2014 JOINT STAFF REPORT:
STOCK STATUS AND FISHERIES FOR
SPRING CHINOOK, SUMMER CHINOOK, SOCKEYE,
STEELHEAD, AND OTHER SPECIES,
AND MISCELLANEOUS REGULATIONS

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CONTENTS

LIST OF TABLES

LIST OF FIGURES

Page

INTRODUCTION

This report describes winter, spring, and summer season fisheries in the mainstem Columbia River, including a review of 2013 winter/spring and summer fisheries, plus management guidelines and expectations for 2014 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 2014 winter/spring and summer management season is scheduled for 10 AM, Wednesday January 29, 2014 at the Clark Regional Wastewater District (8000 52nd Court, 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 29 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 fresh water to spawn in Columbia River tributaries and generally emigrate from freshwater as yearlings. Returning adults are comprised of lower river (downstream from Bonneville Dam) and upriver (upstream from Bonneville Dam) components. 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 one year early, prior to adulthood. Spring Chinook entering the lower Columbia River during mid-February to mid-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 May, with peak abundance during mid-March to mid-April. Migration through the lower Willamette River varies with water conditions but typically occurs from mid-March through April. 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 lower returns to the Willamette in some years 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.

2013 Return

The Willamette River return of 47,311 spring Chinook entering the Columbia River in 2013 was 27% less than the 2012 return of 65,115 fish and was 21% less than the preseason forecast of 59,845 (Tables 1 and 2). The return was made up of 2,431 Age-3, 32,576 Age-4, 12,134 Age-5, and 170 Age-6 Chinook. Approximately 22% (10,401) of the 2013 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.

2013 Escapement

Passage of spring Chinook over Willamette Falls in 2013 totaled 29,561 fish (Table 3 and Table 4). From 1970 to 2013, the number of spring Chinook passing Willamette Falls has ranged from 14,700 to 96,700 and averaged 43,300 fish. Of the fish passing Willamette Falls in 2013, about 22,200 were hatchery fish, which met the 22,000 hatchery fish escapement goal specified in the Willamette Fishery Management and Evaluation Plan (FMEP).

2014 Forecast

The ODFW staff has forecasted a return of 58,690 Willamette River spring Chinook to the Columbia River mouth in 2014 which would be lower than the 10-year average (2004-2013) return of 67,200 fish and 24% greater than the 2013 return (Table 2). Age-specific returns for 2014 are expected to include 3,000 Age-3s, 34,000 Age-4s, 21,400 Age-5s and 290 Age-6s. The 2014 return is expected to include about 12,500 non-fin-clipped fish (21% of total return), based on the proportions of unmarked fish observed in 2009–2013.

Clackamas River Spring Chinook

2013 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 11,300 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 2013, 6,153 fish (including 2,332 hatchery fish) returned to the Clackamas River.

2013 Escapement

The return of 3,821 hatchery fish to the Clackamas River did meet the FMEP escapement goal of 3,300. The North Fork Dam count of 3,592 spring Chinook in 2013 included 2,306 unmarked fish that were passed upstream, 425 adipose-fin marked fish that were recycled downstream (to provide additional recreational fishing opportunity), and 861 marked fish that were transported directly to Clackamas Hatchery where the swim-in return was 2,027 fish. An estimated 11 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.

2014 Forecast

The ODFW staff has forecasted a return of 8,200 spring Chinook to the Clackamas River. The 8,200 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, large-scale releases of spring Chinook smolts from wild, local broodstock were initiated at Sandy River Hatchery. Since 2002, only wild spring Chinook have been used for Sandy River Hatchery 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 2013 adult spring Chinook return to the Sandy River is estimated at 5,750 adults, compared to the forecast of 6,100 adults. The 2014 forecast is 5,500 adult fish, based on 2011–2013 average returns. Both the return estimate and forecast are preliminary and are subject to change. Sandy River returns are shown in Table 1, recreational catch estimates are shown in Table 25.

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 from 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 25.

Cowlitz River Return and Forecast

The 2013 Cowlitz River spring Chinook return of 9,500 adults (5% wild) was greater than the preseason forecast of 5,500 and the recent 10-year (2003-2012) average of 8,900.

The minimum hatchery escapement goal of 1,250 adults was met with 3,800 adipose-fin clipped adults and 700 jacks returning to the hatchery. A total of 1,900 hatchery and 300 wild adult fish were released into the upper basin. Natural spawning escapement below the salmon hatchery is estimated at 1,200 adults, which is 125% of the recent 10-year average of 940.

The 2014 Cowlitz River forecast is 7,800 adult spring Chinook to the tributary mouth, which is 94% of the recent 10-year average and 82% of the 2013 adult return.

Kalama River Return and Forecast

The 2013 Kalama River spring Chinook return of 1,000 adults (8% wild) was greater than the preseason forecast of 700. The 2013 was greater than the returns observed the past few years, but was still well below the recent 10-year average return of 3,000 adult fish.

The minimum hatchery escapement goal of 400 adults was met. Nearly 800 adipose-fin clipped adults and 30 jacks returned to the hatchery. An estimated 150 adult fish spawned naturally below Kalama Falls Hatchery and nearly 100 non-fin-clipped fish were passed upstream.

The 2014 Kalama River forecast is 500 adult spring Chinook to the tributary mouth, which is 18% of the recent 10-year average return and 49% of the 2013 return.

Lewis River Return and Forecast

The 2013 Lewis River spring Chinook return of 1,600 adults was equal to the preseason forecast, but well below the recent 10-year average of 4,000 adults.

The minimum hatchery escapement goal of 1,300 fish was met. A total of 1,400 adults and 100 jacks returned to the Merwin Dam and Lewis River Salmon Hatchery traps in 2013. Natural spawning escapement below Merwin Dam is estimated at 60 fish, compared to the 10-year average of 300 adult fish.

The 2014 Lewis River forecast is 1,100 adult spring Chinook to the tributary mouth which would be the lowest since at least 1980. A return of this size would be 30% of the 10-year average (3,700) and 69% of the 2013 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 the implementation of the Bonneville Power Administration (BPA) funded Select Area Fisheries Evaluation (SAFE) Project. Implementation of the SAFE project also allowed for the development of other Select Area fishing sites. The evaluation phase of the SAFE program was completed in 2006, and the program is now referred to as the Select Area Fisheries Enhancement project (utilizing the same acronym – SAFE). Spring Chinook releases in Oregon Select Area sites are comprised of Willamette stock while the Washington site utilizes Cowlitz and/or Lewis stocks. Currently, most of the Select Area spring Chinook are predominantly reared in hatcheries primarily supported by the BPA-funded SAFE Project: Gnat Creek Hatchery (ODFW) in Oregon and Grays River Hatchery (WDFW) in Washington. Production at both hatcheries uses surplus eggs collected at other state facilities that would not otherwise have been hatched and reared. Spring Chinook released in Select Areas are reared and/or acclimated in net pens located in Youngs Bay, Tongue Point, and Blind Slough in Oregon and Deep River in Washington. However, beginning in 2013, a small experimental group is being overwintered and released directly from Gnat Creek Hatchery.

Spring Chinook releases in all Select Areas combined ranged between 890,400–1,828,100 smolts annually during 1996–2013, with an average release of 1,231,400 smolts (Table 5). In Youngs Bay, annual releases of spring Chinook during the evaluation phase of the project averaged 449,500 smolts (1994–2006 broods). Since then, releases have increased and now average 635,700 for release years 2009–2013 (2007–2011 broods). Releases of spring Chinook smolts into Tongue Point and Blind Slough began in 1996. Since inception, smolt releases into Blind Slough have averaged 295,600 smolts annually. Following the 2003 relocation of the Tongue Point net pen site further into Cathlamet Bay, experimental groups of spring Chinook smolts

released from the Tongue Point–MERTS site ranged from 20,900–103,100 annually (2003–2011). In 2012 and 2013, releases were increased to approximately 250,000 smolts (a return to pre-2000 levels) and 480,000 respectively; this increase was accomplished using smolts reprogrammed from the Willamette system per Oregon Fish and Wildlife Commission direction in 2008 and 2012. Releases into Deep River began in 1998 and averaged 98,500 annually 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 have averaged 286,400 since this strategy was initiated.

2013 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 2013 Select Area winter/spring/summer fisheries totaled 8,064 Chinook (6,658 spring Chinook; remainder primarily early-returning Select Area Bright (SAB) fall Chinook). This was the seventh highest catch on record and was less than the recent 10-year (2003–2012) average harvest of 9,000 Chinook (Table6). The relatively low harvest was driven by below average return rates of Age-4 adults from the Youngs Bay net pen release. An estimated 360 Chinook were harvested from recreational fisheries in Select Areas, bringing the total to 8,424 fish harvested in Select Area sites in 2013.

2014 Forecast

The 2014 Select Area spring Chinook adult return will be comprised primarily of Age-5 and Age-4 adults from releases of 1.29 million smolts in 2011 (2009 brood) and 1.53 million smolts in 2012 (2010 brood) (Table 5). Based on these releases and recent site and age-specific return rates, about 7,400 spring Chinook are expected to return to Select Areas in 2014. Approximately 5,700 fish are predicted to return to Youngs Bay, 1,000 fish to Blind Slough/Knappa Slough, 660 fish to Tongue Point/South Channel, and some fish to Deep River. The total Select Area commercial harvest (including harvest of non-local stocks) is expected to be slightly above the recent 10-year average and the number harvested in 2013.

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. Within this decade, the late timing trend began in 2005. The average 50% passage date at Bonneville Dam over the past 10-years (2003–2012) is May 7, which continues the late timing trend observed since 2005.

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 10% 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. 2013 marks the first brood-year for the Chief Joseph Hatchery spring Chinook program. An anticipated 420,000 yearling smolts are scheduled for release in April 2015. An additional 200,000 yearling smolts are expected to be released as part of the Okanogan re-introduction program beginning in April 2014 or April 2015.

On average, the Snake River spring/summer Chinook return has represented 47% 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.

2013 Return

The 2013 upriver spring Chinook return to the Columbia River mouth totaled 123,100 adults (Table 7) and consisted of 88,900 Age-4 fish, 32,600 Age-5 fish, and 1,600 Age-6 fish. The return included 67,300 (21,900 wild) adult Snake River spring/summer Chinook and 18,000 (3,600 wild) adult upper Columbia spring Chinook. The remainder of the run was destined for tributaries in the mid-Columbia. The 2013 upriver spring Chinook return was 87% of the forecast of 141,400 fish. The aggregate return was less than (66%) the recent ten-year average (2003-2012) of 187,800 adults, and ranked as the 14th highest return since 1980.

The 2013 upriver spring Chinook passage at Bonneville Dam reached 50% passage on May 7, the same as the 10-year average date. As mentioned in the previous section, the late timing trend that has been observed at Bonneville Dam since 2005 appears to be the 'new normal', so the 2013 passage is considered to be normal timed. The peak count occurred on May 3 (over 7,300 fish), four days prior to the 50% passage date. Chinook jack counts at Bonneville Dam totaled nearly 42,800 fish, which was greater than the 10-year average of 25,700, and compares to the high jack counts observed in 2009 (81,800) and 2011 (67,000).

The upper Columbia spring Chinook return of 18,000 adults was similar to the recent 10-year average return (18,100 fish). The upper Columbia wild component was 161% of the recent 10-year average (2,200 fish) and represented 20% of the 2013 upper Columbia return. The 2013 return marks the third year that the proportion of wild fish was higher than average. The Snake River spring/summer return was 67% of the 10-year average of nearly 100,000 fish, and ranked as the 11th highest return since at least 1980. The Snake River wild component was 81% of average and also ranked the 11th highest return since 1980. See Tables 7, 8 and 9.

2014 Forecast

The 2014 forecast for upriver spring Chinook is 227,000 adults to the Columbia River mouth (Table 2). This forecast includes 24,100 upper Columbia spring Chinook (3,700 wild) and 125,000 Snake River fish (42,200 wild), with the remainder of the run comprised of spring Chinook returning to mid-Columbia tributaries. The overall return is expected to include 209,700 Age-4 fish and 16,600 Age-5 fish. If accurate, this forecast of 227,000 fish would be the 5th highest return since 1980 and 129% of the average return observed over the past decade (2004–2013).

The forecast for adult Upper Columbia spring Chinook of 24,100 fish is 137% of the recent 10-year average; the wild component represents 156% of the 10-year average return. The wild component is forecast at 15% of total Upper Columbia spring run, compared to the recent 10-year average of 13%.

The forecast for Snake River spring/summer Chinook of 125,000 fish is 134% of the recent 10-year average of 93,000 fish and the wild forecast is 175% of the recent 10-year average of 24,100 fish. The wild component is forecast to represent 33% of total Snake River run, which is greater than the recent 10-year average percentage (26%). The Upper Columbia return is expected to represent 10% of the aggregate upriver spring Chinook return and the Snake River component is expected to represent 55% of the aggregate return. These stock proportions are similar to the 10-year average.

Washington Tributaries Upstream of Bonneville Dam

The Washington tributary returns and forecasts listed below are included in the aggregate 2013 return and 2014 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 (2003–2012) averaged 8,100 fish (range 3,300–20,600) each year. The 2013 return of spring Chinook to the Wind River was 3,600 adults, compared to the preseason forecast of 3,000 adults. The 2014 forecast to the tributary mouth is 8,500 adult fish, which would be greater (132%) than the average return observed over the past ten years (6,400) and much improved over last year's return.

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 2013 return of spring Chinook to the mouth of the Little White Salmon River was 7,300 adults. The return was greater than the preseason forecast of 4,900 adults, and less than the recent 10-year average of 10,700 adult fish. The 2014 forecast to the tributary mouth is 13,100 adult fish, which would be above average and improved over last year's return.

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 1,960 fish annually with 70–80% of the run being hatchery fish.

The 2013 return of spring Chinook was 1,760 adults compared to the forecast of 2,200 adults. The preliminary 2014 forecast is for a return of 2,500 adults to the tributary mouth. Mark-recapture estimates at Lyle Falls on the lower Klickitat River conducted for the past few years produce overall higher total run size estimates (this method produced an estimate of about 3,900 total adults for 2013), but still indicate a predominantly hatchery-origin run with a small wild run size averaging just over 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 7,100 adult spring Chinook (53% wild) returned to the Yakima River in 2013 which was similar to the 7,300 expected. The 2014 forecast is 9,100 adult spring Chinook, including 5,700 wild fish (63%), compared to the recent 10-yearaverage of nearly 8,800 adults (69% wild).

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. 2013 marks the first brood-year for the Chief Joseph Hatchery summer Chinook program. An anticipated 120,000 sub-yearlings are scheduled for release in June 2014 and 300,000 yearling smolts are expected to be released in April 2015.

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.

2013 Return

The 2013 upper Columbia summer Chinook return totaled 67,600 adults, compared to the preseason forecast of 73,500 adults. The adult return was comprised of 35,700 (53%) Age-4 fish and 30,900 (46%) Age-5 fish. The age class proportions were similar to the average proportion observed over the past ten years. Overall, the total return was strong and continued the generally upward trend observed since 2000. The 2013 return ranked sixth highest since 1980, and was similar (105%) to the recent 10-year average (2003–2012) of 64,400 adults. The 2013 jack return of 17,200 fish at Bonneville Dam was greater than the recent 10-year average (13,000) which includes two years with very high jack returns.

