2016 JOINT STAFF REPORT:
STOCK STATUS AND FISHERIES FOR SPRING CHINOOK, SUMMER CHINOOK, SOCKEYE, STEELHEAD, AND OTHER SPECIES, AND MISCELLANEOUS REGULATIONS

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INTRODUCTION

This report describes winter, spring, and summer season fisheries in the mainstem Columbia River, including a review of 2015 winter/spring and summer fisheries, plus management guidelines and expectations for 2016 salmon and summer steelhead returns and fisheries. This is the second report of an annual series produced by the Joint Columbia River Management Staff of the Oregon Department of Fish & Wildlife (ODFW) and Washington Department of Fish & Wildlife (WDFW) prior to each major Columbia River Compact/Joint State hearing. A Compact hearing for the 2016 winter/spring and summer management season is scheduled for 10 AM, Wednesday January 27, 2016 at the Washington State School for the Blind 2214 East 13th Street, Vancouver, Washington. Members of the *US v Oregon* Technical Advisory Committee (TAC) have reviewed this report.

THE COMPACT

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

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

SEASONS CONSIDERED

At the January 27 hearing, the mainstem Columbia River recreational spring Chinook fishery and the Select Area commercial winter, spring, and summer fisheries will be considered. The general plan for the non-Indian spring Chinook mainstem commercial fisheries will also be outlined. Other general permanent fishery rules may also be considered. Modifications to seasons adopted at this hearing and other recreational and commercial seasons will be considered at future hearings as additional information on fish runs and ongoing fisheries become available.

STOCKS CONSIDERED

Spring Chinook

Spring Chinook enter freshwater during February through June to spawn in Columbia River tributaries during August through October. Juveniles generally emigrate from freshwater as yearlings. Returning adults are comprised of lower river (downstream from Bonneville Dam) and upriver (upstream from Bonneville Dam) stocks. Adult returns are comprised of Age-4, Age-5, and Age-6 fish. Age-3 fish are referred to as "jacks" and are typically male fish that have returned after spending only one year in the ocean. Spring Chinook entering the lower Columbia River during mid-February through March are predominantly larger, Age-5 fish destined for lower river tributaries. Age-5 Chinook are dominant throughout March and reach peak abundance in the lower Columbia River by late March. Smaller Age-4 fish enter in increasing numbers after mid-March, reaching peak abundance during April. Upriver spring Chinook returning to areas upstream of Bonneville Dam begin to enter the Columbia River in substantial numbers after mid-March and generally reach peak abundance at Bonneville Dam in late April to early May. Most wild spring Chinook entering the Columbia River are listed under the federal ESA.

Willamette River Spring Chinook

The Willamette River spring Chinook run passes through the lower Columbia River from February through June, with peak abundance during mid-April through early May. Migration through the lower Willamette River varies with water conditions but typically occurs from mid-March through late May. Passage through the Willamette Falls fishway primarily occurs from April through July, with peak passage typically in mid-May.

Visual stock identification (VSI) and coded-wire tag (CWT) recoveries indicate that spring Chinook destined for the Willamette River typically comprised a large percentage of the spring Chinook caught during past winter commercial seasons and during March in Columbia River recreational fisheries. Willamette River fish predominated because they exhibit a broader migration pattern and usually contained a greater proportion of early-returning Age-5 fish than other spring Chinook runs. In recent years the proportion of Willamette River fish in early season fisheries has decreased, presumably due to relatively large upriver runs since 2000 and a lower proportion of Age-5 fish in recent Willamette returns.

Historically, wild spring Chinook spawned in nearly all eastside Willamette tributaries upstream of Willamette Falls. During 1952–1968, the U.S. Army Corps of Engineers (USACE) constructed dams on all major eastside tributaries upstream of Willamette Falls, blocking more than 400 stream miles of wild spring Chinook rearing area. Some residual spawning areas remain, including about two-thirds of the McKenzie River and about one-quarter of the North Santiam River; however, upstream dams affect these areas through alteration of flows and temperature. The majority of the Clackamas River Basin remains accessible, although a three-dam hydroelectric complex (river miles (RM) 23–31) has impacted migration and rearing conditions in the mainstem Clackamas River. The percentage of wild fish in the Willamette spring Chinook population was previously estimated at about 10–12%, with the majority destined

for the McKenzie River. However, the wild percentage of the run has been higher in recent years, averaging 21% (range 15–27%) since 2008. Passage over Leaburg Dam on the McKenzie River and North Fork Dam on the Clackamas River, plus redd counts and dam counts in the North Santiam River, are currently used to index the status of wild spring Chinook populations in the Willamette River Basin. The National Marine Fisheries Service (NMFS) classified spring Chinook destined for the Willamette River upstream of Willamette Falls and the Clackamas River into a single ESU and listed the wild component as a threatened species under the ESA effective May 24, 1999.

Accurate Willamette River spring Chinook run size estimates prior to 1946 are not available. Prior to 1990, the 1953 run was generally believed to be the largest on record, at 125,000 fish, and the run was predominantly wild. The 1953 run was eclipsed by a return of 130,600 spring Chinook in 1990, comprised mainly of hatchery fish. A new record run was established in 2004 with a return of 144,400 fish, again comprised primarily of hatchery fish.

Four large hatcheries upstream from Willamette Falls produce up to 5.0 million smolts annually, plus additional fingerlings to seed reservoir and stream areas. About 75% of this hatchery production is funded by USACE as mitigation for lost production areas. Downstream of Willamette Falls, hatchery releases in the Clackamas River total about 0.75 million smolts annually. Hatchery egg-take needs for the combined Willamette and Clackamas River programs have been met annually since 1980, with the exception of 1984 and 1994.

2015 Return

The Willamette River return of 87,071 spring Chinook entering the Columbia River in 2015 was 68% greater than the 2014 return of 51,794 fish and was 57% greater than the preseason forecast of 55,440 (Tables 1 and 2). The return was made up of 2,539 Age-3, 63,223 Age-4, 21,258 Age-5, and 51 Age-6 Chinook. Approximately 16% (13,569) of the 2015 Willamette spring Chinook returning to the mouth of the Columbia River were non-fin-clipped fish. The estimated return to the Columbia River mouth includes fish destined for the Clackamas River.

2015 Escapement

Passage of spring Chinook over Willamette Falls in 2015 totaled 53,088 fish (Table 3 and Table 4). From 1980 to 2015, the number of spring Chinook passing Willamette Falls has ranged from 14,700 to 96,000 and averaged 43,800 fish. Of the fish passing Willamette Falls in 2015, about 43,700 were hatchery fish, which exceeded the 32,000 hatchery fish escapement goal specified in the Willamette Fishery Management and Evaluation Plan (FMEP).

2016 Forecast

The ODFW staff has forecasted a return of 70,100 Willamette River spring Chinook (adults and jacks) to the Columbia River mouth in 2016 which would be higher than the 10-year average (2006-2015) total return of 60,900 fish and 20% less than the 2015 return (Table 2). Age-specific returns for 2016 are expected to include 1,400 Age-3s, 40,300 Age-4s, 28,200 Age-5s and 200 Age-6s. The 2016 return is expected to include about 12,600 non-fin-clipped fish (18% of total return), based on the proportions of unmarked fish observed in 2011–2015.

Clackamas River Spring Chinook

2015 Return

The run entering the Clackamas River has generally increased from an annual average of 2,600 in the 1970s, 8,200 in the 1980s, and 8,500 in the 1990s, to 11,400 in the 2000s (Table 3). The increase in returns beginning in the 1980s are due to production from Clackamas Hatchery at McIver Park, which came on-line in 1979, and programs developed to increase passage of wild fish over North Fork Dam yielding increased natural production. In 2015, 8,446 fish (including 5,861 hatchery fish) returned to the Clackamas River.

2015 Escapement

The North Fork Dam count of 4,389 spring Chinook in 2015 included 2,574 unmarked fish that were passed upstream and 1,811 marked fish that were transported directly to Clackamas Hatchery where the swim-in return was 3,543 fish. An estimated 10 fish (marked and unmarked) remained downstream of North Fork Dam to spawn naturally. During 1980–1998, passage over North Fork Dam included unknown numbers of hatchery fish. Since 1999, only unmarked spring Chinook have been passed over North Fork Dam while marked hatchery fish have been recycled through fisheries to the fullest extent possible. The first year in which all returning hatchery adults except double-index tag (DIT) groups were mass-marked with an adipose fin clip was 2003. DIT groups from Clackamas Hatchery were discontinued following the 2003 brood year.

2016 Forecast

The ODFW staff has forecasted a return of 8,300 spring Chinook to the Clackamas River. These fish are included as a component of the total estimated return of Willamette Basin spring Chinook to the Columbia River mouth.

Sandy River Spring Chinook

Beginning in 1976, spring Chinook smolts from hatchery stocks in the Willamette River system were released into the Sandy River to supplement the depressed native spring Chinook run. These releases doubled in the mid-1980s and were mass-marked with an adipose-fin clip beginning in 1999. Subsequently, the Marmot Dam count increased from an average of 120 fish during 1954–1970, 1,000 during the 1980s, 2,900 during the 1990s, and 3,900 during 2000-2007. Beginning with the 2000 brood (2002 release), releases of spring Chinook smolts from wild, local broodstock were initiated at Sandy River Hatchery. However, this program ended after the 2010 release and since 2011 only hatchery-origin spring Chinook have been used for broodstock. Wild spring Chinook in the Sandy River are part of the Lower Columbia ESU and are ESA listed.

Prior to 2008, the minimum spring Chinook run entering the Sandy River was calculated by summing of the Marmot Dam count, Sandy Hatchery return, and recreational catch downstream of Marmot Dam. Recreational catch in the Sandy River is estimated from angler catch cards, which often have a delay of up to three years before catch estimates are available. Because of this inherent delay, an average harvest rate based on the most recent five years available is used to estimate annual catch. Once final catch estimates derived from angler catch cards become

available, the run reconstructions are updated. As a result of the removal of Marmot Dam in late 2007, dam counts of spring Chinook on the Sandy River are no longer available.

Since annual Marmot Dam counts are no longer possible, ODFW has developed a different methodology for run reconstructions for 2008 and beyond. Redd count information for areas upstream of the Marmot Dam site were available for eight years prior to the removal of the dam. A linear regression fitted to the Marmot Dam counts and the redd counts was developed to allow for an escapement estimate to be based upon the redd counts directly.

The 2015 adult spring Chinook return to the Sandy River and the 2016 forecast were not available at the time this document was published. A placeholder of 4,000 adult fish for the 2015 return to the Sandy River has been used in the interim to help estimate total Chinook return and associated ESA impacts. Sandy River returns are shown in Table 1, recreational catch estimates are shown in Table 29.

Washington Lower River Spring Chinook

Spring Chinook returning to the Washington tributaries of the lower Columbia River are destined for the Cowlitz, Kalama, and Lewis rivers. These genetically similar runs are part of the Lower Columbia ESU and are listed under the ESA. Washington lower river spring Chinook migrate earlier than upriver Columbia River stocks with the majority of the run passing through the lower Columbia River during March and April. Once in their natal tributaries, these spring Chinook will spawn during August and September. Virtually all of the production in the Washington portion of the lower Columbia River is of hatchery origin. Adult returns are shown in Table 1. Forecasted and actual returns are shown in Table 2. Catch from Columbia River fisheries are shown in Table 20 for commercial fisheries and Table 24 for recreational fisheries. Recreational tributary catch and harvest rates are shown in Table 26.

Cowlitz River Return and Forecast

The 2015 Cowlitz River spring Chinook return of 23,900 adults (1% wild) was greater than the preseason forecast of 11,200 adults and the recent 10-year (2005-2014) average of 7,400 adult fish. The minimum hatchery escapement goal of 1,550 adults was met with 17,600 adipose-fin clipped adults and 4,000 jacks returning to the hatchery. A total of 14,700 hatchery and 100 wild adult fish were released into the upper basin. Natural spawning escapement below the salmon hatchery is estimated at 800 adults, which is slightly under the recent 10-year average of 800 fish. The 2016 Cowlitz River forecast is 25,100 adult spring Chinook to the tributary mouth, which is 282% of the 2006-2015 average and 105% of the 2015 adult return.

Kalama River Return and Forecast

The 2015 Kalama River spring Chinook return of 3,100 adults (1% wild) was nearly twice the preseason forecast of 1,900 fish, and well above the recent 10-year average return of 2,400 adult fish. The minimum hatchery escapement goal of 400 adults was met. A total of 1,700 adipose-fin clipped adults and 125 jacks returned to the hatchery. Just over 400 adult fish spawned naturally below Kalama Falls Hatchery and less than 50 adipose intact adult fish were passed

upstream. The 2016 Kalama River forecast is 4,900 adult spring Chinook to the tributary mouth, which is twice the recent 10-year average (2,300) and greater than the 2015 adult return.

Lewis River Return and Forecast

The 2015 Lewis River spring Chinook return of 1,000 adults was similar to the preseason forecast of 1,100 fish, but well below the recent 10-year average of 2,800 adults. The minimum hatchery escapement goal of 1,500 fish was not met; however, the egg-take goal was met due to above average fecundity of the female broodstock. Nearly 900 adults and 100 jacks returned to the Merwin Dam and Lewis River Salmon Hatchery traps in 2015. Natural spawning escapement below Merwin Dam is estimated at 150 fish, compared to the 10-year average of 220 adult fish. The 2016 Lewis River forecast is 1,000 adult spring Chinook to the tributary mouth which is 36% of the recent 10-year average (2,800) and equal to the 2015 adult return.

Select Area Spring Chinook

The spring Chinook program in the Youngs Bay terminal fishing area began in 1989 and was expanded in 1993 with support from the Bonneville Power Administration (BPA). Implementation of the BPA-funded Select Area Fisheries Evaluation (now Enhancement), or SAFE, project also allowed for the development of other Select Area fishing sites. Spring Chinook releases in Oregon Select Area sites are Willamette stock while the Washington site utilized Cowlitz and/or Lewis stocks. Most Select Area spring Chinook are reared at Gnat Creek Hatchery in Oregon; however, starting with the 2008 brood, additional production has been received from Willamette basin hatcheries for acclimation and release resulting from reforms to hatchery and harvest management in the lower Columbia River. Additional production is typically composed of surplus eggs collected at various state facilities that would not otherwise have been hatched and reared. Spring Chinook released in Select Areas are primarily reared and/or acclimated in net pens located in Youngs Bay, Tongue Point, and Blind Slough in Oregon and Deep River in Washington (discontinued in 2014). Additionally, an annual experimental group has been overwintered and released directly from Gnat Creek Hatchery since 2013 to test potential survival benefits of this rearing strategy.

Spring Chinook releases in all Select Areas combined ranged between 890,400–1,829,200 smolts annually during 1996–2015, with an average release of 1,272,200 smolts (Table 5). As a result of lower Columbia River hatchery reforms and subsequent reprogramming of spring Chinook production, releases into Oregon Select Area sites increased from an average of 1,143,400 prior to brood year 2008 to 1,451,700 smolts from 2008 to 2010. Beginning with the 2011 brood, smolt releases increased again to meet objectives resulting from lower Columbia River harvest management reform policies and have since averaged 1,694,100 smolts. In Youngs Bay, annual releases of spring Chinook peaked from brood year 2008 to 2010 but have returned to previous levels and average 597,900 for 2011 to 2013 brood years. Prior to 2011, smolt releases into Blind Slough averaged 293,900 smolts annually. Since then, additional smolts were added at the site and releases now average 509,300 for brood years 2011 to 2013. Releases from the Tongue Point–MERTS site have also increased recently and now average 480,200 smolts annually for 2011 to 2013 brood years. Previous to that releases averaged 151,900. The increased production in Tongue Point is partly driven by the successful reinstatement of spring fisheries at this site and resulted from reallocation of smolts from other sites to bolster adult returns. Releases into Deep

River averaged 98,500 annually from 1998 through 2004, except in 2000 when no spring Chinook were released. Starting with the 2005 release (2003 brood), smolts from Deep River were released directly into the mainstem Columbia River via towing of the net pens, as a strategy to reduce potential interactions with native juvenile chum; releases averaged 286,400 after this strategy was initiated. In 2014, releases of spring Chinook into Deep River were discontinued due to poor survival and restricted funding.

2015 Returns

Select Area spring Chinook fisheries are designed to maximize harvest of returning hatchery-produced adults, to minimize straying, and to maximize economic return from the production. Returns of Select Area spring Chinook are measured by Select Area commercial and recreational harvest. Commercial landings of Chinook salmon in 2015 Select Area winter/spring/summer fisheries totaled 13,667 Chinook (13,458 spring Chinook; remainder summer Chinook and early-returning Select Area Bright (SAB) fall Chinook). This was the highest catch since 2010 and 163% of the recent 10-year (2005–2014) average harvest of 8,400 Chinook (Table 6). The high harvest was primarily driven by above average return rates of Age-4 adults from the Youngs Bay net pen release and a significantly higher catch in Tongue Point compared to recent years. An estimated 681 Chinook were harvested from winter/spring/summer recreational fisheries in Select Areas, bringing the total to 14,348 fish harvested in Select Area sites in 2015.

2016 Forecast

The 2016 Select Area spring Chinook forecast is 9,200 adult fish. This return will primarily comprise Age-4 adults from releases of 1.83 million smolts in 2013 (2011 brood) and Age-5 adults from 1.53 million smolts released in 2012 (2010 brood) and (Table 5). Approximately 5,400 fish are predicted to return to Youngs Bay, 2,700 fish to Blind Slough/Knappa Slough, 1,100 fish to Tongue Point/South Channel, and a small number of fish to Deep River. The total Select Area commercial harvest, including harvest of non-local stocks and Select Area Bright (SAB) fall Chinook, is expected to be higher than the recent 10-year average (8,400) but lower than 2015.

Upriver Spring Chinook

Upriver spring Chinook begin entering the Columbia River in late February and early March and typically reach peak abundance at Bonneville Dam in late April. Historically, all Chinook passing Bonneville Dam from March through May were counted as upriver spring Chinook (Figure 1). Since 2005, the upriver spring Chinook run size has included Snake River summer Chinook due to similarities in run timing among the stocks, and is calculated as the sum of the Bonneville Dam count plus the number of upriver origin fish landed in lower river fisheries (kept catch plus release mortalities) from January 1 through June 15. Abundance tables (pre-2005) for upriver spring and summer Chinook contained in this report have been adjusted to account for the change in counting period. Table 2 remains unmodified to allow comparison of past annual forecasts with actual returns.

The upriver spring run is comprised of stocks from several ESUs and three geographically separate production areas: 1) the Columbia River system upstream of the Yakima River (upper

Columbia), 2) the Snake River system, and 3) Columbia River tributaries between Bonneville Dam and the Yakima River, excluding the Snake River (mid-Columbia). Snake River summer Chinook are destined for areas upstream of Lower Granite Dam. Snake River wild spring/summer Chinook outside the Clearwater River and upper Columbia wild spring Chinook are federally-listed under the ESA. In each of the three geographic areas, production is now a mix of hatchery and wild/naturally-produced fish. Although no estimates of hatchery contribution to upriver runs are available prior to 1977, those runs are assumed to have been predominantly wild. Hatchery production in the 1960s and early 1970s was very limited in comparison to current production. Since the late 1970s, spring Chinook hatchery production of upriver stocks has expanded. Beginning in 2002, the majority of the hatchery production returning to the Columbia River has been mass-marked with an adipose fin clip.

Upriver spring Chinook returns have ranged widely in recent decades. Upriver runs were considered poor in the 1980s averaging 84,500 fish per year (range 52,400-128,300) and decreased further during the 1990s when annual returns averaged 69,000 fish (range 12,800-124,300). The 1995 run marked an all-time low of 12,800 fish. The average annual return during the 2000s improved substantially to 210,100 adults (range 86,200 to 440,300). The 2001 run marked a high (since counting began in 1938) of 440,300 adult upriver spring Chinook (Tables 1 and 7).

Run timing of upriver spring Chinook at Bonneville Dam was fairly consistent up until the end of the 1990s. During the 1980s and 1990s, the average 50% passage date was April 27 (ranging from April 20–May 6 during this 20-year period). During the 2000s, the average 50% passage date was May 3 (range April 17–May 12), nearly one week later than observed over the past two decades; the trend of later timed passage began in 2005. The average 50% passage date at Bonneville Dam over the past ten years (2006–2015) is May 8, indicating the late-timing trend has continued into the 2010s.

Upper Columbia River spring Chinook spawn and rear in the mainstem Columbia River and its tributaries (Wenatchee, Entiat and Methow rivers) between Rock Island Dam and Chief Joseph Dams (RM 453–545). Chief Joseph Dam (completed in 1961) now blocks the upriver migration of these fish which was previously blocked by Grand Coulee Dam (RM 597). On average, the Upper Columbia River spring Chinook return has represented 15% of the aggregate upriver spring Chinook run since 1980 but has dropped to 11% based on the recent 10-year average. Returns of upper Columbia spring Chinook to the Columbia River mouth in the 1980s averaged around 20,300 adults (37% wild). Returns declined severely during the 1990s averaging 9,500 adults (20% wild). During the 2000s, the annual returns improved, averaging 21,500 adults, including 2,200 wild fish (10% wild). Data is provided in Table 8.

The year 2013 marked the first brood-year for the Chief Joseph Hatchery spring Chinook program. In April 2015, nearly 515,000 yearling smolts were released from Chief Joseph Hatchery and an additional 197,000 yearling smolts were released as part of the Okanogan re-introduction program. Anticipated releases for April 2016 (2014 BY) include 564,000 spring Chinook yearling smolts from Chief Joseph Hatchery and an additional 205,000 yearling smolts for the Okanogan re-introduction program. Hatchery Spring Chinook were 100% ad-clipped, for

the 2013 BY, and all BY 14 Spring Chinook released from Chief Joseph Hatchery will also be 100% ad-clipped. The re-introduction BY 14 Spring Chinook are CWT'd only.

On average, the Snake River spring/summer Chinook return has represented 48% of the aggregate upriver spring Chinook run since 1980 compared to the recent 10-year average of around 53%. Returns of Snake River spring/summer Chinook to the Columbia River mouth in the 1980s averaged 39,800 adults (48% wild). Returns declined during the 1990s averaging 29,800 adults (38% wild). During the 2000s, annual returns improved, averaging 109,700 adults (27% wild). Data is provided in Table 9.

2015 Return

The 2015 upriver spring Chinook return to the Columbia River totaled 289,000 adults (Table 7) and consisted of 264,800 Age-4 fish, 23,500 Age-5 fish, and 700 Age-6 fish. The return included 162,700 (30,000 wild) adult Snake River spring/summer Chinook and 37,500 (7,300 wild) adult upper Columbia spring Chinook. The remainder of the run was destined for tributaries in the mid-Columbia. The 2015 upriver spring Chinook return was 124% of the forecast of 232,500 fish and was greater than (162%) the recent ten-year average (2005-2014) of 177,900 adults. The 2015 return ranked as the 4th highest return since 1980.

The upper Columbia spring Chinook return of 37,500 adults was 192% of the recent 10-year average return (19,500 fish) and ranked as the 2nd highest return since at least 1980. The upper Columbia wild component was 263% of the recent 10-year average (2,800 fish) and represented 18% of the 2015 upper Columbia run. The Snake River spring/summer return was 172% of the recent 10-year average return (94,700 fish) and ranked as the 4th highest return since at least 1980. The Snake River wild component was 117% of the recent 10-year average (25,500 fish) and represented only 18% of the 2015 Snake River run. See Tables 7, 8 and 9.

The 2015 upriver spring Chinook passage at Bonneville Dam totaled 265,558 adult fish and reached 50% passage on April 30 (compared to the average 50% passage date of May 7). Given the late timing trend that has been observed at Bonneville Dam since 2005, the 2015 50% passage date is considered to be a week earlier than 'normal timed' passage. The peak count occurred on April 28 (17,045 fish); two days prior to the 50% passage date. Chinook jack counts at Bonneville Dam totaled 18,138 fish, which was less than the 5-year average of 33,800, and more in line with the average counts observed in the 2000s (21,300 average).

The Idaho Department of Fish and Game (IDFG) independently develops abundance estimates of Snake River-origin spring Chinook at Bonneville Dam annually. IDFG estimates tend to differ from the estimates developed by TAC reported here. To date, IDFG's alternate methodology has not been reviewed within TAC.

2016 Forecast

The 2016 forecast for upriver spring Chinook is 188,800 adults to the Columbia River mouth (Table 2). This forecast includes 27,600 upper Columbia spring Chinook (5,000 wild) and 124,800 Snake River fish (23,700 wild), with the remainder of the run (36,400) comprised of spring Chinook returning to mid-Columbia tributaries. The overall return is expected to include 162,700 Age-4 fish, 25,500 Age-5 fish and 600 Age-6 fish. If accurate, this forecast of 188,800

fish would be the 10th highest return since 1980 and 96% of the average return observed over the past decade (2006–2015).

The forecast for adult Upper Columbia spring Chinook of 27,600 fish is 127% of the recent 10-year average; the wild component represents 164% of the 10-year average return. The wild component is forecasted to represent 18% of total Upper Columbia spring run, compared to the recent 10-year average of 14%.

The forecast for Snake River spring/summer Chinook of 124,800 fish is 118% of the recent 10-year average (106,000) fish and the wild forecast of 23,700 is 88% of the recent 10-year average (27,000). The wild component is forecast to represent 19% of total Snake River run, which is less than the recent 10-year average percentage (25%). The Upper Columbia return is expected to represent 16% of the aggregate upriver spring Chinook return and the Snake River component is expected to represent 66% of the aggregate return. These stock proportions contain a higher proportion of Snake River fish when compared to the 5-year average (56% Snake, 12% Upper Columbia).

Washington Tributaries Upstream of Bonneville Dam

The Washington tributary returns and forecasts listed below are included in the aggregate 2015 return and 2016 forecast for upriver spring Chinook.

Wind River Return and Forecast

The Wind River enters the Columbia River 155 miles upstream from its mouth. Wind River is included in the Lower Columbia ESU, however Wind River spring Chinook are excluded in the ESA listing. Spring Chinook were introduced into the Wind River with production beginning in the late 1950s at the Carson National Fish Hatchery. Since the 1980s Carson Hatchery has produced spring Chinook exclusively. Hatchery returns of adult spring Chinook to the mouth of the Wind River during the most recent decade (2006–2015) averaged 6,400 fish (range 3,100–11,800) each year. The 2015 return of spring Chinook to the Wind River was 7,100 adults, compared to the preseason forecast of 4,800 adults. The 2016 forecast to the tributary mouth is 6,500 adult fish, which would be essentially equal (102%) to the average return observed over the past ten years.

Little White Salmon River (Drano Lake) Return and Forecast

Prior to the construction of Bonneville Dam in 1938, a limited amount of natural production occurred in the Little White Salmon River downstream of the falls located approximately two miles upstream of the historic mouth of the river. That section of the river was inundated by the construction of Bonneville Dam. Hatchery spring Chinook return to the Little White Salmon National Fish Hatchery, which was built in 1898 and is one of the oldest on the Columbia River system. The program is currently self-supporting, as broodstock are guided into the hatchery by a barrier dam. The Little White Salmon River is included in the Lower Columbia ESU, however Little White Salmon River spring Chinook are excluded in the ESA listing.

The 2015 return of spring Chinook to the mouth of the Little White Salmon River was 17,600 adults. The return was more than double the preseason forecast of 7,800 adults, and more than the recent 10-year average of 11,700 adult fish. The 2016 forecast to the tributary mouth is 9,800 adult fish, which would be less (84%) than the average return observed over the past ten years.

Klickitat River Return and Forecast

The Klickitat River spring Chinook return consists of hatchery-origin fish from the Klickitat Hatchery and a smaller, depressed wild population that spawns upstream of the hatchery. The Klickitat River is included in the mid-Columbia ESU but Klickitat River spring Chinook are not ESA-listed. Prior to 1920, there were large spring Chinook runs in the Klickitat River and a significant tribal fishery occurred at Lyle Falls, despite difficult passage at the falls. By 1951, the annual spring Chinook run varied from 1,000 to 5,000 adults. In 1952, the Klickitat Hatchery and two fishways at Lyle Falls were constructed using Mitchell Act funds. Indigenous Klickitat spring Chinook were trapped at the upper fishway each year from 1952 through at least 1959. Since then, collection of broodstock has relied upon fish returns (primarily of hatchery origin) at the on-site hatchery trap. Plans call for hatchery upgrades and collection of natural-origin fish for broodstock in the near future. Since 1977, estimates of adult spring Chinook returning to the Klickitat River mouth have ranged from 500 to 5,250 fish, and averaged about 1,900 fish annually with 70–80% of the run being hatchery fish.

The 2015 return of spring Chinook to the Klickitat River was 2,810 adults compared to the forecast of 2,500 adults. The 2016 forecast is for a return of 1,600 adults, well below recent 5-year average of 2,200 adults to the Klickitat River, and less than the 2015 return. Mark-recapture estimates at Lyle Falls on the lower Klickitat River conducted since 2005 produce overall higher total run size estimates (this method produced an estimate of about 5,530 total adults for 2015 with a 9-year average of 3,570 adults), but still indicate a predominantly (85-90%) hatchery-origin run with a small wild run size averaging about 500 fish.

Yakima River Return and Forecast

The Yakima River Basin spring Chinook return is comprised of three unique spring Chinook populations: upper Yakima River, Naches River, and American River. The Yakima River is included in the mid-Columbia ESU but Yakima River spring Chinook are not ESA-listed. Historical Yakima spring Chinook returns (all stocks) ranged from approximately 50,000 to 200,000 fish. An integrated hatchery supplementation program (Cle Elum Supplementation and Research Facility (CESRF)) in the Upper Yakima was initiated in 1997 with the first Age-4 adults returning from this program in 2001. The program uses only natural-origin fish for brood stock and hatchery-origin returns are allowed to spawn naturally. The Naches River and American River populations are predominantly wild and few if any hatchery-origin fish are known to stray to Naches sub-basin spawning areas.

An aggregate total of 8,800 adult spring Chinook (69% wild/natural) returned to the Yakima River in 2015 which was very close to the 9,300 expected. The 2016 forecast is 4,600 adult spring Chinook, including 3,100 wild/natural fish (67%), compared to the recent 10-year average of 8,300 adults (56% wild/natural).

Upper Columbia River Summer Chinook

Upper Columbia River summer Chinook are destined for production areas and hatcheries upstream of Priest Rapids Dam. Historically, these fish spawned in the mainstem Columbia, Wenatchee, Okanogan, and Similkameen rivers. Access to over 500 miles of the upper mainstem Columbia River was blocked by the construction of Grand Coulee Dam in 1941. The building of Chief Joseph Dam further reduced available mainstem habitat. Since completion of the Columbia River hydropower system, summer Chinook redds are found in the Columbia, Wenatchee, Okanogan, Methow, Similkameen, Chelan, and Entiat rivers. The upper Columbia summer Chinook run size remained at low levels throughout the 1980s and 1990s, with average returns of 19,200 and 15,100 fish, respectively. The average run size during the 2000s was 59,800 adults, which was three times greater than the average run size of the 1980s and four times greater than the average run size of the 1990s (Table 10). Supplementation programs and improved natural habitat have played a significant role in the increased abundance trends observed since 1999. Since 2002, the majority of the hatchery production has been mass-marked with an adipose fin clip. Natural-spawning populations also contribute significantly to the run and the stock is managed as a composite population.

The year 2013 marked the first brood-year for the Chief Joseph Hatchery summer Chinook program. In May 2014, an estimated 265,000 sub-yearling smolts were released from the hatchery plus an additional 197,300 sub-yearling smolts were released from the Omak acclimation site. In April 2015, releases included an estimated 400,000 yearling smolts from the hatchery and an additional 500,000 integrated yearlings from the Similkameen and Omak acclimation sites. Anticipated releases for 2016 include 400,000 yearling smolts from the hatchery and an additional 500,000 integrated yearlings from the Similkameen and Omak acclimation sites.

The Columbia River summer Chinook run consists only of the upper Columbia component (Snake River summer Chinook are included in the upriver spring run). The Columbia River return is calculated as the sum of the Bonneville Dam count and the number of Chinook mortalities resulting from lower river fisheries during June 16 through July 31. Upper Columbia summer Chinook are not ESA-listed, and the population is currently considered healthy. See Table 10 for abundance, harvest and escapement data.

2015 Return

The 2015 upper Columbia summer Chinook return totaled 126,900 adults, compared to the preseason forecast of 73,000 adults. The adult return was comprised of 72,500 Age-4, 42,600 Age-5 and 11,800 age 6 fish. The 2015 return was the largest return observed since 1980 and was 198% of the recent 10-year average (2005–2014) of 64,100 adults. The 2015 jack return of 18,200 fish at Bonneville Dam was greater than the recent 10-year average (13,900), and similar to the past few years. The 2015 return of nearly 127,000 fish was the largest return since at least 1980 and continued the positive, generally upward, trend observed since the 2000s.

2016 Forecast

The 2016 forecast for upper Columbia summer Chinook is 93,300 adults to the Columbia River mouth. The overall return is expected to include 47,100 Age-4 fish and 42,600 Age-5 fish. If accurate, this projection would represent the 2nd highest return since 1980 and 132% of the average return observed over the past decade.

Wild Winter Steelhead

Winter steelhead enter the Columbia River from November through April and spawn from March through June. Juvenile wild winter steelhead usually rear in freshwater for one to three years before outmigrating to the ocean as smolts during March through June. Most lower Columbia River winter steelhead spend two summers in the ocean before returning as adults to spawn in natal streams. The range of winter steelhead includes all tributaries of the Columbia River upstream to Fifteen Mile Creek in Oregon and the Klickitat River in Washington. All wild winter steelhead are ESA-listed, except those within the Southwest Washington Distinct Population Segment (DPS). The Southwest Washington DPS includes populations in river basins of, and tributaries to, Grays Harbor, Willapa Bay, and the Columbia River downstream of the Cowlitz River in Washington and downstream of the Willamette River in Oregon. All steelhead handled downstream of The Dalles Dam during November through April are managed as winter steelhead. Steelhead passing Bonneville Dam between November 1 and March 31 are counted as winter steelhead. Unclipped steelhead passing Bonneville during this time period are counted as wild fish. Columbia River wild winter steelhead returns during the past 10 years (2005-2014) averaged 15,700 fish and ranged between 11,500 and 20,000 fish (Table 11). Passage of wild winter steelhead at Willamette Falls during the same 10-year period has averaged 8,800 fish, ranging from 2,800 up to 7,600 fish.

2014-2015 Run Year Return and 2015-2016 Run Year Forecast

The 2014-15 wild winter steelhead return to the Columbia River mouth totaled 20,100 fish. The 2015 return was greater than (125%) the forecast of 16,100 fish and 118% of the 5-yr average of 16,900 fish. Returns were generally similar to or above average in Washington tributaries; Oregon returns were less than average. Passage at Willamette Falls totaled 4,508 fish and represented 22% of the total Columbia River return. The 2015-16 forecast is 16,900 for wild winter steelhead returning to the Columbia River mouth.

Summer Steelhead

The Columbia River summer steelhead run includes populations from lower river and upriver tributaries. Summer steelhead enter freshwater year-round with the majority of the run entering from June through October. The Columbia River return of summer steelhead is estimated as the sum of lower river tributary returns (lower river stocks), number of steelhead mortalities resulting from lower river mainstem fisheries during May–October (lower river and upriver stocks), and Bonneville Dam counts during April–October (upriver stocks).

The lower river component of the run tends to be earlier timed than the upriver stocks, with abundance peaking during May and June. Skamania stock hatchery summer steelhead are widely

planted in the lower Columbia tributaries, including the Willamette Basin. Skamania stock hatchery fish are also released annually in some tributaries upstream of Bonneville Dam (primarily the Klickitat River in recent years). Wild lower river summer steelhead are present in the Kalama, Lewis, Washougal and Wind rivers in Washington and in the Hood River in Oregon. The lower Columbia River steelhead DPS was listed as threatened by the NMFS on May 24, 1999. All steelhead handled in fisheries downstream of Bonneville Dam during May and June are managed as lower river Skamania-stock. See Table 16 for abundance estimates of lower river summer steelhead.

The NMFS has divided the upriver wild summer steelhead run into three DPSs: 1) the middle Columbia DPS which includes steelhead destined for Columbia River tributaries from upstream of the Wind and Hood rivers upstream to and including the Yakima River (listed as threatened in May 1999), 2) the upper Columbia DPS which includes steelhead destined for Columbia River tributaries upstream of the Yakima River (listed as endangered in May 1999, reviewed and downgraded as threatened in 2009), and 3) the Snake River DPS which includes steelhead returning to the Snake River basin (listed as threatened in October 1997). Currently, there is no reliable method available to segregate the steelhead run at Bonneville Dam into individual DPSs.