2014 Forecast

The 2014 forecast for Upper Columbia summer Chinook is 67,500 adults to the Columbia River mouth. The overall return is expected to include 43,000 Age-4 fish (64%) and 23,600 Age-5 fish (35%). If accurate, this projection would represent the 7th highest return since 1980 and 107% 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) which includes populations in Grays Harbor, Willapa Bay, and the Columbia River downstream of the Cowlitz River in Washington and the Willamette River in Oregon. All steelhead handled downstream of Bonneville 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. Columbia River wild winter steelhead returns during 2003 through 2012 averaged 17,900 fish and ranged between 11,600 and 29,600 fish (Table 11). Passage of wild winter steelhead at Willamette Falls during the same 10-year period has averaged 6,800 fish, but has varied widely from 2,800 up to 11,400 fish.

2013 Return and 2014 Forecast

The 2013 wild winter steelhead return to the Columbia River mouth totaled 15,700 fish. The 2013 return was very similar to the forecast of 15,700 fish. Returns were generally at or above average in Washington tributaries; Oregon returns were less than average. Passage in 2013 at Willamette Falls totaled 4,944 fish and represented 32% of the total Columbia River return, which is proportionately less than the recent 10-year average (37%). The 2014 forecast is 16,100 for wild winter steelhead returning to the Columbia River mouth (Table 11).

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 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. 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 Skamania-stock.

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), 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.

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). 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 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 are destined for tributaries throughout the Columbia and Snake basins, are characteristically smaller (less than 78 cm length) and spend one or two years at sea. Group B steelhead return to the

Clearwater and Salmon rivers in Idaho, are generally larger (at least 78 cm length), later-timed than the Group A steelhead, and typically spend two or three years at sea.

Upriver summer steelhead returns to Bonneville Dam have been relatively stable since at least 1984. During 1984–2012 Bonneville Dam passage has ranged from 161,000 fish up to 630,000 fish with an average of 312,000 upriver summer steelhead. The recent 10-year average (2003–2012) is 359,000 fish, including 78,000 wild fish. The 2012 return marked the first time in the past 12 years that the overall return was less than 250,000 fish. The Skamania stock has followed a relatively stable trend similar to the total return, with the annual returns since 1984 averaging 16,000 fish compared to the average in the 1990s of 12,000 fish and 17,000 fish in the 2000s. During 1984–2012 the Group A return to Bonneville Dam ranged from 116,000 fish up to 543,000 fish, averaging 244,000 fish. The recent 10-year average for Group A steelhead passage is 292,000 fish, which includes the large return in 2009 and the low return in 2012. The wild component of the Group A run represented 26% of the run during 1984–2012, (14%–45% range) and the recent 10-year average is 29% wild. Group B steelhead returns are much lower than the Group A returns. During 1984–2012 Group B passage at Bonneville Dam has ranged from 13,000 fish up to 130,000 fish, averaging 52,000 fish. The recent 10-year average for Group B steelhead passage is 53,000 fish. The wild component of the Group B run represented 20% of the run during 1984–2012, (8%–32% range) and the recent 10-year average is 21% wild.

2013 Return

The total return to Bonneville Dam (April-October passage) of upriver summer steelhead in 2013 was 231,300 fish, compared to the preseason forecast of 339,200 upriver steelhead (68% of forecast). Upriver summer steelhead passage at Bonneville Dam in 2013 was much lower (64%) than the recent 10-year average return of 359,900 fish and the 9th lowest return 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 98,200 fish (42%). Data in this report are adjusted for unclipped hatchery fish based on sampling data collected at the Bonneville Dam adult fish trap.

Skamania stock steelhead passage at Bonneville Dam in 2013 totaled 5,700 fish including 1,700 (29%) wild fish. The Skamania return was 39% of the recent 10-year average return and was the lowest return since 1984. Recent reductions in upriver Skamania stock production is likely contributing to the lower than average return.

The majority of steelhead passage at Bonneville Dam occurs during July through October. During these months in 2013, a total of 225,600 steelhead passed Bonneville Dam, compared to the recent 10-year average of 346,400 fish and the expected total passage of 322,600. Passage was 50% complete on August 9, compared to the average 50% date of August 14. Preliminary analysis suggests that the 2-salt component of the return did not return in the proportion typically observed, which may be an indicator of poor ocean conditions upon entry for the 2010 brood. Preliminary data also suggests that at least for the Group A stock, the wild component appears to have performed better to the hatchery component when compared to the preseason expectation. The Group A and Group B stock components of the 2013 return had not been determined at the time of this report. The data will be available in early spring and published in the annual Fall Joint Staff report, which is typically available in July.

2014 Forecast

The 2014 forecasts for upriver summer steelhead at Bonneville Dam were not available at the time of this report. Forecasts will be 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), 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, largely returning to the Stanley Basin in Idaho, is extremely depleted. A small remnant population of the Snake River sockeye returns to Redfish Lake. Production is maintained through a captive brood program and most returning adults are progeny of this program. 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 Yakama 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 past ten years (2003–2012), the Okanogan return has averaged 153,000 fish and Wenatchee return has averaged

27,000 fish (18%). 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. During the past ten years (2003–2012), the Snake River return has averaged 800 fish to the Columbia River (Table 16).

2013 Return

The 2013 return of sockeye to the Columbia River of 186,100 adults was greater than the preseason forecast of 180,500 adults, and continues the upward trend observed since 2008. The 2013 return included 36,200 Wenatchee stock, 148,800 Okanogan stock, and 1,100 Snake River stock returning to the Columbia River. At Prosser Dam on the Yakama River, nearly 700 sockeye were counted. On the Deschutes River, around 30 sockeye reached Round Butte Dam and were passed upstream. The Wenatchee return was 81% of forecast, and the escapement goal of 23,000 fish to the Wenatchee River was met. The Okanogan return was 110% of forecast. Sockeye counts at Lower Granite Dam totaled 757 fish, which was slightly greater than the 10-year average of 700 fish and 170% of the 2012 passage (Table 16).

2014 Forecast

The 2014 forecast for the Columbia River sockeye run is for a strong return of 347,100 adults to the Columbia River which includes 63,400 Wenatchee stock, 272,500 Okanogan stock, and 1,200 to the Snake River. The forecast is nearly twice (178%) the 2004–2013 average return of 194,600 fish. The Wenatchee component is forecasted to be well over the escapement objective of 23,000 fish. The Okanogan component, which has shown an impressive increase in run strength since 2008, is expected to continue this trend. Although the Snake River component represents a small proportion of the total run, a return of 1,240 fish would be 137% 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 (primarily purse seine) in 2011 and 2012 under experimental gear permits issued by ODFW. One purse seiner was slated

to fish under an experimental gear permit in 2013 but opted not to due to lack of market demand. It is expected that harvest opportunity would be allowed in 2014 if demand exists.

2013 Return

The 2013 minimum American shad run size was 4.0 million, with a minimum escapement of 3.7 million fish upstream of Bonneville Dam, plus an unknown number of spawners downstream of Bonneville Dam and downstream of Willamette Falls. The 2013 run in the Columbia River increased for the second year after a record low of 0.95 million in 2011 (Table 17). The non-Indian (lower Columbia and lower Willamette) recreational and commercial combined catch of 213,400 American shad (7% of the total run) was improved over the previous two years, with a record catch in the lower Columbia recreational fishery of 194,900 kept.

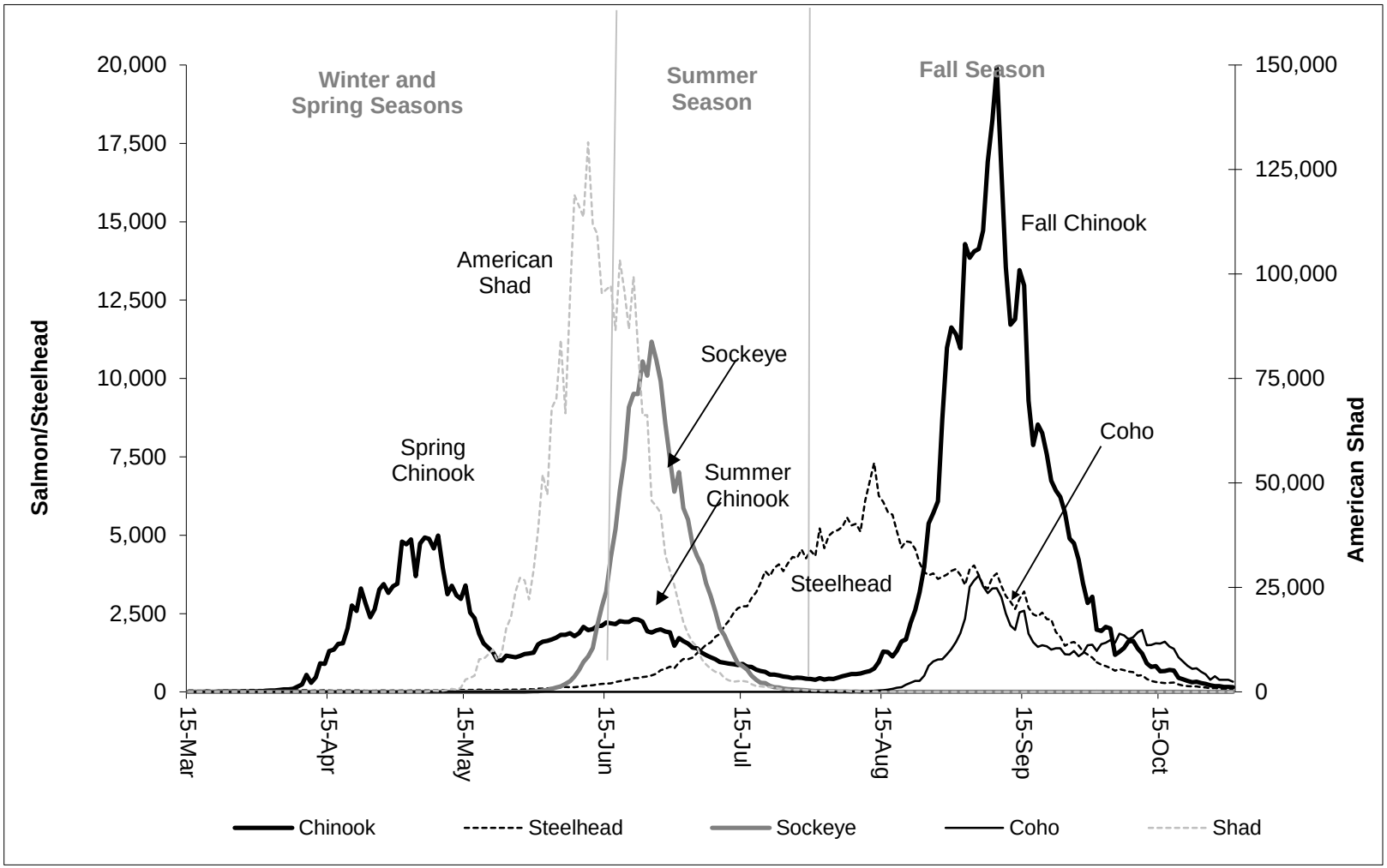

Figure 1. Average Daily Counts of Salmon, Steelhead, and American shad at Bonneville Dam, 2004–2013.

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 for upriver Chinook, sockeye, steelhead, coho, and white sturgeon" (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. Based on this harvest rate schedule and the preseason forecast for upriver spring Chinook, fisheries are planned 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 runsize 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.

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. In 2013, new policy guidelines for non-Indian spring Chinook fisheries were adopted by the Commissions which included (as in previous years) allocation guidelines for assigning available ESA impacts for upriver spring Chinook among the various fisheries. The newly-adopted policy also continued 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 is the policy adopted to be effective starting January 2013. 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 below.

Allocation Schedule for Upriver Spring Chinook ESA Impacts based on OFWC and WFWC 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

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) and by the Commissions. 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-Indian fisheries is established through the MA matrix, the UCMA matrix allocates harvestable Chinook to non-Indian fisheries upstream and downstream of Priest Rapids Dam.

Upper Columbia Management Agreement: Non-treaty Harvest Framework for Upper Columbia Summer Chinook			
River mouth run size	Harvest allocation upstream of Priest Rapids Dam	Harvest allocation downstream of Priest Rapids Dam	Description of expected fisheries upstream of Priest Rapids Dam
0 – 29,000	> 90%	No directed harvest	C&S for Colville and Wanapum, potential selective recreational
29,001 – 50,000	90%	Recreational and/or commercial	C&S for Colville and Wanapum, limited recreational
50,001 – 60,000	70% -90%	Recreational and/or commercial	C&S for Wanapum and Colville, recreational
60,001 – 75,000	65% - 70%	Recreational and/or commercial	C&S for Wanapum and Colville, recreational
≥75,001	60% - 65%	Recreational and/or commercial	C&S Wanapum and Colville, recreational

The Commissions provide staff with policy guidance in the sharing of harvestable fish available for non-Indian fisheries downstream of Priest Rapids Dam. Over the past several years (through 2012), the Commissions have determined that these fish should be shared equally (50/50) between commercial and recreational fisheries. Beginning in 2013, the Commissions adopted new policies regarding the sharing of harvestable fish available for non-Indian fisheries downstream of Priest Rapids Dam. The both Commissions adopted a policy that shares the fish 60/40 between sport and commercial fisheries through 2014. Implementation of the new policy was delayed which caused the States to agree to manage the fisheries based on a 55/45 sport/commercial split for 2013.

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 lower 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		
	Allocation of Harvestable Numbers	
Predicted Hatchery Return	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

A Joint State Agreement has been in effect and renewed every one to three years since 1997 with adjustments as necessary to protect sturgeon populations while maintaining harvest opportunity. For detailed information, see ***2013 Joint Staff Report: Stock Status and Fisheries for Sturgeon and Smelt*** dated January 15, 2013. The current three-year Accord was adopted in 2011. This Accord is similar in structure to past agreements, with the WFWC, OFWC, and the two state directors providing management guidelines for white sturgeon fisheries. Annual adjustments have been made to the accord in 2012 and 2013.

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. A similar lack of stable recreational salmon fisheries and recognition of white sturgeon as a sport fish have increased the popularity of sturgeon angling since the mid-1980s. In recent years, reduced white sturgeon catch guidelines have impacted the stability of all Columbia River white sturgeon fisheries.

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 have been managed to remain within catch guidelines while maximizing economic benefit and achieving conservation objectives for other species. Weekly landing limits have remained a valuable tool for maintaining consistent commercial fisheries since 2002. Annual fishing plans for distribution of commercially harvested sturgeon among various seasons are developed each year with industry input to provide predictable commercial fishing opportunities and stable markets throughout the year. The season structure of winter commercial sturgeon fisheries has been similar in 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 18.

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 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.