Upriver summer steelhead pass Bonneville Dam from April 1 through October 31 each year (Figure 1). Summer steelhead passing Bonneville Dam between April 1 and June 30 are managed as upper Skamania stock steelhead primarily destined for tributaries within Bonneville Pool. Summer steelhead passing Bonneville Dam between July 1 and October 31 are considered to be either Group A or Group B stock. Group A steelhead defined as any steelhead measuring less than 78 cm fork length. Group A steelhead are destined for tributaries throughout the Columbia and Snake basins and typically spend one or two years at sea. Group B steelhead are defined as any steelhead measuring at least 78 cm fork length. Most Group B steelhead return to the Clearwater and Salmon rivers in Idaho, are usually later-timed than the Group A steelhead, and typically spend two or three years at sea. Some Group B steelhead return to all tributaries throughout the basin. See Table 17 for abundance estimates of upriver summer steelhead.

Table 12 and Table 13 provide lower river and upriver summer steelhead estimated abundance, harvest and incidental release mortalities, and associated impacts to ESA-listed wild fish during non-Indian winter/spring and summer fisheries.

Upriver summer steelhead returns (April – June) to Bonneville Dam during the 1990s averaged 217,000 fish, and increased to 396,000 on average during the 2000s. The recent 10-year average (2005–2014) passage is 347,000 fish. During 1984–2014 the Group A return to Bonneville Dam ranged from 116,000 fish up to 543,000 fish, averaging 243,000 fish. Group B steelhead returns are much lower than the Group A returns. During 1984–2014 Group B passage at Bonneville Dam has ranged from 11,000 fish up to 130,000 fish, averaging 51,000 fish. Upriver summer steelhead passage is provided in Table 14 at Bonneville Dam and Table 15 for passage at Lower Granite Dam.

2015 Return

The total return to Bonneville Dam (April-October passage) of upriver summer steelhead in 2015 was 261,400 fish, compared to the preseason forecast of 312,200 fish (84% of forecast). Upriver

summer steelhead passage at Bonneville Dam in 2015 was in the mid-range of the past two years but was only 75% of the recent 10-year average return of 347,500 fish. 2015 was ranked as number 22 out of the 32 years since 1984. Window counts of unclipped steelhead include a small portion of unclipped hatchery fish. Unclipped steelhead counts at Bonneville Dam during April through October totaled 94,400 fish (36%). During 2005-2014, the wild (or unclipped) fish at Bonneville Dam has averaged 31% of the total passage. This higher-than-average proportion of wild fish has been observed annually since 2007 when compared to the previous ten years.

The 2015 Bonneville Dam passage of Skamania stock steelhead totaled 8,100 fish including 3,700 (45%) wild fish. Passage over Bonneville was typical with the majority (77%) of the fish passing during June. The Skamania return was less than the recent 10-year average return of 13,000 and ranked the third lowest in the 32 years since 1984.

The majority of steelhead passage at Bonneville Dam occurs during July through October. During these months in 2015, a total of 253,200 steelhead passed Bonneville Dam, compared to the recent 10-year average of 334,600 fish and the expected total passage of 298,800. Passage was 50% complete on August 13, compared to the average 50% date of August 10. The final Group A and Group B stock components of the 2015 return have not been determined at the time of this report. The data will be publically available on agency websites in early spring and published in the annual Fall Joint Staff report, which is typically available in July.

Steelhead passage at Lower Granite Dam (LRG) for the 2015-16 run year is counted from July 1, 2015 to June 30, 2016 (and corresponds to Group A and Group B fish passing Bonneville Dam from July 1 to October 31, 2015). About 95% of the total run passes LRG between July 1 to December 31. The adult fish ladder at LRG is usually dewatered in January and February. Steelhead passage at LRG from July 1 to December 31, 2015 was 130,482 fish (Table 15). The total 2015-16 run is projected to be about 139,000 steelhead compared to the recent 10- year average of 171,800 fish.

2016 Forecast

The 2016 forecasts for upriver summer steelhead at Bonneville Dam were not available at the time of publication. Forecasts will be publically available on agency websites in early spring and published in the annual Fall Joint Staff Report, which is typically available in July.

Sockeye

Sockeye salmon have been adversely impacted by hydroelectric development in the Columbia Basin, and their abundance has declined substantially from historic levels. Most of the historic production of sockeye occurred in nursery lakes located in the uppermost reaches of the Columbia and Snake River basins. Upstream passage was blocked by the construction of several key dams including: Grand Coulee in the upper Columbia system, and by Swan Falls (completed 1901), Sunbeam (completed 1913; removed in 1934), Black Canyon (completed 1914), Wallowa Dam (completed in 1929), and Brownlee (completed 1958) in the Snake River system. Landlocked sockeye salmon, commonly called kokanee, are still produced in many of the areas that formerly contained anadromous runs.

Until recently, the Columbia River sockeye run consisted only of the Okanogan, Wenatchee, and Snake River stocks. Sockeye have recently been re-introduced in the Yakima River and passage has been re-established at Round Butte Dam on the Deschutes River. The Okanogan and Wenatchee stock abundance is typically cyclic, with occasional strong return years followed by years of low returns. The upper Columbia River sockeye run (Okanogan and Wenatchee) consists of four age groups. Fish returning to Osoyoos Lake in the Okanogan Basin are typically Age-3 and Age-4 fish. Those returning to Lake Wenatchee in the Wenatchee Basin are typically Age-4 and Age-5 fish. The Snake River sockeye run, primarily returning to Redfish Lake within Idaho's Stanley Basin, is extremely depleted. The majority of returning adults are progeny of the captive broodstock program. However, adults trapped at the Redfish Lake Creek weir and released into Redfish Lake also contribute to the returns. The Snake River stock was federally-listed as endangered in November 1991. The upper Columbia stocks are considered healthy populations and are not ESA-listed. Sockeye in the Yakima and Deschutes Rivers are also not ESA listed.

Sockeye salmon migrate through the lower Columbia River during June and July, with normal peak passage at Bonneville Dam around July 1 (Figure 1). The Wenatchee stock generally migrates earlier than the Okanogan stock although the run timing of both stocks overlap. Sockeye counts at Ice Harbor Dam (on the Snake River) and Priest Rapids Dam (on the upper Columbia River) both extend from early June through mid-July, which suggests that the run timing of the Snake River component is similar to the upper Columbia sockeye. The escapement goal of 65,000 sockeye salmon at Priest Rapids Dam requires that 75,000 sockeye migrate past Bonneville Dam. The Wenatchee River, which enters the Columbia River from the Washington shore upstream of Rock Island Dam (RM 454), has a current escapement goal of around 23,000 adult sockeye to the Wenatchee River system. Historically, the Wenatchee return was similar in abundance to the Okanogan return. On average, the Wenatchee return represented 45% of the upper Columbia return during the 1980s and 50% during the 1990s. During the 2000s, Wenatchee stock represented 28% of the upper Columbia return, largely due to the unprecedented high returns of Okanogan stock beginning around 2008. During the 1990s the number of sockeye entering the Columbia River destined for the Snake River basin averaged eight fish per year. During the 2000s, Snake River sockeye returns averaged 400 fish, which was mainly driven by the increased returns observed beginning in 2008 (Table 18).

2015 Return

The 2015 return of sockeye to the Columbia River of 512,500 adults was much greater than the preseason forecast of 394,000 adults, and ranked third largest return since at least 1980. The 2015 return included 139,900 Wenatchee stock, 370,900 Okanogan stock, and 1,700 Snake River stock returning to the Columbia River. At Prosser Dam on the Yakama River, only 95 sockeye were counted. On the Deschutes River, around 40 sockeye reached Round Butte Dam and were passed upstream. The Wenatchee return was 131% of forecast, and the escapement goal of 23,000 fish to the Wenatchee River was easily met, with 51,500 sockeye reported at Tumwater Dam. The Okanogan return was 130% of forecast. The Snake River return was similar to forecast and was the 151% of the recent 10-year average. Sockeye counts at Lower Granite Dam totaled only 440 fish. The low conversion from Bonneville to Lower Granite was likely caused by above average water temperatures the fish encountered in the Columbia and Snake rivers

during their upstream migration. Standard methods developed by TAC were used to determine the relative proportion of Snake River sockeye in the overall run; however, independent estimates by IDFG and CRITFC suggest abundance may have been higher (3,000-4,000 at Bonneville Dam).

River conditions in the Columbia River and its tributaries had a negative effect on the successful migration of sockeye in 2015. Water temperatures were much higher than average during June and July which proved to be detrimental to a good portion of sockeye returning. Sockeye were reported in Columbia River tributaries where normally they would rarely be found. These fish were thought to dip-in to seek cool water refuge. The eventual upriver migration, and final fate, of these dip-in fish is unknown. Upriver passage of sockeye from one hydro-facility to another was also abnormal. Sockeye passage totaled over 510,000 fish at Bonneville Dam, but less than 280,000 at McNary Dam (140 miles upriver). The Fish Passage Center (FPC; in a memo to Charles Morrill (WDFW), Erick VanDyke (ODFW), and Steven Hawley (private citizen) dated October 28, 2015 available at the FPC website: www.fpc.org/documents/FPC_memos.html) estimated that the Snake River adult sockeye survival from Bonneville Dam to Lower Granite Dam was 4% (compared to a range of 44% - 77% from 2009 to 2014) and the survival of Upper Columbia adult sockeye from Bonneville Dam to Rock Island Dam was 46% (compared to a range of 59% - 80% from 2009–2014).

2016 Forecast

The 2016 forecast for the Columbia River sockeye run is for a return of 101,600 adults to the Columbia River which includes 57,800 Wenatchee stock, 41,700 Okanogan stock, and 2,100 Snake River stock. The forecast is 35% the 2006–2015 average return of 290,200 fish. The Wenatchee component is forecasted to be greater than the escapement objective of 23,000 fish, and similar to the 10-year average return of 48,400 fish. The Okanogan component, which has shown an impressive increase in run strength since 2008, is expected to be much less than the recent 10-yr average of 240,500 fish. Although the Snake River component represents a small proportion of the total run, a return of 2,100 fish would be 158% of the recent 10-year average return. Minor returns to the Yakima and Deschutes rivers are also expected.

American Shad

American shad are an introduced species brought to the West Coast from Pennsylvania in the late 19th century. The shad is an anadromous fish, spending three to four years at sea before returning to spawn. Since the extensive development of mainstem hydroelectric projects, American shad runs have increased markedly in abundance and have extended their range into the upper Columbia River and into Hells Canyon of the Snake River. Since the late 1970s runs have met or exceeded one million fish per year, with a peak of over six million in 2005. Shad run timing extends from mid-May through early August at Bonneville Dam, with peak daily counts occurring in June (Figure 1). Since the timing of the run overlaps with upriver Chinook, sockeye, and steelhead runs, harvest opportunities for shad are regulated to minimize impacts to ESA-listed salmonids. Recently, work has been conducted to explore the feasibility of using alternative gear types to increase opportunities to harvest the abundant shad runs while minimizing impacts to salmonids. Shad were harvested with seines in 2011 and 2012 (primarily

purse seine) and again in 2014 (beach seine) under experimental gear permits issued by ODFW. In 2013 one experimental gear permit for a purse seine was issued but no fishing occurred due to lack of market demand. It is expected that harvest opportunity using these alternative gear types would be allowed in future fisheries if demand exists.

2015 Return

The 2015 minimum American shad run size was 1.9 million, with a minimum escapement of 1.8 million fish upstream of Bonneville Dam, plus an unknown number of spawners downstream of Bonneville Dam and downstream of Willamette Falls. The 2015 run in the Columbia River was below the recent five year average of 2.3 million (Table 19). The non-Indian (lower Columbia and lower Willamette) recreational and commercial combined catch of 66,600 American shad (<4% of the total run) was less than half of the recent five year average combined catch of 137,900 kept.

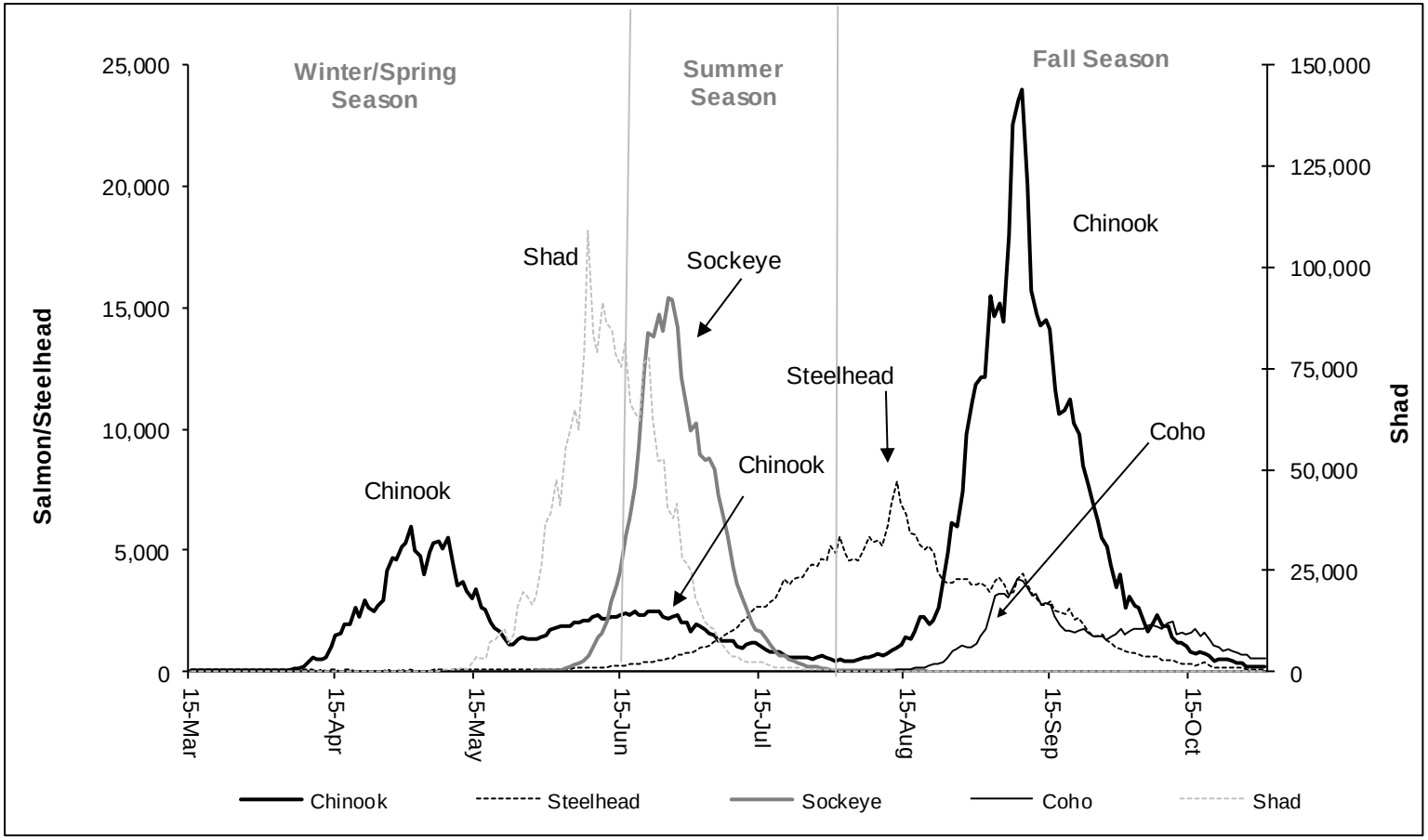

Figure 1. Average Daily Counts of Salmon, Steelhead, and American shad at Bonneville Dam, 2006–2015.

MANAGEMENT GUIDELINES

Endangered Species Act

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

Federally-listed Species Found in Columbia River Fishery Management Areas			
Species – *ESU/DPS*[1]	Current Designation	Listing Date	Effective Date
Chinook			
Snake River Fall	Threatened	April 22, 1992	May 22, 1992
Snake River Spring/Summer	Threatened	April 22, 1992	May 22, 1992
Upper Columbia Spring	Endangered	March 24, 1999	May 24, 1999
Upper Columbia Summer/Fall	Not warranted	--	--
Middle Columbia Spring	Not warranted	--	--
Lower Columbia River Spring/Fall	Threatened	March 24, 1999	May 24, 1999
Upper Willamette Spring	Threatened	March 24, 1999	May 24, 1999
Deschutes River Summer/Fall	Not warranted	--	--
Steelhead			
Snake River Basin	Threatened	August 18, 1997	October 17, 1997
Upper Columbia River [2]	Threatened	August 18, 1997	October 17, 1997
Lower Columbia River	Threatened	March 19, 1998	May 18, 1998
Middle Columbia River	Threatened	March 25, 1999	May 24, 1999
Southwest Washington	Not warranted	--	--
Upper Willamette	Threatened	March 25, 1999	May 24, 1999
Sockeye			
Snake River	Endangered	November 20, 1991	Dec. 20, 1991
Okanogan River	Not warranted	--	--
Lake Wenatchee	Not warranted	--	--
Chum – Columbia River	Threatened	March 25, 1999	May 24, 1999
Coho – Columbia River	Threatened	June 28, 2005	August 26, 2005
Green Sturgeon- Southern DPS	Threatened	April 7, 2006	July 7, 2006
Eulachon - Southern DPS	Threatened	March 18, 2010	May 17, 2010

1. *The ESU/DPSs in bold are present in the Columbia River basin during the time when fisheries described in this report occur and therefore may be impacted by these fisheries.*
2. *Status downgraded to threatened per U.S. District Court order in June 2009.*

The current BA concerns Columbia River treaty Indian and non-Indian fisheries, as described in the *2008–2017 U.S. v Oregon* Management Agreement (2008–2017 MA). The BA was submitted during the spring of 2008 and a Biological Opinion (BO) was subsequently issued by

NMFS later that year. The current BO expires December 31, 2017, concurrent with the 2008-2017 MA. The BO covering non-Indian fisheries described in the 2008–2017 MA also addresses impacts to green sturgeon.

Wild Winter Steelhead Management

Non-Indian fisheries conducted during the winter season incidentally handle wild winter steelhead while targeting hatchery Chinook or hatchery steelhead. While the highest impacts on wild winter steelhead populations occur in the tributaries of the Columbia River where hatchery steelhead are a recreational target species, lesser impacts also occur during mainstem recreational and commercial spring Chinook seasons. Tributary recreational fisheries are conducted under separate permits issued by NMFS and the associated steelhead impacts are considered separately from mainstem fisheries. When lower Columbia and upper Willamette steelhead were listed under the federal ESA, a 2% annual impact rate for all non-Indian mainstem fisheries combined was established in the BAs and BOs for mainstem fisheries.

Columbia River Salmon Management Guidelines

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

Upriver Spring Chinook

The 2008–2017 MA provides for a minimum annual mainstem treaty Indian C&S entitlement to the Columbia River treaty tribes of 10,000 spring and summer Chinook. It is anticipated that the majority of this entitlement will be taken in treaty Indian fisheries during the winter and spring management periods (January 1 through June 15). Tributary harvest of spring and summer Chinook is not included in this entitlement.

Non-Indian and treaty Indian winter and spring season fisheries are managed in accordance with the harvest rate schedule provided in Table A1 of the 2008–2017 MA. This harvest rate schedule was the first to incorporate a sliding scale, with increasing or decreasing allowable impact rates dependent on the total upriver spring Chinook run size. This harvest rate schedule and the preseason forecast for upriver spring Chinook are used to plan fisheries based on the available impacts allocated to treaty Indian and non-Indian fisheries. Beginning in 2010, modifications to Table A1 were implemented, which required non-Indian fisheries to meet the catch balance provisions in the MA for upriver spring Chinook. Under these provisions, non-Indian fisheries are managed to remain within ESA impacts *and* to not exceed the total allowable catch available for treaty Indian fisheries. In addition, prior to the first run size update from TAC, non-Indian fisheries will managed for the allowed treaty catch guideline that is based on a run size that is 70% of forecast (30% buffer). The following table is the revised version of Table A1 of the MA, reflecting the new catch balancing provisions (implemented in 2010).

2008–2017 Harvest Rate Schedule for Chinook in Spring Management Period

Total Upriver Spring and Snake River Summer Chinook Run Size[6]	Snake River Natural Spring/Summer Chinook Run Size[1]	Treaty Zone 6 Total Harvest Rate [2,5]	Treaty Catch Guideline	Non-Treaty Natural Harvest Rate [3]	Non-Treaty Mortality Guideline	Total Natural Harvest Rate[4]	Non-Treaty Natural Limited Harvest Rate[4]
<27,000	<2,700	5.0%		<0.5%		<5.5%	0.5%
27,000	2,700	5.0%	1,350	0.5%	1,350	5.5%	0.5%
33,000	3,300	5.0%	1,650	1.0%	1,650	6.0%	0.5%
44,000	4,400	6.0%	2,640	1.0%	2,640	7.0%	0.5%
55,000	5,500	7.0%	3,850	1.5%	3,850	8.5%	1.0%
82,000	8,200	7.4%	6,068	1.6%	6,068	9.0%	1.5%
109,000	10,900	8.3%	9,047	1.7%	9,047	10.0%	
141,000	14,100	9.1%	12,831	1.9%	12,831	11.0%	
217,000	21,700	10.0%	21,700	2.0%	21,700	12.0%	
271,000	27,100	10.8%	29,268	2.2%	29,268	13.0%	
326,000	32,600	11.7%	38,142	2.3%	38,142	14.0%	
380,000	38,000	12.5%	47,500	2.5%	47,500	15.0%	
434,000	43,400	13.4%	58,156	2.6%	58,156	16.0%	
488,000	48,800	14.3%	69,784	2.7%	69,784	17.0%	

1. If the Snake River natural spring/summer forecast is less than 10% of the total upriver run size, the allowable mortality rate will be based on the Snake River natural spring/summer Chinook run size. In the event the total forecast is less than 27,000 or the Snake River natural spring/summer forecast is less than 2,700, Oregon and Washington would keep their mortality rate below 0.5% and attempt to keep actual mortalities as close to zero as possible while maintaining minimal fisheries targeting other harvestable runs.

2. Treaty Fisheries include: Zone 6 Ceremonial, subsistence, and commercial fisheries from January 1-June 15. Harvest impacts in the Bonneville Pool tributary fisheries may be included if TAC analysis shows the impacts have increased from the background levels.

3. Non-Treaty Fisheries include: Commercial and recreational fisheries in Zones 1-5 and mainstem recreational fisheries from Bonneville Dam upstream to the Hwy 395 Bridge in the Tri-Cities and commercial and recreation SAFE (Selective Areas Fisheries Evaluation) fisheries from January 1-June 15; Wanapum tribal fisheries, and Snake River mainstem recreational fisheries upstream to the Washington-Idaho border from April through June. Harvest impacts in the Bonneville Pool tributary fisheries may be included if TAC analysis shows the impacts have increased from the background levels.

4. If the Upper Columbia River natural spring Chinook forecast is less than 1,000, then the total allowable mortality for treaty and non-treaty fisheries combined would be restricted to 9% or less. Whenever Upper Columbia River natural fish restrict the total allowable mortality rate to 9% or less, then non-treaty fisheries would transfer 0.5% harvest rate to treaty fisheries. In no event would non-treaty fisheries go below 0.5% harvest rate.

5. 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.

6. If the total in river run is predicted to exceed 380,000, the Parties agree to consider increasing the total allowed harvest rate and to reinitiate consultation with NOAA Fisheries if necessary.

Upper Columbia River Summer Chinook

Mainstem Columbia River summer Chinook fisheries occurring from June 16 through July 31 are managed in accordance with the harvest rate schedule provided in Table A2 of the 2008–2017 MA. Table A2 follows the general framework described in the table below, but provides a much more detailed description of incremental harvest rates and escapement past fisheries. The parties agreed to manage upper Columbia River summer Chinook based on an interim management goal of 29,000 hatchery and natural origin adults as measured at the Columbia River mouth. The management goal is based on an interim combined spawning escapement goal of 20,000 hatchery and natural adults upstream of Priest Rapids Dam. Current escapement goals are under review by the parties to *U.S. v. Oregon*, in part due to Chief Joseph Hatchery becoming operational (2013 was the first year for broodstock collection). The following table outlines the current framework for upper Columbia summer Chinook harvest rates.

Upper Columbia Summer Chinook Fishery Framework		
Run Size at River Mouth	Allowed Treaty Harvest	Allowed Non-Treaty Harvest
<5,000	5%	<100 Chinook
5,000-<16,000	5%	<200 Chinook
16,000-<29,000	10%	5%
29,000-<32,000	10%	5-6%
32,000- <36,250 (125% of 29,000 goal)	10%	7%
36,250-50,000	50% of total harvestable[1]	50% of total harvestable[1]
>50,000	50% of 75% of margin above 50,000 plus 10,500[2]	50% of 75% of margin above 50,000 plus 10,500[2]

1 The total number of harvestable fish is defined as the run size minus 29,000 for run sizes of 36,250 to 50,000.

*2 For the purposes of this Agreement, the total number of harvestable fish at run sizes greater than 50,000 is to be determined by the following formula: (0.75 * (run size-50,000)) + 21,000.*

Based on this framework, the sharing formula allows for greater numbers of fish to escape when runs are greater than 50,000 fish. Non-treaty PFMC area ocean fisheries and all in-river fisheries are included in the treaty/non-treaty sharing of upper Columbia summer Chinook.

Sockeye

The management goal for upper Columbia River sockeye is for a return of 65,000 adult sockeye at Priest Rapids Dam, which under average migration conditions requires a passage of 75,000 fish over Bonneville Dam. Combined non-Indian impacts on ESA-listed Snake River sockeye will be minimized, and shall not exceed 1% of the run entering the Columbia River. Fisheries conducted by the Columbia River treaty tribes will be managed according to the following schedule and all fishery impacts on sockeye will be included in the specified harvest rates.

Treaty Indian Sockeye Harvest Rate Schedule, 2008-2017.	
Upriver Sockeye Run Size	**Harvest Rate**
<50,000	5%
50,000-75,000	7%
>75,000	7%, with further discussion

If the upriver sockeye run is projected to exceed 75,000 adults over Bonneville Dam any party may propose harvest rates exceeding the aforementioned harvest rates. If harvest rate modifications are proposed, parties shall prepare a revised BA of proposed Columbia River fishery impacts on ESA-listed sockeye and shall submit the BA to NMFS for consultation under Section 7 of the ESA.

Summer Steelhead

During the winter, spring and summer seasons (November – June), there is a 2% ESA limit on wild upriver summer steelhead handled in non-Indian mainstem fisheries downstream of the Highway 395 Bridge. There is also a 2% impact limit on Lower Columbia River summer steelhead (Lower Skamania stock, L-Ska), which are handled in non-Indian mainstem fisheries mainly downstream of Bonneville Dam during the months of May and June.

Non-Indian Impact Allocations of Upriver Spring Chinook

The Oregon and Washington Fish and Wildlife commissions (Commissions) provide staff with policy guidance when shaping fisheries preseason and managing fisheries in-season. Current policy guidelines for non-Indian spring Chinook fisheries were adopted by the Commissions in 2013, and include (as in previous years) allocation guidelines for assigning available ESA impacts for upriver spring Chinook among the various fisheries. The current policy also continues to specify the proportion of each ESA-impact share that was to be used before and after the run-size update. In order to comply with catch-balancing provisions of the 2008–2017 MA, Washington and Oregon translate the ESA-based guidance received from the Commissions into shares of available upriver-stock harvest (kept catch plus release mortalities) available to each non-Indian fishery. The following schedule reflects the current (2013-2023) policy.

Allocation Schedule for Upriver Spring Chinook ESA Impacts based on Commission Policy

	Allocation	**Pre-update buffers**
2013*	65/35% sport/commercial 75% of Recreational share to area downstream of Bonneville Dam	Commission Buffer = 20% of sport fishery impact + 40% of commercial fishery impact *U.S. v Oregon* run size buffer = 70% of pre-season forecast
2014-2016	Share = 70/30% 75% of Recreational share to area downstream of Bonneville Dam	Commission Buffer = 20% of sport fishery impact + 40% of commercial fishery impact *U.S. v Oregon* run size buffer = 70% of pre-season forecast
2017 - Beyond	Share = 80/20% 75% of Recreational share to area downstream of Bonneville Dam	Commission Buffer = 20% of sport fishery impact + 40% of commercial fishery impact *U.S. v Oregon* run size buffer = 70% of pre-season forecast

*Implementation of the new policy was delayed which caused the states to maintain the 2012 policy sharing guidelines for the 2013 season. Based on the 2012 guidelines, ESA impacts were shared 60% sport and 35% commercial, with 5% unallocated. The pre-update buffers remained as described.

Upper Columbia River Summer Chinook Harvest Sharing Guidelines

The harvest allocation for non-Indian fisheries is determined through a three-tier process that utilizes policy guidelines set forth in the 2008–2017 MA, the Upper Columbia Management Agreement (UCMA; parties are WDFW and the Confederated Tribes of the Colville Reservation), and by current Commission policies. The harvest rate schedule under the 2008–2017 MA determines the sharing formula of harvestable fish between treaty and non-Indian fisheries (shown in previous section). When calculating the harvestable shares, non-Indian ocean harvest south of Canada is considered part of the non-Indian share.

The UCMA provides a harvest sharing matrix also based on run strength of upper Columbia summer Chinook. Once the share for non-treaty fisheries is established through the MA matrix, the UCMA matrix allocates harvestable Chinook to non-Indian and tribal fisheries upstream and downstream of Priest Rapids Dam.

Non-Treaty Harvest Allocations and framework for Upper Columbia Summer Chinook

River mouth run size[1]	Harvest guide Above PRD[2]	Harvest regime below PRD	Description of expected fisheries above PRD	Proportion > PRD to Colville Tribes
0 – 29,000	> 90%	No directed harvest	C&S for Colville and Wanapum, potential selective recreational	90%
29,001 – 50,000	90%	Limited recreational	C&S for Colville and Wanapum, limited recreational	70%
50,001 – 60,000	90% -70% [3]	Recreational and/or commercial	C&S for Wanapum and Colville, recreational	50%
60,001 – 75,000	70 - 65%	Recreational and/or commercial	C&S for Wanapum and Colville, recreational	50%
75,001 – 100,000	65% - 60%	Recreational and/or commercial	C&S for Wanapum and Colville, recreational	55%
100,001+	60%	Recreational and/or commercial	C&S for Wanapum and Colville, recreational	>55% [4]

[1] Increases in spawning escapement) will require a corresponding increase in river mouth run size.
[2] PRD = Priest Rapids Dam. Changes in percent of harvest does not diminish existing fisheries in total fish available for harvest, rather it provides for additional harvest opportunities in other areas, consistent with the increase in run size.
[3] Range is reflective of harvest holding steady or increasing slightly above PRD as harvest rates increase below PRD. Total number harvest available for harvest is > than previous break point in run size at mouth.
[4] Actual proportion to be negotiated by the Parties prior to fishing.

The Commissions provide staff with policy guidance in the sharing of harvestable fish available for non-Indian fisheries downstream of Priest Rapids Dam. For several years (through 2012), the Commissions determined that these fish should be shared equally (50/50) between commercial and recreational fisheries. Beginning in 2013, the Commissions adopted a new policy regarding the sharing of harvestable fish available for non-Indian fisheries downstream of Priest Rapids Dam (see following table).

Allocation Schedule for Upper Columbia Summer Chinook based on Commission Policy					
	Recreational		Commercial		
	Share	Location	Share	Location	Gear
2013*-2014	60%	< Below Priest Rapids Dam	40%	Mainstem Below BON	Gill Net
2015-2016	70%	< Below Priest Rapids Dam	30%	Mainstem Below BON	Gill Net
2017-2023	TBD	< Below Priest Rapids Dam	TBD	Mainstem Below BON	Seine, alt gear.
* Implementation of the new policy was delayed which caused the States to agree to manage the 2013 fisheries based on a 55/45 sport/commercial split.					

Non-Indian Impact Allocations of Sockeye

The following schedule reflects the current (2013-2023) Commission policy for non-Indian sockeye fisheries. Prior to 2013, impacts were not directly assigned, but were allocated to meet each fisheries objective. In addition to specifying allocation shares, the new policy prohibits sockeye-directed commercial fisheries.

Non-Indian ESA Impact Allocation for Snake River Sockeye based on Commission Policy				
	Recreational		Commercial*	
	Share	Location	Share	Location
2013-2016	70%	Mainstem below Snake River	30%	Mainstem Below BON
2017-2023	~80%	Mainstem below Snake River	~20%	Mainstem Below BON
* For incidental sockeye harvest in Chinook-directed fisheries. No commercial sockeye-directed fisheries allowed.				

Willamette Spring Chinook Management

Fishery Management and Evaluation Plan for Willamette Spring Chinook

Following the ESA-listing of wild Willamette Basin spring Chinook, the state of Oregon completed a Fishery Management and Evaluation Plan (FMEP) to comply with Section 4(d) of the ESA. The FMEP set forth maximum freshwater impact limits for wild Willamette River spring Chinook of 20% for 2001 and 15% for 2002 and beyond. These limits apply to impacts associated with recreational fisheries occurring in the Willamette River Basin and with recreational and commercial fisheries occurring in the mainstem Columbia River and Select Areas. In addition to the impact limits, the FMEP requires that all wild Willamette River spring Chinook landed in mainstem Columbia River and Willamette River fisheries be released. In accordance with the FMEP, recreational and commercial fisheries are managed to ensure that cumulative freshwater mortality from fisheries do not exceed 15% of the combined wild spring Chinook run destined for the Willamette River.

Willamette River Basin Fish Management Plan

The original Willamette River Basin Fish Management Plan (WFMP) was adopted in 1981, readopted in 1988, and revised in 1992 and 1999. Beginning in 2001, freshwater fisheries were managed in accordance with the new FMEP, which superseded the prior management plan. The operating policies and objectives of the mainstem WFMP for spring Chinook were revised by the OFWC in December 2001 in accordance with the FMEP. Revisions included the adoption of escapement goals for hatchery-produced spring Chinook over Willamette Falls and to the Clackamas River and determination of the recreational/commercial harvest allocation of

hatchery-produced spring Chinook in excess of the escapement goal. These revisions were designed to allow for the orderly implementation of live-capture and mark-selective fishing strategies for all freshwater fisheries beginning in 2002. The escapement goals adopted by the OFWC are shown in the table below.

Hatchery Spring Chinook Escapement Goals at Willamette Falls and the Clackamas River

Predicted Hatchery Return	Hatchery Fish Escapement		
	Willamette Falls	Clackamas River	Total
<40,000	20,000	3,000	23,000
40,000-49,999	22,000	3,300	25,300
50,000-59,999	24,000	3,600	27,600
60,000-69,999	26,500	4,000	30,500
70,000-79,999	29,000	4,400	33,400
80,000-89,999	32,000	4,900	36,900
90,000-100,000	35,000	5,400	40,400
>100,000	39,000	6,000	45,000

These escapement levels are designed to provide for full mark-selective recreational fisheries in Willamette River and its tributaries upstream of Willamette Falls and meet hatchery broodstock goals. The increase in escapement goals as the hatchery run size increases allows fisheries upstream of Willamette Falls to share in the benefits available to lower Willamette River and mainstem Columbia River fisheries created at higher abundances of hatchery fish.

The recreational and commercial allocations of hatchery-produced Willamette spring Chinook at various hatchery fish run sizes are shown in the table below. Recreational fisheries include the lower Columbia River downstream of Bonneville Dam, the lower Willamette River downstream of Willamette Falls, and the lower Clackamas River downstream of North Fork Dam. Commercial fisheries include the mainstem Columbia River downstream of Beacon Rock and Select Area fisheries. The allocation plan provides recreational fisheries in the mainstem Willamette and Clackamas rivers at hatchery run sizes greater than 23,000 fish and an incrementally larger commercial share (up to 30%) as the run of hatchery fish increases. Limitations on upriver spring Chinook generally restrict access to the commercial share of the Willamette hatchery surplus in the mainstem Columbia River. At low run sizes (<40,000 hatchery fish), the commercial fishery is restricted to <1% of the predicted return to allow for minimal incidental harvest of Willamette hatchery fish during other commercial fisheries.

Allocation of Willamette Hatchery Spring Chinook

Predicted Hatchery Return	Allocation of Harvestable Numbers	
	Recreational Fishery	Commercial Fishery
<23,000	<1%	<1% of predicted return as incidental for other fisheries
23,000-39,999	100%	<1% of predicted return as incidental for other fisheries
40,000-44,999	85%	15%
45,000-49,999	80%	20%
50,000-59,999	76%	24%
60,000-75,000	73%	27%
>75,000	70%	30%

Lower Columbia River White Sturgeon Management

For detailed information, see ***2016 Joint Staff Report: Stock Status and Fisheries for Sturgeon and Smelt*** dated December 17, 2015. The report can be accessed from the ODFW website at http://www.dfw.state.or.us/fish/OSCRP/CRM/reports.asp and at the WDFW website at http://wdfw.wa.gov/fishing/crc/.