2013 Winter Commercial Salmon Season

The 2013 commercial fishery was conducted under similar guiding principles, management objectives, and basic fishing plans in effect since 2004. Based on 2013 preseason run size forecasts and the harvest rate schedule in the 2008–2017 MA, non-Indian fisheries were limited to a 1.9% 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. In addition, Commission guidance 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 0.249% prior to a run size update (1.9% *35% = 0.665% * 60% = 0.399% - 0.150% = 0.249%). Based on the ESA calculations and catch balance protocol, nearly 1,400 upriver Chinook (kept + release mortalities) were available to commercial fisheries (Select Areas and mainstem) prior to a run size update.

The 2013 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 22,000 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 4,400 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.

The available catch for mainstem commercial fisheries (prior to a run size update) included nearly 1,200 upriver-stock spring Chinook (including release mortalities) and 4,400 hatchery Willamette Chinook. A total of 280 white sturgeon were set aside from the commercial allocation (2,021 fish) for harvest during the winter and spring salmon fisheries. According to the preseason commercial fishing plan, test fishing would be conducted prior to considering full fleet fisheries, and was expected to begin in early March. 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 2013 spring Chinook season.

Test fishing using tangle nets occurred weekly from March 3 to May 5, except not during the week of April 8 (statistical week #15). Consistent with past years, the majority of test fishing occurred in Zones 2–3. Data collected provided information on stock composition, mark rates, relative abundance of steelhead and Chinook, and catch rates, to help staff to determine whether a fishery should be scheduled. 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 17 unmarked and 10 marked spring Chinook for ceremonial purposes. ESA impacts for these fish are included in the treaty impact summary.

Test fishing had been conducted once weekly during March, but it wasn't until the end of March that Chinook catch rates began to show signs of improvement. On April 1, the Compact considered the first salmon season for 2013. The Joint Staff recommended a 6.5 hour fishing period in Zones 1-5 and expected catch would be approximately 1,200 Chinook. The Chinook catch was expected to include just over 1,000 upriver stock (kept plus release mortalities) which would represent 85% of the 1,200 upriver fish available and 60% of the associated impacts available. Public testimony included those who supported the recommendation and those who preferred to wait a week until the stock mix was heavier to Willamette hatchery-origin fish. If the Compact decided to wait, the industry recognized the potential need for implementing a landing limit given the expected increase in Chinook abundance and the low number of harvestable fish allocated to the mainstem commercial fishery. The Compact decided to not adopt the proposed fishing period and scheduled the next hearing for the following week on April 8.

Test fishing results from April 7 showed improvements in Chinook stock composition, mark rate and Chinook to steelhead ratios compared to the previous weeks, however the Chinook catch rate (1.5 Chinook per drift) remained modest. Because of the low number of Chinook available for commercial harvest and the building Chinook abundance in the lower river, the Joint Staff had limited options in developing a viable fishing period. Staff did consider a short (4–6 hour) fishing period, but ultimately put forth a recommendation that included a Chinook landing limit.

The first salmon-directed fishery for 2013 was a 9-hour opener on Tuesday April 9. The fishery was conducted with tangle net gear in Zones 1-5. Tributary mouth sanctuaries were in place to protect ESA-listed steelhead and Chinook. Allowable sales included adipose fin-clipped Chinook, shad and white sturgeon. Each participating vessel was limited to a maximum of nine adipose fin-clipped adult Chinook. Just over of 1,000 salmon were landed, which was less than expected. The Chinook mark rate was 79% and upriver fish comprised 66% of the kept catch. Upon the conclusion of the April 9 fishery, mainstem commercial fisheries had used around 40% (0.096% impact) of the upriver Chinook ESA allocation and 60% (690 fish) of the catch–balance available for commercial harvest prior to a run update. Test fishing resumed on April 21 and continued on a once weekly basis through May 5.

The TAC met on April 22 and again on April 29 to review the upriver spring Chinook run but was not able to provide an official run size update. TAC reported that it was too early to update the run given passage to date and variability in run timing. TAC urged fishery managers to continue the conservative management strategy for all fisheries until a run update was available.

TAC reviewed the run size again on May 13 and officially updated the run. TAC estimated a run size of 107,500 adult upriver adult spring Chinook to the Columbia River, which was 76% of forecast, and allowed for a non-Indian impact rate of 1.6% and a total catch balance of 7,955 upriver Spring Chinook mortalities (35% allocated to commercial fisheries). This update resulted in a total of 1,885 upriver spring Chinook mortalities to be available to mainstem commercial fisheries. Given that 690 fish were taken in the April 9 fishery, nearly 1,200 upriver fish remained. The Compact met on May 14 adopted a 14-hour fishing period in Zones 1-5 using

tangle net gear. Catch estimates for the adopted season included 800 hatchery Chinook. Public testimony included the request to use large-mesh due to the building abundance of shad in the river. The Compact acknowledged the concern and recognized that an over-abundance of shad caught with tangle nets could potentially increase the handle time of Chinook/steelhead required be released. Landings from this fishing period included 250 Chinook and 5,200 shad.

TAC maintained the inseason estimate of 107,500 upriver fish so Chinook remained available for commercial harvest. At the May 20 Compact hearing, the Joint Staff recommended three 16-hour fishing periods in Zones 1-5 using tangle net gear. 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. Taking into account the economic value of the fishery and the prescribed regulations (including 45-minute soak times), the Compact decided that for this particular circumstance for this particular fishery, allowing large-mesh gear would be appropriate.

Two additional fishing periods were conducted in late May (May 22 and May 29). Both periods were conducted in Zones 1-5 with large mesh gear (8-inch minimum). Around 600 Chinook and no shad were landed. TAC updated the upriver spring run again on June 6 to 115,000 fish, but too few fish remained on the allocation and no additional fishing periods were set.

Landings for the 2013 winter/spring season (Tables 18 and 19) totaled 2,200 Chinook, 300 white sturgeon and 5,200 shad. Onboard monitoring was conducted during all spring Chinook fishing periods. The total number of released Chinook during the entire winter/spring season was just over 800 un-clipped fish. Stock composition analysis indicated that 71% of the Chinook handled were of upriver origin and the overall adult Chinook mark rate was 69% for the season. Winter steelhead handle totaled 200 fish, of which 100 were unmarked (wild and unmarked hatchery fish combined). An estimated 20 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 totaled 100 fish, of which 44% were unmarked (wild and unmarked hatchery fish combined). An estimated 9 wild LCR summer steelhead mortalities resulted from incidental handle. Commercial landings were sampled at a rate of 58%, and the average weight for Chinook was 12 pounds. Ex-vessel prices averaged $7.30 per pound for Chinook and $3.30 per pound for white sturgeon.

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 angling during January 1 through March 31, and the area from the I-5 Bridge upstream to the Oregon/Washington border (upstream of McNary Dam) has been closed beginning 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 (Table 21) 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; 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. Since 2004, a regulation prohibiting the removal of unmarked fish from the water has been added to provide additional protection for released fish. To date, no studies have been conducted to evaluate the mortality of salmon and steelhead released in mainstem Columbia River recreational fisheries. The TAC conducted extensive literature reviews and concluded that a post-release mortality rate of 10% should be applied to mainstem recreational salmon and steelhead fisheries 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 for the entire area downstream of Bonneville Dam effective in March. In-season management has been necessary in most years to maintain the fishing impacts below ESA guidelines, non-Indian harvest-sharing allocations, and/or catch balancing agreements with the tribes. During all years, the states have attempted to maintain a balanced opportunity for anglers upstream of Bonneville Dam. Regulations for 2002–2013 Columbia River recreational spring Chinook fisheries are listed in Table 21, and catch and effort totals for 2003–2013 are shown in Table 22. Information for the Zone 6 (Bonneville to McNary Dams) and Snake River sport fisheries is shown in Table 21 and/or Table 23.

2013 Lower Columbia River Spring Chinook Recreational Fishery

In 2013, the total spring Chinook run size was forecast to be 225,000 adults to the mouth of the Columbia, comprised of an upriver component of 141,400 fish and a lower river component of 83,600 fish, including 59,800 Willamette spring Chinook (47,300 hatchery spring Chinook). According to the Willamette FMEP, a total of 17,600 Willamette hatchery spring Chinook were

available to recreational fisheries in the lower Willamette and lower Columbia rivers, which was expected to provide full fisheries in both areas. The 2008–2017 MA provided for a 1.9% impact to ESA-listed upriver spring Chinook in all non-Indian fisheries in 2013, based on the upriver spring Chinook run size forecast.

The OFWC and WFWC provided guidance for spring Chinook fisheries in 2013 (see **Non-Indian Impact Allocations of Upriver Spring Chinook**). This guidance, combined with buffer provisions from the 2008–2017 MA, resulted in a total of 5,000 upriver spring Chinook (kept plus release mortalities) available to the sport fishery below Bonneville Dam prior to a run size update.

Recreational fishing regulations for the 2013 spring Chinook fishery were adopted at the January 30 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 5 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 26 and April 2). The two-fish daily bag limit was modified to one adult spring Chinook in the daily limit 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.

The Columbia River was low, clear and cold at the beginning of 2013. Snowpack started above average, and most of the lower Columbia tributaries were high. January and February were cold and dry; however, the Columbia and most of its tributaries were low and clear at the beginning of March. The first spring Chinook was sampled on February 20 near Vancouver, but the catch for February was only 57 adult spring Chinook (46 kept and 11 released) and 58 winter steelhead (30 kept and 28 released) from 4,856 angler trips. The February catch was about two-thirds lower river stock spring Chinook.

Effort increased during early March when the river opened above the I-5 Bridge, but catches were inconsistent and sporadic. The Willamette and most other lower Columbia tributaries remained low and clear through March and April. Effort was the highest in the Portland-Vancouver metropolitan area, but catch rates were better in the area downstream of St. Helens. The total catch in March was 1,893 adult spring Chinook (1,462 kept and 431 released), two spring Chinook jacks and 280 winter steelhead (195 kept and 85 released) from 41,000 angler trips. The handle rate of 0.046 Chinook per angler trip was the lowest CPUE for March since 2000. Based on VSI sampling, the March catch consisted of 69% upriver spring Chinook.

Both effort and catch rates increased in early April as more fish entered the river, particularly in the lower river near Cathlamet. The projected catch through the closure date of April 5 was just over 2,700 total spring Chinook handled including 1,572 upriver fish (kept plus release mortalities), or 32% of the guideline. The states held a Joint State hearing on April 3 to review catch and passage information for upriver spring Chinook and extended the sport fishery for one week during April 6–12 (except closed Tuesday April 9). Catch rates improved to over a fish per boat in the Cathlamet area beginning April 5; however, catch rates remained spotty in the rest of the river, averaging about a Chinook kept for every four to five boats. In addition, catch rates began to taper off in the Cathlamet area by April 8. At a review hearing on April 9, the states

estimated the catch through Sunday April 7 was 3,668 adult Chinook kept and projected a catch of 2,330 more fish through April 12. The projected catch of upriver spring Chinook through April 12 was 4,484 adults (kept plus release mortalities), or 91% of the guideline. The states did not consider any further extension of the recreational fishery at the hearing on April 9, and the fishery closed effective April 13.

The total catch during April 1–12 was 4,479 adult spring Chinook (3,634 kept and 845 released), 64 adipose fin-clipped spring Chinook jacks (kept), and 244 steelhead (118 kept and 26 released) from 28,895 angler trips. The cumulative spring Chinook catch through April 12 was 6,429 fish (5,142 kept and 1,287 released) of which 3,585 were upriver fish (kept plus release mortalities), or 73% of the pre-update guideline. Through April 12, a total of 1,487 adult spring Chinook had passed Bonneville Dam.

Chinook passage at Bonneville Dam increased markedly during late April through mid-May, and the TAC updated the upriver run size to 107,500 on May 14. The states held a hearing on May 20 to consider reopening the recreational fishery below Bonneville Dam. At a run size of 107,500 upriver spring Chinook, about 1,350 upriver fish (kept plus release mortalities) were available to the fishery below Bonneville, and the states reopened sport angling effective Saturday May 25–Saturday June 15 from Tongue Point upstream to Beacon Rock, plus the Oregon and Washington banks only between Beacon Rock and Bonneville Dam. The states initially adopted conservative rules for the reopening of the sport fishery because of the volatile nature of the boat fishery above Beacon Rock and to ensure the recreational spring Chinook fishery could bridge the summer Chinook fishery scheduled to open June 16. On June 6, TAC upgraded the run size to 115,000 and the states rescinded the boat deadline at Beacon Rock effective June 8–15.

The catch during May 25–June 15 was 3,038 adult spring Chinook (1,808 kept and 1,230 released), 548 Chinook jacks, 1,292 summer steelhead (1,163 kept and 129 released) and 76 sockeye (released) from 31,609 angler trips. The final catch in the recreational fishery during February 1 through June 15, 2013 (including trips and catch during May 16–May 24 in the summer steelhead fishery) was 9,616 adult spring Chinook (6,950 hatchery Chinook kept and 2,666 unclipped fish released), 687 adipose fin-clipped spring Chinook jacks (kept), and 2,194 steelhead (1,880 adipose fin-clipped hatchery fish kept and 314 unclipped fish released) from 109,655 angler trips. The total upriver spring Chinook catch was 7,480 adult fish (5,105 kept and 2,375 released) with 5,343 kept catch plus release mortalities.

2013 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 areas upstream to the Oregon and Washington border and fisheries in the Snake River (Washington waters). Similar to past years, these impacts (25% of allowed) were shared 40% mainstem Columbia and 60% Snake River. For 2013, the pre-update ESA allowance totaled 0.228% impact.

Bonneville Dam upstream to the Oregon Washington border

A total of 0.091% ESA impacts were set aside for the Zone 6 extended recreational fishery for use prior to a run size update, which translated to nearly 700 Chinook (kept + release mortalities). The fishery opened under mark-selective regulations on March 16 and was scheduled to continue through May 5. Since 2010 the fishery has included the extended areas from McNary Dam upstream to the Oregon Washington border, and the Oregon and Washington banks between Bonneville Dam and Tower Island. The fishery closed as scheduled on May 6. Catch estimates include 580 Chinook kept (270 released) from nearly 4,200 angler trips.

When TAC provided an in-season run size estimate of 107,500 upriver spring Chinook fish on May 13, the Zone 6 sport fishery was allocated a catch of around 650 fish, compared to the 607 fish in hand. Once TAC updated the run to 115,000 upriver spring Chinook on June 6, additional fish became available and the fishery was able to re-open on June 8 and continue through June 15. Catch and effort during this time frame was very low (fewer than 50 anglers and fewer than 10 Chinook). Season total catch estimates for adult Chinook include 600 kept and 300 released from 4,200 angler trips (Table 23). Total catch represented 75% of the catch balance guideline for this fishery (800 fish). ESA impacts associated with this fishery totaled 0.070%, or 68% of the 0.102% post-season impact guideline for this fishery.

Snake River Recreational Fisheries

Prior to a run size update, 0.137% ESA impacts were set aside for this fishery, which translated to nearly 400 Chinook allowed (kept plus release mortalities). The fishery was open in three sections of the Snake River. On April 26 the area below Ice Harbor Dam near Pasco, Washington opened to hatchery Chinook retention (one-fish bag) followed by the April 28 opening of the two remaining sections of the river near little Goose Dam and Clarkston. Each section was open only two days per week. No closure dates were set, but the fishery was expected to remain for at least a few weeks; with the closure date dependent on catch rates and associated impacts.

The two lower-most areas remained open until May 11 (Ice Harbor) and May 13 (Little Goose). The uppermost area near Clarkston, Washington remained open through May 27. All three areas did reopen on a days-per-week basis in mid-June to provide additional angler opportunity. Season total catch estimates for adult Chinook include 350 kept and 125 released. In-season, because the Snake River return cannot be specifically updated, the Snake River return was estimated to represent the same proportion of the upriver return as forecasted (41%). Post season run reconstruction revealed that the actual Snake River return represented a much higher proportion (55%) of the combined upriver return. Total catch represented 62% of the catch balance guideline for this fishery (600 fish). ESA impacts associated with this fishery totaled 0.083%, or 54% of the 0.153% post season impact guideline for this fishery.

Wanapum Tribal Spring Chinook Fishery

The Wanapum Tribe conducted a ceremonial and subsistence fishery in the mainstem Columbia River downstream of Priest Rapids Dam during the spring of 2013 and harvested three wild and

five hatchery adult upper Columbia spring Chinook. ESA impacts associated with this fishery total 0.083% (3/3,600)

Lower Columbia River Tributary Spring Chinook Fisheries

Tributary spring Chinook recreational fisheries downstream of Bonneville Dam have been mark-selective since 2001. The 2013 preseason forecast for the Cowlitz River allowed for a daily bag limit of two adult Chinook throughout the season, while anglers on the Kalama and Lewis rivers were restricted to a one adult daily limit beginning January 1. The Cowlitz River remained open through the entire spring Chinook season (January 1–July 31). Under emergency actions due to low hatchery returns and poor recreational catches, the Lewis and Kalama rivers were closed to Chinook retention beginning in mid-February. The Lewis re-opened in early June and the Kalama re-opened in mid-July.

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 4,400 hatchery adult spring Chinook were harvested in Washington lower Columbia River tributaries in 2013 including 4,300 fish from the Cowlitz, zero from the Kalama and 100 from the Lewis (Table 25). The combined hatchery adult spring Chinook harvest rate in these Washington tributaries was 36%, compared to the 10-year average of 29%.

Past Summer Commercial Salmon Seasons

Historical summer commercial seasons harvested summer Chinook, sockeye, steelhead, and shad. In 2004, two 12-hour fishing periods occurred downstream of Beacon Rock targeting sockeye but also allowed the retention of Chinook. Prior to 2005, no commercial summer Chinook season had occurred downstream of Bonneville Dam since a two-day season in 1964. 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 number of fishing periods has been two or three per season. An 8-inch minimum mesh restriction and a weekly white sturgeon landing limit have been in place for Chinook-directed fisheries, which typically occurred in Zones 1-5. A sockeye directed fishery was conducted in 2008 with a 4½ inch maximum mesh size in area 2S. Sockeye sales have been allowed in years where escapement goals are expected to be met and ESA impacts are available. Ex-vessel prices in 2010 (per pound landed) averaged $2.53 for Chinook, $3.45 sockeye, and $2.16 for white sturgeon. In 2011, two periods occurred in Zones 1-5 with 8-inch gear and totaled 16 hours combined. The sturgeon landing limit was 5 fish and deliveries ranged from 109-124 per period. Ex-vessel prices (per pound landed) averaged $2.42 for Chinook and $2.52 for white sturgeon. The 2012 season consisted of two 8-hour periods. The 2012 average Chinook weight was 16 pounds. Ex-vessel prices (per pound landed) averaged $4.76 for Chinook and $2.73 for white sturgeon and $2.71 for sockeye.

2013 Summer Commercial Salmon Season

Based on the preseason forecast, management agreements and commission guidelines, nearly 2,600 summer Chinook were available for commercial harvest in 2013. In addition, 300 white sturgeon were available for commercial harvest during the summer season. No more than two fishing periods were anticipated during the six-week summer season. Regulations included an 8-inch minimum mesh size, tributary mouth sanctuaries to protect ESA-listed steelhead, and a limit of five white sturgeon per week. Sockeye sales were allowed since ESA impacts were available to cover the minimal catch expected with this gear.

The first summer Chinook fishing period was an eight-hour period conducted on the evening of June 16 in Zones 1-5. Staff anticipated catch at around 2,500 Chinook from 125 deliveries. Actual catch was less, with roughly 1,700 Chinook from 117 deliveries (Table 19).

By late June it appeared that the summer Chinook run was tracking behind expectations so additional commercial periods were put on hold until a run size update was available. On July 1 TAC downgraded the summer Chinook run to 60,000 fish (73,500 preseason) and downgraded the sockeye run to 155,000 fish (180,000 preseason). The commercial allocation of summer Chinook based on a run of 60,000 fish would not allow for any additional fishing periods. On July 8 TAC updated the inseason run size estimate to 64,000 summer Chinook and 165,000 sockeye. This brought the balance of commercially-harvestable Chinook to 200 fish. A second (and final) 8-hour fishing period was conducted on July 15 in Zones 1-5.

2013 summer season landings included 1,900 Chinook, 100 sockeye and 300 sturgeon. Average Chinook weight was 16 pounds per fish. Nearly 60% of the harvest was sampled. Ex-vessel prices (per pound landed) averaged $4.57 for Chinook and $3.29 for white sturgeon and $1.94 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 Tongue Point 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. A high mark rate of hatchery 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%. In July 2002, the states also opened the area from Bonneville Dam upstream to the Oregon/Washington border to the retention of adipose fin-clipped summer Chinook.

Mark-selective recreational fisheries for summer Chinook also occurred in 2003 and 2004 under the same impact limit of 1% on wild Snake River summer Chinook allowed in the Interim Management Agreement. In these 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 of 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 mark-selective regulations for the Columbia sport 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 the 2010–2012 fisheries 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 fishery was open the entire summer season (June 16–July 31); however, the 2011 fishery closed July 18 after the fishery exceeded its catch guideline and the 2012 fishery closed July 2.

2013 Columbia River Summer Steelhead and Summer Chinook Recreational Fisheries

The 2013 summer steelhead fishery opened May 16 between Tongue Point and the I-5 Bridge. Effective May 25–June 7 the summer steelhead fishery was open between Tongue Point and

Beacon Rock, plus the Oregon and Washington banks between Beacon Rock and Bonneville Dam; and effective June 8–June 15, summer steelhead retention was allowed from Tongue Point to Bonneville Dam to coincide with regulations for the spring Chinook fishery.

The 2013 recreational summer Chinook fishery was scheduled to be open for adipose-fin clipped Chinook during June 16–30 from the Astoria-Megler Bride upstream to Bonneville Dam with a daily limit of two adult hatchery fish. The sport guideline below Bonneville Dam was 2,525 adult summer Chinook (including release mortality) based on the adult run size forecast of 73,500 fish. The retention of sockeye was allowed for the duration of the summer Chinook fishery based on the preseason forecast for a return of 180,350 fish. Summer steelhead fishing would remain open under permanent rules after summer Chinook retention closed, but sockeye fishing would close. The states planned a meeting for late June to review the sport catch and escapement of summer Chinook at Bonneville Dam and consider an extension of the recreational summer Chinook fishery; however, by June 26th it was apparent the Chinook run was smaller than forecast, and the retention of both Chinook and sockeye closed as scheduled effective July 1, 2013. Sockeye retention was subsequently reopened during July 13–31.

During May 16–June 15 salmonid anglers made 34,949 trips and caught 3,187 adult spring Chinook (1,808 kept and 1,379 released), 621 spring Chinook jacks (kept), 1,712 summer steelhead (1,537 kept and 175 released), and 76 sockeye (released) downstream from Bonneville Dam. During June 16–30, summer Chinook anglers made 26,473 trips and caught 2,992 adult summer Chinook (1,820 adipose fin-clipped fish kept and 1,172 unclipped fish released), 468 sockeye (437 kept and 31 released), and 324 adipose fin-clipped Chinook jacks (kept). Summer steelhead anglers released another 336 adult summer Chinook and 53 sockeye during July and kept 42 adipose fin-clipped summer Chinook jacks and 65 sockeye. The total summer steelhead catch during May 16–July 31 was 13,266 fish (6,953 adipose fin-clipped fish kept and 6,313 unclipped fish released). The total sockeye catch during May 16-July 31 was 662 fish (502 kept and 160 released). While boat anglers caught the majority of the summer Chinook, bank anglers benefited from high Columbia River flows during the spring and early summer of 2013 and caught the majority of the sockeye and summer steelhead landed during May–July.

2013 Summer Season Fisheries upstream of Bonneville Dam

<u>Bonneville Dam upstream to Priest Rapids Dam Recreational Summer Chinook Fishery</u>

Summer season recreational fisheries were open June 16 through July 31 from Bonneville Dam upstream to Priest Rapids Dam. The fishery was mark selective, allowing retention of hatchery Chinook and sockeye. Sockeye retention was initially allowed only up to the Highway 395 Bridge, but was extended inseason upstream to Priest Rapids Dam beginning June 21. Recreational catch was low in 2013, with an estimated 9 hatchery summer Chinook kept (6 released) and 11 sockeye. The recreational summer fishery upstream of Priest Rapids Dam was also mark selective for Chinook; catch estimate includes 2,400 fish kept (3,100 released) and 5,700 sockeye.

Tribal Summer Fisheries

Wanapum tribal fisheries typically occur on the mainstem Columbia River in McNary Pool; catch estimates include 23 Chinook and 92 sockeye. Colville tribal summer fisheries typically occur on the mainstem Columbia River upstream of Wells Dam; catch estimates include 3,100 summer Chinook (1,500 released) and 4,300 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. These extended-season fisheries have been either constrained to locations in 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 height/flow during this timeframe or constrained to short (≤4 hours) periods proximate to low tide. Although need for close monitoring is increased during the extension period, adaptive 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. Table 6 lists 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 2000–2012 (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. 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. 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 800–3,500 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. 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). Smolt releases increased back to pre-2000 production levels in 2012 and increased again in 2013. Test fishing and full fleet commercial test fisheries, with a more restrictive lower boundary, were initiated in 2008 to test the feasibility of reestablishing the Tongue Point fishery. Mandatory check-in station and call-in programs were established to provide more precise stock composition information to aid in-season management.

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).

2013 Youngs Bay Winter/Spring/Summer Gillnet Season

At the request of industry the 2013 Youngs Bay seasons were set to maximize fishing opportunity during daylight hours rather than typical overnight seasons. The 2013 winter season consisted of twelve 12–18 hour fishing periods between February 11 and March 7. Three additional 6-hour periods and three 4-hour periods (two periods weekly, scheduled near low tide) were adopted for the mid to late-March timeframe (March 11 through March 25). This strategy of constricting the fishery by time (with in-season adaptive management) 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. 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 eighteen fishing periods resulted in landings of 331 spring Chinook which is slightly less than the average harvest (361) observed since winter seasons began in 1998. Additionally, five white sturgeon were landed in the Youngs Bay winter season. A four white sturgeon (per vessel per week) landing limit was in place during the winter seasons and was reduced to two fish for spring, and summer seasons for all Select Areas.

The 2013 spring season in Youngs Bay began with one 6-hour period on April 18, two 12-hour periods on April 23 and 25–26 and continued with six 12–18 hour periods from April 29–May 10 followed by weekly four-day periods from May 13 through June 14. The 2013 Youngs Bay spring fishery landed 4,306 Chinook and 62 white sturgeon. The Chinook harvest was below expectations and was 23% lower than the recent 10-yearaverage of 5,562 fish. Throughout the spring season, a 9¾-inch maximum mesh size restriction was in effect.

The 2013 summer season in Youngs Bay was open 6 AM Wednesday through 6 AM Friday weekly from June 19–July 28 with a 9¾-inch maximum mesh size restriction in effect. The Youngs Bay summer fishery landed 1,992 Chinook, more than double the recent 10-year (2003–2013) average of 842 Chinook, and continued the trend of increased annual harvest. The high landings were driven by later returning age-4 Select Area spring Chinook adults and early returning SABs fall Chinook destined for Youngs Bay (1,368 landed). Sturgeon catch for the Youngs Bay summer fishery was 25 fish.

The combined Youngs Bay winter/spring/summer fishery harvest totaled 6,629 Chinook. Stock composition is based on VSI and CWT analysis with a total of 3,809 Chinook (57% of the Chinook catch) examined for fin marks and CWTs, and 350 CWTs collected. The 2013 combined winter/spring/summer catch was comprised of 60.0% spring Chinook and 21.0% SAB fall Chinook destined for Select Area sites, 3.2% upriver spring Chinook, 0.2% upper Columbia summer Chinook (after June 15), 14.5% Willamette River spring Chinook, and 1.1% spring Chinook destined for the Cowlitz, Kalama or Lewis rivers (CKL). Based on scale readings, which were verified with CWTs, the age composition of the catch was 0.1% Age-2, 8.2% Age-3 (primarily SABs), 50.3% Age-4, 40.4% Age-5, and 1.0% Age-6 fish.

2013 Blind Slough/Knappa Slough Winter/Spring Gillnet Season

Similar to 2000–2012, a winter gillnet season with a 7-inch minimum mesh restriction was adopted for Blind Slough in 2013. 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 beginning in 2013. The adopted season consisted of fifteen 12-hour periods (7 PM – 7 AM) on Monday and Thursday nights during February 11–April 2 (except Knappa Slough was closed March 14–April 2). The seven periods (March 11–April 2) held after the normal end of the winter season represent ongoing efforts to apply adaptive management techniques to allow prudent expansion of the fishery and also to meet the goal of significant and stable opportunity in 2013. During the winter fishing periods, a total of 157 spring Chinook were landed, which was 28% higher than the recent 10-year (2003–2012) average Chinook harvest (123). As described for Youngs Bay, a four white sturgeon weekly landing limit was in place for the winter season and was reduced to two fish for spring season. Four white sturgeon were landed during the winter season.

Similar to the winter season, the spring Blind Slough fishery 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. For periods between March 2 and June 15, the lower deadline in Knappa Slough was extended further downstream to the western end of Minaker Island. 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 2013 spring fishery consisted of seventeen 12-hour (7 PM – 7 AM) fishing periods on Thursday and Monday nights between April 18 and June 14 (except the second period of the season which was scheduled for a Tuesday night to allow time for management action if necessary after spring opener). The 2013 Blind Slough/Knappa Slough spring fishery landed 780 spring Chinook and 31 white sturgeon. The Chinook harvest was less than half of the recent 10-yearaverage (1,600).

The combined Blind Slough/Knappa Slough winter and spring fishery harvest totaled 937 Chinook. Stock composition is based on VSI and CWT analysis. A total of 739 Chinook (79% of the combined catch) were examined for fin marks and CWTs and 87 CWTs were collected. The catch was comprised of 88.3% spring Chinook destined for Select Area sites, 0.9% upriver spring Chinook, and 10.8% Willamette River spring Chinook. Based on scale readings, which

were verified with CWTs, the age composition of the catch was 0.2% Age-3, 40.7% Age-4, 55.4% Age-5, and 3.7% Age-6.