REVIEW OF MAINSTEM, SELECT AREA, AND TRIBUTARY FISHERIES

Non-Indian Fisheries

Past Mainstem Commercial Winter Sturgeon Seasons and Commercial Salmon Seasons

Reduced salmon fishing opportunities during the mid-1970s through the late 1990s greatly increased the popularity and importance of white sturgeon for both commercial and recreational fisheries. The healthy white sturgeon population allowed the commercial industry to develop stable fisheries in a time when commercial salmon fishing opportunities had been drastically reduced. In recent years, reduced white sturgeon catch guidelines have impacted the stability of all Columbia River white sturgeon fisheries. Effective 2014, policies adopted by the WFWC and OFWC prohibited the retention of white sturgeon in all non-Indian fisheries downstream of Bonneville Dam (recreational and commercial).

Since the adoption of the first Joint State Sturgeon Management Agreement in 1997, the harvestable number of white sturgeon has been allocated 80% to recreational fisheries and 20% to commercial fisheries. Commercial sturgeon fisheries were managed to remain within catch guidelines while maximizing economic benefit and achieving conservation objectives for other species. Beginning in 2002, weekly landing limits were used to maintain consistent commercial harvest opportunity. Annual fishing plans for distribution of commercially harvested sturgeon among various seasons were developed each year with industry input to provide predictable commercial fishing opportunities and stable markets throughout the year. The season structure of winter (January-February) commercial sturgeon fisheries had been similar for recent years, with one or two fishing periods conducted each week from early to mid-January through mid-February.

Winter commercial salmon seasons have been established since 1878. Since 1957, all non-Indian commercial fisheries have been restricted to Zones 1-5 (Columbia River mouth upstream to Beacon Rock) and treaty Indian commercial fisheries to Zone 6 (Bonneville Dam to McNary Dam; Figure 2). To reduce catch of upriver spring Chinook, no commercial salmon fishing was allowed upstream of Kelley Point at the Willamette River mouth during winter salmon seasons from 1975-2007. A minimum mesh size restriction of 7¼-inches was enacted in 1970 to reduce steelhead handle. Subsequent to the prohibition of sales of steelhead in 1975, the minimum mesh size was increased to 8-inches to further reduce steelhead handle. This mesh size remained in effect until the introduction of small mesh tangle nets and live-capture techniques in 2001. No winter gillnet salmon seasons occurred in the lower river during 1995 and 1997–1999; however, small numbers of spring Chinook were landed in conjunction with winter target sturgeon seasons during those years. Winter season fishing dates, mesh size restrictions, and landings are included in Table 20.

The adoption of the Willamette River spring Chinook FMEP in 2001 required the release of unmarked spring Chinook in commercial and recreational freshwater fisheries. The first spring Chinook mark-selective commercial fishery occurred in 2001 using tangle nets. This live-capture fishery consisted of a permit fishery with participation limited to 20 vessels. The fishery

consisted of one weekly 8-hour fishing period during the 4-week period from April 23 through May 18.

The first full fleet live-capture commercial fishery took place in 2002. The fishery was limited to commercial fishers who held appropriate licenses and gear and had completed a state-sponsored workshop concerning live-capture techniques. The 2002 fishery regulations included a 5½-inch maximum mesh size restriction, 150-fathom (900 feet) maximum net length, soak times not to exceed 45 minutes, use of recovery boxes on lethargic or bleeding fish, and allowed sales of sturgeon and adipose fin-clipped Chinook. The 2003 winter/spring salmon fishery incorporated many of the general fishery regulations adopted in 2002 except gear regulations were modified in response to the high steelhead handle observed in 2002. Large mesh nets (8-inch minimum) were required during the early part of the season to minimize steelhead handle, and the maximum mesh size for tangle nets was reduced from 5½ inches to 4¼ inches to improve capture condition by minimizing the frequency of gill-capture for steelhead. The voluntary use of nets fitted with steelhead exclusion panels was also initiated in 2003. Beginning in 2004, test fishing was implemented as a tool to help determine the optimum time for fishing periods based on observed Chinook and steelhead catch rates.

Since 2004, winter/spring salmon seasons have been conducted according to guiding principles and fishery management objectives adopted by the WFWC and OFWC. These principles and objectives provide the Joint Staff with guidance when shaping and managing fisheries. In addition, a fishing plan has been developed annually in cooperation with the Columbia River Commercial Fishery Advisory Group which gives the commercial industry a plan for marketing and provides a basis for making in-season management decisions. This plan typically outlines a weekly schedule of test fishing to determine the relative abundances of fin-marked and unmarked spring Chinook and steelhead. After test fishing results are known, the decisions of whether to fish or not and what gear to use can be made. Fishing periods are scheduled to maximize retention of hatchery spring Chinook and minimize handle of steelhead and unmarked Chinook. This process continues until either the upriver Chinook impact allocation, the hatchery Willamette harvest allocation, or the wild winter steelhead impact limit are reached; however, the upriver spring Chinook impact allocation is typically the most constraining.

In December 2003, the TAC reviewed preliminary results of post-release mortality studies conducted from 2001–2003 and concluded that, for 8-inch-mesh gear, estimated mortality of released Chinook should be 40% and mortality of released steelhead should be 30%. For 4¼-inch tangle nets, the TAC concluded that the estimated post-release mortality rate for Chinook should be 18.5% and, until steelhead-specific studies could be conducted, the rate for steelhead should be assumed to be the same, based on similarities in the capture profiles of steelhead and Chinook in 4¼-inch nets. Based on a review of the data, TAC further concluded that 8-inch nets reduced the capture of steelhead compared to Chinook and fisheries using 9-inch or larger mesh would be expected to capture even fewer steelhead. In 2007, additional data became available indicating that the mortality rate for Chinook released from tangle nets was 14.7%. Given this new information, the mortality rate for Chinook released from tangle nets was reduced from 18.5% to 14.7% beginning in 2008. The release mortality rate for steelhead caught in tangle nets remained at 18.5%. Release mortality rates for fish caught with large mesh gear (8-inch minimum) remained unchanged at 40% for Chinook and 30% for steelhead.

2015 Winter/Spring Commercial Salmon Season

The 2015 commercial fishery was conducted under similar guiding principles, management objectives, and basic fishing plans in effect since 2004. Based on 2015 preseason run size forecasts and the harvest rate schedule in the 2008–2017 MA, non-Indian fisheries were limited to a 2.0% impact rate on ESA-listed upriver spring Chinook. As described in a previous section (see **Non-Indian Impact Allocations of Upriver Spring Chinook**), a run size buffer of 30% was in place prior to a run size update. Commission guidance allocated 30% of the allowed non-Indian ESA impacts to commercial fisheries. In addition, the Commissions called for a 40% buffer on the commercial allocation until a run update was available. From the commercial allocation, a fixed amount of 0.150% impacts were allocated to Select Area fisheries. Mainstem commercial fisheries were managed for an impact limit of 0.210% prior to a run size update (2.0% *30% = 0.600%, * 60% = 0.360%, - 0.150% = 0.210%). Based on the ESA calculations and catch balance protocol, nearly 1,800 upriver Chinook (kept + release mortalities) were available to commercial fisheries (Select Areas and mainstem) prior to a run size update.

The 2015 commercial fishery was also managed for hatchery and wild Willamette River spring Chinook in accordance with the Willamette FMEP. Based on the preseason forecast, a total of 19,900 Willamette River hatchery spring Chinook were available for harvest in all fisheries downstream of Willamette Falls (including Columbia River fisheries). Based on the Willamette harvest matrix, 20% of the surplus hatchery fish were allocated to commercial fisheries (Select Area and mainstem) which equaled 4,000 fish. Additional restrictions included a non-Indian fishery impact limit of 2.0% for ESA-listed wild winter steelhead. Since the inception of this mark-selective fishery, regulations have included gear restrictions, limited soak times and mandatory use of recovery boxes. Participating fishers must also have completed the state-sponsored workshop concerning live-capture techniques and were required to cooperate with the onboard observer program conducted by the agencies.

According to the preseason commercial fishing plan, test fishing would be conducted as needed prior to considering full fleet fisheries. Given the limited number of harvestable hatchery salmon, only one or two periods were expected prior to a run size update. Full fleet fishing periods were expected to occur on Tuesdays and/or Thursdays, and were not to exceed 24 hours. Commercial fisheries were likely to be conducted during both daylight and nighttime hours. Consistent with Commission policy only tangle net gear was expected to be deployed in 2015 spring Chinook season.

Test fishing using tangle nets occurred weekly during March 15 – April 5. Consistent with past years, the majority of test fishing occurred in Zones 2–3. Data collected provided information on stock composition, relative abundance of steelhead and Chinook, mark rates, and catch rates, to help staff to determine whether a fishery should be recommended. As has been the case in recent years, all adipose fin-clipped salmon caught during test fishing operations were kept and sold by WDFW to help fund test fishing and research. Because upriver spring Chinook passage at Bonneville Dam was low early in the run, members of several treaty tribes accompanied test fishing vessels during March and retained two unmarked and five marked spring Chinook for ceremonial purposes. ESA impacts for these fish are included in the treaty impact summary.

Chinook catch rates during test fishing improved from one Chinook per drift on March 22 to three Chinook per drift on March 29. On March 30, the Compact considered the first salmon season for 2015. The Joint Staff recommended a 7-hour fishing period for the morning of March 31 in Zones 1-5. Catch estimates totaled 2,000 hatchery Chinook and included 1,600 upriver stock (kept plus release mortalities) which would represent 93% of the 1,760 upriver fish available and 57% of the associated impacts available. Staff noted that delaying the fishery another week would likely require the need for landing limits. After hearing public testimony and careful deliberation the Compact decided to adopt the proposed fishing period.

The 2015 winter/spring commercial opener occurred on March 31 between 7a–2p in Zone 1-5 with tangle net gear. Tributary mouth sanctuaries were in place to protect ESA-listed steelhead and Chinook. Allowable sales included adipose fin-clipped Chinook and shad. A total of 980 adult hatchery Chinook were landed (150 released) from 94 deliveries, which was less than projected. The Chinook mark rate was 87% and upriver fish comprised 76% of the kept catch. Based on the in-season data, the mainstem commercial fisheries had used around 26% (0.054% impact) of the upriver Chinook ESA allocation and 43% (755 fish) of the 1,760 catch–balance fish available for mainstem commercial harvest prior to a run update. Total winter steelhead handle was estimated at 259 fish. Wild steelhead mortalities were estimated at 28 fish (0.17% impact). Given the balance of harvestable fish and impacts remaining for commercial fisheries, test fishing was conducted on April 5 and a second fishing period was adopted by the Compact.

The second commercial period was a 10-hour period (8a-6p) conducted on April 7 with the same area and gear restrictions as the first period. This period did impose a landing limit, which allowed a maximum of eight adult hatchery Chinook to be possessed and sold by each participating vessel. A total of 757 hatchery Chinook were kept (162 non-ad-clipped released). An additional 92 adult hatchery Chinook were estimated released due to the vessel reaching the 8-fish landing limit. Total winter steelhead handle was estimated at 204 fish, resulting in 11 wild winter steelhead mortalities. The observed mark rate for Chinook during this fishing period was 83%, and upriver fish represented 77% of the handle. By the end of the second fishery, 775 of the catch-balance and 49% of the ESA impact allocation was used. With less than 400 upriver spring Chinook mortalities available to mainstem commercial fisheries, the fisheries were put on hold until TAC provided an official run-size update, which typically didn't occur until early May.

The TAC initiated weekly meetings beginning April 20 to review salmon stock status. On April 29 TAC officially updated the run. TAC estimated a run size of 220,000 adult upriver adult spring Chinook to the Columbia River, which was 95% of forecast and allowed for a non-Indian impact rate of 2.0% and a total catch balance of 22,000 upriver Spring Chinook mortalities. This update resulted in a total of 4,101 upriver spring Chinook mortalities available for mainstem commercial fisheries. Given that 1,361 fish were taken in the earlier periods, 2,740 upriver fish remained. The Compact met on April 30 and adopted a 14-hour fishing period in Zones 1-5 using tangle net gear on Monday May 4. Landings from this fishing period at the time were estimated at nearly 1,400 Chinook (400 released). TAC had provided another run size update of 241,000 adult upriver spring Chinook. An additional 14-hour period was then adopted for Wednesday May 6 with the same area and gear restrictions. Landings from this period were estimated at 1,200 adult Chinook (300 released).

TAC upgraded the in-season estimate to 250,000 upriver Chinook on May 11, which allowed for additional commercial opportunity. A total of 4,660 upriver mortalities were available to the mainstem commercial fisheries under this run size, and a balance of nearly 1,500 remained. A 14-hour fishing period occurred on May 12 with the same area and gear restrictions adopted in the previous four periods. Landings totaled 500 adult Chinook (300 released).

TAC continued to provide weekly upgrades to the upriver run, which lead to corresponding weekly mainstem commercial fishing periods. Similar to 2013 and 2014, public testimony included the continued concern regarding high shad encounters and the challenges it posed in keeping Chinook and steelhead handle time at a minimum. The Compact decided to implement the adaptive management clause within the current policy that allowed for policy adjustments when conservation/fishery objectives were at risk of not being met. The Compact met weekly and adopted a total of three additional periods for the remainder of the spring season between May 27 and June 10, taking into account the economic value of the fishery and the prescribed regulations (including 45-minute soak times). These three periods occurred once weekly in Zones 1-5 using the large-mesh gear (8-inch minimum). Recovery boxes and limited soak times remained in effect. The Compact adopted the final fishing periods acknowledging that some of the ESA impacts needed to conduct the fishery may have to come from the balance of impacts remaining on the overall allocation for non-Indian fisheries to allow access to the commercial catch balance allocation. Sockeye retention was allowed only on the final (June 10) period. Landing from these three final periods using large mesh gear totaled 2,100 Chinook (2,200 released). Deliveries ranged between 42 and 51 for these three periods.

The 2015 spring season consisted of eight commercial periods totaling 91 hours. Landings (Tables 20–23) totaled 6,460 hatchery adult Chinook, 527 shad and 55 sockeye. Onboard monitoring was conducted during all spring Chinook fishing periods. The number of released Chinook during the winter/spring season was 3,620 un-clipped adult fish, plus 118 adult hatchery Chinook. Stock composition analysis indicated that 79% of the Chinook handled were of upriver origin and the overall adult Chinook mark rate was 63% for the season (decreasing as the season progressed). Winter steelhead handle was 558 fish, of which 232 were unmarked (wild and unmarked hatchery fish combined). An estimated 43 wild winter steelhead mortalities resulted from incidental handle during full-fleet fisheries and an additional seven mortalities from test-fishing operations. Summer steelhead handle during May and June totaled 573 fish, including 414 unclipped fish and an estimated 79 wild LCR summer steelhead mortalities. Commercial landings were sampled at a rate of 49%, and the average weight for Chinook was 12 pounds. Ex-vessel prices averaged $6.52 per pound for spring Chinook.

ESA impacts associated with spring mainstem commercial fishery totaled 0.745%, or 146% of the 0.510% post-season impact guideline for this fishery. Kept and release mortalities of adult upriver spring Chinook totaled 5,724 (96% of 5,942 allowed).

Past Lower Columbia River Spring Chinook Recreational Fisheries

Under permanent regulations, the mainstem Columbia River from Buoy 10 to the I-5 Bridge (RM 106) is open for spring Chinook retention during January 1 through March 31, and the area from the I-5 Bridge upstream to the Oregon/Washington border above McNary Dam is closed effective January 1 each year (since 1993). The purpose of these regulations is to target early-migrating

Willamette spring Chinook and reduce the catch of upriver spring Chinook. During 1995–1999, recreational fisheries for spring Chinook on the lower Columbia River were all but eliminated to protect a weak return of upriver spring Chinook in 1995 and low Willamette spring Chinook runs during 1996–1999. In 2000, biologists predicted the largest upriver run since 1977 (134,000 preseason projection) and an improved Willamette River run size of 59,900; and the OFWC allocated 1,200 Willamette spring Chinook to the mainstem Columbia River recreational fishery. Problems with the issuance of a Biological Opinion (BO) from the NMFS, however, resulted in an early (March 16) closure of the 2000 recreational fishery and a catch of only 322 adult spring Chinook.

The expected return of 430,400 adult spring Chinook to the Columbia River in 2001, including 364,600 upriver spring Chinook and a majority of fin-clipped hatchery fish, prompted the states to adopt the first mark-selective recreational fishery for spring Chinook on the lower Columbia River effective March 12–April 30, 2001. At the same time, the states opened the area of the Columbia from the I-5 Bridge upstream to Bonneville Dam to spring Chinook angling. The recreational fishery had not been open upstream of the I-5 Bridge during the month of April since 1977. The 2001 recreational spring Chinook fishery was both extremely popular and highly successful, with record-high angler effort and catch rates; and in-season management was necessary to maintain the fishery within ESA guidelines. The states also provided a limited fishery for the mainstem Columbia River from The Dalles Dam upstream to McNary Dam during May 6–8, 2001.

Mark-selective recreational fisheries for spring Chinook have occurred annually since 2001. These fisheries were generally characterized by high effort and catch rates, as well as excellent compliance among anglers with the mark-selective fishing regulations. In 2002, mark-selective (adipose-fin clipped only) regulations for spring Chinook were permanently adopted for the lower Columbia River. In 2004, the states adopted a regulation prohibiting the removal of unmarked fish from the water to provide additional protection for released fish. To date, there have been no studies conducted to evaluate the mortality of salmon and steelhead released in the mainstem Columbia River recreational fishery. The TAC conducted extensive literature reviews and concluded that a post-release mortality rate of 10% should be applied to mainstem recreational fisheries for salmon and steelhead during the spring management timeframe.

The daily bag limit for the recreational spring Chinook fishery downstream of Bonneville Dam was two adult Chinook or steelhead in combination during 2000–2007, except for 2005 when a one-fish bag limit was adopted for the area between Rooster Rock and Bonneville Dam. Beginning in 2008, the daily bag limit was changed to one adult spring Chinook effective during March through June. In-season management has been necessary in most years to maintain the recreational catch within ESA guidelines, non-Indian harvest-sharing allocations, and/or catch-balancing agreements with the Columbia River treaty tribes. During all years, the states have provided opportunity for anglers upstream of Bonneville Dam. Regulations for 2002–2015 Columbia River recreational spring Chinook fisheries are listed in Table 24, and catch and effort totals are shown in Table 25 and 27. Information for recreational fisheries above Bonneville Dam is shown in Table 24 and/or Table 26.

2015 Lower Columbia River Spring Chinook Recreational Fishery

In 2015, the spring Chinook run was forecast to be 312,600 adults to the mouth of the Columbia, comprised of an upriver component of 232,500 fish and a lower river component of 80,100 fish, including 55,400 Willamette spring Chinook (45,200 Willamette hatchery spring Chinook). According to the Willamette FMEP, a total of 15,900 Willamette hatchery spring Chinook were available to recreational fisheries in the lower Willamette and lower Columbia. The 2008–2017 MA provided for a 2% impact to ESA-listed upriver spring Chinook in all non-Indian fisheries in 2015, based on the upriver spring Chinook run size forecast.

The OFWC and WFWC provided guidance for spring Chinook fisheries in 2015 (see **Non-Indian Impact Allocations of Upriver Spring Chinook**). This guidance, combined with buffer provisions from the 2008–2017 MA, provided 10,300 upriver spring Chinook (kept plus release mortalities) to the recreational fishery below Bonneville Dam prior to a run size update with an expected impact of 0.84% to ESA-listed upriver spring Chinook.

Regulations for the 2015 spring Chinook fishery were adopted at the January 28 Compact/Joint State hearing. The permanent regulations for the Columbia River from Buoy 10 to the I-5 Bridge began January 1 and remained in effect through February 28. At the hearing, the states adopted a March 1–April 10 season for the lower Columbia River between Buoy 10 and Beacon Rock, plus the Oregon and Washington banks between Beacon Rock and Bonneville Dam (except closed Tuesdays March 24, 31 and April 7). The two-fish daily bag limit was modified to one adult spring Chinook between Buoy 10 and Bonneville Dam effective March 1. The retention of shad and adipose fin-clipped steelhead was allowed for the duration of the spring Chinook season.

Flows in the Columbia River were relatively moderate, clear and warm at the beginning of 2015. Precipitation was above or near average across the basin, but snowpack was lagging in most areas as high freezing levels prevented snow from accumulating. A large rainstorm in early February coupled with warm temperatures caused most of the mid and lower Columbia River tributaries to rise and become turbid; however, flows were moderate, clear and warm again by the end of the month. The first spring Chinook was sampled on February 21 at Willow Bar, but effort and catches remained light through the end of the month. The total catch in February was 30 Chinook (24 kept and six released) and 153 winter steelhead (47 kept and 106 released) from 5,133 angler trips.

River conditions were nearly ideal at the beginning of March, but fishing was generally slow in spite of an increase in angler participation. Columbia flows increased after mid-March in response to early snowmelt, and catch rates improved somewhat but remained spotty overall. The total catch during March was 3,017 adult spring Chinook (2,594 kept and 423 released) and 584 winter steelhead (254 kept and 330 released) from 40,963 angler trips. Based on VSI sampling, upriver spring Chinook comprised about two thirds of the kept catch during March.

Angler effort and catch rates increased dramatically in early April as more fish entered the river with over 1,100 boats counted on Thursday April 2 and 1,900 boats on Saturday April 4. During April 1-6, the CPUE was about 0.5 Chinook per boat river-wide: however, the catch rate for boats fishing in the Columbia River Gorge increased to over 2.0 fish per boat on April 6. The total estimated catch through April 6 was 7,097 adult spring Chinook kept with 4,663 upriver

spring Chinook mortalities, or about 45% of the guideline. The states held a hearing on April 8 to review catch and passage information for upriver spring Chinook, and projected a catch of 2,600 adult spring Chinook during April 8-10, which would bring the cumulative upriver catch total to 7,462 fish including release mortalities, or about 72% of the guideline on the scheduled closure date. Given the volatile nature of the recreational fishery during April, the states proposed a two-day extension of the fishery during Saturday April 11-Sunday April 12; however, public testimony overwhelmingly favored adding a day later in April, when Chinook abundance would be much higher. The states ultimately adopted a two-day extension on Saturday April 11 and Thursday April 16, with the possibility of a holding a hearing on Tuesday April 14 to modify the fishery if catches were higher than expected on Saturday April 11.

On Saturday April 11, there were 1,665 boats counted with a river-wide catch rate of 0.6 Chinook per boat. The total catch on Saturday April 11 was just over 1,600 adult spring Chinook, which was in line with expectations and the states allowed fishing to proceed as scheduled on April 16. On Thursday April 16, just under 2,000 boats were counted during the flight, and catch rates improved to just under 1.0 fish per boat. The catch rate for boats fishing in the Columbia River Gorge on April 16 was 2.7 Chinook per boat. The total catch on April 16 was just under 2,500 adult spring Chinook, which was much higher than expected. The recreational fishery closed effective April 17 with an estimated catch of 15,333 adult spring Chinook (13,183 kept and 2,150 released) including 10,134 upriver mortalities, or 98% of the guideline. Based on VSI sampling, upriver spring Chinook comprised 77% kept catch in April. Through April 16, a total of 16,553 adult spring Chinook had passed Bonneville Dam. Catch in April also included 233 winter steelhead (137 kept and 96 released).

Chinook passage at Bonneville Dam increased markedly during late April, and the TAC updated the upriver run size to a minimum of 220,000 adults on April 29. At the updated run size, the recreational fishery had used about 72% of its upriver impact guideline. The states held a hearing on April 29, and reopened recreational angling effective Saturday May 2-Sunday May 3 from Tongue Point upstream to Beacon Rock, plus the Oregon and Washington banks between Beacon Rock and Bonneville Dam. The states initially adopted conservative rules for the reopening of the recreational fishery because of the volatile nature of the boat fishery in the gorge. The estimated catch for May 2–3 was less than expected with 2,335 spring Chinook landed (1,826 kept and 509 released) from angler 11,300 trips.

On May 4 TAC upgraded the upriver spring Chinook run size to 241,000. At this run size, the recreational fishery had utilized 75% of its upriver impact guideline. On May 5, the states held a hearing and reopened the recreational fishery effective Saturday May 9 and May 16-June 15 between Tongue Point and Beacon Rock plus the Oregon and Washington banks between Beacon Rock and Bonneville Dam. On May 26 TAC updated the upriver spring Chinook run to 260,000 fish, and the states changed the boat angling boundary from Beacon Rock to the permanent deadline at Bonneville Dam effective May 30-June 15. On June 1, TAC updated the upriver spring Chinook run size to 271,000, which changed the allowable non-Indian impact rate from 2% to 2.2%; and the states modified the daily bag limit to two fish effective June 3-15. The total catch in the recreational fishery during May 9-June 15 was 6,745 adult spring Chinook (4,324 kept and 2,421 released) from 42,246 angler trips.

The final catch in the recreational fishery during February 1 through June 15, 2015 was 24,638 adult spring Chinook (19,586 adipose fin-clipped hatchery fish kept and 5,052 unclipped fish released), 1,127 adipose fin-clipped spring Chinook jacks (kept), and 1,905 steelhead (1,181 adipose fin-clipped hatchery fish kept and 724 unclipped fish released) from 151,173 angler trips. The total upriver spring Chinook catch was 19,811 adult fish (15,231 kept and 4,580 released) with 15,689 total mortalities, or 81% of the post-season catch balance guideline. ESA impacts from this fishery totaled 0.69%, compared to the 1.16% allocated, or 59% of the ESA impact guideline.

2015 Spring Chinook Recreational Fisheries upstream of Bonneville Dam

Following Commission guidance, 25% of the recreational ESA impact allocation was dedicated to fisheries upstream of Bonneville Dam, including the Columbia River upstream to the Oregon and Washington border (located approximately 40 miles upstream of McNary Dam) and fisheries in Washington waters of the Snake River . Similar to past years, these impacts (25% of allowed) were shared 40% mainstem Columbia and 60% Snake River. For 2015, the pre-update ESA allowance totaled 0.280% impact.

<u>Bonneville Dam upstream to the Oregon Washington border</u>

Since 2011 the Columbia River Zone 6 recreational fishery has included the area from McNary Dam upstream to the Oregon/Washington border, and the Oregon and Washington banks between Bonneville Dam and Tower Island. Catch estimates are based on creel and updated with catch record card data once available. Release data is based on creel, and then updated based on actual kept data and adult Chinook mark rates at Bonneville Dam. In 2015 a total of 0.112% ESA impacts were set aside for this fishery for use prior to a run size update, which translated to nearly 1,400 Chinook (kept + release mortalities) allocated to the fishery. The fishery opened under mark-selective regulations on March 16 and was scheduled to continue through May 6. The daily bag limit for adult Chinook was one fish (had been two fish in previous years).

Two additional regulations for this fishery were adopted in mid-April and continued through the remainder of the season (June 15). The Compact's intent for these additional regulations was that they would be made permanent and implemented annually. The first regulation addressed bank angling on the Washington shore in Bonneville reservoir. The Washington Shore had opened in 2008 based on the premise that the majority of the effort would be centralized near the tributary mouth s and the vast majority of the fish encountered would be non-ESA-listed destined for hatcheries within the tributaries. The Washington shore, primarily near the mouth of Drano Lake, had become very popular and successful. Some anglers were using boats to set the lines several hundred feet out from the shore to improve their success. Coded-wire tag and genetic data indicated the majority of the catch was Chinook destined for areas other than the local tributaries. In an effort to moderate the harvest and spread the total catch more evenly throughout the entire open area, regulations were adopted to allow only hand-casted lines to be used on the Washington shore when the area is open for hatchery Spring Chinook. No floating devices would be allowed to set lines for salmon or steelhead. The second regulation addressed the daily salmon possession limit for Washington anglers in the area from The Dalles Dam to the fisheries upper boundary at the Oregon/Washington state line. When the daily bag limit was reduced from two to one Chinook a few years earlier it also affected the daily possession limits.

Daily possession limits in Washington allow two daily limits in fresh form. The result of the decreased bag limit affected the possession limit so that anglers could now only possess two adult hatchery Chinook (two daily limits of one fish) instead of four fish (two daily limits of two fish). Because this fishery (Bonneville Dam upstream to the Oregon/Washington border) is a destination fishery for many anglers, the possession limit was increased to allow for up to four adult Chinook in fresh form (only one daily limit while aboard a boat). The lower boundary for this regulation was The Dalles Dam for ease in enforcement.

The fishery progressed with minimal catch through late-April, but as dam counts increased so did the catch (and effort). By May 5, TAC had provided a run size update of 241,000 upriver spring Chinook. This upgrade increased the number of adult Chinook available to the fishery to nearly 2,100 mortalities. Catch projections for the season totaled 1,500 mortalities (72% of allocated). The fishery was extended through May 10, providing four additional days of angling opportunity.

On May 26 the in-season run size estimate was upgraded by TAC to 260,000 upriver spring Chinook. Given the upgrade, the fishery was able to re-open on May 28 and continue through June 15. TAC continued to review and upgrade the upriver spring Chinook run as the season progressed. By June 1 the run was estimated to reach 271,000 fish. Given a run of this size, catch to date and the few weeks remaining in the season, the daily bag limit was increased to 2-hatchery adult Chinook per day starting June 3.

Season total catch estimates for adult Chinook include 1,646 kept and 500 released from nearly 10,000 angler trips (Table 26). ESA impacts associated with this fishery totaled 0.074%, or 48% of the 0.154% post-season impact guideline for this fishery. Kept and release mortalities totaled 1,696 or 65% of allowed (2,615).

Snake River Recreational Fisheries (Washington waters)

Since 2001, springtime recreational fisheries have occurred in Washington waters of the Snake River for hatchery Chinook. As with all fisheries, seasons are dependent on the run size, allowable ESA limits, allocations and current policy. A robust creel program is used to track catch and effort.

In 2015, prior to a run size update, 0.168% ESA impacts were set aside for this fishery, which translated to nearly 1,100 Chinook allowed (kept plus release mortalities). The fishery was initially open in four sections of the Snake River in Washington waters. Each section was open three days per week with an adult daily limit of one hatchery Chinook. No closure dates were set, but the fishery is typically expected to remain for four to six weeks; with the closure date dependent on catch rates and associated impacts. On April 19 the area downstream of Ice Harbor Dam and the area downstream of Lower Granite Dam opened to hatchery Chinook retention followed by the April 23 opening of the area downstream of Little Goose Dam and the area near Clarkston, Washington. The adult daily limit was one hatchery Chinook, and the possession limit was increased to allow up to three daily limits in fresh form.

On May 4, TAC provided a run size update for upriver spring Chinook, estimating 241,000 fish (232,500 preseason). The run size update resulted in an allocation increase of 1,627 mortalities which was about 500 more fish for this fishery. Around 1,000 mortalities had accrued to date,

and catch was increasing with the building Chinook abundance especially in the lower two open areas. In an effort to provide equitable harvest opportunity throughout the entire geographic open areas, the two lower areas closed on May 9. Catch in the two upper areas increased rapidly and those areas closed on May 12, despite the TAC run size upgrade to 250,000 upriver spring Chinook and the corresponding allocation increase to 1,688 mortalities.

At the May 26 Compact hearing, the Compact directed staff to transfer the balance of any unused Chinook allocation from the overall recreational allocation to the Snake River fisheries. By May 28, both the LCR and the Zone 6 recreational fisheries were re-opened for the rest of the season and catch projections were less than allocated. Staff estimated 300-500 fish would be available for transfer, which would add to the 1,755 mortalities now available to the Snake River fishery (2,355 adjusted total). By June 7, the WDFW Snake River fishery managers had re-opened three of the possible four areas (Lower Granite area remained closed) on a days-per-week rotation (each area open three days per week). The fishery continued through June, although catch and effort was light (around 100 kept for 8,700 angler hours).

Season total catch estimates for adult Chinook include 1,900 kept and 378 released (Table 26). ESA impacts associated with this fishery totaled 0.079%, or 34% of the 0.231% post-season impact guideline for this fishery. Kept and release mortalities totaled 1,938 (68% of allowed, 2,834 fish including the 300 allocation transfer).

Lower Columbia River Washington Tributary Spring Chinook Fisheries

Tributary spring Chinook recreational fisheries downstream of Bonneville Dam have been mark-selective since 2001. The 2015 preseason forecast for the Cowlitz River allowed for a daily bag limit of two adult Chinook throughout the spring Chinook season (January 1 – July 31), increasing to a 3 fish bag limit starting May 17, while anglers on the Kalama River were restricted to a one adult daily limit beginning January 1, increasing to a 2 fish bag limit on May 17. The Lewis River closed March 1st and remained closed for the rest of the spring Chinook season.

Preliminary hatchery adult spring Chinook recreational catch estimates for Washington lower Columbia River tributaries are based upon creel sampling and escapement data until Catch Record Card (CRC) data is available.

An estimated 6,500 hatchery adult spring Chinook were harvested in Washington lower Columbia River tributaries in 2015 including 4,400 fish from the Cowlitz, 1,000 from the Kalama, and zero from the Lewis (Table 29). The combined hatchery adult spring Chinook harvest rate in these Washington tributaries was 23%, compared to the 10-year average of 31%.

Wanapum Tribal Spring Chinook Fishery

Wanapum tribal fisheries occur on the mainstem Columbia River in McNary Pool between Priest Rapids Dam and Vernita Bridge; harvest may also be permitted in a the area immediately upstream of Priest Rapids Dam. Salmon are used for ceremonial and subsistence use only. Permits are issued annually by WDFW that regulate the times for and manner of taking the salmon. Harvest in 2015 included 58 adult upper Columbia spring Chinook (51 hatchery and seven wild). ESA impacts associated with this fishery total 0.10%.

Past Summer Commercial Salmon Seasons

Historical summer commercial seasons harvested summer Chinook, sockeye, steelhead, and shad. Prior to 2005, no commercial summer Chinook season had occurred downstream of Bonneville Dam since a two-day season in 1964 (in 2004, two 12-hour fishing periods occurred downstream of Beacon Rock targeting sockeye but also allowed the retention of Chinook). The 2005 season consisted of six 10-hour fishing periods between June 23 and July 26 in Zones 1-5 with an 8-inch minimum mesh size requirement. The 2006 season consisted of thirteen 10-12 hour fishing periods between June 26 and July 31, with the same area and gear requirements used in 2005, including a white sturgeon landing limit. Since 2007, the season structure has generally been two or three fishing periods in Zones 1-5 with an 8-inch minimum mesh restriction. Weekly white sturgeon landing limit have been in place for Chinook-directed fisheries if sturgeon were available for harvest. Sockeye sales have been allowed in years where escapement goals are expected to be met and ESA impacts are available. A sockeye-directed fishery was conducted in 2008 with a 4½-inch maximum mesh size in area 2S. The current policy (2013-2023) does not allow for sockeye-directed fisheries.

2015 Summer Commercial Salmon Season

Based on the preseason forecast, management agreements and commission guidelines, just under 1,650 summer Chinook were available for commercial harvest in 2015. Season structures are discussed annually with constituents and during the North of Falcon public process. Regulations included an 8-inch minimum mesh size and tributary mouth sanctuaries to protect ESA-listed steelhead. Sockeye sales were allowed since ESA impacts were available to cover the minimal catch expected with this gear. Consistent with Commission policy for all fisheries downstream of Bonneville Dam beginning in 2014, sturgeon sales/possession were prohibited.

The first summer Chinook fishing period was an eight-hour period conducted on the evening of June 17 in Zones 1-5. Staff anticipated catch at around 1,500 Chinook from 75 deliveries. Actual catch was higher, with roughly 2,000 Chinook and 300 sockeye from 67 deliveries (Table 21). TAC provided weekly run-size updates, and by July 6 the in-season forecast for summer Chinook run was upgraded to 100,000 fish, which would be the largest on record since at least 1961. The run size upgrade increased the commercial allocation to nearly 3,000 adult Chinook. A 12-hour fishing period was conducted on July 8 in Zones 1-5; landings included 1,100 Chinook from 36 deliveries. The third and final fishing period was conducted on July 21 with the same time, area and gear restrictions as the previous fishery. Landed Chinook totaled around 800 fish from 32 deliveries.

The 2015 summer season consisted of three fishing periods (32 hours total) with landings including 3,938 Chinook and 329 sockeye. Average Chinook weight was 15 pounds per fish. The landed catch was sampled at a rate of 44%. Ex-vessel prices (per pound landed) averaged $3.47 for Chinook and $1.87 for sockeye.

Past Columbia River Summer Steelhead and Summer Chinook Recreational Fisheries

The recreational summer steelhead fishery has been mark-selective since the mid-1980s. Since then, the only closures of the summer steelhead fishery have risen from the need to protect upriver spring Chinook. Under permanent regulations, the mainstem Columbia River is open to

the retention of hatchery steelhead beginning May 16 from the Tongue Point/Rocky Point line upstream to the I-5 Bridge and June 16 from the I-5 Bridge upstream to the Oregon/Washington border above McNary Dam. The steelhead fishery is closed under permanent regulations during April 1 – May 15 between Buoy 10 and the I-5 Bridge and April 1 – June 15 upstream of I-5, when spring Chinook abundance is high. When spring Chinook fisheries are open during these timeframes, the retention of adipose fin-clipped steelhead is allowed in conjunction with those opportunities. Conversely, when too few upriver spring Chinook impacts remain to allow incidental hooking mortality of Chinook during the target steelhead fishery, the steelhead fishery is delayed (as late as June 16), as was the case in 2005, 2008, and 2009. The retention of sockeye is prohibited in all Columbia River recreational fisheries under permanent regulations. The states may allow sockeye retention in the recreational fishery when the run size exceeds 75,000 fish at Bonneville Dam as long as combined non-Indian impacts remain less than 1% of the run.

The Columbia River recreational summer Chinook fishery was closed to retention of adult Chinook under permanent regulations during June 1 – July 31 every year during 1974–2001. In 2002, the states opened a recreational summer Chinook fishery between Tongue Point and Bonneville Dam during June 28 – July 31 for the first time since 1973. The high mark rate for summer Chinook allowed the states to adopt mark-selective fishery regulations and provide an opportunity to harvest abundant hatchery Chinook while limiting the impact to ESA-listed Snake River wild summer Chinook to less than 1%. The states also opened the area from Bonneville Dam upstream to the Oregon/Washington border to the retention of adipose fin-clipped summer Chinook during July 2002.

Mark-selective recreational fisheries for summer Chinook also occurred in 2003 and 2004 under the same 1% impact limit on wild Snake River summer Chinook allowed in the Interim Management Agreement. In both years, the states adopted mark-selective summer Chinook fisheries for the Columbia River from Tongue Point upstream to McNary Dam during June 16-July 31 to match regulations for the summer steelhead season upstream of the I-5 Bridge.

Beginning in 2005, the management period for summer Chinook at or below Bonneville Dam was reclassified from June 1 – July 31 to June 16 – July 31, because new information indicated that the June 1 – June 15 portion of the summer run typically contained significant numbers of listed Snake River spring/summer Chinook, while the later portion of the run was mostly upper Columbia summer Chinook, which are not listed under the ESA. This reclassification allowed the states to maintain protections for listed Snake River spring/summer Chinook, while allowing more substantial fisheries on the upper Columbia summer Chinook run. On June 2, 2005, the states adopted a recreational summer Chinook fishery for the Columbia River from Tongue Point upstream to McNary Dam during June 16 – July 31 with a daily bag limit of two adipose fin-clipped summer Chinook. While mark-selective regulations were no longer required during the summer Chinook management period, the states initially adopted conservative regulations for the Columbia recreational fishery due to concern that the summer run might follow the pattern shown by the 2005 spring Chinook run, which returned at less than half of the preseason forecast. By late June, the summer Chinook run size forecast appeared to be on target, and the states allowed the retention of both clipped and unclipped summer Chinook during July 1–31, 2005.

Non-mark-selective summer Chinook fisheries also occurred during 2006–2009. The 2006 fishery was open during June 16–July 31 and produced a catch of 4,924 adult Chinook, which was the highest on record (since at least 1969). Summer Chinook run sizes during 2007–2009 were not large enough to allow full, non-selective recreational fisheries, and seasons were shortened to an average of twelve days during those years with catches of 2,200 fish. In an effort to expand the recreational fishing opportunity for summer Chinook, the states adopted mark-selective (adipose fin-clipped) regulations for fisheries during 2010–2014 and extended the open area from Tongue Point downstream to the Astoria-Megler Bridge. Also beginning in 2010, the states assigned a 15% mortality rate for adult summer Chinook released in recreational fisheries based on literature reviews conducted by TAC. The 2010 summer Chinook fishery was open the entire summer season (June 16 – July 31); however, the 2011–2013 fisheries closed between July 1 and July 18 each year to remain within harvest sharing guidelines. The 2014 summer Chinook fishery was open during June 16-30, July 3-6 and July 11-31.

2015 Lower Columbia River Summer Steelhead and Summer Chinook Recreational Fisheries

The 2015 summer steelhead fishery opened in conjunction with the spring Chinook fishery during May 2–3, May 9 and May 16-29 between Tongue Point and Beacon Rock plus the banks between Beacon Rock and Bonneville Dam and May 30-June 15 between Tongue Point and Bonneville Dam.

The 2015 recreational summer Chinook fishery was scheduled to be open for adipose-fin clipped Chinook during June 16-July 6 from the Astoria-Megler Bridge upstream to Bonneville Dam with a daily limit of two adult hatchery fish. The guideline for the recreational fishery below Bonneville Dam was 3,200 adult summer Chinook (including release mortality) based on the adult run size forecast of 73,000 fish. Sockeye retention was allowed in conjunction with the summer Chinook fishery through July 6 based on the forecast for 394,000 fish. The summer steelhead fishery would remain open under permanent rules after summer Chinook and sockeye retention closed.

Flows in the Columbia were low and warm during June 16-30, averaging 139 kCFS and 69° F. With the exception of the gorge, bank angling was not productive in the low, clear flows and warm water temperatures. Summer Chinook catches lagged expectations despite good counts at Bonneville, and many anglers requested the opportunity to harvest unclipped summer Chinook to have a chance at reaching their catch guideline. Through June 28, anglers had kept 1,603 adult summer Chinook and released another 1,112 Chinook (1,770 total mortalities). On June 29, TAC updated the summer Chinook run from 73,000 to 85,000. With lower than expected catches and an increase in the guideline, the states met on June 30 and extended Chinook and sockeye retention during July 7–31. In addition, the states modified the retention rules to allow anglers to keep clipped and unclipped summer Chinook and changed the daily bag limit to one adult Chinook effective July 3-31. Concerns over increased Chinook release mortality due to drought conditions, higher than average water temperatures, and a low Chinook mark-rate prompted the decision to allow the retention of unclipped Chinook. The decrease in bag limit was intended to continue the opportunity to harvest Chinook while moderating the number of unclipped fish harvested and ensuring the fishery remained within in the harvest guideline.

During July, water temperatures in the mainstem Columbia reached 74° F, and while anglers in most areas of the river struggled to catch summer Chinook during the extension, boat anglers fishing just upstream of the Astoria-Megler Bridge experienced excellent success beginning around July 7. Chinook catches were also very good for boat anglers near the mouth of the Lewis River. Despite catches being much higher than expected during the extension, strong counts of summer Chinook continued at Bonneville Dam and prevented the states from having to modify the recreational fishery. The summer Chinook run was ultimately upgraded to 127,000 adult fish by TAC on July 27. The final Chinook catch during July was 4,718 adult fish (4,255 kept and 463 released), and the sockeye catch was 829 fish (428 kept and 401 released). Boat anglers in the estuary accounted for about half of the total summer Chinook catch during July.

During June 16 – July 31, salmon/steelhead anglers made 50,555 trips and caught 7,419 adult summer Chinook (5,928 kept and 1,491 fish released), 458 adipose fin-clipped Chinook jacks (kept), 1,394 sockeye (958 kept and 436 released) and 7,628 summer steelhead (4,560 kept and 3,068 released). The summer Chinook handle and kept catch were the highest since at least 1969 (Table 27).

The total summer steelhead catch during May 2 – July 31 was 8,563 fish (5,303 adipose fin-clipped fish kept and 3,260 unclipped fish released), and the total sockeye catch was 1,440 fish (958 kept and 482 released. The summer steelhead catch was the lowest since 2005, but the sockeye catch was the third highest on record.

2015 Summer Season Fisheries upstream of Bonneville Dam

Bonneville Dam upstream to Priest Rapids Dam Recreational Summer Chinook Fishery

Since 2002 a summer Chinook fishery has occurred upstream of Bonneville Dam (BON), extending to Priest Rapids Dam (PRD) beginning in 2006. Recreational fisheries also occur upstream of Priest Rapids Dam, but are not reported in detail here. In-season catch estimates are based on limited creel and updated with catch record card (CRC) data when available. Release data is based on creel and then updated based on actual kept data and adult Chinook mark rates at Bonneville Dam. The current release mortality rate for Chinook is estimated at 15% in recreational fisheries downstream of Priest Rapids Dam. The 2015 observed mark rate at BON for the summer season was 47% for adult summer Chinook.

Summer season recreational fisheries were open June 16 – July 31 from Bonneville Dam upstream to Priest Rapids Dam. This Chinook fishery is typically a mark-selective fishery (MSF), allowing retention of hatchery Chinook, as well as any sockeye. In 2015, during July 3-31 in the area from Bonneville Dam upstream to the Oregon/Washington border (concurrent Oregon/Washington waters) the fishery was modified to include non-mark selective regulations for Chinook. Water temperatures on the Columbia River were above average in late June and July, estimated around 70°–72° F, which is more consistent with water temperatures observed in August. This, combined with a low mark rate and therefore a high release rate, prompted the Compact to allow any Chinook to be kept (marked or unmarked) in this specific area. The Compact also reduced the daily bag limit from two adult Chinook to one adult Chinook. These two rules were designed to reduce the number of Chinook hooked and released during unusually warm water conditions, which can affect survival rates. With the record high return and

relatively low harvest rate in this area, the additional harvest of unclipped salmon was not expected to greatly impact natural or hatchery escapement. Catch estimates total 741 adult summer Chinook kept (297 released) and 1,569 sockeye.

The recreational summer fishery upstream of Priest Rapids Dam was mark selective for Chinook; catch estimates (including tributaries) includes 4,121 Chinook kept (4,678 released) and 27,360 sockeye.

Tribal Summer Fisheries

Wanapum tribal fisheries occur on the mainstem Columbia River in McNary Pool between Priest Rapids Dam and Vernita Bridge; harvest may also be permitted in a the area immediately upstream of Priest Rapids Dam. Salmon are used for ceremonial and subsistence use only. Based on the Wanapum Fishing Framework, a harvest matrix is used to determine the allowable catch by Wanapum tribal members. Permits are issued annually by WDFW that regulate the open seasons with time, area and gear restrictions. Preseason, a total of 300 summer Chinook were allocated to the Wanapum tribe. The 2015 catch estimates include 284 adult summer Chinook (159 unclipped) and 522 sockeye (515 unclipped).

Colville tribal summer fisheries typically occur on the mainstem Columbia River upstream of Wells Dam. In recent years Colville Tribal fisheries have utilized hook & line, tangle net and purse seine gear. Based on the preseason forecast and the sharing principles under the Upper Columbia Harvest Agreement, 50% of the of the harvestable fish available to fisheries upstream of Priest Rapids Dam were allocated to the Colville tribes which amounted to about 5,300 adult summer Chinook (including any mortalities). Post-season, based on the increased run size, 55% of the harvestable fish available to fisheries upstream of Priest Rapids Dam were allocated to the Colville Tribe, amounting to 10,200 fish. The 2015 catch estimates include 9,694 adult summer Chinook (3,409 released) and 23,050 sockeye.

Past Select Area Commercial Seasons

Spring Chinook commercial fisheries in the Select Areas were initiated in Youngs Bay in 1992. Initially, Youngs Bay fisheries were restricted to the spring season, with open periods occurring primarily from late April through early June. Through 1996, fishing time was limited to less than 15 days annually and landings ranged from 155–851 spring Chinook. As production increased, winter and summer seasons were added in an attempt to harvest all returning hatchery adults. Winter seasons during late February through early March were initiated in 1998 to harvest early returning Age-5 spring Chinook. Starting in 2006, the Youngs Bay winter season has been extended into the mid-March through early-April timeframe as allowed by in-season evaluation of management criteria. Initially, these extended-season fisheries were either constrained to upstream areas of Youngs Bay to reduce harvest of non-local Chinook that are known to "dip in" to lower portions of Youngs Bay in response to tidal fluctuations and river conditions or constrained to short (≤4 hours) periods proximate to low tide. In recent years, only the short-period approach has been utilized to manage the extended winter periods but reducing area is still an important management option. Although the need for close monitoring is increased during the extension period, adaptive in-season management has provided for important additional opportunity. Beginning in 1999, summer seasons during the mid-June through July timeframe

have been adopted to provide harvest opportunity on late returning spring Chinook and early returning SAB fall Chinook. See Table 6 for Chinook harvest during winter, spring, and summer seasons for all Select Area sites since 1993. Harvest of Chinook in Youngs Bay is variable and has ranged from 3,100–20,800 during the years 2000–2014 (excluding 2005).

Commercial fisheries for spring Chinook in Blind Slough began in 1998 with spring seasons only, until 2000 when the first winter season was established. Weeknight fishing periods have been consistently adopted to minimize interactions with recreational boaters and in most years, fishing periods have opened concurrent with the other Select Area sites to minimize congestion. Since 2006, the winter season has been expanded into the late-March/early-April timeframe with minimal increase in impacts to ESA-listed upriver stocks. Beginning in 2013, the winter season expanded to include Knappa Slough. The spring season fishing area was initially limited to Blind Slough but was expanded downstream to include the waters of Knappa Slough in 1999 as returns increased. A one-year trial summer season was adopted in Blind and Knappa sloughs in 1999 but resulted in a harvest of only three spring Chinook and no summer seasons have been adopted since. Annual winter/spring season landings have ranged from 500–3,500 Chinook since 2000.

Spring commercial fisheries in Tongue Point were initiated in 1998 and continued through 2003, with trial winter seasons occurring in 2000 and 2001. In most years, seasons and open hours were consistent with Blind/Knappa Slough and Youngs Bay except in recent years the opening spring period has been delayed 3–7 days relative to the rest of the sites. The spring season fishing area was expanded to include the South Channel in 1999 to reduce congestion during peak fishing periods. Annual Chinook harvest increased dramatically with landings peaking in 2002, when 3,003 fish were landed. High abundance of upriver spring Chinook in this area during the 2003 spring fishery resulted in the cancellation of the season after one fishing period. Production-level releases of spring Chinook at Tongue Point were discontinued in 2000; however, experimental releases were maintained from 2003 through 2011 at the relocated MERTS net-pen site (Table 5). In 2008, test fishing and full fleet commercial test fisheries, with a more restrictive lower boundary and delayed spring season opening dates, were initiated to evaluate the feasibility of reestablishing the Tongue Point fishery. In addition to the fishery modifications, mandatory check-in station and call-in programs were established to provide more precise stock composition information to aid in-season management. Promising results from the 2008-2011 test fisheries resulted in restoring smolt releases to pre-2000 production levels in 2013. An evaluation of the 2008-2013 test fisheries supported the feasibility of reinstating a fishery and the spring Chinook fishery at Tongue Point/South Channel was reestablished in 2014; additionally, experimental winter fisheries began in 2013 and were conducted again in 2014.

In Deep River, winter seasons have been adopted annually since 2006 and spring fisheries have been conducted since 2003. Total harvest has ranged from 28 to 415 fish annually (Table 6). In 2014, releases of spring Chinook into Deep River were discontinued due to poor survival and restricted funding.

2015 Youngs Bay Winter/Spring/Summer Seasons

At the request of industry, the 2015 Youngs Bay seasons were set to maximize fishing opportunity during daylight hours rather than typical overnight seasons. The 2015 winter season

consisted of the standard twelve 12–18 hour fishing periods between February 9 and March 6. Additional periods for the mid to late-March timeframe were adopted preseason: one 18-hour period, two 8-hour periods, and seven 4-hour periods during March 9–30. Due to higher than expected upriver impacts the final three 4-hour periods from March 25 to March 30 were rescinded via in-season action. Focusing fishery timeframes around low tide when non-local stocks may be most abundant appears to be an effective alternative to reducing the fishing area or closing the fishery entirely during this timeframe although reducing area is still an important management option. The entire Youngs Bay fishing area was open with a 7-inch minimum mesh size regulation during all winter season periods. As is the case for all commercial fisheries in Youngs Bay, maximum net length was restricted to 250 fathoms; no more than two pounds of leadline per fathom of net are allowed, except in the area upstream of the mouth of the Walluski River. The nineteen fishing periods resulted in landings of 116 spring Chinook which is less than half of the average harvest (353) since winter seasons began in 1998.

The 2015 spring season in Youngs Bay was scheduled to begin with one 4-hour period on April 21, which was several days later than the typical starting date, with the intent to reduce abundant upriver spring Chinook typically encountered in mid-April. Due to higher than expected upriver impacts during the winter season the 4-hour and 6-hour periods scheduled on April 21 and April 24 and an 18-hour period scheduled for May 4 were rescinded. In addition, four periods scheduled during April 28 – May 8 were modified. The weekly four-day periods from May 11 through June 12 continued as originally scheduled. The 2015 Youngs Bay spring fishery landed 6,693 Chinook. The Chinook harvest was above expectations and was 30% higher than the recent 10-year average of 5,131 fish. Throughout the spring season a 9¾-inch maximum mesh size restriction was in effect.

The 2015 summer season in Youngs Bay was open noon Monday through noon Friday weekly from June 16 – July 3, noon Monday July 6 through noon Thursday July 9, and noon Tuesday through noon Thursday from July 14 to July 30. Weekly summer periods were extended beginning in 2014 to enhance fishing opportunity and harvest in Youngs Bay. A 9¾-inch maximum mesh size restriction was in effect. The Youngs Bay summer fishery landed 1,779 Chinook ranking it as the fifth highest summer season landings in Youngs Bay since inception.

The combined Youngs Bay winter/spring/summer fishery harvest totaled 9,083 Chinook. Stock composition is based on VSI and CWT analysis with a total of 3,405 Chinook (37% of the Chinook catch) examined for fin marks and CWTs, and 270 CWTs collected. The 2015 combined winter/spring/summer catch included an estimated 81.3% spring Chinook and 0.7% SAB fall Chinook originating from Select Area sites, 6.9% upriver spring and summer Chinook (caught before June 15), 1.6% upper Columbia summer Chinook (after June 15), 7.3% Willamette River spring Chinook, and 2.2% spring Chinook from the Cowlitz, Kalama, Lewis, and Sandy Rivers (CKLS). Based on scale readings and CWT correction, the estimated age composition of the catch was 1.2% Age-3, 87.4% Age-4, 9.9%% Age-5, and 1.4% Age-6 fish.

2015 Blind Slough/Knappa Slough Winter/Spring Seasons

Similar to 2000–2014, a winter gillnet season with a 7-inch minimum mesh restriction was adopted for Blind Slough in 2015. In an effort to assess the feasibility of increasing harvest opportunity, the area was expanded to include Knappa Slough for a portion of the winter season,

as has been done since 2013. The adopted season consisted of fifteen 12-hour periods (7 PM – 7 AM) on Monday and Thursday nights during February 9 – March 30 (except Knappa Slough was closed March 13 – March 30). The seven periods (March 9 – March 30) held after the normal end of the winter season represent ongoing efforts to expand the fishery. During the winter fishing periods, a total of 116 spring Chinook were landed, which was 92% of the recent 10-year (2003–2014) average Chinook harvest (126) in Blind Slough/Knappa Slough.

Similar to the winter season, the spring Blind Slough season included Knappa Slough down to the east end of Minaker Island, to increase fishing area and maximize the opportunity to harvest local Select Area-origin spring Chinook. As in previous years the lower deadline in Knappa Slough was extended further downstream to the western end of Minaker Island. The lower deadline extension normally occurs in the beginning of May but was delayed until May 5 via in-season action in an effort to remain within preseason impact guidelines. This strategy of area expansion has been successfully employed for several years. A 9¾-inch maximum mesh size restriction was adopted to target Chinook. For both the winter and spring fisheries in Blind and Knappa sloughs, net length was limited to 100-fathoms with no weight restrictions on the leadline, including allowed use of additional weights and anchors. The 2015 spring fishery consisted of fourteen 12-hour (7 PM – 7 AM) fishing periods on Thursday and Monday nights between April 28 and June 12 (except the May 5 period which was modified to occur on a Tuesday night to allow time for management action if necessary after spring opener). Similar to other sites the two 12-hour season opening periods scheduled for April 21 and April 24 and another 12-hour period scheduled for May 4 were rescinded due to higher than expected upriver impacts during the winter season. During the 2015 Blind Slough/Knappa Slough spring fishery 2,666 spring Chinook were landed which was third highest on record and was more than double the recent 10-year average of 1,185. Due to high harvest and low upriver impacts during late spring season in 2015, five periods were set during the summer season timeframe from June 16 to July 3 resulting in a harvest of 336 Chinook.

The combined Blind Slough/Knappa Slough winter, spring and summer season harvest totaled 3,118 Chinook the second highest on record since the site was initiated. Stock composition is based on VSI and CWT analysis. A total of 1,794 Chinook (58% of the combined catch) were examined for fin marks and CWTs and 172 CWTs were collected. The catch included an estimated 91.4% Select Area-origin spring Chinook, 0.8 % upriver spring Chinook, 6.7% Willamette River spring Chinook, and 1.1% CKL-origin fish. Based on scale readings and CWT correction, the estimated age composition of the catch was 0.6% Age-3, 90.9% Age-4, 8.5% Age-5, and 0.0% age 6.

2015 Tongue Point/South Channel Winter/Spring Seasons

To assess the feasibility of expanding harvest opportunity in the Select Areas, the winter season initially adopted for the Tongue Point/South Channel site in 2013 was continued in 2015. The 2015 season consisted of ten 12-hour periods (7 PM – 7 AM) on Monday and Thursday nights during February 9 to March 13 with a 7-inch minimum mesh restriction in effect. A total of 70 spring Chinook were landed in the winter season which was more than double the catch in 2014 (33 fish) and equivalent to 2013 (70 fish).

The opening spring period in Tongue Point/South Channel was scheduled for April 21, but the first two periods were rescinded via in-season action due to higher than expected impacts incurred during the winter season. Similar to the other Select Area fisheries, two periods during the last week of April were shortened in order to stay within preseason impact guidelines. The remaining Tongue Point South Channel spring season included a rescheduled period the night of May 5, a 12 hour period on the night of May 7, and ten 12-hour fishing periods on Monday and Thursday nights (7 PM – 7 AM) starting on May 11 and ending on June 12. A 9¾-inch maximum mesh restriction was in place. In Tongue Point, nets were restricted to a maximum length of 250 fathoms with standard weight restrictions while nets in South Channel were limited to a maximum length of 100 fathoms and no weight restrictions were in place. During the 2015 Tongue Point/South Channel spring fishery 1,192 spring Chinook were landed. This is the third highest Chinook harvest during the spring season behind 2001 and 2002.

The 2015 winter and spring fishery in Tongue Point/South Channel harvested 1,262 spring Chinook. Stock composition was based on VSI and CWT analysis with a total of 574 Chinook (45% of the catch) examined for fin marks and CWTs; 54 CWTs were detected and recovered. The catch included an estimated 62.6% spring Chinook released from Select Area sites, 10.3% upriver spring Chinook, and 23.8% Willamette River spring Chinook and 3.3% CKL-origin fish. Based on scale readings and CWT correction the estimated age composition of the catch was 0.2% Age-3, 81.0% Age-4 and 18.8% Age-5 fish.

2015 Deep River Winter/Spring Seasons

The 2015 winter season in Deep River consisted of fifteen 12-hour fishing periods, which (like 2013 and 2014) was two more nights of fishing than in recent previous years. Fishing occurred on Monday and Thursday nights (7 PM – 7 AM) from February 9 through March 31.

The spring season consisted of fifteen 12-hour fishing periods (7 PM – 7 AM) on Thursday night April 17, Tuesday and Thursday nights from April 28 to May 8, and Monday and Thursday nights from May 11 through June 12. Two fishing periods (Tuesday night April 21 and Thursday night April 23) that were initially adopted at the January 28, 2015 Compact hearing were rescinded by Compact action on April 20, 2015 to reduce potential impacts to upriver stocks.

The fishing area during all periods was restricted to the area from markers at navigation marker #16 upstream to the Highway 4 Bridge. Gear regulations included a 100-fathom maximum net length, a 7-inch minimum mesh size for the winter season and a 9¾-inch maximum mesh size for the spring season. The use of additional weights or anchors was allowed. As has been the case since the inception of the Deep River spring fishery in 2003, fishers were required to submit all landed catch for biological sampling before being transported out of the fishing area. A WDFW sampling station was set up in the area for this purpose.

A total of 94 Chinook were landed during the winter season and 110 Chinook were landed during the spring season. The harvest of 204 Chinook from Deep River in the combined winter and spring seasons was second only to the exceptional harvest of 415 in 2010 and twice the average of 102 for the previous ten years.

The Deep River winter/spring fishery stock composition for 2015 was based on VSI and CWT analysis with a total of 202 Chinook (99% of the catch) examined for fin marks and CWTs, and 15 CWTs being collected. The catch was comprised of 49.5% spring Chinook destined for Select Area sites (41.2% Youngs Bay, 2.9% Blind Slough, 5.4% Deep River), 8.8% upriver spring Chinook, 41.7% Willamette River spring Chinook, and 0.0% spring Chinook destined for the Cowlitz, Kalama, or Lewis rivers. Based on scale readings, verified with CWTs, the age composition of the catch was 0% Age-3, 81.4% Age-4, 18.6% Age-5, and 0.0% Age-6.

Select Area Recreational Fisheries

Beginning in 1998, year-round recreational seasons were opened for Chinook and adipose fin-clipped Coho in Youngs Bay, Tongue Point, and Blind Slough. Similar regulations were adopted for South Channel and Knappa Slough in 1999 and for Deep River in 2000. In 2003, regulations were adopted to allow year-round angling for adipose fin-clipped steelhead in all Oregon Select Areas. To maintain consistency with mainstem fisheries, mark-selective regulations were permanently adopted for Select Area spring Chinook recreational fisheries effective January 1, 2004. Also in 2004, classification of Tongue Point and South Channel as Select Area recreational fishing sites was rescinded due to discontinuation of production-level spring Chinook releases and because these areas are already open to angling concurrent with the mainstem Columbia River. Brief springtime recreational fishing closures were enacted in the Select Areas during 2004, 2005, and 2010 when the potential for additional impacts to upriver spring Chinook also forced closure of Select Area commercial fisheries.

Recreational harvest of Chinook in the winter, spring and summer seasons is reported in Table 6. From 2001 through 2004 and again in 2010, effort and harvest in Select Area recreational fisheries increased due to improved adult returns which resulted in more productive fishing opportunities. Due to resource limitations, a statistical creel program is not in place for the Select Area spring Chinook fisheries. As an alternative, estimates are made using expanded catch record card estimates, trends in the Select Area commercial fisheries, and comparative statistics of years with limited creel information. Catch record card data is final only through 2013; however, preliminary estimates are available and are used to produce the recent year estimates. The 2015 catch estimate for spring Chinook in all Select Area sites is 681 fish adult fish which is comparable to the recent 5-year (2010-14) average of about 700 fish.

2015 Commercial American Shad Seasons

Under permanent regulations the lower Columbia River was open to commercial fishing for American shad in Area 2S (upstream of navigation aid #50 near Gary Island) from 3:00 p.m. to 10:00 p.m. daily, Monday through Friday, from May 10 through June 20 (except on the observed Memorial Day holiday). Regulations for the Area 2S shad fishery since 1996 have included the following gear specifications designed to minimize the handle of salmonids: mesh size restriction of 5⅜ to 6¼-inches, ten-pound mesh breaking strength, and net not to exceed 40 meshes in depth or 150 fathoms in length. The shallower and shorter nets have proven to substantially reduce the handle of salmonids compared to gear used in shad fisheries prior to 1996. Only American shad may be kept and sold, and all salmon, steelhead, walleye, and sturgeon are required to be released immediately. The 2015 fishery produced landings of 570 shad which is the lowest harvest since

at least 1980 and 5% of the recent 10-year average. The recent trend of low harvest is likely due to a relatively low market value for American shad (Table 19).

The Washougal Reef commercial shad fishery has not been open since 2011.

2015 Non-Indian Impacts to ESA-Listed Stocks

The management intent for 2015 spring Chinook fisheries was conservation of Columbia River salmon and steelhead runs, to remain within the ESA impact rates and catch limits of upriver stocks allowed in the MA, and to reach the objectives outlined in Commission guidance.

The 2015 preseason forecast for upriver spring Chinook was 232,500 adult fish to the Columbia River. Based on the *U.S. v. Oregon* Management Agreement (MA), non-Indian fisheries were limited to an ESA impact of 2.0% and a catch balance limit of 23,250 upriver fish (kept plus release mortalities). After applying a 30% run size buffer (also mandated by the MA), non-Indian fisheries were planned based on a total of 14,810 upriver spring Chinook harvest mortalities available prior to a run-size update. Commission sharing formulas and buffers were applied to produce the allowable take by each fishery prior to a run-size update.

On January 28, 2015, the Columbia River Compact adopted management guidelines for the harvest of upriver spring Chinook consistent with the Commission policy. Spring Chinook fisheries were managed based on an ESA- sharing formula that included 70% to recreational and 30% to commercial fisheries.

The final 2015 preseason (buffered) catch allocation and ESA guidelines for upriver spring Chinook (kept plus release mortalities) used for managing fisheries prior to a run-size update are provided in the following table:

2015 Non-Indian Fisheries - Comparison of PRE-Season Allowed and Buffered ESA-impacts and Catch (kept plus release mortalities) of Adult Upriver Spring Chinook.

	PRE-Season (232.5 K run size, 2.0% impact limit) (Buffered - 162.7 K run size, 1.9% impact limit)						
2014 Non-Indian Fishery	ESA Impact	1.90% buffered	% of Allowed		Catch Balance	pre-update buffered	% of Allowed
Mainstem	0.450%	0.210%	47%		4,334	1,760	41%
Select Areas	0.150%	0.150%	100%		349	244	70%
Commercial total (30% of total)	**0.600%**	**0.360%**	**60%**		**4,683**	**2,004**	**43%**
Downstream of Bonneville Dam (LCR)	1.050%	0.840%	80%		14,960	10,318	69%
Bonneville Dam to OR/WA border	0.14%	0.112%	80%		1,995	1376	69%
Upper Col/Snake	0.21%	0.168%	80%		1,613	1,112	69%
Recreational total (70% of total)	**1.400%**	**1.120%**	80%		**18,567**	**12,806**	**69%**
Non-Indian Total	**2.00%**	**1.48%**	**74%**		**23,250**	**14,810**	**64%**

As the season progressed and TAC provided in-season run updates and fisheries continued to be managed conservatively while providing opportunity to harvest hatchery Chinook. The post-season details are provided in the following table:

2015 Non-Indian Fisheries - Comparison of Post-Season Allowed and Actual ESA-impacts and Catch (kept plus release mortalities) of Adult Upriver Spring Chinook.						
	POST-Season					
	(289.0 K run size, 2.2% impact limit)					
2015 Non-Indian Fishery	ESA Impact	Actual	% of Allowed	Catch Balance	Actual	% of Allowed
Mainstem	0.510%	0.745%	146%	5,942	5,724	96%
Select Areas	0.150%	0.278%	186%	433	804	185%
Commercial total (30% of total)	**0.660%**	**1.023%**	**155%**	**6,376**	**6,528**	**102%**
Downstream of Bonneville Dam (LCR)	1.155%	0.686%	59%	19,316	15,689	81%
Bonneville Dam to OR/WA border	0.154%	0.074%	48%	2,615	1,696	65%
Upper Col/Snake	0.231%	0.096%	41%	2,904	1,996	69%
Recreational total (70% of total)	**1.54%**	**0.86%**	56%	**24,836**	**19,381**	**78%**
Non-Indian Total	**2.20%**	**1.88%**	**85%**	**31,211**	**25,909**	**83%**

Post-season, the final non-Indian impact rate was 1.90% for the Snake River ESU and 1.94% for the upper Columbia ESU compared to the 2.2% allowed. Non-Indian fisheries used 85% of the impacts allowed under the ESA. Since non-Indian fisheries are managed to remain within both the allowable ESA limit and the catch-balance guidelines outlined in the 2008-2017 MA, fisheries are halted once either of the two constraints are met. Similar to past years, 2015 recreational fisheries were well within the allocated ESA allowance, and more constrained by catch (mortalities) of upriver Chinook. For commercial fisheries, the opposite is true, where ESA-impacts allocated are more constraining than the catch allocated. The Compact made decisions in-season that benefited both commercial and recreational fisheries. The Snake River recreational fisheries benefited when the Compact allowed those fisheries to continue despite the individual fishery allocation may be exceeded, recognizing there was a balance of fish remaining on the overall recreational allocation. Commercial fisheries benefited towards the end of the season when the Compact made decisions to allow the balance of ESA-impacts from the total non-Indian allocation to be used as needed for the commercial fisheries to gain access to their harvestable allocation. Under the catch balance provisions outlined in the MA, non-Indian fisheries used 83% (25,909) of the 31,211 upriver spring Chinook mortalities available. Impacts to wild Willamette River spring Chinook are reported separately by ODFW in an annual report submitted to NOAA Fisheries and were not available when this report was completed.

Impacts to wild winter steelhead are accrued from incidental release mortalities during non-Indian mainstem recreational and commercial fisheries. As has been the case for the past several years impacts were minimal in 2015, estimated at 0.60%, which is was well within the 2.0% ESA impact rate limit (Table 11).

Non-Indian fisheries downstream to the Highway 395 Bridge near Pasco, Washington accrued a total impact of 0.30% to Snake River sockeye, compared to the allowable impact rate of 1.00%.

Summer Chinook fisheries operated under principles described in the Management Guidelines section of this report. The preseason harvest allocation for non-Indian fisheries was 21,000 adult summer Chinook (mortalities), which included 5,000 for ocean and 16,000 for in-river harvest. The inriver harvest was allocated 34.3% downstream of PRD, which equated about 5,500 fish (adult mortalities). These fish were further allocated 70/30 sport/commercial based on commission policy. Post-season, the actual Columbia River return of nearly 127,000 adult summer Chinook increased the non-Indian allocation to 42,590 fish, of which 40% were allocated downstream of PRD. The preliminary non-treaty harvest for Columbia River fisheries is estimated to be 35,189 fish, which is 83% of the allowed harvestable surplus under the MA. Ocean harvest reported is estimated based on past harvest rates. Actual ocean catch reported is assumed to be equal to the amount allowed.

2015 Non-Treaty Summer Chinook Fisheries Summary

(All data preliminary and includes kept + release mortalities)

	Pre	**Post**		
Run size	73,000	126,882		
Harvest allocated	Allowed		Actual	Actual/
Fishery	Pre	Post	Take	Allowed
PFMC Ocean Fisheries	5,000	8,691	8,691	
Below Priest Rapids Dam (PRD)	*34.3%*	*40.0%*		
Commercial below BON	1,646	4,068	3,938	
Recreational Below Bonneville	3,227	7,973	6,152	
Recreational BON to PRD	615	1,519	786	
Below PRD Total	**5,488**	**13,560**	**10,876**	**80%**
Above Priest Rapids Dam (PRD)	*65.7%*	*60.0%*		
Wanapum Tribal	300	300	284	
Colville Tribal	5,256	11,187	10,410	
Recreational above PRD	4,956	8,853	4,823	
Above PRD Total	**10,512**	**20,339**	**15,517**	**76%**
Non-Treaty Total	**21,000**	**42,590**	**35,084**	**82%**

Treaty Indian Fisheries

Treaty Indian harvest of spring Chinook primarily occurs in ceremonial and subsistence (C&S) fisheries except in years of higher abundance, such as in 2000–2004 and 2008–2015, when commercial fisheries have been allowed. Steelhead and a few spring Chinook are sometimes incidentally harvested in the winter season sturgeon gillnet fishery and limited incidental handling mortality could occur if the tribal shad trap-net or other experimental shad fishery is pursued.

Treaty Indian commercial and C&S fisheries, including dipnet and fisheries, are managed individually by the four Columbia River treaty tribes through either a permit system or a general regulation system. The tribes have defined regulations concerning lawful gear, fishing area, and other miscellaneous regulations concerning the tribal C&S and commercial fisheries. Tribal staff monitor the fisheries and provide in-season accounting of catch and impacts. The tribes implement commercial spring or summer fisheries depending on the Chinook and sockeye run sizes and bring any commercial plan before the Compact to approve purchase of harvested fish by non-Indian buyers. Since 2004, the tribes have had directed commercial gillnet fisheries in the summer season targeting upper Columbia River summer Chinook. The tribes typically also use some portion of their allowed sockeye harvest rate for commercial purposes. The tribes monitor and provide accounting for C&S and any commercial fisheries that occur.

2015 Treaty Indian Winter Season Fisheries

The 2015 winter sturgeon setline fishery was open Zone 6 from January 1 to January 31 with landings totaling 82 white sturgeon, which was above average.

The winter commercial gillnet fishery opened February 2 in Zone 6. The season continued through February 24 in The Dalles and John Day Pools and February 23 through March 21 in the Bonneville Pool. No mesh restrictions were in place and sales of platform and hook-and-line caught fish were allowed. Landings totaled 1,273 white sturgeon, 117 steelhead, and 7 Chinook from the winter gillnet fishery. The winter season steelhead catch has generally been low in recent years, due to most fishers targeting sturgeon (Tables 31 and 33).

The 2015 total tribal commercial winter season catch was 1,355 white sturgeon. Winter catch is shown by pool in the table below, combined in Table 30, and separated out by the Bonneville Pool and two upper pools in Table 33. Catch in the Bonneville Pool is presumed to be all winter steelhead. Catch in the two upper pools is presumed to be summer steelhead that passed Bonneville in the previous calendar year.