2013 Tongue Point/South Channel Spring Gillnet Full-Fleet Test Fishery.

To assess the feasibility of expanding harvest opportunity in the Select Areas, an abbreviated winter season was adopted for the Tongue Point/South Channel site in 2013. A 7-inch minimum mesh restriction was in effect for these periods. The adopted season consisted of nine 12-hour periods (7 PM – 7 AM) on Monday and Thursday nights during February 11–April 2. During the winter fishing periods, a total of 70 spring Chinook were landed. As described for the other sites, a four white sturgeon weekly landing limit was in place for the winter season and was reduced to two fish for spring season. Six white sturgeon were landed during the winter season.

Efforts to reinstate a spring Chinook fishery in the Tongue Point/South Channel site continued in 2013. As in past years, test fishing activities were planned to precede the first scheduled period. Results of test fishing provide data on presence of non-local stocks during this timeframe and are used to evaluate the risk of proceeding with the full-fleet fishery. Full-fleet commercial test fisheries were adopted in the Tongue Point/South Channel site for Monday and Thursday nights (7 PM – 7 AM) starting on April 25 and ending on June 14. The initial period was scheduled for the week following the spring season opener in all of the other sites to reduce the likelihood of encountering ESA-listed upriver spring Chinook. 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. Additionally, fishers were required to call ODFW's sampling staff with details on catch and time/location of sale to facilitate sampling efforts.

One commercial fisher was contracted to make four drifts per day for several days during the week prior to the first scheduled period in Tongue Point/South Channel. All test fishing activities were conducted using live-capture methods with an ODFW employee on-board to collect data and direct activities. Very few fish were caught but all were identified as lower river stock. 2013 was the final year of the Tongue Point/South Channel fishery reinstatement feasibility evaluation.

The 2013 winter and spring full-fleet experimental test fishery in Tongue Point/South Channel consisted of fifteen 12-hour fishing periods and landings totaled 374 spring Chinook and 120 white sturgeon. Stock composition was based on VSI and CWT analysis with a total of 326 Chinook (87% of the catch) examined for fin marks and CWTs, and 77 CWTs being collected. The catch was comprised of 58.2% spring Chinook destined for Select Area sites, 8.6% upriver spring Chinook, 30.5% Willamette River spring Chinook and 2.7% spring Chinook destined for the Cowlitz, Kalama or Lewis rivers (CKL). Based on scale readings, verified with CWTs, the age composition of the catch was 1.3% Age-3, 49.5% Age-4, 48.9% Age-5, and 0.3% Age-6 fish.

2013 Deep River Winter/Spring Gillnet Season

The expanded Deep River winter 2013 season consisted of fifteen 12-hour fishing periods, which was two more nights of fishing than in recent years. Fishing occurred on Monday and Thursday

nights (7 PM – 7 AM) beginning Monday night February 11 and ending Tuesday morning April 2. The two additional Thursday nights (March 21 and 28) were added by in-season Compact Action because the increased harvest opportunity posed little risk of upriver impacts.

A spring season consisting of 17 twelve-hour fishing periods on Monday (with one exception) and Thursday nights (7 PM – 7 AM) from April 18 through June 14 was adopted at the January 30, 2013 Compact hearing. The exception was that instead of Monday there was a Tuesday night fishing period on April 23, to maintain consistency with Oregon Select Area fisheries.

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. Consistent with the other Select Areas, weekly white sturgeon landing limits were in place for the winter and spring season.

A total of 72 Chinook and 3 white sturgeon were landed during the winter season, and 52 Chinook and 5 white sturgeon were landed during the spring season. The harvest of 124 Chinook from Deep River in the combined winter and spring seasons was slightly higher than the average of the previous 10 years (106 Chinook). While the Chinook harvest in 2013 was the second highest Deep River winter-spring harvest (by a small margin), it was still only about 30% of the highest number harvested (415 Chinook in 2010).

The Deep River winter/spring fishery stock composition for 2013 was based on VSI and CWT analysis with a total of 121 Chinook (98% of the catch) examined for fin marks and CWTs, and 16 CWTs being collected. The catch was comprised of 33.1% spring Chinook destined for Select Area sites, 4.0% upriver spring Chinook, 49.2% Willamette River spring Chinook, and 13.7% 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, 50% Age-4, 50% Age-5, and 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.

From 2001 through 2004 and again in 2010 and 2011, effort and harvest in Select Area recreational fisheries increased, due to improved adult returns which resulted in higher quality fishing opportunities. The 2013 estimate of 360 harvested spring Chinook is below average for recreational fisheries in the Select Areas. Due to limited resources to carry out a statistical creel program, formal estimates of recreational catch are not possible for the Select Area spring Chinook fisheries. However, for 2013 an estimate was made using expanded punch card estimates, trends in the Select Area commercial fisheries and comparative statistics of years with limited creel information. The 2011–2012 estimates were produced utilizing the same methodology but have since been updated using preliminary expanded punch card estimates. Harvest is reported in Table 6.

2013 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 2013 fishery produced landings of only 676 shad which was the lowest catch since 1977. The recent trend of low harvest is likely due to a relatively low market value for American shad.

The Washougal Reef commercial shad fishery was not open in 2013. One experimental gear permit (purse seine) was issued by ODFW in 2013 to evaluate the use of new commercial gears for targeting shad. However, due to low market demand, the gear was not fished.

2013 Non-Indian Impacts to ESA-Listed Stocks

The management intent for 2013 spring Chinook fisheries was conservation of Columbia River salmon and steelhead runs, to remain within the ESA impact rates and catches of upriver stocks allowed in the MA, and to reach the objectives outlined in Commission guidance. The 2013 pre-season forecast for upriver spring Chinook was 141,400 adult fish to the Columbia River mouth. Based on the U.S. v. Oregon Management Agreement (MA), non-Indian fisheries were limited to an ESA impact of 1.9% and a catch balance limit of 12,800 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 7,325 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 30, 2013, the Columbia River Compact adopted management guidelines for the harvest of upriver spring Chinook consistent with the Commission policy. These guidelines were

modified slightly after a court order was issued to stay the enforcement of the Oregon policy. This resulted in a slight adjustment in the share allocated to recreational fisheries commercial fisheries, but did not change the management or structure of the fisheries already adopted. 2013 spring Chinook fisheries were managed based on an ESA- sharing formula that included 60% to recreational and 35% to commercial fisheries, and 5% un-allocated (2012 guidelines).

The final 2013 preseason catch and ESA guidelines for upriver spring Chinook (kept plus release mortalities) used for managing fisheries prior to a run-size update were:

2013 Non-Indian Fisheries - Comparison of Pre-Season Allowed and Actual ESA-impacts and Catch (kept plus release mortalities) of Adult Upriver Spring Chinook.

	Pre-Season allotments						
	(141.1K run size, 1.9% impact limit)						
2013 Non-Indian Fishery	ESA Impact	1.6% buffered	% of Allowed		Catch Balance	pre-update buffered	% of Allowed
Mainstem	0.52%	0.25%	48%		3,207	1,222	38%
Select Areas	0.15%	0.15%	100%		212	148	70%
Commercial total (35% of total)	**0.67%**	**0.40%**	**60%**		**3,419**	**1,370**	**40%**
Downstream of Bonneville Dam (LCR)	0.86%	0.68%	80%		7,829	4,934	63%
Bonneville Dam to OR/WA border	0.11%	0.09%	80%		1,044	658	63%
Upper Col/Snake	0.17%	0.14%	80%		575	363	63%
Sport total (60% of total)	**1.14%**	**0.91%**	80%		**9,448**	**5,954**	**63%**
NI Total	**1.81%**	**1.31%**	**73%**		**12,867**	**7,325**	**57%**
Commission unallocated (5% of total)	0.10%	0.29%					
ESA Impact	**1.90%**	**1.60%**					

Post season, the final non-Indian impact rate was 1.35% for the Snake River ESU and 1.39% for the upper Columbia ESU compared to the 1.7% allowed. Non-Indian fisheries used only 82% of the impacts allowed under the ESA. The recreational impact total was 0.76% and the commercial impact total was 0.64%. 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. In 2013, although the recreational fisheries were well within the allocated ESA allowance, the fishery was constrained by (catch) mortalities of upriver Chinook. For commercial fisheries, the opposite was true, where ESA-impacts allocated were more constraining than the catch allocated. Under the catch balance provisions outlined in the MA, non-Indian fisheries used 79% (8,087) of the 10,217 upriver spring Chinook mortalities available.

As has been the case for the past several years, impacts to wild winter steelhead were minimal in 2013. Impacts are estimated at 0.13% from non-Indian mainstem fisheries, which is was well within the 2.0% ESA impact rate limit. Total impacts to Snake River sockeye are estimated to be 0.36%, compared to the allowable impact rate of 1.00%. 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.

2013 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						
	(123.1K run size, 1.7% impact limit)						
2013 Non-Indian Fishery	ESA Impact	Actual	% of Allowed		Catch Balance	Actual	% of Allowed
Mainstem	0.45%	0.43%	96%		2,439	1,498	61%
Select Areas	0.15%	0.21%	140%		185	259	140%
Commercial total (35% of total)	**0.60%**	**0.64%**	**107%**		**2,624**	**1,757**	**67%**
Downstream of Bonneville Dam (LCR)	0.77%	0.61%	79%		6,168	5,343	87%
Bonneville Dam to OR/WA border	0.10%	0.07%	68%		822	613	75%
Upper Col/Snake	0.15%	0.08%	54%		603	374	62%
Sport total (60% of total)	**1.02%**	**0.76%**	75%		**7,593**	**6,330**	**83%**
NI Total	**1.62%**	**1.40%**	**87%**		**10,217**	**8,087**	**79%**
Commission unallocated (5% of total)	0.09%		5%				
ESA Impact	**1.70%**	**1.40%**	**82%**				

Summer Chinook fisheries operated under principles described in the Management Guidelines section of this report. The preseason harvest allocation for non-Indian fisheries was 20,900 adult summer Chinook, which included 4,300 for ocean and 16,600 for in-river harvest. The actual Columbia River return of 67,600 reduced the non-Indian allocation to 18,600 fish. The preliminary non-Indian harvest for Columbia River fisheries is estimated to be 14,300 fish, which is 77% 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.

2013 Non-Treaty Summer Chinook Fisheries Summary *(all data preliminary, includes kept + release mortalities)*			
	Pre	**Post**	
Runsize	73,500	67,600	
harvest allocated Fishery	Pre allowed	Post allowed	Actual catch
PFMC Ocean Fisheries	4,260	3,918	3,918
Below Priest Rapids	34.5%	32.5%	
Recreational Below Bonneville	2,525	2,121	2,058
Commercial Below Bonneville	2,585	2,145	1,954
Recreational Bonn. to PRD	635	500	10
Below PRD Sum	5,744	4,767	4,022
Above Priest Rapids	65.5%	67.5%	
Wanapum Tribal	350	326	240
Colville Tribal	5,998	4,942	3,216
Recreational above PRD	4,558	4,616	2,899
Above PRD Sum	10,906	9,885	6,355
Non-Treaty Total	**20,910**	**18,570**	**14,295**

Treaty Indian Fisheries

Treaty Indian harvest of spring Chinook primarily occurs in ceremonial and subsistence (C&S) fisheries except in years of high abundance, such as in 2000–2004 and 2008–2012, when commercial fisheries have been allowed. Steelhead and a few spring Chinook are 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 proposal before the Compact to approve purchase of harvested fish by non-Indians. 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.

2013 Treaty Indian Winter Season Fisheries

The 2013 winter sturgeon setline fishery was open in all of Zone 6 from January 1 to January 31 with landings totaling 57 white sturgeon (16 in the Bonneville Pool, 8 in The Dalles Pool, and 33 in the John Day Pool). The 2013 January setline landings were near average.

The winter commercial gillnet fishery opened February 1 in all three pools. The season continued through February 27 in the John Day Pool, through March 6 in the Bonneville Pool and through March 21 in The Dalles Pool. No mesh restrictions were in place and sales of platform/ hook and line caught fish was allowed. No steelhead or Chinook were harvested during the winter gillnet fishery. The winter season steelhead catch has generally been low in recent years, due to most fishers targeting sturgeon. The 2013 white sturgeon treaty Indian catch guidelines by pool include 1,100 fish for Bonneville Pool, 1,000 fish for The Dalles Pool and 1,000 fish for John Day pool.

The total tribal commercial winter season catch for 2013 was 2,974 white sturgeon or 96% of the combined Zone 6 treaty guideline (3,100 fish). The total 2013 winter catch is shown by pool in the table below and combined in Table 26.

2013 Treaty Indian Winter Commercial Landings From Setline, Gillnet, Platform and Hook & Line					
		White Sturgeon			
Pool	Steelhead	Setline	Gillnet	Walleye	Chinook
Bonneville	0	16	1,261	2	0
The Dalles	0	8	639	1	0
John Day	0	33	1,017	0	0
Total	**0**	**57**	**2,917**	**3**	**0**

2013 Treaty Indian Mainstem Spring and Summer Chinook and Sockeye Fisheries

The tribal intent for 2013 spring and summer 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/hook and line fishery retained spring Chinook and steelhead for subsistence purposes throughout most of the spring season. Tribal mainstem fisheries were closed between May 18 and June 8, with the exception of a sturgeon setline fishery in The Dalles Pool which began June 1. Commercial sales of fish harvested in platform and hook and line fisheries (including the hook and line fishery downstream of Bonneville Dam during periods when it was open) was authorized beginning June 8. The estimated C&S gillnet permit catch was 4,175 spring Chinook. The estimated catches for the platform and hook-and-line (C&S and commercial) fisheries were 2,100 spring Chinook upstream of Bonneville and 3,007 downstream of Bonneville Dam. Total harvest of upriver spring Chinook was 9,282 or 7.5% total harvest rate compared to an 8.3% management limit (Table 7). The impact on the ESA-listed wild Snake River spring/summer Chinook and ESA listed upper Columbia spring Chinook was 7.8%. The differential between the total harvest rate and the wild harvest rate results from differential harvest of marked and unmarked Chinook in mark-selective fisheries between the Columbia River mouth and Bonneville Dam.

During the summer management period, the Zone 6 platform/hook-and-line catch of summer Chinook and commercial gillnet fishery combined was 13,397 (19.8% of the river mouth return; Table 10). The harvest was less than the 18,551 allowed.

There were 8,046 sockeye caught in Zone 6 platform and hook-and-line fisheries and in commercial gillnet fisheries (including 6 fish caught in early fall season fisheries). The catch was 4.3% of the river mouth return as compared to the allowed harvest rate of 7%. The TAC estimated that 49 of the sockeye caught were Snake River sockeye (Table 16).

Steelhead harvest during winter and spring fisheries was minimal, estimated at 200 fish. Platform 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. Most of the summer steelhead landed would be expected to be Skamania Index or Group A-index summer steelhead. 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 harvest was estimated at 4,062 steelhead.

2013 Treaty Indian Tributary Fisheries

Preliminary spring Chinook landings from Yakama Nation tributary fisheries are estimated at 2,514 adult Chinook. These totals include 92 adults from the Wind River, 843 adults from Drano Lake, 125 adults Chinook from the Klickitat River, 1,212 adults from the Yakima River, and 242 adult Chinook from the Icicle River. Sales of fish were allowed concurrent with mainstem sales. Steelhead harvest in tributary fisheries is not available at this time. Tributary spring Chinook fisheries also occurred by other tribes in the Hood, Deschutes, John Day, Umatilla, Walla Walla and various Snake Basin tributaries, but catches are not included in this report.

2013 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 of 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 2013 upriver spring and summer Chinook returns were sufficient to allow the full entitlement to be harvested in treaty fisheries.

2013 Ceremonial and Subsistence "Safety Net" Summary		
C&S permit gillnet spring fishery	4,175	spring Chinook
Winter commercial gillnet fishery	0	spring Chinook
Zone 6 Platform/hook and line winter/spring fishery	2,100	spring Chinook
Zone 5 Platform/hook and line/ fishery *(includes fish donated from NI test fishery)*	3,007	spring Chinook
Spring commercial gillnet fishery	0	spring Chinook
Spring Chinook Subtotal	**9,282**	**spring Chinook**
Zone 5 Platform/hook and line summer fishery	50	summer Chinook
Zone 6 commercial gillnet and Platform/ hook and line/ fishery	13,272	summer Chinook
Zone 6 C&S Permit fishery	75	summer Chinook
Summer Chinook Subtotal	**13,397**	**summer Chinook**
Total spring and summer Chinook	***25,525***	

2013 Shad Fisheries

There was no directed treaty commercial harvest of shad in 2013 using the trap just upstream from The Dalles Dam Oregon shore fish ladder. An estimated 1,000-1,500 fish were caught in the Zone 6 platform fishery which were mostly sold direct to the public.

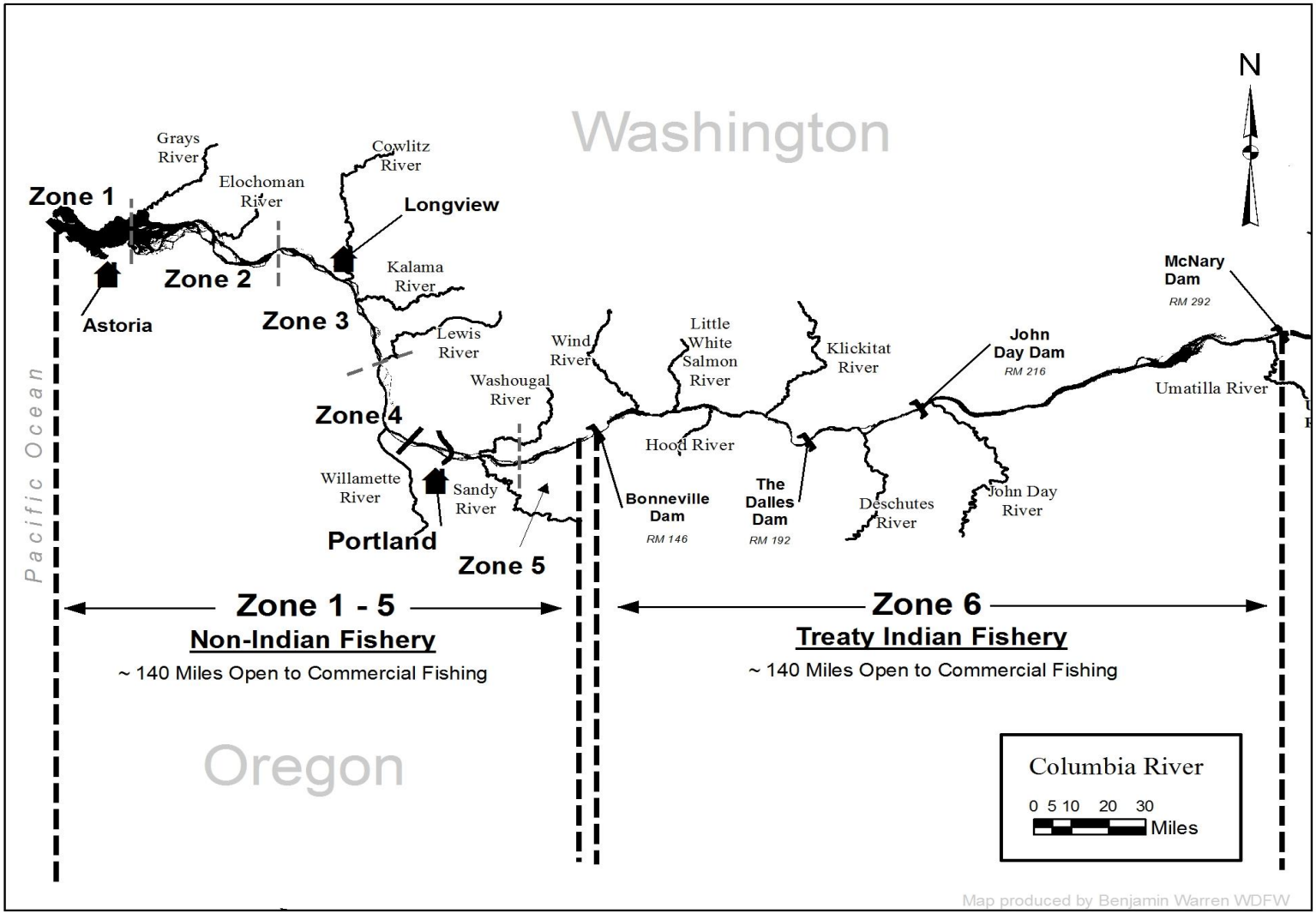

Figure 2. Map of the Columbia River Downstream of McNary Dam Showing Areas Open to Commercial Fishing.

2014 WINTER, SPRING, AND SUMMER SEASON EXPECTATIONS

2014 Management Guidelines

All fisheries conducted in 2014 will be managed in accordance with the 2008–2017 MA, UCMA, Willamette FMEP, and Commission guidance as applicable.

According to the harvest rate schedule in the 2008–2017 MA and the 2014 upriver spring Chinook preseason forecast, winter/spring season fisheries will be managed not to exceed a total ESA impact limit of 12% (2.0% for non-Indian fisheries and 10.0% 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 for 2014 will operate with a 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 the preseason forecast, harvestable sockeye will likely be available, allowing 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%.

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.

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.

2014 Non-Indian Fisheries

Commercial Winter Sturgeon Fishery
(Compact consideration at the January 29, 2014 hearing)

- No fishery will be recommended

Commercial Spring Chinook Fisheries
(Compact consideration at the January 29, 2014 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 29, 2014 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 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

Bonneville to McNary Dam Spring Chinook Recreational Fishery
(Joint State consideration at the January 29, 2014 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 29, 2014 hearing)

- Winter and spring seasons are expected for all Select Areas, and a summer season is expected in Youngs Bay.
- A winter season extension in Youngs Bay, similar in structure to that in 2013, may be considered.
- Winter seasons in Knappa Slough and Tongue Point/South Channel will 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 2014 will be similar to previous years and will reflect input from the January 8, 2014 public meeting concerning Select Area spring Chinook fisheries.

Columbia River Steelhead Recreational Fishery
(Season as per permanent regulations; Joint State consideration at January 29, 2014 hearing)

- Dates: January 1–March 31 and May 16–December 31 for the area from the Tongue Point/Rocky Point line to the I-5 Bridge; January 1–March 31 and June 16–December 31 for the area from the I-5 Bridge upstream to Highway 395 Bridge at Pasco, WA. Seasons are generally also open for retention of steelhead concurrent with Chinook retention seasons.
- Retention of sockeye may be allowed.

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 60% of the harvestable surplus available for use downstream of Priest Rapids Dam to mainstem recreational fisheries and the balance to mainstem commercial fisheries in 2014.
- Summer Chinook recreational fisheries will likely be mark-selective in most Columbia River fisheries.
- Retention of sockeye may be allowed.
- Season will be developed during the North of Falcon process in March/April 2014.

Commercial American Shad Fishery
(Season as per permanent regulations)

- In Area 2S; open hours of 3–10 PM on all weekdays (except the observed Memorial Day holiday from May 10 through June 20.
- A commercial season for the Washougal Reef area will not likely be proposed for 2014.
- Additional harvest of American shad may occur via Oregon experimental gear permits.

2014 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 permanent regulation in Zone 6 from February 1 to March 21. The fishery will be managed similar to recent years. The fishery will be managed for pool-specific guidelines. The fishery will close early in any pool if sturgeon harvest guidelines are met.
- The 2014 winter season fisheries are expected to have effort similar to 2013, 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 2014 spring Chinook fisheries.
- Based on the 2008–2017 MA, the tribes will be allowed a 10.0% 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 2013 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 29, 2014 Winter Fact Sheet.

Table 1. Minimum Adult Spring Chinook Run Entering the Columbia River, 1980-2013. [1]

Year	Select Areas[2]	Cowlitz River	Kalama River	Lewis River	Sandy River	Willamette River[3]	Upriver Run[4]	Total
1980-84 Ave.		*22,737*	*4,165*	*3,834*	*2,020*	*64,800*	*63,521*	*161,077*
1985-89 Ave.		*11,176*	*1,552*	*10,312*	*1,980*	*93,700*	*105,481*	*224,201*
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	48,834	24,095	*84,064*
1990-94 Ave.	*503*	*7,892*	*2,234*	*6,984*	*5,119*	*83,448*	*81,989*	*187,867*
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	34,536	124,321	*169,666*
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	*40,966*	*56,008*	*106,599*
2000	6,631	2,199	1,418	2,515	3,641	55,788	186,715	*258,907*
2001	9,719	1,609	1,796	3,777	5,329	78,436	440,336	*541,002*
2002	12,251	5,152	2,912	3,514	5,905	120,164	335,214	*485,112*
2003	8,783	15,954	4,556	5,040	5,615	123,352	242,605	*405,905*
2004	11,643	16,511	4,286	7,475	12,680	143,242	221,675	*417,512*
2000-04 Ave.	*9,805*	*8,285*	*2,994*	*4,464*	*6,634*	*104,196*	*285,309*	*421,688*
2005	2,550	9,379	3,367	3,512	7,668	59,495	106,911	*192,882*
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	5,852	27,016	178,629	*222,814*
2009	3,975	5,977	404	1,493	2,375	39,400	169,296	*222,920*
2005-09Ave.	*5,099*	*5,856*	*3,776*	*4,423*	4,618	*45,033*	*134,733*	*203,539*
2010	25,915	8,830	918	2,337	7,516	110,500	315,345	*471,361*
2011	11,748	5,834	778	1,311	5,421	80,254	221,158	*326,504*
2012	10,495	12,617	862	1,895	5,337	65,115	203,090	*299,111*
2013	7,018	9,536	1,014	1,597	5,750	47,311	123,136	*195,362*

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 adults and jacks. Includes Clackamas River return.*
   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

Table 2. Forecasted and Actual Spring Chinook Entering the Columbia River, 1985-2013 and 2014 Forecast.

Year	Willamette River (All Age Classes) Preseason Forecast	Willamette River (All Age Classes) Actual Return	Willamette River (All Age Classes) % of Forecast	Cowlitz, Kalama, & Lewis Rivers Combined (Adults) Preseason Forecast	Cowlitz, Kalama, & Lewis Rivers Combined (Adults) Actual Return	Cowlitz, Kalama, & Lewis Rivers Combined (Adults) % of Forecast	Upriver (Adults)[1] Preseason Forecast	Upriver (Adults)[1] Actual Return	Upriver (Adults)[1] % 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	109	298.9	169.3	57
2010	62.7	110.5	176	19.4	12.1	62	470.0	315.3	67
2011	104.1	80.3	77	10.6	7.9	59	198.4	221.2	111
2012	83.4	65.1	78	12.1	15.4	96	314.2	203.1	65
2013	59.8	47.3	79	7.8	12.6	161	141.4	123.1	87
2014	58.7			13.8			227.0		

1. *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, 1970-2013. 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

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, 1980-2013. 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	NA	NA	17,488	59	2,888	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 1996-2011.

		Release Site										
		Youngs Bay			Blind Slough			Tongue Point				
Brood Year	Species [1]	South Fork Klaskanine Hatchery	Klaskanine Hatchery	Youngs Bay Net Pens	Blind Slough Net Pens	Gnat Creek Hatchery	Big Creek Hatchery [2]	Tongue Point Net Pens	Tongue Pt. – MERTS Net Pens	John Day R. Net Pens	Deep River Net Pens	**Select Area Total [3]**
1996	CHS	--	--	456,282	223,318	--	--	253,770	--	--	56,414	989,784
	SAB	--	603,960	463,703	27,413	--	--	27,482	--	--	--	1,122,558
	CO	550,427	--	1,119,632	144,958	--	--	119,611	--	--	208,350	2,142,978
1997	CHS	--	--	426,418	200,007	--	--	224,277	--	--	39,678	890,380
	SAB	--	769,126	117,571	--	--	--	--	--	--	--	886,697
	CO	429,652	--	2,101,573	197,089	--	--	204,143	--	--	414,108	3,346,565
1998	CHS	--	--	464,650	196,401	--	--	250,009	--	--	--	911,060
	SAB	--	703,200	221,971	--	--	--	--	--	--	--	925,171
	CO	610,658	--	1,819,500	195,645	--	--	754,123	--	--	431,143	3,811,069
1999	CHS	--	--	537,898	250,396	--	--	--	--	--	159,565	947,859
	SAB	--	408,492	153,928	--	--	--	--	--	--	--	562,420
	CO	344,738	--	1,724,031	299,411	--	--	655,613	--	--	395,337	3,419,130
2000	CHS	--	--	478,062	390,908	--	--	--	--	--	95,940	964,910
	SAB	--	669,913	205,145	--	--	--	--	--	--	--	875,058
	CO	583,248	--	1,688,696	343,842	--	--	667,758	--	--	354,557	3,638,101
2001	CHS	--	--	451,623	426,309	--	--	--	30,385	27,412	141,904	1,077,633
	SAB	--	620,527	467,056	--	--	--	--	--	--	--	1,087,583
	CO	641,555	--	1,686,711	316,804	--	--	675,712	--	--	366,435	3,687,217
2002	CHS	639,446	--	455,825	408,495	--	--	--	20,913	27,143	97,318	1,649,140
	SAB	--	702,188	780,314	--	--	--	--			--	1,482,502
	CO	--	--	1,470,914	298,748	--	--	--	697,522		357,200	2,824,384
2003	CHS	458,659	--	457,994	433,044	--	--	--	26,344	26,955	254,471	1,657,467
	SAB	53,963	679,153	519,676	--	--	--	--	--	--	--	1,252,792
	CO	--	--	1,146,068	309,527	--	--	--	202,727		144,900	1,803,222
2004	CHS	566,030 [4]	--	391,843	451,388	--	--	--	57,114	25,451	336,300	1,828,126
	SAB	45,247	735,066	161,237	--	--	--	--	--	--	--	941,550
	CO	--	--	1,125,609	305,573	--	--	--	194,442	--	201,300	1,826,924
2005	CHS	--	--	417,662	272,226	--	--	--	76,877	27,272	263,300	1,057,337
	SAB	628,888	--	476,497	--	--	--	--	--	--	--	1,105,385
	CO	--	--	1,157,746	304,558	--	--	--	174,547	--	420,000	2,056,851
2006	CHS	--	--	543,803	312,962	--	--	--	79,343	--	121,500	1,057,608
	SAB	708,412	--	564,641	--	--	--	--	--	--	--	1,273,053
	CO	282,201	232,455	768,960	310,133	--	--	--	597,754	--	368,000	2,559,503
2007	CHS	--	--	457,161	280,437	--	--	--	103,060	--	279,811	1,120,469
	SAB	674,181	--	574,020	--	--	--	--	--	--	--	1,248,201
	CO	470,135	510,061	1,014,141	300,036	--	--	--	477,830	--	706,150	3,478,353
2008	CHS	--	--	804,665	265,832	--	--	--	101,700	--	363,000	1,535,197
	CHF	--	--	--	--	--	--	--	--	--	700,000	700,000
	SAB	714,118	--	702,659	--	--	--	--	--	--	--	1,416,777
	CO	347,494	561,968	783,092	417,506	--	--	--	483,412	--	747,000	3,340,472
2009	CHS	--	--	702,609	253,503	--	--	--	100,557	--	234,000	1,290,669
	CHF	--	2,100,365	--	--	--	3,948,579	--	--	--	700,000	6,748,944
	SAB	685,056	--	229,105	--	--	--	--	--	--	--	914,161
	CO	368,980	397,419	796,443	388,505	--	--	--	479,365	--	692,000	3,122,712
2010	CHS	--	--	612,330	258,923	--	--	--	253,002	--	405,000	1,529,255
	CHF	--	1,961,446	--	--	--	3,255,120	--	--	--	862,000	6,078,566
	SAB	672,829	--	684,030	--	--	--	--	--	--	--	1,356,859
	CO	390,610	489,060	757,474	372,265	--	--	--	491,330	--	800,000	3,300,739
2011	CHS	--	--	601,862	326,490	99,190	--	--	481,617	--	320,000	1,829,159
	CHF	--	1,975,377	--	--	--	3,614,747	--	--	--	893,000	6,483,124
	SAB	704,594	--	653,452	--	--	--	--	--	--	--	1,358,046
	CO	386,668	607,824	769,971	586,277	--	--	--	849,381	--	600,000	3,800,121