2015 Treaty Indian Winter Commercial Landings From Setline, Gillnet, Platform and Hook & Line

	White Sturgeon						
Pool	Guide-line	Total	*Setline*	*Gillnet*	Chinook	Steelhead	Walleye
Bonneville	1,100	378	*1*	*377*	7	171	6
The Dalles	1,000	93	*0*	*93*	0	0	1
John Day	1,000	884	*81*	*803*	0	0	0
Total		**1,355**	**82**	**1,273**	**7**	**171**	**7**

2015 Treaty Indian Mainstem Spring and Summer Chinook and Sockeye Fisheries

The tribal intent for 2015 spring and summer season fisheries was to remain within impact rates allowed by the 2008–2017 MA based on the actual river mouth run sizes for Chinook and sockeye.

The four tribes issued permits for gillnet C&S fisheries for spring Chinook from late March through early May. The platform and hook-and-line fishery retained spring Chinook and steelhead for subsistence purposes throughout the spring season, and sales of fish were allowed beginning May 6. Platform fisheries downstream of Bonneville Dam were open for a short period during the spring in 2015. The catch downstream of Bonneville was 922 Chinook. Tribal staff accompanying non-treaty commercial test fishing operations below Bonneville Dam kept an additional seven Chinook. Catch from the permit gillnet fisheries (C&S gillnet) is estimated at 8,127 spring Chinook. Catch estimates for the Zone 6 platform and hook-and-line (C&S and commercial) fisheries totals 1,798 spring Chinook upstream of Bonneville (prior to commercial gillnet fishing). Tribal staff accompanying non-treaty commercial test fishing operations kept a total of 7 Chinook. Commercial gillnet fisheries included 5 weekly periods (3.5 days each) during May 12 and June 12. Landings totaled 20,320 adult Chinook, which includes fish harvested from gillnets and platform/hook & line during this period.

Total harvest of upriver spring Chinook was 31,181 or 10.8% total harvest rate compared to a 10.8% management limit (Table 7). The impact on the ESA-listed wild Snake River spring/summer Chinook and ESA listed upper Columbia spring Chinook was 11.5%. The difference between the total harvest rate and the wild harvest rate results from the differential harvest of marked and unmarked Chinook in mark-selective fisheries between the Columbia River mouth and Bonneville Dam.

During the summer management period (June 16 – July 31), the Zone 6 platform and hook-and-line was open throughout the season. The commercial season consisted of seven weekly periods (3.5days/ week) from June 16 – July 31. Summer Chinook landings totaled 37,763 (29.8% of the river mouth return; Table 10). The harvest was less than the 42,590 allowed. The allowed harvest is based in part on a preliminary estimate of non-treaty impacts in PFMC area fisheries which will be finalized later in 2015.

There were 30,095 sockeye caught in Zone 6 platform and hook-and-line fisheries and in commercial gillnet fisheries (including 555 fish during the spring and 308 fish from the early fall season fisheries). The catch was 5.9% of the river mouth return as compared to the allowed harvest rate of 7%. The TAC estimated that 102 of the sockeye caught were Snake River sockeye (Table 18).

Steelhead harvest during winter and spring fisheries was minimal, estimated at 171 winter steelhead in winter season fisheries and 173 summer steelhead in spring season fisheries. Winter fisheries were not sampled to determine a steelhead hatchery-to-wild ratio, and there is no definitive method of determining the number of winter steelhead or hold-over summer steelhead in the early season catch although all 2015 winter season catch occurred in the Bonneville Pool and are counted as winter steelhead. There is not complete sampling for clipped and unclipped steelhead in spring season fisheries although 29.6% of the steelhead caught during spring commercial gillnet fisheries were unclipped. Clip rates can also be estimated by the clip rate of steelhead during the spring season at Bonneville Dam. The summer steelhead landed in spring season fisheries would be expected to be Skamania Index summer steelhead (Tables 31 and 34). Some of the winter and spring season catch may have been winter steelhead and hold-over summer steelhead from the previous year. The summer season steelhead harvest was estimated at 2,866 steelhead, including 328 Group B steelhead (Tables 32 and 35). The summer season harvest is a mixture of steelhead passing Bonneville during the Skamania counting period and A/B index counting period which begins July 1.

2015 Treaty Indian Tributary Fisheries

Tributary spring Chinook fisheries also occurred by the treaty tribes in the Wind, Little White Salmon (Drano Lake), Hood, Klickitat, Deschutes, John Day, Umatilla, and Yakima Rivers, as well as Icicle Cr. (Wenatchee) and various Snake Basin tributaries. Total tributary harvest of spring and Snake River spring/summer Chinook in these tributaries is estimated at 24,577 adults. The Shoshone-Bannock tribe harvested an additional 961 spring/summer adult Chinook in Snake River tributaries.

2015 Ceremonial and Subsistence Safety Net

The 2008–2017 MA as well as the expired CRFMP identified a minimum C&S annual "safety net" to the Columbia River treaty tribes defined as the opportunity to harvest 10,000 spring and summer Chinook or be provided with hatchery fish of equivalent quality. After spring and summer fisheries are accounted for, the balance of the "safety net" is to be provided to the tribes by the states of Oregon and Washington. The 2015 upriver spring and summer Chinook returns were sufficient to allow the harvest in treaty fisheries to exceed the "safety net" level.

2015 Ceremonial and Subsistence "Safety Net" Summary	
Fishery	**# Adult Chinook**
C&S permit gillnet spring fishery	8,127
Winter commercial gillnet fishery	0
Zone 6 Platform/hook and line winter/spring fishery	1,798
Zone 5 Platform/hook and line/ fishery *(includes fish donated from NI test fishery)*	929
Spring commercial gillnet fishery	20,320
Spring Chinook Subtotal	**31,181**
Zone 5 Platform/hook and line summer fishery	30
Zone 6 commercial gillnet and Platform/ hook and line/ fishery	37,733
Zone 6 C&S Permit fishery	0
Summer Chinook Subtotal	**37,763**
Total spring and summer adult Chinook	***68,944***

2015 Shad Fisheries

A small number (<2,000) of fish were caught in the Zone 6 platform fishery which were either sold direct to the public or retained for subsistence. A small number of shad may also have been retained from incidental catch in gillnets.

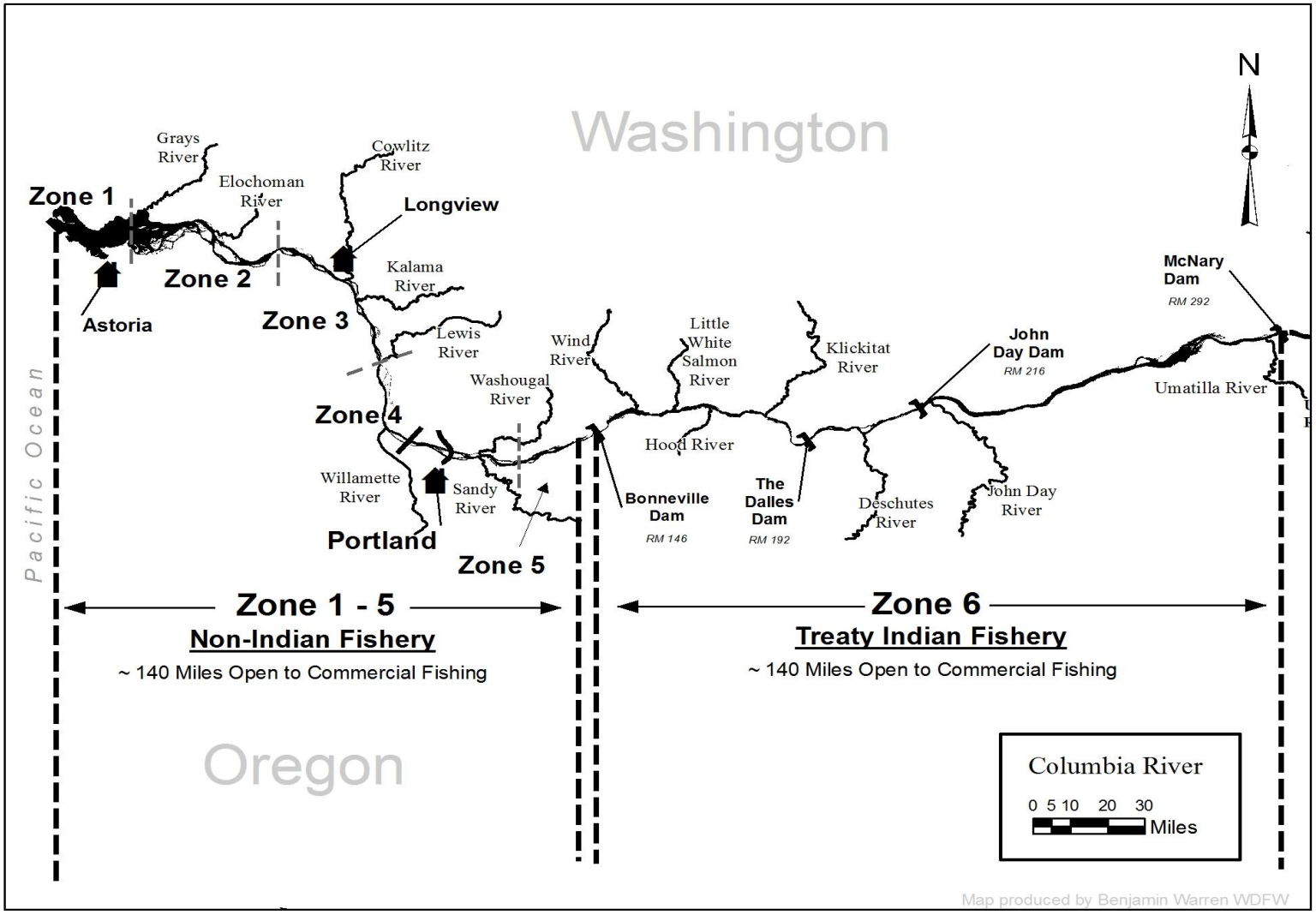

Figure 2. Map of the Columbia River Downstream of McNary Dam Showing Areas Open to Commercial Fishing.

2016 WINTER, SPRING, AND SUMMER SEASON EXPECTATIONS

2016 Management Guidelines

All fisheries conducted in 2016 will be managed in accordance with the 2008–2017 MA, Willamette FMEP, UCMA, and Commission guidance as applicable.

According to the harvest rate schedule in the 2008–2017 MA and the 2016 upriver spring Chinook preseason forecast (188,800 fish), winter/spring season fisheries will be managed not to exceed a total ESA impact limit of 11.0% (1.9% for non-Indian fisheries and 9.1% for treaty fisheries) of the upriver spring Chinook run. In addition, non-Indian fisheries will be managed to meet the catch balance provisions in the 2008–2017 MA for upriver spring Chinook. Under these provisions, non-Indian fisheries will be managed to remain within ESA impact limits and catch balance guidelines. Non-Indian fisheries will operate with a 30% run-size buffer in place, which will limit spring Chinook catch prior to a run size update. Fisheries harvesting Willamette spring Chinook will be managed to ensure hatchery escapement targets and wild fish impact limitations outlined in the Willamette River FMEP are achieved. Impacts to wild winter steelhead will be limited to 2%.

Mainstem summer Chinook fisheries will be managed based on the 2008–2017 MA, the UCMA, and Commission guidance. Based on a run size of 93,300 adult upper Columbia Summer Chinook and a preliminary estimate for ocean harvest of 8,000 fish, around 22,000 harvestable fish will be available for non-treaty harvest in the Columbia River. Non-Treaty fisheries upstream of Priest Rapids are allocated 61.3% of the in-river total non-Treaty allowance (~13,300 fish). Treaty fisheries will be allocated around 30,000 fish.

Based on the preseason forecast, harvestable sockeye will be limited, but may allow for retention of sockeye in some non-Indian fisheries. Impacts of up to 1% will be available for non-Indian fisheries and 7% for treaty Indian fisheries.

Impacts to ESA-listed upriver summer steelhead in non-Indian fisheries occur as release mortalities during mainstem recreational and commercial fisheries and will be limited to 2% (January through July) for fisheries from the Columbia River at Buoy 10 upstream to the Highway 395 Bridge near Pasco Washington.

Fisheries will also be managed according to Commission guidance on Columbia River Sturgeon Management. In January of 2013, both the Oregon and Washington Commission adopted policies prohibiting sturgeon retention in all fisheries downstream of Bonneville Dam effective January 1, 2014. Recreational fisheries upstream of Bonneville Dam are not affected by this policy. Catch and release is allowed. Currently, sturgeon retention remains prohibited downstream of Bonneville Dam.

Recognizing the complexities of managing mixed stock fisheries, the Compact will continue to be cautious and conservative by shaping and adopting seasons that minimize impacts on ESA-listed and depressed runs while maximizing opportunities to harvest abundant hatchery fish.

2016 Non-Indian Fisheries

Commercial Spring Chinook Fisheries
(Compact consideration at the January 27, 2016 hearing)

- Mark-selective fishery – release of all non-adipose fin-clipped salmon required.
- Catch expectations and impact limits are set forth in the 2008–2017 MA, Commission guidance, and the Willamette FMEP.
- Regulations similar to previous years (net type, net length, soak times, recovery boxes, and observers). No sturgeon retention allowed.
- Fishery structure designed to maximize harvest of hatchery Chinook while minimizing handle of ESA-listed salmonids.
- Fishing plan (including expected day(s) when test fishing and commercial fishing periods are expected to occur) similar to previous years. Staff met with the Columbia River Commercial Advisory Group in January to solicit input in developing a fishing plan.

Lower Columbia River Spring Chinook Recreational Fishery
(Joint State consideration at the January 27, 2016 hearing)

- Catch expectations and impact limits are set forth in the 2008–2017 MA and the Willamette FMEP and Commission guidance.
- Season structure likely similar to past years. Staff met with the Columbia River Recreational Advisory Group in January to solicit input in developing a fishing plan.
- Retention of steelhead and shad is allowed concurrent with Chinook retention seasons.

Bonneville to McNary Dam Spring Chinook Recreational Fishery
(Joint State consideration at the January 27, 2016 hearing)

- Mark-selective fishery – release of all non-adipose fin-clipped salmon required.
- Catch expectations and impact limits are set forth in the 2008–2017 MA and Commission guidance.

Select Area Commercial Fisheries
(Compact and Oregon State consideration at the January 27, 2016 hearing)

- Winter and spring seasons are expected for all Select Area sites, and a summer season is expected in Youngs Bay.
- A winter season extension in Youngs Bay, similar in structure to that in 2015, may be considered.
- Fisheries will be structured and managed for stability while minimizing harvest of non-target stocks.
- Impacts to ESA-listed salmonids will be included in the commercial share of total non-Indian impacts.
- Season proposals for 2016 will be similar to previous years and will reflect input from the January 13, 2016 public meeting concerning Select Area spring Chinook fisheries.

Columbia River Steelhead Recreational Fishery
(Joint State consideration at January 27, 2016 hearing)

- Mark-selective fishery – release of all non-adipose fin-clipped steelhead required.
- Retention of steelhead and shad likely to be allowed concurrent with Chinook retention seasons.

Columbia River Summer Chinook Recreational and Commercial Fisheries

- According to the 2008–2017 MA and the preseason run size, harvestable summer Chinook are split evenly between treaty and non-treaty fisheries.
- The UCMA calls for the majority of the non-treaty allocation to be harvested in areas upstream of Priest Rapids Dam.
- Policies adopted by the OFWC and WFWC assign 70% of the harvestable surplus available for use downstream of Priest Rapids Dam to mainstem recreational fisheries and the balance to mainstem commercial fisheries in 2016.
- Summer Chinook recreational fisheries will likely be mark-selective in most Columbia River fisheries.
- Retention of sockeye may be allowed.
- Retention of steelhead and shad is allowed concurrent with Chinook retention seasons.
- Season will be developed during the North of Falcon process in March/April 2016.

Commercial American Shad Fishery
(Season as per permanent regulations)

- In Area 2S; open hours of 3 PM – 10 PM on all weekdays from May 10 through June 20 (except the observed Memorial Day holiday).

2016 Treaty Indian Fisheries

Treaty Winter Commercial Fisheries

- The winter sturgeon setline fishery occurs by permanent regulation from January 1 through January 31.
- The winter gillnet fishery occurs by in Zone 6, typically from February 1 to March 21. The management of the winter gillnet fishery will be determined in early 2015. The fishery will be managed for pool-specific guidelines. The fishery will close early in any pool if sturgeon harvest guidelines are met.
- The 2016 winter season fisheries are expected to have effort similar to 2015, and to accrue similar low impacts to salmon and steelhead.

Treaty Indian Spring Season Fisheries

- The treaty tribes have not yet determined the structure of the 2016 spring Chinook fisheries.
- Based on the 2008–2017 MA, the tribes will be allowed a 9.1% harvest rate on upriver spring Chinook if the run returns at the pre-season forecast level. The tribes will manage

fisheries in-season and make adjustments as necessary based on the agreed harvest rate schedule and the actual river mouth run size.
- Steelhead harvest and stock composition is expected to be comparable to historic levels.

Treaty Indian Summer Season Fisheries

- The treaty tribes have not yet determined the structure of the 2016 summer Chinook and sockeye fisheries.
- Harvest will be managed in accordance with the 2008–2017 MA and the actual river mouth run size adjusted for expected summer Chinook harvest in PFMC area ocean fisheries.
- The treaty fisheries will manage sockeye fisheries according to the harvest rate schedule in the 2008–2017 MA. The expected harvest rate based on the pre-season forecast is 7%.
- Steelhead harvest is expected be comparable to historic levels.

Treaty Indian Shad Fisheries

- Implementation of a shad trap fishery at The Dalles Dam east ladder exit is unlikely and will depend on identifying a market as well as agreements with the USACE.
- Platform shad fisheries are expected, primarily in the Cascade Locks area. These shad are kept for subsistence or sold direct to the public or to commercial buyers.
- The tribes may experiment with new gear types and locations for shad fishing.

MISCELLANEOUS REGULATIONS

Miscellaneous regulations including dam sanctuaries, river mouth closures, gear requirements, sturgeon rules, etc., will be included in the January 27, 2016 Winter Fact Sheet.

Table 1. Minimum Adult Spring Chinook Run Entering the Columbia River, 1990-2015. [1]								
Year	Select Areas[2]	Cowlitz River	Kalama River	Lewis River	Sandy River	Willamette River[3]	Upriver Run[4]	Total
1985-89 Ave.		*11,176*	*1,552*	*10,312*	*1,980*	*90,800*	*105,481*	*221,301*
1990		7,555	1,987	9,299	3,527	127,900	105,715	255,983
1991		8,945	2,613	8,334	3,652	105,530	64,479	193,553
1992		10,353	2,430	6,025	8,551	72,197	95,691	195,247
1993	851	9,458	2,874	8,195	6,369	62,778	119,963	210,488
1994	155	3,149	1,265	3,068	3,498	48,804	24,095	84,064
1990-94 Ave.	*503*	*7,892*	*2,234*	*6,984*	*5,119*	*83,442*	*81,989*	*187,861*
1995	201	2,102	697	3,726	2,529	40,854	12,792	62,901
1996	789	1,787	627	1,730	3,801	33,358	55,552	97,644
1997	1,821	1,877	505	2,196	4,410	34,540	124,321	169,670
1998	2,313	1,055	407	1,611	3,577	43,497	44,308	96,768
1999	1,980	2,069	977	1,753	3,585	52,584	43,067	106,015
1995-99 Ave.	*1,421*	*1,778*	*643*	*2,203*	*3,580*	*40,967*	*56,008*	*106,600*
2000	6,631	2,199	1,418	2,515	3,641	55,747	186,715	258,866
2001	9,719	1,609	1,796	3,777	5,329	78,502	440,336	541,068
2002	12,251	5,152	2,912	3,514	5,905	120,161	335,214	485,109
2003	8,783	15,954	4,556	5,040	5,615	123,355	242,605	405,908
2004	11,643	16,511	4,286	7,475	12,680	143,240	221,675	417,510
2000-04 Ave.	*9,805*	*8,285*	*2,994*	*4,464*	*6,634*	*104,201*	*285,309*	*421,692*
2005	2,550	9,379	3,367	3,512	7,668	59,471	106,900	192,847
2006	7,577	6,963	5,458	7,301	4,382	59,311	132,583	223,575
2007	6,902	3,975	8,030	7,596	2,813	39,943	86,247	155,506
2008	4,493	2,986	1,623	2,215	5,994	26,615	178,629	222,555
2009	3,975	5,977	404	1,493	2,429	35,432	169,296	219,063
2005-09Ave.	*5,099*	*5,856*	*3,776*	*4,423*	*4,657*	*44,154*	*134,731*	*202,709*
2010	25,915	8,830	918	2,337	7,652	107,675	315,345	468,798
2011	11,748	5,834	778	1,311	5,721	76,549	221,158	323,122
2012	10,495	12,617	862	1,895	5,038	63,037	203,090	297,089
2013	7,018	9,536	1,014	1,597	5,700	44,880	123,136	191,978
2014	2,164	10,461	1,013	1,482	5,971	49,765	242,635	311,987
2010-14Ave.	*11,468*	*9,456*	*917*	*1,724*	*6,016*	*68,381*	*221,073*	*318,595*
2015	11,119	23,931	3,149	1,006	4,000[5]	84,532	288,994	416,733

1. *Tributary run sizes are to the tributary mouth and include hatchery returns or dam counts, recreational catch estimates, and estimates of natural spawning populations. Willamette return is to the Columbia River mouth and includes jacks.*
2. *Minimum run sizes for Select Area-origin spring Chinook is based only on harvest of returning adults in Select Area commercial and recreational fisheries. Estimates of escapement are not available. Select Area run size includes minor catches of non-local spring Chinook and early returning Select Area Bright fall Chinook.*
3. *Includes Clackamas River return.*
4. *Upriver counts prior to 2005 are adjusted for new management spring management period. Counts include Snake River summer Chinook and continue through June 15 at Bonneville Dam. Adjustments may result in data being inconsistent with data found elsewhere in this document.*
5. *Approximate value. Final estimate not available at time of publication.*

Table 2. Forecasted and Actual Spring Chinook Entering the Columbia River, 1985-2015 and 2016 Forecast.

	Willamette River (All Age Classes)			Cowlitz, Kalama, & Lewis Rivers Combined (Adults)			Upriver (Adults)		
Year	Preseason Forecast	Actual Return	% of Forecast	Preseason Forecast	Actual Return	% of Forecast	Preseason Forecast	Actual Return	% of Forecast
1985	70.0	68.1	97	--	14.4	--	52.6	84.7	161
1986	65.0	73.6	113	--	16.7	--	115.0	120.6	105
1987	78.0	93.6	120	--	37.0	--	79.7	99.8	125
1988	97.0	118.1	122	32.0	24.9	78	53.4	97.0	182
1989	102.0	114.9	113	16.1	22.3	139	92.7	82.6	89
1990	128.0	130.6	102	18.6	18.8	101	120.8	99.1	82
1991	110.0	109.9	100	19.7	19.9	101	61.9	59.2	96
1992	106.0	75.0	71	26.6	18.8	71	71.4	89.8	126
1993	70.0	65.9	94	21.3	20.5	96	76.2	111.0	146
1994	75.0	49.6	66	12.3	7.5	61	49.0	20.8	42
1995	49.0	42.6	87	4.6	6.5	142	12.0	9.8	82
1996	41.0	34.8	85	4.4	4.1	94	37.2	51.5	138
1997	30.0	35.3	118	4.5	4.6	102	67.8	114.0	168
1998	33.7	45.1	134	2.9	3.1	106	36.2	38.3	106
1999	46.5	54.2	117	3.9	4.8	123	24.6	38.7	157
2000	59.9	57.5	96	6.0	6.1	102	134.0	178.6	133
2001	61.0	80.4	132	4.8	7.2	150	364.6	416.5	114
2002	73.8	121.7	165	6.7	11.6	174	333.7	295.1	88
2003	109.8	126.6	115	11.6	25.6	221	145.4	208.9	144
2004	109.4	144.4	132	27.3	28.3	104	360.7	193.4	54
2005	116.9	61.0	52	24.8	16.3	66	254.1	106.9	42
2006	46.5	59.7	128	15.2	19.7	130	88.4	132.6	150
2007	52.0	40.5	78	15.9	19.6	123	78.5	86.2	110
2008	34.0	27.0	79	12.4	6.8	55	269.3	178.6	66
2009	37.6	39.4	105	7.2	7.9	110	298.9	169.3	57
2010	62.7	110.5	176	19.4	12.2	63	470.0	315.3	67
2011	104.1	80.3	77	10.6	7.9	75	198.4	221.2	111
2012	83.4	65.1	78	12.1	15.4	128	314.2	203.1	65
2013	59.8	47.3	79	7.8	11.2	144	141.4	123.1	87
2014	58.7	51.8	88	13.8	11.5	83	227.0	242.6	107
2015	55.4	87.1		14.2	28.1	198	232.5	289.0	124
2016	70.1			31.1			188.8		

Includes Snake River summer Chinook since 2005 and reflects new spring management period of Jan- Jun 15. Data prior to 2005 has not been adjusted. Adjustments may result in data being inconsistent with data found elsewhere in this document.

Table 3. Components (in Thousands) of the Minimum Willamette River Spring Chinook Run and Percentage Caught in Lower Willamette Recreational Fishery, 1970-2015. Includes Jacks.

Year	Minimum Run Entering Columbia River	Mainstem Columbia River		Run Entering Willamette River	Lower Willamette River Recreational Catch[3]		Willamette Falls Count	Run Entering Clackamas River
		Comm.[1]	Sport[2]		Number[4]	% of Run		
1970-1974 Average	71.6	10.1	2.6	58.9	18.2	31	38.3	2.1
1975-1979 Average	56.6	5.4	1.6	49.5	15.1	32	31.1	3.0
1980-1984 Average	64.8	4.4	1.7	58.6	13.9	23	35.5	8.7
1985-1989 Average	93.7	9.8	2.2	81.7	19.6	24	53.6	7.7
1990-1994 Average	86.2	6.5	3.5	76.1	19.8	26	44.8	10.4
1995-1999 Average	42.4	0.2	0.0	42.2	6.2	14	28.8	6.6
2000	57.5	1.1	0.2	56.2	9.0	16	39.1	7.8
2001	80.3	3.5	3.8	72.9	7.6	10	54.0	10.8
2002	121.7	7.4	5.2	109.1	10.8	10	83.1	14.4
2003	126.6	1.8	7.2	117.6	13.5	11	87.7	15.4
2004	144.4	7.2	5.9	131.3	12.0	9	96.7	21.9
2000-2004 Average	106.2	4.2	4.5	97.4	10.6	11	72.1	14.1
2005	61.0	2.3	2.8	55.8	5.8	10	36.6	12.7
2006	59.7	2.7	2.0	55.0	7.2	13	37.0	10.4
2007	40.5	1.3	1.6	37.6	5.7	15	23.1	8.6
2008	27.0	0.1	0.2	26.7	4.6	17	14.7	7.2
2009	39.4	0.3	1.4	37.7	4.5	12	28.5	4.3
2005-2009 Average	45.5	1.3	1.6	42.6	5.6	13	28.0	8.6
2010	110.5	3.3	5.4	101.8	22.7	21	67.1	11.0
2011	80.3	2.3	2.1	75.9	22.8	28	45.1	6.8
2012	65.1	2.3	3.2	59.6	15.8	27	37.2	5.7
2013	47.3	1.8	1.7	43.8	7.4	16	29.6	6.2
2014	51.8	1.3	2.3	48.2	8.1	15	31.7	5.6
2010-2014 Average	71.0	2.2	2.9	65.9	15.4	21	42.1	7.1
2015	87.1	2.6	3.5	81.0	13.6	16	53.1	8.5

1. *Includes spring Chinook destined for the Willamette River landed in Select Area commercial fisheries of Youngs Bay (since 1992), Tongue Point (since 1998), and Blind Slough (since 1998). Also, includes estimated release mortalities from Lower Columbia mainstem commercial selective fisheries since 2001.*
2. *Includes spring Chinook destined for the Willamette River landed in Columbia River boat and/or bank fisheries. Also includes estimated hook and release mortalities in the Lower Columbia mainstem selective recreational fishery since 2001.*
3. *Lower Willamette recreational fishery managed for quotas in 1996, 1997, 1998, 1999, and 2000. 2009 season was set based on a closure date of April 30 and 3 days per week fishing allowed from March 19-April 30.*
4. *Includes estimated hook and release mortalities in the Lower Willamette selective recreational fishery since 2000.*

Table 4. Willamette Falls Spring Chinook Escapement, Upper Willamette Recreational Catch, Number Returning to Hatcheries, and Tribal Use, 1980-2015. Includes jacks.

Year	Willamette Falls Count[1]	Upper Willamette Recreational Catch: Number	Upper Willamette Recreational Catch: % of Will. Falls Count	Upper Willamette Hatchery Return: Number	Upper Willamette Hatchery Return: % of Will. Falls Count	Clackamas Hatchery Return[2]	Received by Columbia River Tribes[3]
1980	26,973	1,954	7	8,302	31	1,024	--
1981	30,057	2,241	7	9,198	31	1,065	--
1982	46,195	3,687	8	13,780	30	573	--
1983	30,589	1,877	6	10,372	34	1,923	--
1984	43,452	3,123	7	15,433	36	2,521	--
1985	34,533	2,510	7	10,785	31	944	--
1986	39,155	2,708	7	12,591	32	776	--
1987	54,832	6,442	12	16,517	30	1,005	--
1988	70,451	8,536	12	22,534	32	1,253	3,700
1989	69,180	9,375	14	27,349	40	865	2,520
1990	71,273	10,856	15	29,692	42	1,847	1,425
1991	52,516	8,323	16	20,685	39	2,776	2,992
1992	42,004	7,424	18	15,743	37	4,535	2,206
1993	31,966	8,161	26	14,636	46	4,635	1,386
1994	26,102	4,273	16	9,795	38	3,675	3,193 [4]
1995	20,592	3,380	16	8,757	43	3,112	1,504 [5]
1996	21,605	5,041	23	10,056	47	3,044	4,386 [6]
1997	26,885	4,022	15	14,752	55	2,670	539
1998	34,461	6,125	18	16,414	48	4,530	7,590
1999	40,410	6,367	16	18,725	46	4,562	7,689
2000	39,073	5,119	13	16,158	41	4,296	0
2001	53,973	5,538	10	21,246	39	6,155	0
2002	83,136	12,662	15	31,194	38	6,219	0
2003	87,749	10,786	12	28,384	32	5,336	0
2004	95,970	13,026	14	36,948	39	11,231	0
2005	36,633	4,386	12	15,821	43	6,792	0
2006	37,041	5,523	15	16,949	46	7,359	0
2007	23,098	2,130	9	10,145	44	6,106	0
2008	14,672	279	2	8,705	59	5,223	0
2009	28,514	3,110	11	14,820	52	2,853	0
2010	67,059	9,484	14	28,408	42	5,484	0
2011	45,147	4,857	11	23,646	52	3,908	0
2012	37,213	5,062	14	21,959	59	2,954	0
2013	29,561	2,391	8	17,488	59	2,888	0
2014	31,669	NA	NA	17,427	55	4,136	0
2015	53,088	NA	NA	26,640	50	5,354	0

1. *Includes jacks.*
2. *Includes fish transferred from North Fork trap.*
3. *Given toward the treaty tribes' minimum ceremonial and subsistence entitlement per the Columbia River Fish Management Plan.*
4. *Columbia treaty tribes at Willamette Falls also harvested 759 Chinook and 396 marked summer steelhead.*
5. *Columbia treaty tribes at Willamette Falls also harvested 29 Chinook June 12-17 and 112 summer steelhead.*
6. *Columbia treaty tribes at Willamette Falls also harvested 12 Chinook.*

Table 5. Smolt Releases at Select Area Fisheries Enhancement Project Sites, Brood Years 1996-2013.

		Release Site										
		Youngs Bay			Blind Slough			Tongue Point	Deep River		Other	
Brood Year	Species*	South Fork Klaskanine Hatchery	Klaskanine Hatchery	Youngs Bay Net Pens	Big Creek Hatchery	Blind Slough Net Pens	Gnat Creek Hatchery	Tongue Point Net Pens	Deep River Net Pens	Grays River Hatchery	Steamboat Slough Net Pens	**Select Area Total**
2000	CHS	--	--	478,062	--	390,908	--	--	95,940	--	--	964,910
	SAB	--	669,913	205,145	--	--	--	--	--	--	--	875,058
	CHF	--	--	--	4,537,448	--	--	--	--	--	--	4,537,448
	CO	583,248	--	1,688,696	540,898	343,842	--	667,758	354,557	154,107	273,108	4,606,214
2001	CHS	--	--	451,623	--	426,309	--	57,797	141,904	--	--	1,077,633
	SAB	--	620,527	467,056	--	--	--	--	--	--	--	1,087,583
	CHF	--	--	--	5,765,933	--	--	--	--	--	--	5,765,933
	CO	641,555	--	1,686,711	537,085	316,804	--	675,712	366,435	153,000	239,635	4,616,937
2002	CHS	639,446	--	455,825	--	408,495	--	48,056	97,318	--	--	1,649,140
	SAB	--	702,218	780,314	--	--	--	--	--	--	--	1,482,532
	CHF	--	--	--	5,764,833	--	--	--	--	--	--	5,764,833
	CO	131,185	--	1,470,914	516,942	298,748	--	697,522	357,200	157,000	204,600	3,834,111
2003	CHS	458,659	--	457,994	--	433,044	--	53,299	254,471	--	--	1,657,467
	SAB	53,963	681,155	519,676	--	--	--	--	--	--	--	1,254,794
	CHF	--	--	--	5,887,836	--	--	--	--	--	--	5,887,836
	CO	--	--	1,146,068	506,172	309,527	--	202,727	144,900	146,000	--	2,455,394
2004	CHS	566,030**	--	391,843	--	451,388	--	82,565	336,300	--	--	1,828,126
	SAB	45,247	735,066	161,237	--	--	--	--	--	--	--	941,550
	CHF	--	--	--	5,865,175	--	--	--	--	--	--	5,865,175
	CO	--	--	1,125,609	527,631	305,573	--	194,442	201,300	156,302	--	2,510,857
2005	CHS	--	--	417,662	--	272,226	--	104,149	263,600	--	--	1,057,637
	SAB	628,888	--	476,497	--	--	--	--	--	--	--	1,105,385
	CHF	--	--	--	5,850,219	--	--	--	--	--	--	5,850,219
	CO	--	--	1,157,746	529,697	304,558	--	174,547	449,200	157,500	--	2,773,248
2006	CHS	--	--	543,803	--	312,962	--	79,343	121,500	--	--	1,057,608
	SAB	708,412	--	564,641	--	--	--	--	--	--	--	1,273,053
	CHF	--	--	--	4,467,016	--	--	--	--	--	--	4,467,016
	CO	278,944	232,455	768,960	559,717	310,133	--	597,754	368,000	132,188	--	3,248,151
2007	CHS	--	--	457,161	--	280,437	--	103,060	279,811	--	--	1,120,469
	SAB	674,181	--	574,020	--	--	--	--	--	--	--	1,248,201
	CHF	--	--	--	4,286,153	--	--	--	--	--	--	4,286,153
	CO	370,796	609,400	1,014,141	540,169	300,036	--	477,830	706,150	158,000	--	4,176,522
2008	CHS	--	--	804,665	--	265,832	--	101,700	363,000	--	--	1,535,197
	SAB	714,118	--	702,659	--	--	--	--	--	--	--	1,416,777
	CHF	--	--	--	5,666,218	--	--	--	700,000	--	--	6,366,218
	CO	347,494	561,968	783,092	516,206	417,506	--	483,412	747,000	153,000	--	4,009,678
2009	CHS	--	--	702,609	--	253,503	--	100,557	234,000	--	--	1,290,669
	SAB	685,056	--	229,105	--	--	--	--	--	--	--	914,161
	CHF	--	2,093,575	--	3,948,579	--	--	--	700,000	--	--	6,742,154
	CO	368,980	392,314	796,443	538,402	388,505	--	479,365	692,000	155,000	--	3,811,009
2010	CHS	--	--	612,330	--	258,923	--	253,002	405,000	--	--	1,529,255
	SAB	672,829	--	684,030	--	--	--	--	--	--	--	1,356,859
	CHF	--	1,932,616	--	3,255,120	--	--	--	862,000	--	--	6,049,736
	CO	390,610	489,060	757,474	532,082	372,265	--	491,330	800,000	163,000	--	3,995,821
2011	CHS	--	--	601,862	--	326,490	99,190	481,617	320,000	--	--	1,829,159
	SAB	704,594	--	653,452	--	--	--	--	--	--	--	1,358,046
	CHF	--	1,954,732	--	3,614,747	--	--	--	893,000	--	--	6,462,479
	CO	386,668	607,824	769,971	571,616	586,277	--	849,381	600,000	165,000	--	4,536,737
2012	CHS	--	--	631,337	--	370,858	150,834	493,595	--	--	--	1,646,624
	SAB	680,806	481,663	687,801	--	--	--	--	--	--	--	1,850,270
	CHF	--	1,986,471	--	2,956,068	--	--	--	2,620,000	--	--	7,562,539
	CO	336,856	732,994	774,533	537,811	623,649	--	928,589	725,000	155,000	--	4,814,432
2013	CHS	--	--	560,520	--	437,583	142,959	465,420	--	--	--	1,606,482
	SAB	697,554	822,825	706,974	--	--	--	--	--	--	--	2,227,353
	CHF	--	1,644,974	--	2,837,901	--	--	--	930,000	--	--	5,412,875
	CO	260,289	903,119	684,306	537,661	569,921	--	935,023	654,000	165,000	--	4,709,319

* *CHS = Spring Chinook, CHF = Fall Chinook (tule stock unless noted), SAB = Select Area Bright Fall Chinook, CO = coho.*

** *CHS from South Fork Klaskanine Hatchery were released early (September 26, 2005) due to disease.*

Table 6. Winter/Spring/Summer Season Commercial and Recreational Chinook Harvest in Select Area Sites, 1993-2015.

	Commercial					Recreational[2]						
Year	Youngs Bay	Blind Slough	Tongue Point[1]	Deep River	*subtotal*	Youngs Bay	Blind Slough	Tongue Point	SAFE Tributaries	Deep River	*subtotal*	Sum
1993	851	--	--	--	851	--	--	--	--	--	0	851
1994	155	--	--	--	155	--	--	--	--	--	0	155
1995	201	--	--	--	201	--	--	--	--	--	0	201
1996	789	--	--	--	789	--	--	--	--	--	0	789
1997	1,821	--	--	--	1,821	--	--	--	--	--	0	1,821
1998	2,167	60	31	--	2,258	55	--	--	--	--	55	2,313
1999	1,298	458	199	--	1,955	25	--	--	--	--	25	1,980
2000	4,731	818	947	--	6,496	14	121	--	120	--	255	6,751
2001	5,593	2,045	1,631	--	9,269	50	400	--	50	--	500	9,769
2002	6,643	2,053	3,003	--	11,699	121	430	1	--	--	552	12,251
2003	5,300	2,041	348	117	7,806	51	493	--	450	--	994	8,800
2004	6,916	3,531	--	115	10,562	96	285	--	700	--	1,081	11,643
2005	969	1,377	--	60	2,406	9	81	--	67	--	157	2,563
2006	5,798	1,419	--	28	7,245	53	73	--	210	--	336	7,581
2007	5,209	1,536	--	29	6,774	45	100	--	49	--	194	6,968
2008	3,195	1,004	259	28	4,486	--	--	--	--	--	100	4,586
2009	3,123	797	133	122	4,175	--	--	--	--	--	100	4,275
2010[3]	20,751	2,999	727	415	24,892	--	--	--	--	--	1,967	26,859
2011[3]	8,732	1,610	659	100	11,101	--	--	--	--	--	391	11,492
2012[3]	8,549	961	503	44	10,057	--	--	--	--	--	679	10,736
2013[3]	6,629	937	374	124	8,064	--	--	--	--	--	333	8,397
2014[4]	4,039	467	72	65	4,643	--	--	--	--	--	171	4,814
2015[4]	9,083	1,262	3,118	204	13,667	--	--	--	--	--	681	14,348

1. *No winter, spring, or summer seasons occurred in Tongue Point/South Channel from 2004–2007. Volunteer test fishing in mid-April 2008 resulted in a full-fleet experimental fishery beginning in late April and continuing through the remainder of the spring season. Abbreviated full-fleet experimental fisheries occurred in late April 2009 and in late April–early June 2010-2013 following test fishing activities. Spring fisheries were reinstated beginning in 2014.*
2. *From 1998–2007 annual estimates of recreational harvest were made starting when effort was first observed in a particular site. In 2008–2009 resources were not available to formally estimate recreational harvest so estimates are based on anecdotal sources.*
3. *Recreational estimate based on available punch card data.*
4. *Recreational harvest estimate is preliminary, will be updated when punch card data is available.*

Table 7. Estimated Numbers of Adult Upriver Spring Chinook Entering the Columbia River.

Return Year	Upriver Run[3]	Harvest Impact Downstream of Bonneville Dam (Zones 1-5)					BON Dam Count	Harvest Impact Bonneville Dam upstream to McNary Dam (Zone 6)					Escapement	
		Non-Indian (NI) Catch[1]				Grand Total		Treaty Catch2						
		Comm.	Sport	Misc.[4]	Treaty			NT Sport	Winter Gillnet	Comm. Gillnet	C&S & Platform	Zone 6 Total	Total[5]	%Run
80-84	*63,521*	*951*	*320*	*182*		*1,452*	*62,069*	*0*	*1,008*	*0*	*2,306*	*3,313*	*58,756*	*92%*
85-89	*105,481*	*2,308*	*805*	*222*		*3,334*	*102,146*	*0*	*208*	*0*	*5,991*	*6,199*	*95,947*	*91%*
90-94	*81,989*	*779*	*1,332*	*178*		*2,289*	*79,700*	*0*	*13*	*0*	*4,991*	*5,004*	*74,696*	*91%*
1995	12,792	0	9	2		11	12,781	0	13	0	620	633	12,148	95%
1996	55,552	5	10	41		56	55,496	0	0	0	2,911	2,911	52,585	95%
1997	124,321	9	16	44		69	124,252	0	14	0	8,309	8,323	115,929	93%
1998	44,308	0	14	27		41	44,267	0	1	0	2,224	2,225	42,042	95%
1999	43,067	2	16	26		44	43,023	0	1	0	1,983	1,984	41,039	95%
2000	186,715	88	110	177		375	186,340	0	31	1,348	9,973	11,352	174,988	94%
2001	440,336	1,579	22,714	964		25,257	415,079	168	160	43,630	10,985	54,943	360,137	82%
2002	335,214	9,507	16,245	667		26,419	308,795	1,716	48	24,209	9,208	35,181	273,614	82%
2003	242,605	2,758	9,581	765		13,104	229,501	1,860	857	8,348	9,090	20,155	209,346	86%
2004	221,675	5,989	17,138	251		23,379	198,296	1,596	2	8,368	9,114	19,080	179,196	81%
2005	106,900	2,247	7,224	42		9,513	97,387	464	1	0	6,163	6,628	90,836	85%
2006	132,583	2,106	4,187	133		6,425	126,158	1,362	0	0	8,401	9,763	116,513	88%
2007	86,247	1,436	3,927	54		5,418	80,829	1,445	3	0	5,624	7,072	73,835	86%
2008	178,629	5,907	19,612	385	830	26,734	151,895	2,068	0	12,314	8,247	22,629	129,119	72%
2009	169,296	4,172	15,246	371	2,018	21,807	147,489	644	0	0	11,083	11,727	135,689	80%
2010	315,345	7,458	23,535	1,824	5,139	37,956	277,389	3,692	0	25,008	12,807	41,507	235,644	75%
2011	221,158	3,410	9,506	520	2,291	15,727	205,431	2,564	7	0	13,235	15,806	189,810	86%
2012	203,090	4,269	10,422	552	1,399	16,642	186,448	1,282	2	818	15,482	17,584	169,260	83%
2013	123,136	1,497	5,343	355	3,007	10,202	112,934	1,109	0	0	6,275	7,384	106,046	86%
2014	242,635	3,364	13,572	734	19	17,689	224,946	2,188	0	13,807	10,877	26,872	198,074	82%
2015	288,994	5,724	15,689	1094	929	23,436	265,558	1,647	7	20,320	9,925	31,899	233,660	81%

1. *Includes kept plus release mortalities.*
2. *Ceremonial and subsistence includes catch by gillnet, dipnet, and hook-and-line since 1982.*
3. *Run sizes adjusted to reflect the counting period from January 1- June 15. Run includes upriver spring Chinook and Snake River summer Chinook.*
4. *Includes Select Area, shad, test, experimental fisheries and research.*
5. *Bonneville count minus Zone 6 harvest.*

Table 8. Estimated Numbers of Adult Upper Columbia Wild Spring Chinook Entering the Columbia River.

	Return to Columbia River		Non-Indian Wild Catch[1]		Treaty Wild Catch[2]		Total Wild Catch		Wild Passage Loss[3]		Wild Escapement[4]	
Year	Total	Wild	No.	% of Run	No.	% of Run	No.	% of Run	No.	% of Run	No.	% of Run
1980	16,946	7,128	12	0.2	229	3.2	241	3.4	4,114	57.7	2,772	38.9
1981	14,140	6,044	82	1.4	305	5.0	387	6.4	2,405	39.8	3,253	53.8
1982	15,850	6,314	110	1.7	434	6.9	544	8.6	2,756	43.6	3,015	47.8
1983	16,160	7,292	350	4.8	293	4.0	643	8.8	2,362	32.4	4,286	58.8
1984	16,776	6,706	230	3.4	445	6.6	675	10.1	1,422	21.2	4,608	68.7
1985	28,948	10,290	371	3.6	350	3.4	721	7.0	628	6.1	8,941	86.9
1986	29,404	7,903	161	2.0	458	5.8	619	7.8	1,764	22.3	5,519	69.8
1987	25,485	8,777	135	1.5	530	6.0	665	7.6	1,760	20.1	6,352	72.4
1988	21,043	7,503	479	6.4	496	6.6	975	13.0	870	11.6	5,658	75.4
1989	18,681	7,455	176	2.4	557	7.5	733	9.8	2,591	34.8	4,130	55.4
1990	12,013	4,437	223	5.0	291	6.6	514	11.6	1,115	25.1	2,808	63.3
1991	8,665	2,437	96	3.9	146	6.0	242	9.9	662	27.2	1,533	62.9
1992	20,722	4,261	69	1.6	256	6.0	325	7.6	773	18.1	3,163	74.2
1993	25,998	4,050	33	0.8	246	6.1	279	6.9	669	16.5	3,102	76.6
1994	3,421	1,044	41	3.9	50	4.8	91	8.7	342	32.8	611	58.5
1995	1,645	224	0	0.0	11	4.9	11	4.9	105	46.9	108	48.2
1996	3,427	575	1	0.2	30	5.2	31	5.4	228	39.7	317	55.1
1997	9,673	1,222	1	0.1	82	6.7	83	6.8	393	32.2	746	61.0
1998	4,495	547	1	0.2	27	4.9	28	5.1	152	27.8	367	67.1
1999	4,663	401	0	0.0	18	4.5	18	4.5	97	24.2	284	70.8
2000	22,443	1,367	3	0.2	83	6.1	86	6.3	377	27.6	904	66.1
2001	51,679	6,256	81	1.3	817	13.1	898	14.4	552	8.8	4,807	76.8
2002	36,740	2,992	52	1.7	319	10.7	371	12.4	664	22.2	1,957	65.4
2003	23,470	2,198	33	1.5	173	7.9	206	9.4	411	18.7	1,581	71.9
2004	15,352	2,308	47	2.0	200	8.7	247	10.7	420	18.2	1,641	71.1
2005	16,062	2,806	46	1.6	175	6.2	221	7.9	505	18.0	2,080	74.1
2006	15,131	1,463	22	1.5	96	6.6	118	8.1	413	28.2	933	63.8
2007	6,414	458	6	1.3	32	7.0	38	8.3	22	4.8	398	86.9
2008	15,347	829	18	2.2	113	13.6	131	15.8	23	2.8	675	81.4
2009	12,481	1,086	17	1.6	93	8.6	110	10.1				
2010	37,189	3,102	57	1.8	459	14.8	516	16.6	109	3.5	2,476	79.8
2011	15,941	2,639	36	1.4	194	7.4	230	8.7	242	9.2	2,167	82.1
2012	25,685	5,690	71	1.2	528	9.3	599	10.5	854	15.0	4,238	74.5
2013	18,282	3,449	47	1.4	273	7.9	320	9.3	624	18.1	2,553	74.0
2014	32,807	6,234	91	1.5	642	10.3	733	11.8	996	16.0	4,203	67.4
2015	37,476	7,306	104	1.4	660	9.0	764	10.5	115	1.6	4,872	66.7

1. *Includes incidental release mortalities in mainstem recreational and commercial fisheries. Includes Wanapum tribal harvest.*
2. *Since 1982 C&S catch includes gill net, dip net and hook and line. Includes harvest downstream of BON from C&S fishery.*
3. *Bonneville Dam through McNary Dam: calculated by Zone 6 escapement minus Rock Island Dam passage.*
4. *Estimated Rock Island Dam passage.*

Table 9. Estimated Numbers of Adult Snake River Wild Spring/Summer Chinook Entering the Columbia River.

	Return to Columbia River		Non-Indian Wild Catch[1]		Treaty Wild Catch[2]		Total Wild Catch		Wild Passage Loss[3]		Wild Escapement[4]	
Year	Total	Wild	No.	% of Run	No.	% of Run	No.	% of Run	No.	% of Run	No.	% of Run
1980	27,323	20,968	35	0.2	674	3.2	709	3.4	13,604	64.9	6,134	29.3
1981	35,147	24,753	336	1.4	1,248	5.0	1,584	6.4	11,004	44.5	11,318	45.7
1982	39,908	27,601	479	1.7	1,897	6.9	2,376	8.6	13,400	48.5	11,307	41.0
1983	28,099	20,936	1,004	4.8	842	4.0	1,846	8.8	8,664	41.4	9,845	47.0
1984	20,971	14,119	485	3.4	937	6.6	1,422	10.1	4,427	31.4	7,929	56.2
1985	40,694	14,865	536	3.6	505	3.4	1,041	7.0	2,547	17.1	10,682	71.9
1986	64,510	20,085	409	2.0	1,164	5.8	1,573	7.8	6,517	32.4	11,359	56.6
1987	52,284	15,870	244	1.5	958	6.0	1,202	7.6	3,948	24.9	10,140	63.9
1988	54,076	17,368	1,108	6.4	1,148	6.6	2,256	13.0	3,536	20.4	11,182	64.4
1989	35,477	14,707	348	2.4	1,099	7.5	1,447	9.8	6,424	43.7	6,499	44.2
1990	41,304	17,582	882	5.0	1,152	6.6	2,034	11.6	5,689	32.4	9,357	53.2
1991	23,665	13,106	516	3.9	788	6.0	1,304	9.9	5,785	44.1	5,756	43.9
1992	39,679	20,657	334	1.6	1,243	6.0	1,577	7.6	5,989	29.0	12,677	61.4
1993	41,149	17,911	147	0.8	1,089	6.1	1,236	6.9	3,829	21.4	12,531	70.0
1994	7,713	3,721	146	3.9	179	4.8	325	8.7	1,444	38.8	1,856	49.9
1995	5,262	3,395	3	0.1	168	4.9	171	5.0	2,039	60.1	1,167	34.4
1996	16,799	9,062	9	0.1	475	5.2	484	5.3	4,772	52.7	3,643	40.2
1997	82,849	9,236	5	0.1	618	6.7	623	6.7	3,606	39.0	4,847	52.5
1998	26,714	13,722	13	0.1	689	5.0	702	5.1	5,656	41.2	7,280	53.1
1999	13,034	5,525	6	0.1	255	4.6	261	4.7	2,409	43.6	2,853	51.6
2000	64,185	13,921	27	0.2	846	6.1	873	6.3	4,791	34.4	8,187	58.8
2001	260,403	63,195	815	1.3	8,255	13.1	9,070	14.4	8,939	14.1	44,572	70.5
2002	170,976	52,202	915	1.8	5,563	10.7	6,478	12.4	15,237	29.2	29,872	57.2
2003	137,703	50,645	769	1.5	3,976	7.9	4,745	9.4	13,130	25.9	32,080	63.3
2004	125,912	33,102	677	2.0	2,862	8.6	3,539	10.7	7,936	24.0	20,967	63.3
2005	49,741	15,146	250	1.7	943	6.2	1,193	7.9	3,765	24.9	9,832	64.9
2006	53,304	16,831	249	1.5	1,106	6.6	1,355	8.1	5,842	34.7	9,340	55.5
2007	44,913	10,351	137	1.3	713	6.9	850	8.2	2,242	21.7	6,903	66.7
2008	100,557	23,939	508	2.1	3,270	13.7	3,778	15.8	2,271	9.5	17,171	71.7
2009	89,184	20,242	325	1.6	1,740	8.6	2,065	10.2	3,136	15.5	14,313	70.7
2010	165,899	34,797	637	1.8	5,155	14.8	5,792	16.6	1,927	5.5	25,211	72.5
2011	123,014	30,519	414	1.4	2,243	7.3	2,657	8.7	2,950	9.7	23,844	78.1
2012	115,672	35,760	445	1.2	3,318	9.3	3,763	10.5	6,074	17.0	24,828	69.4
2013	68,403	22,307	299	1.3	1,744	7.8	2,043	9.2	5,479	24.6	13,916	62.4
2014	136,510	45,562	697	1.5	4,929	10.8	5,626	12.3	7,348	16.1	31,208	68.5
2015	162,745	29,967	541	1.8	3,438	11.5	3,979	13.3	3,182	10.6	21,910	73.1

1. *Includes incidental mortalities in mainstem recreational and commercial fisheries and Snake River recreational fisheries.*
2. *Since 1982 C&S catch includes gill net, dip net and hook-and-line. Includes harvest downstream of BON from C&S fishery.*
3. *Bonneville Dam to Lower Granite Dam: calculated by Zone 6 escapement - (Snake River Recreational + Tucannon River escapement + Lower Granite Dam escapement).*
4. *Lower Granite Dam passage plus Tucannon River escapement.*

Table 10. Estimated Numbers of Adult Upper Columbia Summer Chinook Entering the Columbia River.

		Zones 1-5: Catch downstream of Bonneville Dam (BON)				BON	Zone 6 Catch BON-McNary (MCN)			MCN to Priest Rapids Dam (PRD)	Wanapum Tribal	PRD to Grand Coulee Dam	Colville Tribal
	Upriver	Non-Treaty (NT)				Dam	NT	Treaty	Zone 6				
Year	Run[1]	Sport	Comm.	Misc[2]	Treaty	Count	Sport	Catch [3]	Escapement[4]	Sport	(< PRD)	Sport	(>PRD)
80-84	*17,505*	*0*		*51*		*17,453*		*919*	*16,535*		0		
85-89	*20,982*	*9*		*75*		*20,900*		*1,170*	*19,730*		0		
90-94	*14,251*	*13*		*33*		*14,206*		*165*	*14,041*		0		
1995	12,455	14		0		12,441	0	417	12,024		0		
1996	12,080	34		15		12,031	0	374	11,657		0		
1997	17,709	16		6		17,687	0	270	17,417		0		
1998	15,536	27		1		15,508	0	335	15,173		0		
1999	21,867	51		1		21,815	0	395	21,420		0		
2000	22,595	17		0		22,578	0	209	22,369		39	1,092	442
2001	52,960	64		1		52,895	0	692	52,203		82	4,380	2,346
2002	89,524	1,447		8		88,069	113	2,093	85,863	36	197	4,535	2,720
2003	83,058	1,945		36		81,077	415	4,297	76,365	40	223	5,187	2,178
2004	65,623	1,246	219	3		64,155	260	8,394	55,501	36	157	5,849	1,874
2005	60,272	1,621	2,787	0		55,864	423	7,642	47,799	2	338	2,192	894
2006	77,573	4,926	4,819	9		67,819	276	16,319	51,224	19	216	3,864	1,340
2007	37,035	2,214	1,122	0		33,699	136	5,375	28,188	12	294	3,900	1,070
2008	55,532	2,140	1,370	59		51,963	942	9,029	41,992	55	188	2,597	1,861
2009	53,881	2,341	2,524	22	0	48,994	175	11,650	37,169	90	185	2,458	1,190
2010	72,346	2,738	4,720	20	230	64,638	435	15,569	48,634	451	48	2,481	3,524
2011	80,574	5,576	5,004	0	0	69,994	303	20,645	49,046	86	55	5,546	1,208
2012	58,300	3,281	1,692	23	0	53,304	231	7,824	45,249	65	23	3,980	3,400
2013	67,603	2,058	1,954	33	50	63,508	173	13,347	49,988	148	240	2,899	3,452
2014	78,254	2,385	2,743	45	210	72,871	308	19,179	53,384	146	150	2,875	3,574
2015	126,777	6,152	3,938	105	30	116,657	609	37,733	78,315	177	284	4,823	10,410

1. *Includes only upper Columbia summer Chinook and reflects new summer management period of Jun 16-Jul 31. All data has been adjusted. Adjustments may result in data being inconsistent with data found elsewhere in this document. Non-Indian catch includes incidental release mortalities.*
2. *Includes incidental non-retention mortality in commercial test, research, shad, and sockeye fisheries, and harvest in SAFE fisheries.*
3. *Includes commercial and C&S catches.*
4. *Bonneville counts minus Zone 6 harvest.*

Table 11. Winter Steelhead Harvest and Incidental Release Mortalities in Mainstem Columbia River Non-Indian Fisheries [1].

	Wild	Winter Steelhead			Winter Steelhead		Winter Steelhead		Wild Winter	
	Col R	Comm.[2]	Recreational Downstream of BONN[3]		Recreational Bonneville Pool[4]		Total		Impact Rate[5]	
Year	Return	Released Wild	Kept Hatchery	Released Wild	Kept Hatchery	Released Wild	Kept Hatchery	Released Wild	Actual	Allowed
2000-01	21,825	100	1,772	56	397	6	2,169	162	0.7%	2.0%
2001-02	33,711	3,095	2,073	92	497	6	2,570	3,192	9.5%	2.0%
2002-03	23,452	217	1,309	64	292	5	1,601	285	1.2%	2.0%
2003-04	29,566	238	1,620	69	164	4	1,784	311	1.1%	2.0%
2004-05	14,660	65	548	28	168	4	716	96	0.7%	2.0%
2005-06	16,709	15	639	39	190	5	829	59	0.4%	2.0%
2006-07	15,072	75	817	38	306	16	1,123	128	0.9%	2.0%
2007-08	13,943	9	562	23	167	11	729	43	0.3%	2.0%
2008-09	11,575	4	664	21	202	10	866	34	0.3%	2.0%
2009-10	20,035	89	1,274	49	200	10	1,474	148	0.7%	2.0%
2010-11	16,752	23	1,236	84	144	9	1,380	116	0.7%	2.0%
2011-12	17,332	70	1,771	63	188	12	1,959	145	0.8%	2.0%
2012-13	15,655	27	433	20	112	7	545	54	0.3%	2.0%
2013-14	14,928	58	463	41	84	7	547	106	0.7%	2.0%
2014-15	20,117	52	560	65	98	7	658	124	0.6%	2.0%

1. *All harvest data is expressed as mortalities. Data since 2013 is preliminary and all data is subject to change.*
2. *Estimated wild steelhead incidental release mortalities from Winter/Spring commercial fisheries based on observation data.*
3. *Estimated from fisheries occurring from November- April. Kept catch based on catch record card data or creel when available.*
4. *Based on catch record card data. Winter steelhead upper range extends into Bonneville Pool. Estimated 6% of the harvest from BONN- Hwy 395 occurs in Bonneville Pool (which would be considered winter stock). Total BON-H395 catch from November- March is multiplied by 6% to estimate winter steelhead catch.*
5. *Wild harvest rate based Columbia River wild winter steelhead return.*

Table 12. Winter/Spring Season Summer Steelhead Harvest and Incidental Release Mortalities in Mainstem Columbia River Non-Indian Fisheries since 1999 [1].

	Below Bonneville Dam *(May & June)*				**BON - Hwy 395** *(Nov-Jun)*		**Total Winter/Spring Season**							
	Commercial[2]		Recreational[3]		Recreational[4]		**Mortalities**				**Impacts**			
	Hatchery	Rel. Wild	Hatchery	Rel. Wild	Hatchery	Rel. Wild	Hatchery		Wild		Hatchery		Wild	
Year	L.Ska	L. Ska	L. Ska	L. Ska	Group A	Group A	L-Ska	Group A	L-Ska	Group A	L-Ska	Group A	L-Ska	Group A
1999	0	0	1,282	20	2,121	34	1,282	2,121	20	34	4.9%	1.8%	0.5%	0.1%
2000	0	0	1,619	38	2,226	99	1,619	2,226	38	99	4.4%	1.5%	0.4%	0.2%
2001	0	0	1,966	61	6,764	105	1,966	6,764	61	105	2.7%	1.8%	0.3%	0.1%
2002	0	0	4,404	61	8,733	121	4,404	8,733	61	121	3.8%	3.7%	0.4%	0.1%
2003	0	0	2,691	59	4,973	81	2,691	4,973	59	81	3.5%	2.1%	0.4%	0.1%
2004	4	1	2,954	51	2,829	65	2,958	2,829	52	65	2.6%	1.5%	0.3%	0.1%
2005	40	10	2,055	45	2,910	66	2,095	2,910	55	66	3.5%	1.5%	0.3%	0.1%
2006	57	4	3,021	24	3,312	90	3,078	3,312	28	90	3.9%	1.8%	0.4%	0.1%
2007	20	3	2,695	34	5,265	266	2,715	5,265	37	266	6.4%	2.9%	0.6%	0.3%
2008	25	6	2,035	53	3,034	191	2,060	3,034	59	191	3.1%	1.8%	0.3%	0.2%
2009	54	18	1,381	47	3,480	164	1,435	3,480	65	164	2.5%	0.9%	0.2%	0.1%
2010	112	32	4,220	108	3,565	181	4,332	3,565	140	181	5.2%	1.9%	0.5%	0.2%
2011	135	43	3,681	90	2,489	160	3,816	2,489	133	160	6.3%	1.1%	0.6%	0.2%
2012	45	7	4,049	57	3,248	205	4,094	3,248	63	205	5.9%	2.4%	0.6%	0.4%
2013	53	19	2,391	47	2,139	131	2,444	2,139	65	131	5.4%	1.7%	0.5%	0.1%
2014	34	31	3,816	109	2,660	168	3,850	2,660	140	168	5.2%	1.8%	0.5%	0.2%
2015	28	80	1,608	64	NA	NA	1,636	NA	143	NA	3.4%	NA	0.3%	NA

1. *All fish reported as mortalities. Steelhead handled below Bonneville Dam during May and June are considered lower Skamania (L.Ska) stock. Steelhead handled above Bonneville Dam during April through June are considered Group A steelhead, although some are likely upper Skamania stock. Includes summer steelhead mortalities from January through June and November through December. Covers the area from Buoy 10 upstream to the Highway 395 Bridge near Pasco Washington. Data since 2013 is preliminary and all data is subject to change.*
2. *Incidental release mortalities in commercial fisheries.*
3. *Recreational kept based on creel in the area below Bonneville Dam.*
4. *Kept data based on catch record cards. Wild fish based on ad-clip rate at Bonneville Dam. Includes some winter steelhead from Bonneville pool. Summer Steelhead catch considered Group A stock only. Future work will include assigning (removing) some of the Nov-Dec catch in this area to the Fall Season, which will include both Group A and Group B steelhead.*

Table 13. Summer Season Summer Steelhead Harvest and Incidental Release Mortalities in Mainstem Columbia River Non-Indian Fisheries in July, since 1999[1].

	Below Bonneville Dam								Bonneville Dam - Hwy 395		Total Summer Season							
	Commercial[2]				Recreational				Recreational[3]		Mortalities				Impacts			
	Hatchery		Rel. Wild		Hatchery		Rel. Wild		Hatchery	Rel. Wild	Hatchery		Wild		Hatchery		Wild	
Year	Group A	Group B	Group A	Group B	Group A	Group B	Group A	Group B	Group A	Group A	Group A	Group B	Group A	Group B	Group A	Group B	Group A	Group B
1999	0	0	0	0	1,729	33	129	3	188	15	1,918	33	144	3	1.60%	0.18%	0.25%	0.09%
2000	0	0	0	0	3,112	53	242	4	482	34	3,593	53	276	4	2.35%	0.16%	0.43%	0.05%
2001	0	0	0	0	4,339	73	416	9	711	45	5,050	73	461	9	1.34%	0.10%	0.34%	0.07%
2002	0	0	0	0	3,785	150	230	15	338	21	4,123	150	250	15	1.75%	0.15%	0.29%	0.05%
2003	0	0	0	0	2,695	0	169	2	352	21	3,047	0	189	2	1.28%	0.00%	0.28%	0.02%
2004	2	0	1	0	3,267	41	183	0	345	17	3,614	41	201	0	1.89%	0.14%	0.33%	0.00%
2005	22	0	12	0	2,700	0	167	0	318	17	3,040	0	196	0	1.58%	0.00%	0.33%	0.00%
2006	55	1	26	1	2,749	58	137	6	257	12	3,060	60	174	7	1.69%	0.09%	0.27%	0.09%
2007	7	0	3	0	3,127	82	190	6	360	17	3,494	83	210	6	1.92%	0.20%	0.27%	0.07%
2008	10	0	7	0	4,362	115	370	14	923	63	5,295	115	439	14	3.23%	0.15%	0.54%	0.08%
2009	0	0	0	0	8,010	211	767	6	709	56	8,719	211	822	6	2.24%	0.69%	0.53%	0.04%
2010	0	0	0	0	7,863	207	690	19	1,265	119	9,127	207	809	19	4.97%	0.38%	0.67%	0.08%
2011	0	0	0	0	8,329	220	721	13	544	30	8,873	220	751	13	4.09%	0.75%	0.74%	0.17%
2012	0	0	0	0	10,040	265	994	15	438	29	10,479	265	1,023	15	7.67%	1.27%	1.84%	0.23%
2013	3	0	4	0	4,111	108	571	0	276	34	4,390	108	609	0	3.55%	1.26%	0.67%	0.00%
2014	19	0	21	0	5,119	135	575	4	396	45	5,534	135	641	5	3.67%	0.40%	0.59%	0.03%

1. From fisheries occurring July 1- 31. All steelhead handled in July below Bonneville Dam are considered Group A or Group B upriver summer steelhead. Steelhead handled upstream of Bonneville Dam in July are currently assumed to be Group A only, given the relatively small number of steelhead handled and the majority of fish passing Bonneville Dam in July are Group A fish. Future work may assign some of the handle to Group B stock. Stock composition downstream of Bonneville Dam based on creel or Bonneville Dam sampling. Stock composition upstream of Bonneville Dam based on sampling data collected at Bonneville Dam. All wild steelhead are expressed as mortalities. Data since 2013 is preliminary and all data is subject to change.
2. Reflects incidental release mortalities (hatchery and wild).
3. Includes Dip-In mortalities. Kept data based on catch record cards. Wild fish based on sampling or observations at Bonneville Dam.

Table 14. Upriver Summer Steelhead Passage at Bonneville Dam (April-October), 1984-2015.

	Skamania		Group A Index		Group B Index		Total Passage		
Year	Wild	Total	Wild	Total	Wild	Total	Wild	Hatchery	Total
1984	2,490	20,780	52,447	195,751	13,768	98,011	68,705	245,837	314,542
1985	3,690	19,990	51,922	281,504	12,986	40,870	68,598	273,766	342,364
1986	5,520	24,830	56,570	287,508	9,984	64,016	72,074	304,279	376,353
1987	7,380	17,790	106,690	238,283	13,990	44,959	128,060	172,972	301,032
1988	4,180	22,360	64,331	173,151	17,742	81,643	86,253	190,901	277,154
1989	3,770	15,730	57,513	193,079	12,367	77,604	73,650	212,763	286,413
1990	3,690	18,710	27,102	115,628	8,811	47,174	39,603	141,909	181,512
1991	1,220	10,880	60,264	234,048	6,207	28,265	67,692	205,501	273,193
1992	2,940	14,910	44,294	241,524	12,715	57,438	59,948	253,924	313,872
1993	1,250	14,360	28,650	136,701	4,378	36,169	34,278	152,952	187,230
1994	1,380	12,330	21,212	120,971	5,152	27,463	27,744	133,020	160,764
1995	1,150	8,220	25,997	180,037	1,847	13,221	28,994	172,484	201,478
1996	1,310	10,830	25,721	174,464	3,912	18,693	30,943	173,044	203,987
1997	930	11,890	30,852	208,209	3,913	36,663	35,695	221,067	256,762
1998	1,610	9,440	34,836	134,687	3,415	40,241	39,861	144,507	184,368
1999	1,310	7,160	56,626	176,466	3,740	22,137	61,676	144,087	205,763
2000	5,728	16,619	63,628	216,723	8,368	40,909	77,724	196,527	274,251
2001	7,952	28,725	137,230	515,079	12,047	86,426	157,229	473,001	630,230
2002	9,671	24,991	87,276	323,124	32,333	129,882	129,280	348,717	477,997
2003	1,801	14,154	67,049	305,795	6,417	37,228	75,268	281,909	357,177
2004	3,289	20,148	60,421	250,615	9,202	37,398	72,912	235,248	308,161
2005	2,123	11,221	58,917	251,631	9,619	48,968	70,659	241,161	311,820
2006	2,181	9,882	63,735	245,168	8,466	74,128	74,382	254,796	329,178
2007	1,727	9,475	77,268	258,848	9,015	51,073	88,010	231,386	319,396
2008	4,489	15,832	81,648	245,823	18,529	93,429	104,666	250,418	355,084
2009	3,528	13,884	154,045	543,195	13,727	44,540	171,300	430,319	601,619
2010	10,357	29,270	120,531	304,002	22,364	77,146	153,252	257,166	410,418
2011	2,814	9,750	101,263	318,125	7,771	36,996	111,848	253,023	364,871
2012	3,023	10,958	55,464	192,134	6,813	27,723	65,300	165,515	230,815
2013	1,661	5,738	90,496	214,075	2,907	11,511	95,064	136,260	231,324
2014	4,783	13,526	109,279	260,130	13,341	47,057	127,403	193,310	320,713
2015	3,664	8,131		NA		NA			261,361

Table 15. Summer Steelhead Counts at Lower Granite Dam 1984-2015.							
Run	Group A Index		Group B Index		Total Passage		
Year[1]	Wild	Total	Wild	Total	Hatchery	Wild	Total
1984-85					79,900	24,500	104,400
1985-86					89,600	26,700	116,300
1986-87	16,613	87,513	5,463	42,432	107,869	22,076	129,945
1987-88	20,164	52,582	5,347	18,820	45,891	25,511	71,402
1988-89	15,700	60,443	4,614	26,620	66,749	20,314	87,063
1989-90	16,937	83,440	8,042	47,908	106,369	24,979	131,348
1990-91	4,806	30,383	4,483	26,498	47,592	9,289	56,881
1991-92	14,135	84,020	3,182	15,065	81,768	17,317	99,085
1992-93	13,617	97,037	5,777	31,343	108,986	19,394	128,380
1993-94	7,332	41,989	1,790	17,685	50,552	9,122	59,674
1994-95	5,873	37,829	2,231	9,409	39,134	8,104	47,238
1995-96	6,721	69,494	1,334	9,651	71,090	8,055	79,145
1996-97	5,980	73,055	1,645	13,856	79,286	7,625	86,911
1997-98	7,424	74,443	1,325	12,203	77,897	8,749	86,646
1998-99	7,074	50,906	2,301	19,756	61,287	9,375	70,662
1999-00	10,184	64,303	914	9,748	62,953	11,098	74,051
2000-01	17,689	97,288	2,886	20,014	96,727	20,575	117,302
2001-02	37,545	234,615	3,174	33,851	227,747	40,719	268,466
2002-03	28,308	150,577	13,623	71,599	180,245	41,931	222,176
2003-04	21,892	140,066	7,254	32,444	143,364	29,146	172,510
2004-05	18,297	121,688	4,774	29,958	128,575	23,071	151,646
2005-06	14,586	125,133	3,544	33,032	140,035	18,130	158,165
2006-07	7,877	108,321	1,633	40,845	139,656	9,510	149,166
2007-08	11,242	128,259	2,924	26,883	140,976	14,166	155,142
2008-09	18,217	125,500	5,659	53,370	154,994	23,876	178,870
2009-10	38,210	299,598	4,529	23,784	280,643	42,739	323,382
2010-11	34,549	163,020	9,584	45,276	164,163	44,133	208,296
2011-12	35,241	156,208	4,198	24,112	140,881	39,439	180,320
2012-13	19,806	88,184	3,337	21,002	86,043	23,143	109,186
2013-14	23,469	99,129	1,886	9,025	82,799	25,355	108,154
2014-15	39,602	133,632	8,879	31,959	117,110	48,481	165,591
2015-16	29,979	118,079	3,694	12,403	96,809	33,673	130,482

1. *Run year = July 1 through June 30 of following year. 2015-16counts are only through December 2015.*

Table 16. Minimum Numbers (in Thousands) of Lower River Summer Steelhead Entering the Columbia River.