[1] *CHS = Spring Chinook, CHF = Fall Chinook (tule stock), SAB = Select Area Bright Fall Chinook, CO = coho.*

[2] *Prior to 2009, tule fall Chinook were not released from any Select Area facilities and therefore are not included. Since 2009, a portion of the tule fall Chinook produced at Big Creek Hatchery have been reared released from Klaskanine Hatchery.*

[3] *Does not include coho releases from Steamboat Slough 1997-2002 (221,000 average annual release)*

[4] *Released early (September 26, 2005) due to disease.*

Table 6. Winter/Spring/Summer Season Commercial and Recreational Chinook Harvest in Select Area Sites, 1993-2013.

	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[4]	6,629	937	374	124	8,064	--	--	--	--	--	360	8,424

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 following test fishing activities.*
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.

		Harvest Impact Downstream of Bonneville Dam (Zones 1-5)						Harvest Impact Bonneville Dam upstream to McNary Dam (Zone 6)						
		Non-Indian (NI) Catch[1]						Treaty Catch[2]						
Return Year	Upriver Run[3]	Comm.	Sport	Misc.[4]	Treaty	Grand Total	BON Dam Count	NT Sport	Winter Gillnet	Comm. Gillnet	C&S & Platform	Zone 6 Total	Escapement 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	167	160	43,630	10,985	54,942	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	1,616	2	8,368	9,114	19,100	179,196	81%
2005	106,911	2,247	7,235	42		9,524	97,387	388	1	0	6,163	6,552	90,836	85%
2006	132,583	2,106	4,187	133		6,425	126,158	1,245	0	0	8,401	9,646	116,513	88%
2007	86,247	1,436	3,927	54		5,418	80,829	1,368	3	0	5,624	6,995	73,835	86%
2008	178,629	5,907	19,612	385	830	26,734	151,895	2,215	0	12,314	8,247	22,776	129,119	72%
2009	169,296	4,172	15,246	371	2,018	21,807	147,489	717	0	0	11,083	11,800	135,689	80%
2010	315,345	7,458	23,535	1,824	5,139	37,956	277,389	3,930	0	25,008	12,807	41,745	235,644	75%
2011	221,158	3,410	9,506	520	2,291	15,727	205,431	2,379	7	0	13,235	15,621	189,810	86%
2012	203,090	4,269	10,422	552	1,399	16,642	186,448	886	2	818	15,482	17,188	169,260	83%
2013	123,136	1,497	5,343	355	3,007	10,202	112,934	613	0	0	6,275	6,888	106,046	86%

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	4,114	57.7	2,772	39
1981	14,140	6,044	82	1.4	305	5.0	387	6	2,405	39.8	3,253	54
1982	15,850	6,314	110	1.7	434	6.9	543	9	2,756	43.6	3,015	48
1983	16,160	7,292	350	4.8	293	4.0	643	9	2,362	32.4	4,286	59
1984	16,776	6,706	230	3.4	445	6.6	676	10	1,422	21.2	4,608	69
1985	28,948	10,290	371	3.6	350	3.4	721	7	628	6.1	8,941	87
1986	29,404	7,903	161	2.0	458	5.8	619	8	1,764	22.3	5,519	70
1987	25,485	8,777	135	1.5	530	6.0	665	8	1,760	20.1	6,352	72
1988	21,043	7,503	479	6.4	496	6.6	975	13	870	11.6	5,658	75
1989	18,681	7,455	176	2.4	557	7.5	733	10	2,591	34.8	4,130	55
1990	12,013	4,437	223	5.0	291	6.6	513	12	1,115	25.1	2,808	63
1991	8,665	2,437	96	3.9	146	6.0	242	10	662	27.2	1,533	63
1992	20,722	4,261	69	1.6	256	6.0	325	8	773	18.1	3,163	74
1993	25,998	4,050	33	0.8	246	6.1	280	7	669	16.5	3,102	77
1994	3,421	1,044	41	3.9	50	4.8	91	9	342	32.7	611	59
1995	1,645	224	0	0.1	11	4.9	11	5	105	46.8	108	48
1996	3,427	575	1	0.1	30	5.2	31	5	228	39.6	317	55
1997	9,673	1,222	1	0.1	82	6.7	83	7	393	32.2	746	61
1998	4,495	547	1	0.1	27	5.0	28	5	152	27.9	367	67
1999	4,663	401	0	0.1	18	4.6	19	5	97	24.3	284	71
2000	22,443	1,367	3	0.2	83	6.1	86	6	376	27.5	904	66
2001	51,645	6,252	88	1.4	817	13.1	904	14	541	8.7	4,807	77
2002	36,745	2,992	53	1.8	319	10.7	372	12	664	22.2	1,957	65
2003	23,468	2,160	36	1.7	170	7.9	205	10	401	18.6	1,554	72
2004	15,352	2,303	49	2.1	199	8.6	248	11	417	18.1	1,638	71
2005	16,073	2,776	46	1.7	173	6.2	219	8	501	18.0	2,057	74
2006	15,116	1,430	19	1.4	94	6.6	113	8	404	28.3	912	64
2007	6,427	505	6	1.2	35	6.9	41	8	26	5.2	438	87
2008	15,352	815	18	2.2	111	13.7	129	16	23	2.8	664	81
2009	12,480	1,149	18	1.6	99	8.6	117	10				
2010	37,154	3,127	58	1.9	463	14.8	521	17	107	3.4	2,499	80
2011	15,965	2,531	34	1.3	186	7.3	220	9	236	9.3	2,075	82
2012	24,317	5,533	67	1.2	513	9.3	581	10	600	10.8	4,352	79
2013	17,995	3,584	47	1.3	280	7.8	327	9	599	16.7	2,658	74

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	65	6,134	29
1981	35,147	24,753	336	1.4	1,248	5.0	1,583	6.4	11,004	44	11,318	46
1982	39,908	27,601	479	1.7	1,897	6.9	2,376	8.6	13,400	49	11,307	41
1983	28,099	20,936	1,004	4.8	842	4.0	1,846	8.8	8,664	41	9,845	47
1984	20,971	14,119	485	3.4	937	6.6	1,422	10.1	4,427	31	7,929	56
1985	40,694	14,865	536	3.6	505	3.4	1,041	7.0	2,547	17	10,682	72
1986	64,510	20,085	409	2.0	1,164	5.8	1,574	7.8	6,517	32	11,359	57
1987	52,284	15,870	244	1.5	958	6.0	1,203	7.6	3,948	25	10,140	64
1988	54,076	17,368	1,108	6.4	1,148	6.6	2,256	13.0	3,536	20	11,182	64
1989	35,477	14,707	348	2.4	1,099	7.5	1,447	9.8	6,424	44	6,499	44
1990	41,304	17,582	882	5.0	1,152	6.6	2,034	11.6	5,689	32	9,357	53
1991	23,665	13,106	516	3.9	788	6.0	1,303	9.9	5,785	44	5,756	44
1992	39,679	20,657	334	1.6	1,243	6.0	1,577	7.6	5,989	29	12,677	61
1993	41,149	17,911	147	0.8	1,089	6.1	1,236	6.9	3,829	21	12,531	70
1994	7,713	3,721	146	3.9	179	4.8	325	8.7	1,444	39	1,856	50
1995	5,262	3,395	3	0.1	168	4.9	171	5.0	2,039	60	1,167	34
1996	16,799	9,062	9	0.1	475	5.2	484	5.3	4,772	53	3,643	40
1997	82,849	9,620	5	0.1	644	6.7	649	6.8	3,756	39	5,055	53
1998	26,714	13,725	13	0.1	689	5.0	702	5.1	5,657	41	7,281	53
1999	13,034	5,525	6	0.1	255	4.6	260	4.7	2,409	44	2,853	52
2000	64,184	13,921	28	0.2	846	6.1	874	6.3	4,791	34	8,187	59
2001	260,232	63,154	887	1.4	8,250	13.1	9,136	14.5	8,903	14	44,572	71
2002	170,999	52,209	928	1.8	5,564	10.7	6,492	12.4	15,243	29	29,872	57
2003	137,692	50,641	841	1.7	3,976	7.9	4,816	9.5	13,127	26	32,080	63
2004	125,916	33,103	702	2.1	2,862	8.6	3,564	10.8	7,933	24	20,967	63
2005	49,773	15,155	250	1.7	944	6.2	1,194	7.9	3,784	25	9,832	65
2006	53,250	16,814	229	1.4	1,105	6.6	1,334	7.9	5,842	35	9,340	56
2007	45,006	10,373	127	1.2	715	6.9	842	8.1	2,271	22	6,903	67
2008	100,589	23,946	516	2.2	3,271	13.7	3,787	15.8	2,254	9	17,171	72
2009	89,177	20,240	326	1.6	1,740	8.6	2,065	10.2	3,125	15	14,313	71
2010	165,740	34,764	646	1.9	5,150	14.8	5,796	16.7	1,871	5	25,211	73
2011	123,206	30,567	411	1.3	2,247	7.3	2,657	8.7	3,020	10	23,844	78
2012	109,512	33,856	412	1.2	3,141	9.3	3,553	10.5	4,453	13	24,828	73
2013	67,329	21,929	286	1.3	1,714	7.8	2,000	9.1	5,247	24	13,916	63

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.

		Catch downstream of Bonneville Dam (Zones 1-5)				BON	Catch Bonneville Dam upstream to McNary Dam (Zone 6)			
	Upriver	Non-Indian (NI)				Dam	NI	Treaty	Escapement[4]	
Year	Run[1]	Sport	Comm.	Misc[2]	Treaty	Count	Sport	Catch[3]	No.	%
1980	22,498			16		22,482	0	1,181	21,301	95%
1981	18,746			9		18,737	0	1,364	17,373	93%
1982	14,369			117		14,252	0	1,295	12,957	90%
1983	13,145			92		13,053	0	297	12,756	97%
1984	18,765			22		18,743	0	457	18,286	97%
1985	18,522			36		18,486	0	1,453	17,033	92%
1986	18,752	0		109		18,643	0	1,116	17,527	93%
1987	22,715	6		141		22,567	0	1,684	20,883	92%
1988	22,720	9		81		22,630	0	1,497	21,133	93%
1989	22,201	20		9		22,172	0	100	22,072	99%
1990	18,794	4		15		18,775	0	111	18,664	99%
1991	14,323	1		9		14,313	0	171	14,142	99%
1992	9,428	16		35		9,377	0	46	9,331	99%
1993	14,021	16		81		13,925	0	328	13,597	97%
1994	14,691	28		23		14,640	0	171	14,469	98%
1995	12,455	14		0		12,441	0	417	12,024	97%
1996	12,080	34		15		12,031	0	374	11,657	96%
1997	17,709	16		6		17,687	0	270	17,417	98%
1998	15,536	27		1		15,508	0	335	15,173	98%
1999	21,867	51		1		21,815	0	395	21,420	98%
2000	22,595	17		0		22,578	0	209	22,369	99%
2001	52,960	64		1		52,895	0	692	52,203	99%
2002	89,524	1,447		8		88,069	113	2,093	85,863	96%
2003	83,058	1,945		36		81,077	417	4,297	76,363	92%
2004	65,623	1,246	219	3		64,155	261	8,394	55,500	85%
2005	60,272	1,621	2,787	0		55,864	487	7,642	47,735	79%
2006	77,573	4,926	4,819	9		67,819	346	16,319	51,154	66%
2007	37,035	2,214	1,122	0		33,699	194	5,375	28,130	76%
2008	55,532	2,140	1,370	59		51,963	1,072	9,029	41,862	75%
2009	53,881	2,341	2,524	22	0	48,994	273	11,650	37,071	69%
2010	72,346	2,738	4,720	20	230	64,638	447	15,569	48,622	67%
2011	80,574	5,576	5,004	0	0	69,994	208	20,645	49,141	61%
2012	58,300	3,281	1,692	23	0	53,304	81	7,824	45,399	78%
2013	67,570	2,058	1,954	0	50	63,508	10	13,347	50,151	74%

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. Wild Winter Steelhead Minimum Run Size and Forecast, 2001-2014.

Year	Min. Col R Return	Non-Indian Release Mortalities: Mainstem Comm.	Mainstem Sport	Tributary[1] Sport	Escapement	Forecast
2001	21,825	100	22	165	21,538	--
2002	33,711	3095	34	403	30,180	--
2003	23,452	217	23	308	22,904	15,500
2004	29,566	238	30	334	28,964	32,200
2005	14,672	77	15	170	14,410	27,000
2006	16,708	14	17	403	16,274	16,000
2007	15,072	75	15	363	14,619	16,100
2008	13,943	9	14	300	13,620	15,300
2009	11,575	4	11	292	11,268	15,200
2010	20,035	89	19	248	19,679	20,100
2011	16,752	35	17	214	16,486	15,200
2012	17,332	70	17	254	16,991	15,300
2013	15,655	27	16	383	15,230	15,700
2014						16,100

[1] *Washington tributaries only. Data based on historical exploitation rates and may not reflect actual impacts.*

Table 12. Upriver Summer Steelhead Passage at Bonneville Dam (April-October), 1984-2013.