Year	Lower Col. Recreational Catch (May-June)[1]	Tributary Recreational Catch[2] OR	Tributary Recreational Catch[2] WA	Dam Counts[3]	Hatchery Returns[4] OR	Hatchery Returns[4] WA	Minimum Run
1980-84	1.5	3.5	15.6	23.0	0.2	4.8	48.4
1985	1.8	3.9	15.9	32.3	0.2	3	57.1
1986	3	4.4	26.9	53.3		2.3	89.9
1987	1.6	4.2	17.4	33.6		1.6	58.4
1988	2.7	7	14.2	50.7		3.3	77.9
1989	1.7	3.5	12.6	13.4		3.8	35 0
1990	2.2	5.1	17.2	31.8		5.6	61.9
1991	1.2	3	15	10.4		2.2	31.8
1992	1.2	3	17.6	23.1		3.1	48
1993	1.8	3.2	20	17.3		4.7	47
1994	1.2	2.1	23	15.4		5.6	47.3
1995	1.4	1.5	13	15.1	0.1	7.8	38.9
1996	1.2	1	15.1	7.8	0.2	9.9	35.2
1997	1.9	1.4	6	17.5	0.1	3.7	30.6
1998	1.2	1.4	5	15.3		5.4	28.3
1999	1.3	1.5	6.3	12.4		4.6	26.1
2000	1.6	1.7	10.2	13.1	0.4	9.6	36.6
2001	2	3.1	19.7	28.4	1.9	16.4	71.5
2002	4.4	6	33.3	35.2	2.8	33.8	115.5
2003	2.7	2.7	26.1	17.5	4.5	23	76.5
2004	3	5.6	42.4	36.4	2.4	23.1	112.9
2005	2.1	2	15.3	14.6	4.1	18.8	56.9
2006	3	4.3	29.5	17	1.3	24.8	79.9
2007	2.7	3.5	12.4	13.1	1.2	9.2	42.4
2008	2	4.2	22.6	13.9	0.9	20.6	65.3
2009	1.4	3.6	18.1	14.2	0.7	19.1	57.8
2010	4.2	3.5	23.5	24	1.0	26.3	81.6
2011	4.4	2.7	17.5	20.5	0.6	17.1	62.8
2012	4	4.8	17.3	24.1	1.2	18.5	69.9
2013	2.4	3.2	9.5	13.6	1.6	7	37.3
2014	3.8	3.6	25.3	22	1.1	24	79.8
2015	1.7	3.6	17.4	4.3	0.2	21.3	48.5

1. *Does not include release mortalities. Beginning in 1977, May-June lower Columbia recreational catch determined to be mostly lower river stock.*
2. *From Oregon and Washington catch record estimates. 2014-15 OR estimates based on previous 3-year average.*
3. *Willamette Falls (Willamette R.), North Fork Dam (Clackamas R.), and Marmot Dam through 2007only (Sandy R); hatchery fish only.*
4. *Washington - Skamania, Lewis River, and Cowlitz hatcheries and beginning in 1998 Kalama River hatcheries. Oregon – Sandy (1999 onward) and Clackamas (1984-1987 and 1995 onward) hatcheries.*

Table 17. Minimum Numbers (in Thousands) of Upriver Summer Steelhead Entering the Columbia River.			
Year	Lower Columbia Recreational Catch[1]	Bonneville Dam Counts[2]	Minimum Run
1980	2.0	127.6	129.6
1981	3.1	157.9	161.0
1982	2.5	156.2	158.7
1983	2.9	217.6	220.5
1984	5.4	314.5	320.0
1985	6.0	342.4	348.4
1986	8.0	376.4	384.4
1987	4.9	301.0	305.9
1988	7.7	277.2	284.9
1989	6.4	286.4	292.8
1990	4.0	181.5	185.5
1991	6.0	273.2	279.2
1992	9.7	313.9	323.6
1993	8.1	187.2	195.3
1994	4.0	160.8	164.7
1995	6.8	201.5	208.3
1996	5.1	204.0	209.1
1997	5.2	256.8	261.9
1998	3.6	184.4	188.0
1999	5.8	205.8	211.6
2000	8.2	274.3	282.5
2001	9.4	630.2	639.7
2002	7.5	478.0	485.5
2003	6.9	357.2	364.0
2004	5.8	309.0	314.7
2005	5.3	312.5	317.8
2006	7.1	329.2	336.2
2007	8.0	319.4	327.4
2008	7.1	355.1	362.2
2009	7.3	601.6	608.9
2010	14.1	410.4	424.5
2011	20.7	364.9	385.6
2012	16.0	230.8	246.8
2013	12.6	231.3	243.9
2014	11.9	320.7	332.5
2015	7.8	261.4	269.2

1. *Recreational kept catch based on timing: May 1-October 31 (1969-1976) and July 1-October 31 beginning in 1977. Includes catches from Buoy 10 recreational fishery (OR only) beginning in 1992. Does not include release mortalities.*
2. *April through October.*

Table 18. Estimated Number of Sockeye Entering the Columbia River.

Year	Columbia River Mouth[1]	Non-Indian Catch[2]	Bonn. Dam Count	Treaty Catch[3]	Snake River Sockeye				Estimated Spawning Escapement	
					At Col R. Mouth	Non-Indian Catch[2]	Treaty Catch[3]	Lower Granite Esc.[4]	Wenatchee[5]	Okanogan[6]
1980	58,886	4	58,882	636	107	0	1	96	22,751	26,540
1981	56,037	0	56,037	1,507	236	0	6	218	16,490	28,004
1982	50,319	100	50,219	775	257	1	4	211	23,732	18,865
1983	100,628	83	100,545	3,349	241	0	8	216	60,418	27,697
1984	161,886	9,345	152,541	24,616	148	9	23	105	35,802	81,006
1985	200,724	32,213	166,340	49,969	59	10	15	35	49,123	52,945
1986	59,963	1,840	58,123	6,672	24	1	3	20	16,876	34,694
1987	145,546	28,553	116,993	39,560	55	11	15	29	28,753	40,052
1988	99,757	17,632	79,714	30,990	45	8	14	23	15,087	33,953
1989	47,475	36	41,884	2,138	4	0	0	4	21,184	15,952
1990	49,754	173	49,581	2,716	1	0	0	1	34,847	7,588
1991	76,484	3	76,481	3,271	10	0	0	9	34,679	27,464
1992	85,000	8	84,992	2,185	2	0	0	2	26,555	41,926
1993	91,710	64	80,178	5,020	18	0	1	17	37,311	27,829
1994	12,858	1	12,678	472	3	0	0	3	9,296	1,529
1995	9,908	1	8,773	445	5	0	0	5	4,474	4,826
1996	30,939	25	30,255	1,414	3	0	0	3	7,759	17,641
1997	47,470	12	46,927	2,046	18	0	1	17	9,890	25,733
1998	13,220	2	13,218	425	4	0	0	3	3,685	4,649
1999	19,076	1	17,877	704	19	0	1	18	4,260	12,388
2000	93,757	366	93,391	2,910	352	1	11	337	20,979	59,918
2001	120,504	1,691	114,933	7,300	49	1	3	45	35,353	74,490
2002	50,484	24	49,610	2,564	77	0	4	73	31,883	10,659
2003	39,375	0	39,375	1,090	28	0	1	26	5,074	28,774
2004	130,118	682	123,320	4,317	117	1	4	113	26,663	77,453
2005	77,381	4	72,448	2,766	20	0	1	19	15,646	53,011
2006	37,067	1	37,066	1,596	60	0	3	16	9,756	22,052
2007	26,549	0	24,376	1,414	58	0	3	55	4,439	22,202
2008	214,465	978	213,607	9,017	978	4	41	907	27,875	163,964
2009	178,952	1,201	177,823	9,731	1,490	10	81	1,406	27,489	116,834
2010	389,802	483	386,355	26,125	2,565	3	172	2,406	38,543	264,205
2011	187,365	1,872	185,796	12,853	1,800	18	123	1,502	18,634	108,677
2012	521,159	5,504	515,673	45,352	512	5	45	446	35,120	278,803
2013	186,191	725	185,505	8,046	1,137	4	49	757	22,965	119,394
2014	648,367	1,446	614,176	30,991	2,925	6	140	2,786	80,323	441,549
2015	512,455	1,545	510,706	30,095	1,740	5	102	440	51,533	136,645

1. *Upriver run is the larger of Bonn. Count + Zones 1-5 harvest or Priest Rapids count + Snake River count + Zone 1-6 harvest.*
2. *Non-Indian harvest may include kept fish and incidental release mortalities in Zones 1-6, upstream to Highway 395.*
3. *Treaty harvest includes sockeye kept in Zones 1-6, which includes harvest downstream of Bonneville Dam.*
4. *Prior to 1992, Lower Granite Dam sockeye counts may include kokanee. Since 1992 video counts or length measurements are used to identify true sockeye.*
5. *The Wenatchee estimate is based on Rock Island or Priest Rapids Dam counts minus Rocky Reach Dam totals, or Tumwater Dam counts, except Priest Rapids count minus Wells count in 1995. Tributary harvest is subtracted to estimate spawning escapement.*
6. *The Okanogan estimate is based on the Wells Dam counts minus any harvest.*

Table 19. Columbia River American Shad Harvest and Passage (in Thousands), 1980-2015.

	Commercial Catch			Recreational Kept Catch		Treaty	Columbia	
Year	Area 2S	Washougal Reef [1]	Other [2]	Columbia River	Willamette River	Indian Harvest	River Dam Count [3]	
1980	21.9	--	1.3	24.3	15.5	0.2	1,160.8	
1981	15.5	--	6.3	28.7	20.4	0.0	1,089.0	
1982	72.5	--	2.5	33.9	21.7	1.5	1,002.8	
1983	84.9	--	0.1	28.7	36.9	0.3	1,932.0	
1984	14.4	--	3.7	22.3	19.9	3.1	1,275.8	*
1985	33.7	--	1.7	13.7	16.4	0.0	1,389.5	
1986	80.5	7.6	0.1	18.9	5.9	0.7	1,361.9	
1987	103.2	4.1	1.4	14.3	5.1	12.3	1,289.7	
1988	97.4	8.9	2.1	27.5	11.5	19.2	2,008.6	
1989	36.2	15.4	0.0	64.4	18.3	0.1	2,971.0	
1990	161.8	6.0	0.0	113.8	23.1	0.2	3,706.9	
1991	38.8	4.9	0.0	100.6	27.9	<0.1	2,191.1	
1992	130.2	11.1	0.0	88.3	16.3	0.3	2,824.3	
1993	139.2	5.3	0.2	111.4	20.8	1.0	2,394.4	
1994	46.9	10.8	0.0	103.8	33.2	15.3	1,801.5	
1995	54.4 [4]	6.7	0.0	101.4	37.4	49.6	1,959.6	
1996	60.1	1.0	0.0	129.8	66.4	282.8	2,648.6	
1997	20.3	4.6	0.0	98.9	53.0	10.2	2,571.3	
1998	24.4	0.0	0.1	83.4	47.9	24.1	2,149.1	
1999	39.7	0.0	0.0	79.3	42.8	13.8	1,718.7	
2000	30.4	0.0	0.1	58.0	64.4	0.1	1,556.6	
2001	17.0	--	9.2	98.6	58.7	5.6	2,724.9	
2002	37.1	--	0.0	148.2	26.8	14.5	3,218.1	
2003	79.2	--	0.0	115.9	46.5	105.8	4,558.6	*
2004	48.4	--	0.0	123.0	36.5	30.0 [5]	5,472.4	
2005	48.8	0.0	0.0	164.9	42.8	30.0 [5]	6,067.0	
2006	21.1	--	0.0	169.4	31.8	NA	4,611.6	
2007	14.1	--	0.0	118.2	32.4	NA	3,592.0	
2008	12.5	--	0.0	104.4	7.4	NA	2,144.8	*
2009	1.4	--	0.0	81.1	2.7	NA	1,641.4	
2010	2.5	--	0.0	62.4	12.8	NA	1,241.8	
2011	8.9	0.0	7.8	71.3	13.0	NA	948.1	*
2012	0.8	--	28.4	129.7	15.9	NA	2,432.4	*
2013	0.7	--	5.3	194.9	12.5	NA	3,751.4	*
2014	4.8	--	1.2	103.8	12.5	NA	2,603.3	*
2015	0.6	--	0.5	47.3	18.2	NA	1,815.0	*

1. *Washougal Reef landings are included in Area 2S landings until 1986. No seasons have been set in recent history, except for 2005 and 2011 which resulted in no fish landed.*
2. *Includes any landings from experimental gear permits, research, spring Chinook seasons, sockeye seasons, Select Area fisheries, and John Day River shad fisheries.*
3. *The count shown is the greater passage of shad at either Bonneville or The Dalles dams. Due to large numbers of shad passing through the Bonneville locks in most years, The Dalles count was usually higher. Bonneville counts were higher in 1984, 2003, and 2008 and noted (*). Shad counting at The Dalles Dam was discontinued in 2011; counts beginning in 2011 are from Bonneville Dam and also noted (*).*
4. *Limited experimental fishery with three boats.*
   Precise catch estimates not available.

Table 20. Season Dates, Gear Restrictions, and Commercial Landings during Non-Indian Winter (January-March) and spring (April-June 15) Mainstem Seasons, 1975-2015.

Year	Season	Fishing Days	Mesh Size [2]	Commercial Landings [1] Chinook	White Sturgeon
1975-1979 Avg		8	8" min.	7,900	2,100
Range	Feb 26-Mar 11	5-11		4,700-13,500	1,000-2,700
1980-1984 Avg		8	8" min.	6,000	2,300
Range	Feb 16-Mar 11	1-12		400-9,600	900-3,700
1985-1989 Avg		12		13,200	1,500
Range	Jan 25-Mar 11	8-17	8" min. – 9" min.	400-18,300	500-1,700
1990-1994 Avg		13		7,900	1,300
Range	Jan 25-Mar 11	6-20	8" min. – 9" min.	1,500-18,300	700-3,000
1995-1999 Avg		7		<100	1,600
Range	Jan 11-Feb 26	0-13	8" min. – 9" min.	0-100	600-2700
2000-2004 Avg		16	4¼" – 5½" max	7,306	2,287
Range	Jan 7 – Mar 30	7-26	8" min – 9"max	496-14,384	1,517-3,059
2005 [3]	Jan 18-Feb 25	7	9" min.	94	473
	Mar 1-Mar 16	5	9" min.	1,489	58
	Mar 29-April 1	2	4¼" max.	3,606	12
2006 [3]	Jan 10-Feb 22	10	9" min.	39	288
	Feb 23-Mar 15	5	8" min.	994	88
	May 16-Jun 2	6	8" min.	3,356	1,563
2007 [3]	Jan 9-Feb 23	9	9" min.	194	1,424
	Mar 6	1	8" min.	434	19
	Mar 20-23	2	4¼" max.	2,292	15
	Jun 14-15	1	8" min.	30	13
2008 [3]	Jan 8 – Feb 29	11	9" min.	14	869
	Apr 1 – 15	3	4¼" max.	5,658	17
2009 [3]	Jan 6 – Feb 13	8	9" min.	18	1,697
	March 29 – April 14	3	4¼" max.	4,150	21
2005-2009 Avg		15		4,474	1,311
2010 [3]	Jan 19 – Feb 17	5	9" min.	75	518
	Mar 30 – April 7	2	4¼" max.	8,966	28
2011 [3]	Jan 18 – Feb 9	4	9" min.	88	50
	Mar 29 – April 6	2	4¼" max.	2,006	7
	May 12 – 19	2	8" min.	2,430	118
2012 [3]	Jan 30 – Feb 7	3	9" min.	7	40
	Apr 3 – 10	2	4¼" max.	6,111	14
2013 [3]	Jan 1 – Feb 7	3	9" min.	0	15
	Apr 9 – May 15	2	4¼" max.	1,537 [4]	30
	May 22 – 30	2	8" min.	648 [5]	244
2014 [3]	Apr 1 – May 7	2	4¼" max.	2,915 [6]	-- [8]
	May 20 – June 5	3	8" min.	1,085 [7]	-- [8]
2010-2014 Avg		6		5,974 [7]	266
2015 [3]	March 31 – May 13	5	4¼" max.	5,106 [8]	-- [10]
	May 27 – June 11	3	8" min.	2,125 [9]	-- [10]

1. *Sale of steelhead prohibited since 1975. Catches ranged from 2,100 to 8,500 steelhead during 1970-74.*
2. *Since 1997, maximum mesh size of 9¾" unless specified otherwise.*
3. *Catch updated with preliminary fish ticket landings.*
4. *Includes 264 jacks.*
5. *Includes six jacks.*
6. *Includes 465 jacks.*
7. *Includes 21 jacks.*

8. *Includes 756 jacks.*
9. *Includes 15 jacks.*
10. *All Non-Indian commercial fisheries downstream of Bonneville Dam were closed to the retention of white sturgeon during 2014 and 2015 based on Oregon Fish and Wildlife Commission and Washington Fish and Wildlife Commission action/policy.*

Table 21. Fishing Periods, Gear, and Associated Salmon and White Sturgeon Landings (Preliminary) During Mainstem Columbia River Commercial Seasons, 2015.

Prelim / FINAL Landings Information Based on ODFW / WDFW Fish Receiving Tickets (12 / 28 / 15).

Season	Fishing Period	Week	Hours	Zones	Mesh Size	Del.	Chinook	Coho	Sockeye	Pink	Chum [1]	Sturgeon [2]
							ChS Adults	*ChS Jacks*				
	Mar 31, 7 AM - 2 PM	*14*	7	**1 - 5**	≤ 4 1/4"	90	930	3	- -	- -	Prohibited	Prohibited
Spring	Apr 7, 8 AM - 6 PM	*15*	10	**1 - 5**	≤ 4 1/4"	111	753	6	- -	- -	Prohibited	Prohibited
Salmon	May 4, 10 AM - midnight	*19*	14	**1 - 5**	≤ 4 1/4"	95	1225	306	- -	- -	Prohibited	Prohibited
	May 6, 4 PM - May 7, 6 AM	*19*	14	**1 - 5**	≤ 4 1/4"	56	924	286	- -	- -	Prohibited	Prohibited
	May 12, 4 PM - May 13, 6 AM	*20*	14	**1 - 5**	≤ 4 1/4"	43	518	155	- -	- -	Prohibited	Prohibited
	May 27, 7 PM - May 28, 5 AM	*22*	10	**1 - 5**	8" - 9 3/4"	42	549	9	- -	- -	Prohibited	Prohibited
	Jun 2, 7 PM - Jun 3, 5 AM	*23*	10	**1 - 5**	8" - 9 3/4"	49	621	2	- -	- -	Prohibited	Prohibited
	Jun 10, 7 PM - Jun 11, 7 AM	*24*	12	**1 - 5**	8" - 9 3/4"	51	940	4	55	- -	Prohibited	Prohibited
	Spring Season Totals (and average number of deliveries):					**67**	**6,460**	**771**	**55**	**0**	**0**	**0**
							Chinook	Coho				
	Jun 17, 9 PM - Jun 18, 5 AM	*25*	8	**1 - 5**	8" - 9 3/4"	67	2,004	- -	260	- -	Prohibited	Prohibited
Summer	Jul 8, 7 PM - Jul 9, 7 AM	*29*	12	**1 - 5**	8" - 9 3/4"	36	1,131	- -	67	- -	Prohibited	Prohibited
	Jul 21, 7 PM - Jul 22, 7 AM	*31*	12	**1 - 5**	8" - 9 3/4"	32	803	- -	2	- -	Prohibited	Prohibited
	Summer Season Totals (and average number of deliveries):					**45**	**3,938**	**0**	**329**	**0**	**0**	**0**
	Aug 9, 9 PM - Aug 10, 6 AM	*33*	9	4 - 5	9" - 9 3/4"	20	427	2	- -	0	Prohibited	Prohibited
	Aug 11, 9 PM - Aug 12, 6 AM	*33*	9	4 - 5	9" - 9 3/4"	29	974	0	- -	0	Prohibited	Prohibited
	Aug 13, 9 PM - Aug 14, 6 AM	*33*	9	4 - 5	9" - 9 3/4"	42	742	1	- -	0	Prohibited	Prohibited
	Aug 16, 9 PM - Aug 17, 6 AM	*34*	9	4 - 5	9" - 9 3/4"	71	2,231	6	- -	0	Prohibited	Prohibited
	Aug 18, 9 PM - Aug 19, 6 AM	*34*	9	4 - 5	9" - 9 3/4"	94	3,594	19	- -	0	Prohibited	Prohibited
August	Aug 20, 9 PM - Aug 21, 6 AM	*34*	9	4 - 5	9" - 9 3/4"	88	918	6	- -	0	Prohibited	Prohibited
	Aug 23, 9 PM - Aug 24, 6 AM	*35*	9	4 - 5	9" - 9 3/4"	114	5,278	69	- -	0	Prohibited	Prohibited
	Aug 25, 9 PM - Aug 26, 6 AM	*35*	9	4 - 5	9" - 9 3/4"	119	3,959	15	- -	0	Prohibited	Prohibited
	Aug 27, 9 PM - Aug 28, 6 AM	*35*	9	4 - 5	9" - 9 3/4"	126	10,156	40	- -	0	Prohibited	Prohibited
	Aug 31, 2 AM - 6 AM	*36*	4	4 - 5	9" - 9 3/4"	124	5,143	44	- -	0	Prohibited	Prohibited
	August Season Totals (and average number of deliveries):					**83**	**33,422**	**202**	**0**	**0**	**0**	**0**
	Sep 15, 9 PM - Sep 16, 6 AM	*38*	9	4 - 5	8" - 9 3/4"	134	11,490	41	- -	0	Prohibited	Prohibited
	Sep 20, 8 PM - Sep 21, 6 AM	*39*	10	4 - 5	8" - 9 3/4"	129	15,596	162	- -	0	Prohibited	Prohibited
	Sep 22, 8 PM - Sep 23, 6 AM	*39*	10	4 - 5	8" - 9 3/4"	119	8,927	135	- -	0	Prohibited	Prohibited
	Sep 27, 8 PM - Sep 28, 6 AM	*40*	10	4 - 5	8" - 9 3/4"	103	5,160	104	- -	0	Prohibited	Prohibited
Late-Fall	Oct 1, 6 AM - 6 PM	*40*	12	1 - 3	≤ 3 3/4"	36	593	302	- -	0	Prohibited	Prohibited
	Oct 5, 6 AM - 6 PM	*41*	12	1 - 3	≤ 3 3/4"	39	871	459	- -	0	Prohibited	Prohibited
	Oct 7, 6 AM - 6 PM	*41*	12	1 - 3	≤ 3 3/4"	27	391	203	- -	0	Prohibited	Prohibited
	Oct 8, 8 PM - Oct 9, 6 AM	*41*	10	**1 - 5**	8" - 9 3/4"	57	2,465	377	- -	0	Prohibited	Prohibited
	Oct 12, 7 AM - 7 PM	*42*	12	1 - 3	≤ 6"	71	974	1,353	- -	0	Prohibited	Prohibited
	Oct 20, 7 AM - 7 PM	*43*	12	1 - 3	≤ 6"	65	1,281	864	- -	0	Prohibited	Prohibited
	Late-Fall Season Totals (and average number of deliveries):					**78**	**47,748**	**4,000**	**0**	**0**	**0**	**0**
						** Includes jacks.*	***Ave.Del.***	**Chinook ***	**Coho**	**Sockeye**	**Pink**	Chum [1]	Sturgeon [2]
					TOTALS:	**74**	**92,339**	**4,202**	**384**	**0**	**0**	**0**
							ChF Adults	*ChF Jacks*	**Total ChF**	*Coho Adults*	*Coho Jacks*	**Total Coho**
	Sep 2, 6 AM - 8 PM	*36*	14	2-3, upper 4	≤ 3 1/2"	1	44	16	**60**	5	1	**6**
	Sep 3, 6 AM - 8 PM	*36*	14	2-3, upper 4	≤ 3 1/2"	1	48	9	**57**	12	1	**13**
Beach	Sep 8, 6 AM - 8 PM	*37*	14	2-3, upper 4	≤ 3 1/2"	1	78	13	**91**	4	0	**4**
Seine [3]	Sep 9, 6 AM - 8 PM	*37*	14	2-3, upper 4	≤ 3 1/2"	1	218	39	**257**	14	1	**15**
	Sep 10, 6 AM - 8 PM	*37*	14	2-3, upper 4	≤ 3 1/2"	1	102	23	**125**	7	0	**7**
	Sep 11, 6 AM - 8 PM	*37*	14	2-3, upper 4	≤ 3 1/2"	1	82	9	**91**	13	0	**13**
	Beach Seine Season Totals (and average number of deliveries for periods fished):					**1**	**572**	**109**	**681**	**55**	**3**	**58**
							ChF Adults	*ChF Jacks*	**Total ChF**	*Coho Adults*	*Coho Jacks*	**Total Coho**
	Aug 24, 6 AM - 8 PM	*35*	14	2-3	≤ 3 1/2"	0	0	0	**0**	0	0	**0**
	Aug 26, 6 AM - 8 PM	*35*	14	2-3	≤ 3 1/2"	0	0	0	**0**	0	0	**0**
	Aug 31, 6 AM - 8 PM	*36*	14	2-3, upper 4	≤ 3 1/2"	2	25	2	**27**	4	0	**4**
	Sep 1, 6 AM - 8 PM	*36*	14	2-3, upper 4	≤ 3 1/2"	1	5	0	**5**	1	0	**1**
	Sep 2, 6 AM - 8 PM	*36*	14	2-3, upper 4	≤ 3 1/2"	2	110	5	**115**	5	0	**5**
	Sep 3, 6 AM - 8 PM	*36*	14	2-3, upper 4	≤ 3 1/2"	1	39	1	**40**	8	0	**8**
	Sep 4, 6 AM - 8 PM	*36*	14	2-3, upper 4	≤ 3 1/2"	0	0	0	**0**	0	0	**0**
	Sep 8, 6 AM - 8 PM	*37*	14	2-3, upper 4	≤ 3 1/2"	1	246	14	**260**	14	0	**14**
	Sep 9, 6 AM - 8 PM	*37*	14	2-3, upper 4	≤ 3 1/2"	1	6	0	**6**	0	0	**0**
	Sep 10, 6 AM - 8 PM	*37*	14	2-3, upper 4	≤ 3 1/2"	0	0	0	**0**	0	0	**0**
Purse	Sep 11, 6 AM - 8 PM	*37*	14	2-3, upper 4	≤ 3 1/2"	2	278	15	**293**	21	2	**23**
Seine	Sep 14, 6:30 AM - 7:30 PM	*38*	13	2-3, upper 4	≤ 3 1/2"	1	311	13	**324**	21	1	**22**
	Sep 15, 6:30 AM - 7:30 PM	*38*	13	2-3	≤ 3 1/2"	1	202	3	**205**	20	1	**21**
	Sep 16, 6:30 AM - 7:30 PM	*38*	13	2-3, upper 4	≤ 3 1/2"	1	138	6	**144**	26	3	**29**
	Sep 17, 6:30 AM - 7:30 PM	*38*	13	2-3	≤ 3 1/2"	1	134	4	**138**	40	0	**40**
	Sep 18, 6:30 AM - 7:30 PM	*38*	13	2-3, upper 4	≤ 3 1/2"	0	0	0	**0**	0	0	**0**
	Sep 21, 6:30 AM - 7:30 PM	*39*	13	2-3, upper 4	≤ 3 1/2"	2	315	25	**340**	148	5	**153**
	Sep 22, 6:30 AM - 7:30 PM	*39*	13	2-3, upper 4	≤ 3 1/2"	2	75	4	**79**	60	1	**61**
	Sep 23, 6:30 AM - 7:30 PM	*39*	13	2-3, upper 4	≤ 3 1/2"	4	307	29	**336**	141	7	**148**
	Sep 24, 6:30 AM - 7:30 PM	*39*	13	2-3, upper 4	≤ 3 1/2"	0	0	0	**0**	0	0	**0**
	Sep 25, 6:30 AM - 7:30 PM	*39*	13	2-3, upper 4	≤ 3 1/2"	0	0	0	**0**	0	0	**0**
	Sep 28, 6:30 AM - 7:30 PM	*40*	13	2-3, upper 4	≤ 3 1/2"	0	0	0	**0**	0	0	**0**
	Sep 30, 6:30 AM - 7:30 PM	*40*	13	2-3, upper 4	≤ 3 1/2"	0	0	0	**0**	0	0	**0**
	Purse Seine Season Totals (and average number of deliveries for periods fished):					**2**	**2,191**	**121**	**2,312**	**509**	**20**	**529**
						** Includes jacks.*	*ChF Adults*	*ChF Jacks*	**Total ChF ***	*Coho Adults*	*Coho Jacks*	**Total Coho***
					TOTALS:		2,763	230	**2,993**	564	23	**587**
						** Includes jacks.*	**Chinook ***	**Coho ***	**Sockeye**	**Pink**	Chum [1]	Sturgeon [2]
					2015 Grand Totals:		**95,332**	**4,789**	**384**	**0**	**0**	**0**

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

2. Commercial fisheries downstream of Bonneville Dam were closed to the retention of white sturgeon during 2014-15 (OFW C/WFW C action) ; green sturgeon retention prohibited since July 6, 2006 (NMFS SDPS Threatened 4/7/06) .

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

Table 22. 2015 Lower Columbia River Winter/Spring/Summer/Fall Commercial Landings.

(Prelim / FINAL - OR/WA Fish Tickets - 12 / 28 / 15)

Season	CHINOOK		Z 1 - 5 Spring Chinook [1]		SOCKEYE		SHAD		WHITE STURGEON [2]	
Mainstem	**Numbers**	Pounds	***Adults***	*Jacks*	**Numbers**	Pounds	**Numbers**	Pounds	**Numbers**	Pounds
Winter Sturgeon (no season in 2015)	**0**	0	--	--	**0**	0	**0**	0	*No Retention*	
Spring [1]	**7,231**	87,878	***6,460***	***771***	**55**	188	**527**	896	*No Retention*	
Summer	**3,938**	61,064	--	--	**329**	1,174	**2**	6	*No Retention*	
Shad (Area 2S)	**--**	--	--	--	**--**	--	**570**	1,538	*No Retention*	
Mainstem Totals	**11,169**	148,942	--	--	**384**	1,362	**1,099**	2,440	**0**	0
Select Areas										
Youngs Bay Winter	**611**	7,972			**0**	0	**0**	0	*No Retention*	
Youngs Bay Spring	**6,693**	73,170			**7**	23	**0**	0	*No Retention*	
Youngs Bay Summer	**1,779**	21,150			**53**	174	**0**	0	*No Retention*	
Tongue Point Winter	**70**	964			**0**	0	**0**	0	*No Retention*	
Tongue Point Spring	**1,192**	13,343			**0**	0	**0**	0	*No Retention*	
Blind & Knappa Sloughs Winter	**116**	1,436			**0**	0	**0**	0	*No Retention*	
Blind & Knappa Sloughs Spring	**3,002**	32,494			**2**	6	**0**	0	*No Retention*	
Deep River Winter	**94**	1,264			**0**	0	**0**	0	*No Retention*	
Deep River Spring	**110**	1,249			**0**	0	**0**	0	*No Retention*	
Select Area Totals	**13,667**	153,042			**62**	203	**0**	0	**0**	0
Lower Columbia River Commercial GRAND TOTALS Winter/Spring/Summer 2015	**Chinook**				**Sockeye**		**Shad**		**WHITE STURGEON [2]**	
	24,836	301,984			**446**	1,565	**1,099**	2,440	**0**	0

2015 Lower Columbia River *Fall* Commercial Landings

(Summary Table 22) *(Prelim / FINAL - OR/WA Fish Tickets - 12 / 28 / 15)*

Season	CHINOOK		COHO		PINK		CHUM [3]		WHITE STURGEON [2]	
Mainstem	**Numbers**	Pounds	**Numbers**	Pounds	**Numbers**	Pounds	**Numbers**	Pounds	**Numbers**	Pounds
August (Zone 4 - 5 gillnet)	**33,422**	589,561	**202**	1,086	**0**	0	*No Retention*		*No Retention*	
August Subtotals	**33,422**	589,561	**202**	1,086	**0**	0	*No Retention*		*No Retention*	
Late-Fall (Zone 4 - 5; 8-9 3/4 inch gillnet)	**41,173**	611,486	**442**	3,036	**0**	0	*No Retention*		*No Retention*	
Late-Fall (Zone 1 - 5; 8-9 3/4 inch gillnet)	**2,465**	35,993	**377**	2,717	**0**	0	*No Retention*		*No Retention*	
Late-Fall (Zone 1 - 3 tangle-net)	**1,855**	18,765	**964**	5,463	**0**	0	*No Retention*		*No Retention*	
Late-Fall (Z 1 - 3; 6-inch max gillnet)	**2,255**	23,055	**2,217**	15,213	**0**	0	*No Retention*		*No Retention*	
Late-Fall Subtotals	**47,748**	689,299	**4,000**	26,429	**0**	0	*No Retention*		*No Retention*	
Beach Seine (Zone 1 - 5) [4]	**681**	7,438	**58**	394	**0**	0	*No Retention*		*No Retention*	
Purse Seine (Zone 1 - 5) [4]	**2,312**	24,043	**529**	3,037	**0**	0	*No Retention*		*No Retention*	
Seine Subotals	**2,993**	31,481	**587**	3,431	**0**	0	*No Retention*		*No Retention*	
Fall Mainstem Totals (all gears)	**84,163**	1,310,341	**4,789**	30,946	**0**	0	**0**	0	**0**	0
Select Areas										
Youngs Bay	**6,765**	75,994	**11,461**	79,795	**0**	0	*No Retention*		*No Retention*	
Tongue Point	**3,614**	43,133	**9,721**	67,032	**1**	3	*No Retention*		*No Retention*	
Blind Slough & Knappa Slough	**3,405**	43,888	**1,698**	11,335	**1**	5	*No Retention*		*No Retention*	
Deep River	**4,303**	48,275	**4,519**	29,866	**1**	4	*No Retention*		*No Retention*	
Fall Select Area Totals	**18,087**	211,290	**27,399**	188,028	**3**	12	**0**	0	**0**	0
Lower Columbia River Commercial GRAND TOTALS Fall 2015	**ChF**		**Coho**		**Pink**		**CHUM [3]**		**WHITE STURGEON [2]**	
	102,250	1,521,631	**32,188**	218,974	**3**	12	**0**	0	**0**	0

PRELIMINARY GRAND TOTALS 2015	CHINOOK		COHO		PINK		CHUM [3]		WHITE STURGEON [2]	
	Numbers	Pounds	**Numbers**	Pounds	**Numbers**	Pounds	**Numbers**	Pounds	**Numbers**	Pounds
	127,086	1,823,615	**32,188**	218,974	**3**	12	*No Retention*		*No Retention*	
for Lower Columbia R. Commercial Fisheries	**SOCKEYE**		**SHAD**		**SMELT**(Mainstem)				**GREEN STURGEON [5]**	
	Numbers	Pounds	**Numbers**	Pounds	Pounds				**Numbers**	Pounds
	446	1,565	**1,099**	2,440	**16,546**				*No Retention*	

1 During spring salmon seasons in Zones 1- 5, 7,231 total Chinook were landed, of which 6,460 were adults and 771 were jacks.

2. All non-Indian commercial fisheries downstream of Bonneville Dam were closed to the retention of white sturgeon during 2015 based on OFWC and WFWC action.

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

4. Fall seining: beach seine = 681 total Chinook (572 adults; 109 jacks) and 58 total coho (55 adults; 3 jacks); purse seine = 2,312 total Chinook (2,191 adults; 121 jacks) and 529 total coho (509 adults; 20 jacks).

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

Table 23. Stock Composition of Hatchery Spring Chinook (in Thousands) Landed during Non-Indian Mainstem Commercial fisheries 1990-2015.

	February – March Kept Catch by Stock					April – June 15 Kept Catch by Stock				
Year	Willamette River	C,K,L,S[1]	Upriver	Select Area	Feb-Mar Total	Willamette River	C,K,L,S[1]	Upriver	Select Area	Apr-Jun Total
1990	15.5	0.7	2.1	--	18.3	--	--	--	--	--
1991	11.2	0.5	0.9	--	12.6	--	--	--	--	--
1992	3.9	1	0.2	--	5.1	--	--	--	--	--
1993	0.8	0.4	0.2	--	1.4	--	--	--	--	--
1994	1.0	0.4	0.4	--	1.9	--	--	--	--	--
1995	--	--	--	--	--	--	--	--	--	--
1996	0.1	<0.1	<0.1	--	0.2	--	--	--	--	--
1997	0.1	0	<0.1	--	0.2	--	--	--	--	--
1998	<0.1	0	0	--	<0.1	--	--	--	--	--
1999	<0.1	<0.1	<0.1	--	0.1	--	--	--	--	--
2000	0.4	<0.1	0.1	<0.1	0.5	--	--	--	--	--
2001	2.8	0.2	1.6	0.8	5.4	--	--	--	--	--
2002	5.4	0.5	8.3	0.3	14.5	--	--	--	--	--
2003	0.8	0.1	2.1	<0.1	3.1	--	--	--	--	--
2004	5.7	1.3	5.3	0.9	13.2	--	--	--	--	--
2005	2.1	1.1	2.0	0.0	5.2	--	--	--	--	--
2006	0.5	0.3	0.2	<0.1	1.0	1.6	0.8	1.0	<0.1	3.4
2007	0.9	0.6	1.3	<0.1	2.8	<0.1	<0.1	<0.1	<0.1	<0.1
2008	<0.1	0.0	<0.1	0.0	<0.1	0.0	<0.1	5.6	0.0	5.6
2009	<0.1	<0.1	<0.1	0.0	<0.1	<0.1	0.0	4.1	0.0	4.1
2010	<0.1	<0.1	<0.1	0.0	<0.1	1.5	0.2	7.3	0.0	9.0
2011	0.3	<0.1	0.9	<0.1	1.3	0.8	0.1	2.2	<0.1	3.2
2012	<0.1	<0.1	<0.1	<0.1	<0.1	1.6	0.1	4.1	0.3	6.1
2013[2]	--	--	--	--	--	0.5	<0.1	1.3	0.1	1.9
2014[2]	--	--	--	--	--	0.6	0.2	2.7	0.0	3.5
2015[2]	0.2	<0.1	0.7	--	0.9	1.0	0.4	4.0	0.1	5.5

[1] *C = Cowlitz River, K = Kalama River, L = Lewis River, and S = Sandy River.*

[2] *Adults only.*

Table 24. Columbia River Recreational Spring Chinook Fishing Regulations, 2002-2015.				
Year	Buoy 10 to Tongue Point	Tongue Point to I-5 Bridge	I-5 Bridge to Bonneville Dam	Bonneville Dam to McNary Dam
2002	Open January 1-April 28 and May 5-15. Two adipose fin-clipped adult spring Chinook daily bag limit.	Open January 1-April 28 and May 5-15. Two adipose fin-clipped adult spring Chinook daily bag limit.	Open March 16-April 28 and May 5-15. Two adipose fin-clipped adult spring Chinook daily bag limit.	Open March 16-May 15 from The Dalles Dam upstream to McNary Dam and April 3-May 15 from Tower Is. powerlines to The Dalles Dam. Two adipose fin-clipped adult spring Chinook daily bag limit.
2003	Open January 1-April 5 and April 9-12, 16-19, 23-26, 30-May 3, May 7-10, and May 14-15. Two adipose fin-clipped adult spring Chinook daily bag limit.	Open January 1-April 5 and April 9-12, 16-19, 23-26, 30-May 3, May 7-10, and May 14-15. Two adipose fin-clipped adult spring Chinook daily bag limit.	Open February 15-April 5. Two adipose fin-clipped adult spring Chinook daily bag limit.	Open February 15-May 3, May 7-10, and May 14-15 from Tower Is. powerlines upstream to McNary Dam plus the Oregon Bank from Bonneville to Tower Is. Two adipose fin-clipped adult spring Chinook daily bag limit.
2004	Open January 1-April 30. Two adipose fin-clipped adult spring Chinook daily bag limit. Unlawful to remove unclipped fish from the water (added as permanent regulation).	Open January 1-April 30. Two adipose fin-clipped adult spring Chinook daily bag limit. Unlawful to remove unclipped fish from the water (added as permanent regulation).	Open March 16-April 21. Two adipose fin-clipped adult spring Chinook daily bag limit. Unlawful to remove unclipped fish from the water (added as permanent regulation).	Open March 16-May 6 from Tower Is. powerlines upstream to McNary Dam plus the Oregon Bank from Bonneville Dam to Tower Is. Two adipose fin-clipped adult spring Chinook daily limit. Unlawful to remove unclipped fish from the water (added as permanent regulation).
2005	Open January 1-April 20. Two adipose fin-clipped adult spring Chinook daily bag limit.	Open January 1-April 20 and June 4-15. Two adipose fin-clipped adult spring Chinook daily bag limit.	Open March 16-April 20 and June 4-15. Open Sunday, Monday and Tuesday only with a one-fish daily salmonid limit during March 16-April 20 between Rooster Rock and Bonneville Dam. Otherwise, two adipose fin-clipped adult spring Chinook daily bag limit.	Open March 16-April 20 and June 4-15 from Tower Is. powerlines upstream to McNary Dam plus the Oregon Bank between Bonneville Dam and Tower Is. Two adipose fin-clipped adult spring Chinook daily bag limit.
2006	Open January 1-April 13. Two adipose fin-clipped adult spring Chinook daily bag limit.	Open January 1-April 13 and May 17-June 15. Two adipose fin-clipped adult spring Chinook daily bag limit.	Open May 17-June 15. Two adipose fin-clipped adult spring Chinook daily bag limit.	Open March 16-April 30 and May 13-June 15 from Tower Is. powerlines upstream to McNary Dam plus the Oregon bank between Bonneville Dam and Tower Is. Two adipose fin-clipped adult spring Chinook daily bag limit.
2007	Open January 1-April 15. Two adipose fin-clipped adult spring Chinook daily bag limit.	Open January 1-April 15 and May 16-June 15. Two adipose fin-clipped adult spring Chinook daily bag limit.	Open June 6-15. Two adipose fin-clipped adult spring Chinook daily bag limit.	Open March 16-May 3 and June 6-15 from Tower Is. powerlines upstream to McNary Dam plus the Oregon bank between Bonneville Dam and Tower Is. Two adipose fin-clipped adult spring Chinook daily bag limit.
2008	Open January 1- February 24 under permanent rules, then March 24-April 4 with one adipose fin-clipped adult spring Chinook in the daily bag limit.	Open January 1- February 24 under permanent rules, then March 24-April 4 upstream to Hayden Island powerlines with one adipose fin-clipped adult spring Chinook in the daily bag limit.	Open March 16-April 20 from Hayden Island powerlines upstream to Bonneville Dam (except closed Tuesdays March 25, April 1, 8, and 15). One adipose fin-clipped adult spring Chinook in the daily bag limit.	Open March 16-May 10 from Tower Is. powerlines upstream to McNary Dam plus the Oregon and Washington banks between Bonneville Dam and Tower Is. Two adipose fin-clipped adult spring Chinook daily bag limit.

Table 24. Columbia River Recreational Spring Chinook Fishing Regulations, 2002-2015 continued.				
Year	Buoy 10 to Tongue Point	Tongue Point to I-5 Bridge	I-5 Bridge to Bonneville Dam	Bonneville Dam to McNary Dam
2009	Open January 1-February 28 under permanent rules. Open March 1-15, 19-21, 26-28, April 2-4, 9-11, and 16-18 with one adipose fin-clipped adult spring Chinook in the daily bag limit.	Open January 1-February 28 under permanent rules. Open March 1-15, 19-21, 26-28, April 2-4, 9-11, and 16-18 upstream to the Hayden Island powerlines with one adipose fin-clipped adult spring Chinook in the daily bag limit.	Open March 1-22, 25-28, April 1-4, 8-11, 15-18, and 22 from Hayden Island powerlines upstream to Bonneville Dam with one adipose fin-clipped adult spring Chinook in the daily bag limit.	Open March 16-April 30 from Tower Is. powerlines upstream to McNary Dam plus the Oregon and Washington banks between Bonneville Dam and Tower Is. Two adipose fin-clipped adult spring Chinook daily bag limit.
2010	Open January 1-February 28 under permanent rules. Open March 1-April 18 (except closed Tuesdays March 9, 16, 23, and 30) with one adipose fin-clipped adult spring Chinook in the daily bag limit.	Open January 1-February 28 under permanent rules. Open March 1-April 18 (except closed Tuesdays March 9, 16, 23, and 30) with one adipose fin-clipped adult spring Chinook in the daily bag limit.	Open from I-5 to I-205 plus the Oregon and Washington banks between I-205 and Bonneville Dam during March 1-14, 18-20, 25-27, and April 1-3 (except closed Tuesday March 9) with one adipose fin-clipped adult spring Chinook in the daily bag limit.	Open March 16-May 9 from Tower Is. powerlines upstream to McNary Dam plus the Oregon and Washington banks between Bonneville Dam and Tower Is. Two adipose fin-clipped adult spring Chinook daily bag limit.
2011	Open January 1-February 28 under permanent rules. Open March 1-April 4 and April 8-19 with one adipose fin-clipped adult spring Chinook in the daily bag limit.	Open January 1-February 28 under permanent rules. Open March 1-April 4, April 8-19, and May 15-June 15 with one adipose fin-clipped adult spring Chinook in the daily bag limit.	Open March 1-April 4 and April 8-19 from the I-5 Bridge to Rooster Rock plus the Oregon and Washington banks between I-5 and Bonneville Dam. Open May 15-26 from the I-5 Bridge to Beacon Rock plus the Oregon and Washington banks between Beacon Rock and Bonneville Dam. Open May 27-June 15 from the I-5 Bridge to Bonneville Dam. One adipose fin-clipped adult spring Chinook in the daily bag limit throughout the entire season.	Open March 16-May 1, May 7-10, and May 28-June 15 from Tower Is. powerlines upstream to the McNary Dam plus the Oregon and Washington banks between Bonneville Dam and Tower Is. powerlines. Two adipose fin-clipped adult spring Chinook daily bag limit.
2012	Open January 1-February 29 under permanent rules. Open March 1-April 22 (except closed Tuesdays March 20, 27, and April 3, 10, and 17) and May 26-27 with one adipose fin-clipped adult spring Chinook in the daily bag limit.	Open January 1-February 29 under permanent rules. Open March 1-April 22 (except closed Tuesdays March 20, 27, and April 3, 10, and 17) and May 26-27 with one adipose fin-clipped adult spring Chinook in the daily bag limit.	Open March 1-April 22 (except closed Tuesdays March 20, 27, and April 3, 10, and 17) and May 26-27 from I-5 upstream to Beacon Rock plus the Oregon and Washington banks between Beacon Rock and Bonneville Dam with one adipose fin-clipped adult spring Chinook in the daily bag limit.	Open March 16-May 6 and May 19-20 from Tower Is. powerlines upstream to McNary Dam plus the Oregon and Washington banks between Bonneville Dam and Tower Is. powerlines. Two adipose fin-clipped adult spring Chinook daily bag limit.
2013	Open January 1-February 28 under permanent rules. Open March 1-April 12 (except closed Tuesdays March 26, April 2 and 9) with one adipose fin-clipped adult spring Chinook allowed in the daily bag limit.	Open January 1-February 28 under permanent rules. Open March 1-April 12 (except closed Tuesdays March 26, April 2 and 9) and May 25-June 15 with one adipose fin-clipped adult spring Chinook allowed in the daily bag limit.	Open March 1-April 12 (except closed Tuesdays March 26, April 2 and 9) and May 25-June 7 from I-5 upstream to Beacon Rock plus the Oregon and Washington banks between Beacon Rock and Bonneville Dam. Open June 8-15 from I-5 to Bonneville Dam. One adipose fin-clipped adult spring Chinook in the daily bag limit for the entire season.	Open March 16-May 5 from Tower Is. powerlines upstream to McNary Dam plus the Oregon and Washington banks between Bonneville Dam and Tower Is. powerlines with two adipose fin-clipped adult spring Chinook in the daily bag limit, and June 8-15 with one adipose fin-clipped adult spring Chinook in the daily bag limit.

Table 24. Columbia River Recreational Spring Chinook Fishing Regulations, 2002-2015 continued.				
Year	Buoy 10 to Tongue Point	Tongue Point to I-5 Bridge	I-5 Bridge to Bonneville Dam	Bonneville Dam to McNary Dam
2014	Open January 1-February 28 under permanent rules. Open March 1-April 14 and April 19 (except closed Tuesdays March 25, April 1 and 8) with one adipose fin-clipped adult spring Chinook allowed in the daily bag limit.	Open January 1-February 28 under permanent rules. Open March 1-April 14, April 19, May 9-10 and May 15-June 15 (except closed Tuesdays March 25, April 1 and 8) with one adipose fin-clipped adult spring Chinook allowed in the daily bag limit.	Open March 1-April 14 (except closed Tuesdays March 25, April 1 and 8) from I-5 upstream to Beacon Rock plus the Oregon and Washington banks between Beacon Rock and Bonneville Dam); April 19 and May 9-10 from I-5 upstream to Rooster Rock plus the Oregon and Washington banks between Rooster Rock and Bonneville Dam; and May 15-June 15 from I-5 to Bonneville Dam with one adipose fin-clipped adult spring Chinook allowed in the daily bag limit.	Open March 16-May 9 and May 31-June 15 from Tower Is. powerlines upstream to McNary Dam plus the Oregon and Washington banks between Bonneville Dam and Tower Is. powerlines with one adipose fin-clipped adult spring Chinook in the daily bag limit.
2015	Open January 1-February 28 under permanent rules. Open March 1-April 11 and April 16 (except closed Tuesdays March 24, 31 and April 7) with one adipose fin-clipped adult spring Chinook allowed in the daily bag limit.	Open January 1-February 28 under permanent rules. Open March 1-April 11 and April 16 (except closed Tuesdays March 24, 31 and April 7), May 2, 3, 9 and May 16-June 15. One adipose fin-clipped adult spring Chinook allowed in the daily bag limit January 1-June 2. Two adult spring Chinook bag limit June 3-15.	Open March 1-April 11 (except closed Tuesdays March 24, 31 and April 7), April 16, May 2, 3, 9 and May 16-29 from I-5 upstream to Beacon Rock plus the Oregon and Washington banks between Beacon Rock and Bonneville Dam. Open May 30-June 15 from I-5 upstream to Bonneville Dam. One adipose fin-clipped adult spring Chinook allowed in the daily bag limit January 1-June 2. Two adult spring Chinook bag limit June 3-15.	Open March 16-May 10 and May 28-June 15 from Tower Is. powerlines upstream to McNary Dam plus the Oregon and Washington banks between Bonneville Dam and Tower Is. Powerlines. One adipose fin-clipped adult spring Chinook in the daily bag limit March 16-June 2. Two adult spring Chinook bag limit June 3-15.

Table 25. Salmonid Angler Trips and Adult Chinook Catch by Month on the Lower Columbia River, 2006-2015.

Year	Month	Angler Trips	Adult Chinook Kept	Adult Chinook Released
2006	Feb	2,471	19	0
	Mar	27,418	1,810	413
	Apr	33,750	3,595	712
	May	12,225	634	345
	Jun 1-15	10,971	927	991
	Jun 16-30	19,088	3,360	5
	Jul	24,714	1,564	11
2006	Total	130,637	11,909	2,477
2007	Feb	4,405	24	0
	Mar	27,949	1,110	311
	Apr	34,890	4,507	924
	May	10,989	505	234
	Jun 1-15	4,777	330	179
	Jun 16-30	23,732	2,214	0
	Jul	16,036	0	219
2007	Total	122,778	8,690	1,867
2008	Feb	4,150	3	1
	Mar	35,453	4,107	668
	Apr	63,369	15,930	2,463
	May	0	0	0
	Jun 1-15	0	0	0
	Jun 16-30	30,505	2,051	463
	Jul	20,783	0	427
2008	Total	154,260	22,091	4,022
2009	Feb	4,539	34	1
	Mar	55,061	3,906	933
	Apr	82,693	12,983	2,304
	May	0	0	10
	Jun 1-15	4,109	0	148
	Jun 16-30	23,569	1,749	381
	Jul	39,644	507	469
2009	Total	209,615	19,179	4,246
2010	Feb	7,614	128	40
	Mar	65,160	6,646	989
	Apr	99,001	22,473	3,407
	May	6,196	0	311
	Jun 1-15	7,005	0	608
	Jun 16-30	26,932	1,866	845
	Jul	43,729	673	483
2010	Total	255,637	31,786	6,683
2011	Feb	5,598	280	47
	Mar	59,971	3,349	1,099
	Apr	48,962	4,026	928
	May	21,237	1,687	385
	Jun 1-15	19,127	2,352	695
	Jun 16-30	30,858	3,787	1,731
	Jul	44,960	1,373	1,040
2011	Total	230,713	16,854	5,925
2012	Feb	8,188	37	23
	Mar	39,600	1,560	309
	Apr	57,357	11,105	1,810
	May	15,024	630	739
	Jun 1-15	7,750	0	595
	Jun 16-30	31,298	2,698	1,521
	Jul	49,435	199	1,037
2012	Total	208,652	16,229	6,034
2013	Feb	4,856	46	11
	Mar	40,955	1,462	431
	Apr	28,895	3,634	845
	May	13,751	461	458
	Jun 1-15	21,198	1,347	921
	Jun 16-30	26,473	1,820	1,172
	Jul	25,564	12	336
2013	Total	161,692	8,782	4,174
2014	Feb	3,292	0	0
	Mar	25,275	910	246
	Apr	60,429	10,652	2,525
	May	33,799	2,727	1,978
	Jun 1-15	22,847	1,439	2,027
	Jun 16-30	23,645	1,669	2,074
	Jul	30,016	311	629
2014	Total	199,303	17,708	9,479
2015	Feb	5,133	24	6
	Mar	40,963	2,594	423
	Apr	50,470	10,800	1,691
	May	38,991	4,853	1,875
	Jun 1-15	15,616	1,315	1,057
	Jun 16-30	18,726	1,673	1,028
	Jul	31,829	4,255	463
2015	Total	201,728	25,514	6,543

Table 26. Recreational Fisheries Upstream of Bonneville Dam[1].

Zone 6 Spring Chinook Recreational Fishery

Year	Kept	Released	Season	General Area
2002	1,609	1,073	Mar 16- May 15	The Dalles Dam - McNary Dam
2003	1,744	1,163	Feb 15- May 16 (4d/wk in May)	BON- McNary
2004	1,539	569	Mar 16- May 6	BON- McNary
2005	438	263	Mar 16- Apr 21, June 4-15	BON-McNary, BON-Hwy 395
2006	1,290	779	Mar 16- Apr 30, May 12-jun 15	BON-McNary, BON-Hwy 395
2007	1,401	438	Mar 16-May 3, June 6-15	BON- McNary
2008	2,014	535	Mar 16-May 10	BON- McNary
2009	631	129	Mar 16-April 30	BON- McNary
2010	3,618	741	Mar 16-May 10	BON- McNary
2011	2,508	772	Mar 16-May 1, May 7-10, May 28-Jun 15	BON- Oregon/Washington border
2012	1,310	467	Mar 16-May 6, May 19-20	BON- Oregon/Washington border
2013	1,093	424	Mar 16-May 5, Jun 8-15	BON- Oregon/Washington border
2014	2,162	921	Mar 16-May 9, May 31-Jun 15	BON- Oregon/Washington border
2015	1,646	500	Mar 16-May 10, May 28-Jun 15	BON- Oregon/Washington border

Snake River Spring Chinook Recreational Fishery (Washington waters)

	Kept	Released	General Season	General Area
2002	866	351	Apr 25-Jun 2 (4d/wk)	LGO
2003	513	405	Apr 26- Jun 15	LGO
2004	1,224	337	April 16- May 7	LGO
2005	77	83	June 11- 30	LGO
2006	192	100	May 17- Jun 30	LGO
2007	284	67	May 9- Jun 30	LGO
2008	515	128	Apr 22/Apr 24- May 11	Ice Harbor (IHD)/ LGO
2009	498	100	April 24- May 17	LGO
2010	1,663	199	April 20/24- May 21	IHD/ LGO/LRG/Clarkston
2011	1,913	357	April 20/25- May 13/15, May 28-Jun 2	IHD/ LGO/Clarkston
2012	2,338	448	April 20/25-May 18/20/22	IHD/ LGO/LRG/Clarkston
2013	353	125	Apr 26/28-May 11/13/27, ~Jun 14-28 (days/wk)	IHD/ LGO/Clarkston
2014	1,454	553	Apr 24/27-May 14/25/27, ~Jun 4-28 (days/wk)	IHD/ LGO/LRG/Clarkston
2015	1,900	383	Apr 19/23-May 5/9/12, Jun 4-30 (days/wk)	IHD/ LGO/LRG/Clarkston

Upstream of Bonneville Dam Summer Chinook Recreational Fishery

	Kept	Released	General Season	General Area
2002	129	199	July 9- July 31	Bonneville Dam (BON) - Hwy 395
2003	396	604	June 16-July 31	BON - Hwy 395
2004	257	386	June 16-July 31	BON - Hwy 395
2005	377	370	June 16-July 31	BON - Hwy 395
2006	295	0	June 16-July 31	BON - Priest Rapids Dam (PRD)
2007	148	0	June 16-July 3	BON - PRD
2008	997	0	June 16-July 1	BON - PRD
2009	265	0	July 1- 31	BON - PRD
2010	811	497	June 16-July 31	BON - PRD
2011	347	308	June 16-July 31	BON - PRD
2012	268	186	June 16- July 31	BON - PRD
2013	262	273	June 16- July 31	BON - PRD
2014	361	615	June 16- July 31	BON - PRD
2015	737	293	June 16- July 31	BON - PRD

1. *Columbia River data based on Catch Record Cards through 2012. Snake River based on creel.*

Table 27. Recreational Fisheries Downstream of Bonneville Dam [1,2].			
Lower Columbia River Recreational Fishery – Spring Chinook[3]			
Year	Angler Trips	Kept	Released
2000	16,039	322	92
2001	177,642	25,711	15,517
2002	180,127	20,936	14,221
2003	166,640	16,892	9,267
2004	161,992	23,740	7,420
2005	124,695	11,315	3,560
2006	86,835	6,985	2,461
2007	83,010	6,476	1,648
2008	102,972	20,040	3,132
2009	146,402	16,923	3,396
2010	186,132	29,247	5,355
2011	154,895	11,694	3,154
2012	127,919	13,332	3,476
2013	109,655	6,950	2,666
2014	145,642	15,728	6,776
2015	151,173	19,586	5,052
Lower Columbia River Recreational Fishery – Summer Chinook[4]			
Year	Anglers	Kept	Released
2000	28,038	0	341
2001	32,312	0	889
2002	54,839	1,352	1,840
2003	46,943	1,854	1,777
2004	41,850	1,119	1,325
2005	38,505	1,571	500
2006	43,802	4,924	16
2007	39,768	2,214	219
2008	51,288	2,051	890
2009	63,213	2,256	850
2010	70,661	2,539	1,328
2011	75,818	5,160	2,771
2012	80,733	2,897	2,558
2013	52,037	1,832	1,508
2014	53,661	1,980	2,703
2015	50,555	5,928	1,491

1. *Adult fish only.*
2. *Includes steelhead angler trips during non-retention periods for Chinook.*
3. *February through May 31 during 2000-2004 and February-June 15 since 2005.*
4. *June 1 through July 31 during 2000-2004 and June 16-July 31 since 2005.*

Table 28. Stock Composition of Hatchery Spring Chinook (in Thousands) Kept during the Mainstem Lower Columbia Recreational Fisheries, 1990-2015.

	February – March Kept Catch by Stock					April – June 15 Kept Catch by Stock				
Year	Willamette River	C,K,L,S[1]	Upriver	SAFE	Feb-Mar Total	Willamette River	C,K,L,S[1]	Upriver	SAFE	Apr-Jun Total
1990	6.8	0.3	2.0	--	9.1	2.0	<0.1	1.1		3.1
1991	3.5	0.6	1.5	--	5.6	--	--	--	--	--
1992	3.1	1.0	1.2	--	5.3	--	--	--	--	--
1993	0.3	0.2	0.1	--	0.6	0.6	0.3	0.3		1.2
1994	1.0	0.3	0.2	--	1.5	0.3	0.1	0.2		0.6
1995	--	--	--	--	--	--	--	--	--	--
1996	0.0	0.0	0.0	--	0.0	--	--	--	--	--
1997	0.0	0.0	0.0	--	0.0	--	--	--	--	--
1998	<0.1	<0.1	0.0	--	0.1	--	--	--	--	--
1999	0.0	0.0	0.0	--	0.0	--	--	--	--	--
2000	0.2	<0.1	0.1	--	0.4	--	--	--	--	--
2001	0.8	0.1	3.7	--	4.6	2.8	0.4	17.9	--	21.1
2002	0.6	0.1	1.4	--	2.1	4.5	0.5	13.5	--	18.5
2003	1.1	0.2	4.5	--	5.8	5.9	0.8	4.3	--	11.0
2004	1.0	0.3	1.3	--	2.6	4.5	1.3	15.2	--	21.0
2005	0.7	0.4	0.8	--	1.9	2.1	1.2	6.1	--	9.4
2006	0.7	0.3	0.9	--	1.9	1.4	0.6	3.1	--	5.1
2007	0.4	0.2	0.5	<0.1	1.1	1.2	0.8	3.3	<0.1	5.3
2008	0.1	0.3	3.7	--	4.1	0.1	0.2	15.6	--	15.9
2009	0.4	0.2	3.3	<0.1	3.9	0.9	0.4	11.6	--	13.0
2010	2.0	0.3	4.4	--	6.7	3.2	0.5	18.7	--	22.4
2011	0.5	0.1	3.1	--	3.6	1.6	0.3	6.2	<0.1	8.1
2012	0.5	0.1	1.0	--	1.6	2.2	0.4	9.1	--	11.7
2013	0.4	<0.1	1.0	--	1.5	1.2	<0.1	4.1	<0.1	5.4
2014	0.2	0.1	0.6	<0.1	0.9	2.0	0.3	12.4	0.2	14.8
2015	0.6	0.2	1.8	<0.1	2.6	2.8	0.6	13.5	0.1	17.0

[1] *C = Cowlitz River, K = Kalama River, L = Lewis River, and S = Sandy River.*

Table 29. Adult Spring Chinook Recreational Catch and Harvest Rates for the Cowlitz, Kalama, Lewis, and Sandy Rivers.

Year[1]	Cowlitz River Kept Catch	Cowlitz River Harvest Rate	Kalama River Kept Catch	Kalama River Harvest Rate	Lewis River Kept Catch	Lewis River Harvest Rate	Sandy River Kept Catch	Sandy River Harvest Rate	Total Kept Catch	Total Harvest Rate
1980-84 Ave.	7,094	32%	1,292	32%	2,554	65%	1,269	62%	12,215	32%
1985-89 Ave.	2,888	26%	568	43%	6,262	64%	815	43%	10,549	42%
1990	2,636	35%	887	45%	7,143	77%	2,058	58%	12,724	57%
1991	3,417	38%	1,404	54%	6,201	74%	1,950	53%	12,972	55%
1992	2,134	21%	749	31%	4,385	73%	2,223	26%	9,491	35%
1993	2,897	31%	1,472	51%	6,102	74%	2,416	38%	12,887	48%
1994	1,076	34%	229	18%	1,942	63%	1,322	38%	4,569	42%
Ave.	**2,432**	**32%**	**948**	**40%**	**5,155**	**72%**	**1,994**	**43%**	**10,529**	**47%**
1995	33	2%	3	0%	2,437	65%	1,134	45%	3,624	40%
1996	29	2%	190	30%	351	20%	1,290	34%	1,869	24%
1997	144	8%	5	1%	781	36%	1,186	27%	2,133	24%
1998	0	0%	0	0%	228	14%	998	28%	1,234	19%
1999	491	24%	8	1%	692	39%	1,481	41%	2,672	32%
Ave.	**139**	**7%**	**41**	**7%**	**898**	**35%**	**1,218**	**35%**	**2,306**	**28%**
2000	538	24%	397	28%	1,260	50%	1,268	35%	3,463	35%
2001	54	3%	407	23%	2,020	53%	1,580	30%	4,061	32%
2002	1,598	31%	531	18%	1,372	39%	1,588	27%	5,089	29%
2003	2,996	19%	821	18%	1,916	38%	1,595	28%	7,328	24%
2004	1,926	12%	906	21%	3,035	41%	4,452	35%	10,319	25%
Ave.	**1,422**	**18%**	**612**	**22%**	**1,921**	**44%**	**2,097**	**31%**	**6,052**	**29%**
2005	1,327	14%	1,029	31%	1,569	45%	1,845	24%	5,769	24%
2006	838	12%	1,371	25%	2,788	38%	925	21%	5,900	24%
2007	747	19%	2,050	26%	3,588	47%	393	14%	6,778	30%
2008	607	20%	249	15%	825	37%	724	12%	2,405	19%
2009	1,823	31%	115	28%	416	28%	293	12%	2,647	26%
Ave.	**1,068**	**19%**	**963**	**25%**	**1,837**	**39%**	**836**	**17%**	**4,700**	**25%**
2010	2,154	24%	351	36%	510	22%	788	11%	3,803	19%
2011	2,532	43%	213	27%	254	19%	1,352	25%	4,351	32%
2012	5,437	43%	471	55%	381	20%	1,160	22%	7,431	36%
2013[2]	4,257	45%	0	0%	130	8%	504	10%	5,325	29%
2014[2]	4,333	41%	0	0%	100	7%	942	16%	5,488	29%
Ave.	**3,743**	**39%**	**207**	**24%**	**275**	**15%**	**1,055**	**17%**	**5,280**	**29%**
2015[2]	5,500	23%	1,000	32%	0	0%	NA	NA	--	--%

1. *1995-2001 and 2008 harvest rates reflect fishery restrictions due to extremely low returns.*
2. *Data preliminary. Data for the Sandy River not available at time of publication.*

Table 30. Winter Season Commercial Landings in Treaty Fisheries, 1977-2015.

Year	Season[1]	Peak Net Count	Numbers of Fish Sold Commercially[2]			
			Chinook	Steelhead	Sturgeon	Walleye
1977-1981 Ave.	Feb 1-Apr 1[3]	170	1,400	3,700	110	--
Range		87-246	30-2,800	2,600-4,900	20-220	
1982-1986 Ave.	Feb 1-Mar 21[4,5]	107	50	4,700	670	--
Range		61-180	5-100	3,000-7,800	70-1,700	
1987-1991 Ave.	Feb 1-Mar 21[4,5]	183	100	6,700	2,100	500
Range		124-299	0-280 [6]	2,100-10,800	1,300-3,100	130-1,030
1992	Feb 1-Mar 21 (48 days)	161 (Mar 9)	47	4,600	625[7]	350
1993	Feb 1-Mar 20 (47 days)	78 (Mar 18)	0	2,400	2,000	180
1994	Feb 1-Mar 19 (34 days)	120 (Mar 16)	10	2,100	1,500	190
1995	Feb 1-Mar 18 (33 days)	83 (Mar 16)	13	2,100	1,950	730
1996	Feb 1-Mar 16 (32 days)	--	0	90	480	230
1997	Feb 3-Mar 21 (35 days)	--	14	220	2,600	190
1998	Feb 2-Mar 14 (30 days)	--	1	150	2,800	120
1999	Feb 1-Mar 20 (40 days)	--	1	89	1,700	160
2000	Feb 1-Mar 21 (48 days)	--	31	2	2,251	307
2001	Feb 1-Mar 14 (41 days)	--	160	230	1,961	86
2002	Feb 1-Mar 21 (48 days)	--	45	78	1,529	76
2003	Feb 1- Mar 21 (48 days)	--	857	788	1,339	113
2004	Feb 2-Mar 10 (37 days)	--	2	70	1,748	48
2005	Feb 1-Mar 16 (44 days)	--	1	8	1,754	27
2006	Feb 1-Mar 21 (48 days)	--	1	139	815	186
2007	Feb 1-Mar 21 (49 days)	--	3	558	1,114	85
2008	Feb 1-Mar 21 (48 days)	--	0	334	1,588	20
2009	Feb 2-Mar 21	--	0	0	1,602	1
2010	Feb 1-Mar 3	--	0	12	2,889	2
2011	Feb 1-Mar 21	--	7	247	2,869	103
2012	Feb 1-Mar 21	--	2	100	4,153[8]	14
2013	Feb 1-Mar 21	--	0	0	2,974[9]	3
2014	Feb 1-Mar 21	--	0	98	2,115[10]	5
2015	Feb 2-Mar 21	--	6	171	1355[11]	7

1. *Season dates during 1994-1999 (except March, 1999) include weekend closures of 42-48 hours.*
2. *Treaty Indian sales to wholesale fish dealers.*
3. *The 1980 season ended on March 15. The ending date for all other years was April 1.*
4. *The 1989 season ended on March 26. The end date for all other years was March 21.*
5. *Walleye sales not accounted for prior to 1989.*
6. *Includes two late fall Chinook in 1991.*
7. *Sturgeon sales prohibited beginning noon March 5.*
8. *John Day Pool fishery through March 1, Bonneville Pool fishery through March 6, The Dalles Pool fishery through March 21.*
9. *John Day Pool fishery through February 27, Bonneville Pool fishery through March 6, The Dalles Pool fishery through March 21.*
10. *John Day Pool fishery through February 26, Bonneville Pool fishery through March 15, The Dalles Pool fishery through March 21(except closed between March 3-12).*
11. *The Dalles and John Day Pool fishery Feb 2-24. Bonneville Pool fishery Feb. 23-March 21.*

Table 31. Spring Season Commercial Landings in Treaty Fisheries, 2009-2015 [1].

Spring Season					
		Numbers of Fish Sold Commercially to wholesale fish buyers			
Year	Season	Chinook[2]	Steelhead	Sockeye	Walleye
2009	Jun 1-14	1,039	44	11	1
2010	April 27-May 19	27,544	93	0	15
2011	May 10-June 15	10,519	124	0	0
2012	May 15- June 15	4,910	77	968	7
2013	June 8- June15	694	26	265	0
2014	May 6-June 15	14,447	144	39	16
2015	March 12-June 15	19,028	55	97	9

[1] *Includes platform and hook and line fisheries since 2010.*
[2] *Includes both adult and jack Chinook.*

Table 32. Summer Season Commercial Landings in Treaty Fisheries, 2009-2015 [1].

Summer Season					
		Numbers of Fish Sold Commercially to wholesale fish buyers			
Year	Season	Chinook[2]	Steelhead	Sockeye	Walleye
2009	Jun 16- Jul 17	9,730	1,040	5,958	6
2010	June 16- Jul 29	12,734	4,912	13,111	34
2011	June 16-July 31	17,521	2,683	4,763	55
2012	June 16-July 12	6,474	548	18,931	33
2013	June 16-July 25	12,057	1,691	3,278	28
2014	June 16-July 31	15,389	4,361	21,448	15
2015	June 16-July 31	31,545	2,142	22,884	28

[1] *Includes platform and hook and line fisheries since 2010.*
[2.] *Includes both adult and jack Chinook.*

Table 33. Winter Season Harvest of Winter and Summer Steelhead in Treaty Fisheries in Zone 6, 2001-2015.

		Bonneville Pool Winter Steelhead [1]			The Dalles and John Day Pool
Year	Total	Total	Clipped	Unclipped	Summer Steelhead [2]
2001	230	117	93	24	113
2002	78	78	65	13	0
2003	788	568	477	91	220
2004	70	54	46	8	16
2005	8	8	7	1	0
2006	139	108	92	16	31
2007	558	288	211	77	270
2008	334	28	17	11	306
2009	0	0	0	0	0
2010	12	0	0	0	12
2011	281	32	19	13	249
2012	101	85	56	29	16
2013	0	0	0	0	0
2014	98	98	63	35	0
2015	171	171	88	83	0

[1] *Clipped and unclipped winter steelhead based on Bonneville Dam clip rate.*
[2.] *Summer steelhead harvest is on fish passing Bonneville Dam in the previous calendar year.*

Table 34. Spring Season Treaty Steelhead Harvest, 2001-2013.[1]			
Year	Total	Clipped	Unclipped
2001	617	446	171
2002	411	252	159
2003	385	336	49
2004	400	335	65
2005	155	126	29
2006	422	329	93
2007	323	264	59
2008	288	206	82
2009	400	298	102
2010	483	312	171
2011	234	166	68
2012	151	109	42
2013	267	153	114
2014	200	149	51
2015	157	94	63

[1] *Clipped and unclipped based on Bonneville Dam clip rate for Skamania stock.*

Table 35. Summer Season Treaty Steelhead Harvest in Zone 6 and in Bank Fisheries Downstream of Bonneville Dam. [1]							
Year	Hatchery A	Wild A	Hatchery B	Wild B	Total Hatchery	Total Wild	Total
1999	--	--	--	--	--	--	2,952
2000	--	--	--	--	--	--	1,670
2001	--	--	--	--	--	--	8,220
2002	--	--	--	--	--	--	4,967
2003	--	--	--	--	--	--	4,455
2004	--	--	--	--	--	--	5,514
2005	--	--	--	--	--	--	3,552
2006	--	--	--	--	--	--	1,345
2007	--	--	--	--	--	--	1,039
2008	1,753	614	694	142	2,447	756	3,203
2009	2,193	527	605	210	2,798	737	3,535
2010	5,067	1,857	3,022	1,011	8,089	2,868	10,957
2011	1,848	658	943	545	2,790	1,203	3,993
2012	921	399	112	80	1,034	478	1,512
2013	2,974	2,255	87	55	3,061	2,310	5,373
2014	4,670	3,173	575	370	5,245	3,543	8,788

[1.] *Stock proportions from 2008 on based on creel sampling data. B steelhead are defined as steelhead of any origin that measure 78cm or greater.*