Year	Skamania Wild	Skamania Total	Group A Index Wild	Group A Index Total	Group B Index Wild	Group B Index Total	Total Passage Hatchery	Total Passage Wild	Total Passage Total
1984-89 Avg	4,505	20,247	64,912	228,212	13,473	67,851	233,420	82,890	316,310
1990	3,690	18,710	27,102	115,628	8,811	47,174	141,909	39,603	181,512
1991	1,220	10,880	60,264	234,048	6,207	28,265	205,501	67,692	273,193
1992	2,940	14,910	44,294	241,524	12,715	57,438	253,924	59,948	313,872
1993	1,250	14,360	28,650	136,701	4,378	36,169	152,952	34,278	187,230
1994	1,380	12,330	21,212	120,971	5,152	27,463	133,020	27,744	160,764
1995	1,150	8,220	25,997	180,037	1,847	13,221	172,484	28,994	201,478
1996	1,310	10,830	25,721	174,464	3,912	18,693	173,044	30,943	203,987
1997	930	11,890	30,852	208,209	3,913	36,663	221,067	35,695	256,762
1998	1,610	9,440	34,836	134,687	3,415	40,241	144,507	39,861	184,368
1999	1,310	7,160	56,626	176,466	3,740	22,137	144,087	61,676	205,763
2000	5,728	16,619	63,628	216,723	8,368	40,909	196,527	77,724	274,251
2001	7,952	28,725	137,230	515,079	12,047	86,426	473,001	157,229	630,230
2002	9,671	24,991	87,276	323,124	32,333	129,882	348,717	129,280	477,997
2003	1,801	14,154	67,049	305,795	6,417	37,228	281,909	75,268	357,177
2004	4,086	20,945	60,706	251,607	8,202	36,406	235,964	72,994	308,958
2005	2,769	11,867	58,917	251,631	9,619	48,967	241,160	71,305	312,465
2006	2,181	9,882	63,734	245,168	8,465	74,128	254,797	74,381	329,178
2007	1,727	9,475	77,267	258,847	9,015	51,073	231,386	88,009	319,395
2008	4,489	15,832	81,648	245,823	18,529	93,429	250,419	104,666	355,085
2009	3,528	13,884	154,045	543,195	13,727	44,540	430,319	171,300	601,619
2010	10,357	29,269	120,529	304,001	22,365	77,147	257,166	153,251	410,417
2011	2,814	9,750	101,263	318,125	7,771	36,996	253,023	111,848	364,871
2012	3,032	10,958	55,464	192,134	6,813	27,723	165,506	65,309	230,815
2013									231,300

Table 13. Summer Steelhead Counts at Lower Granite Dam 1984-2013							
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	20,035	126,321	5,729	52,549	153,106	25,764	178,870
2009-10	39,759	299,854	4,480	23,528	279,143	44,239	323,382
2010-11	34,362	162,494	10,478	45,802	163,457	44,839	208,296
2011-12	35,471	156,114	4,680	24,206	140,169	40,151	180,320
2012-13	20,786	87,914	5,387	21,268	83,009	26,173	109,182
2013-14	21,925	92,169	1,930	7,897	76,211	23,855	100,066

1. *Run year = July 1 through June 30 of following year. 2013-14counts are only through December 7, 2013.*

Table 14. 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	3.0	57.1
1986	3.0	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	7.0	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	3.0	15.0	10.4		2.2	31.8
1992	1.2	3.0	17.6	23.1		3.1	48.0
1993	1.8	3.2	20.0	17.3		4.7	47.0
1994	1.2	2.1	23.0	15.4		5.6	47.3
1995	1.4	1.5	13.0	15.1	0.1	7.8	38.9
1996	1.2	1.0	15.1	7.8	0.2	9.9	35.2
1997	1.9	1.4	6.0	17.5	0.1	3.7	30.6
1998	1.2	1.4	5.0	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	2.0	3.1	19.7	28.4	1.9	16.4	71.5
2002	4.4	6.0	33.3	35.2	2.8	33.8	115.5
2003	2.7	2.7	26.1	17.5	4.5	23.0	76.5
2004	3.0	5.6	42.4	36.4	2.4	23.1	112.9
2005	2.1	2.0	15.3	14.6	4.1	18.8	56.9
2006	3.0	4.3	29.5	17.0	1.3	24.8	79.9
2007	2.7	3.8	12.4	13.1	1.2	9.2	42.4
2008	2.0	5.3	22.6	14.2	0.9	20.6	65.6
2009	1.4	4.3	16.8	15.2	0.7	19.1	57.5
2010	4.2	4.3	22.0	25.9	1.0	26.3	78.5
2011	4.4	3.4	16.3	20.5	0.6	17.1	62.3
2012	4.0	4.0	18.4	25.2	1.2	18.5	71.3
2013	2.4	3.5	14.1	14.3	1.6	7.0	42.9

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. 2011-2012 based on 3-yr average.*
3. *Willamette Falls (Willamette R.), North Fork Dam (Clackamas R.), and Marmot Dam through 2007 only (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 15. 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

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.*

2. *April through October.*

Table 16. 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	108	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	261	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	28	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	9,662	1	8,773	445	5	0	0	5	4,474	4,826
1996	30,896	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	17,878	1	17,877	704	20	0	1	18	4,260	12,388
2000	94,471	364	93,391	2,910	348	1	11	337	20,979	59,918
2001	122,351	1,688	114,933	7,300	49	1	3	45	35,353	74,490
2002	50,484	14	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	130,128	672	123,320	4,317	117	1	4	113	26,663	77,453
2005	77,377	0	72,448	2,766	20	0	1	19	15,646	53,011
2006	37,067	1	37,066	1,596	79	0	3	16	9,756	22,052
2007	26,072	0	24,376	1,414	58	0	3	55	4,439	22,202
2008	214,402	795	213,607	9,017	982	4	41	907	27,875	163,964
2009	178,959	1,137	177,823	9,731	1,623	10	88	1,406	26,609	116,834
2010	387,858	233	386,355	26,125	2,592	2	175	2,406	35,699	264,205
2011	187,307	1,708	185,796	12,853	1,918	18	132	1,502	18,634	108,677
2012	520,959	5,731	515,673	45,352	512	5	45	446	33,654	278,803
2013	186,166	672	185,505	8,046	1,145	4	49	757	29,229	120,060

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 17. Columbia River American Shad Harvest and Passage (in Thousands), 1980-2013.

	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	*

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 landings during experimental seine fishery (2011-2012), experimental tangle-net permit fishery for spring Chinook in 2001, sockeye seasons, Select Area fisheries, and John Day River shad fisheries in some years.*
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.*
5. *Precise catch estimates not available.*

Table 18. Season Dates, Gear Restrictions, and Commercial Landings during Non-Indian Winter (January-March) and spring (April-June 15) Mainstem Seasons, 1970-2013.

Year		Season	Fishing Days	Mesh Size [2]	Commercial Landings [1] Chinook	White Sturgeon
1970-1974 Avg			13	7¼" min.	14,400	1,500
Range		Feb 19-Mar 10	9-15		12,500-17,200	800-3,400
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.	1,563 [4]	30
		May 22 – 30	2	8" min.	644 [5]	244

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 287 jacks.*
5. *Includes six jacks*

Table 19. Fishing Periods, Gear, and Associated Salmon and White Sturgeon Landings (Preliminary) During Mainstem Columbia River Commercial Seasons, 2013.

Season	Fishing Period	Week	Hours	Zones	Mesh Size	STG Limit [1]	Del.	Chinook	Coho	Sockeye	Pink	WSTG	GSTG
Winter Sturgeon	Jan 31, 6 PM - Feb 1, 6 PM	5	24	**1 - 5**	9" - 9 3/4"	10	4	0	- -	- -	- -	9	Prohibited
	Feb 4, 6 PM - Feb 5, 6 PM	6	24	**1 - 5**	9" - 9 3/4"	10	3	0	- -	- -	- -	4	Prohibited
	Feb 6, 6 PM - Feb 7, 6 PM	6	24	**1 - 5**	9" - 9 3/4"	10	2	0	- -	- -	- -	2	Prohibited
	Winter Season Totals (and average number of deliveries):						**3**	**0**	**0**	**0**	**0**	**15**	**0**
								ChS Adults	*ChS Jacks*				
	Apr 9, 7 AM - 4 PM	15	9	**1 - 5**	≤ 4 1/4"	No limit.	130	1,028	34	- -	- -	6	Prohibited
Spring Salmon	May 15, 10 AM - Midnight	20	14	**1 - 5**	≤ 4 1/4"	5	59	248	253	- -	- -	24	Prohibited
	May 22, 7 PM - May 23, 7 AM	21	12	**1 - 5**	8" - 9 3/4"	5	62	249	1	- -	- -	159	Prohibited
	May 29, 7 PM - May 30, 7 AM	22	6	**1 - 5**	8" - 9 3/4"	3	47	389	5	- -	- -	85	Prohibited
	Spring Season Totals (and average number of deliveries):						**75**	**1,914**	**293**	**0**	**0**	**274**	**0**
Summer	Jun 16, 9 PM - Jun 17, 5 AM	25	8	**1 - 5**	8" - 9 3/4"	5	117	1,636	- -	119	- -	293	Prohibited
	Jul 15, 9 PM - Jul 16, 5 AM	29	8	**1 - 5**	8" - 9 3/4"	2	40	232	- -	0	- -	33	Prohibited
	Summer Season Totals (and average number of deliveries):						**79**	**1,868**	**0**	**119**	**0**	**326**	**0**
	Aug 11, 9 PM - Aug 12, 6 AM	33	9	4 - 5	9" - 9 3/4"	4	67	1,037	4	- -	0	130	Prohibited
	Aug 13, 9 PM - Aug 14, 6 AM	33	9	4 - 5	9" - 9 3/4"	4	75	3,180	5	- -	0	45	Prohibited
	Aug 15, 9 PM - Aug 16, 6 AM	33	9	4 - 5	9" - 9 3/4"	4	85	1,436	5	- -	0	71	Prohibited
August	Aug 18, 9 PM - Aug 19, 6 AM	34	9	4 - 5	9" - 9 3/4"	4	124	4,150	7	- -	0	132	Prohibited
	Aug 20, 9 PM - Aug 21, 6 AM	34	9	4 - 5	9" - 9 3/4"	4	115	5,806	44	- -	0	74	Prohibited
	Aug 22, 9 PM - Aug 23, 6 AM	34	9	4 - 5	9" - 9 3/4"	4	118	7,067	102	- -	0	66	Prohibited
	Aug 25, 9 PM - Aug 26, 6 AM	35	9	4 - 5	9" - 9 3/4"	4	125	9,501	85	- -	0	125	Prohibited
	Aug 28, 9 PM - Aug 29, 2 AM	35	5	4 - 5	9" - 9 3/4"	4	114	13,472	126	- -	0	76	Prohibited
	August Season Totals (and average number of deliveries):						**103**	**45,649**	**378**	**0**	**0**	**719**	**0**
	Sep 15, 9 PM - Sep 16, 3 AM	38	6	4 - 5	8" - 9 3/4"	2	127	7,111	79	- -	0	49	Prohibited
	Sep 17, 9 PM - Sep 18, 5 AM	38	8	4 - 5	8" - 9 3/4"	2	112	8,059	326	- -	1	47	Prohibited
	Sep 19, 8 PM - Sep 20, 6 AM	38	10	4 - 5	8" - 9 3/4"	2	106	6,634	521	- -	2	28	Prohibited
	Sep 22, 8 PM - Sep 23, 6 AM	39	10	4 - 5	8" - 9 3/4"	2	97	3,791	192	- -	0	59	Prohibited
	Sep 24, 8 PM - Sep 25, 6 AM	39	10	4 - 5	8" - 9 3/4"	2	76	3,620	194	- -	0	40	Prohibited
	Sep 26, 8 PM - Sep 27, 6 AM	39	10	**1 - 5**	8" - 9 3/4"	2	82	3,031	430	- -	1	54	Prohibited
	Sep 29, 8 PM - Sep 30, 6 AM	40	10	**1 - 5**	8" - 9 3/4"	2	40	977	177	- -	0	47	Prohibited
	Oct 1, 8 PM - Oct 2, 6 AM	40	10	4 - 5	8" - 9 3/4"	Prohibited	38	981	179	- -	0	Prohibited	Prohibited
	Oct 2, 6 AM - 6 PM	40	12	1 - 3	≤ 3 3/4"	Prohibited	20	223	436	- -	0	Prohibited	Prohibited
	Oct 3, 6 AM - 6 PM	40	12	1 - 3	≤ 3 3/4"	Prohibited	15	163	357	- -	0	Prohibited	Prohibited
	Oct 3, 8 PM - Oct 4, 6 AM	40	10	4 - 5	8" - 9 3/4"	Prohibited	22	503	46	- -	0	Prohibited	Prohibited
	Oct 6, 8 PM - Oct 7, 6 AM	41	10	4 - 5	8" - 9 3/4"	Prohibited	24	823	124	- -	0	Prohibited	Prohibited
	Oct 7, 6 AM - 6 PM	41	12	1 - 3	≤ 3 3/4"	Prohibited	27	387	1,084	- -	0	Prohibited	Prohibited
	Oct 8, 6 AM - 6 PM	41	12	1 - 3	≤ 3 3/4"	Prohibited	23	259	757	- -	0	Prohibited	Prohibited
	Oct 8, 8 PM - Oct 9, 6 AM	41	10	4 - 5	8" - 9 3/4"	Prohibited	22	655	87	- -	0	Prohibited	Prohibited
	Oct 9, 6 AM - 6 PM	41	12	1 - 3	≤ 3 3/4"	Prohibited	27	321	712	- -	0	Prohibited	Prohibited
Late-Fall	Oct 10, 6 AM - 6 PM	41	12	1 - 3	≤ 3 3/4"	Prohibited	24	270	471	- -	0	Prohibited	Prohibited
	Oct 10, 8 PM - Oct 11, 6 AM	41	10	4 - 5	8" - 9 3/4"	Prohibited	19	505	73	- -	0	Prohibited	Prohibited
	Oct 13, 8 PM - Oct 14, 6 AM	42	10	4 - 5	8" - 9 3/4"	Prohibited	17	500	70	- -	0	Prohibited	Prohibited
	Oct 14, 6 AM - 6 PM	42	12	1 - 3	≤ 3 3/4"	Prohibited	21	139	553	- -	0	Prohibited	Prohibited
	Oct 15, 6 AM - 6 PM	42	12	1 - 3	≤ 3 3/4"	Prohibited	16	52	185	- -	0	Prohibited	Prohibited
	Oct 15, 8 PM - Oct 16, 6 AM	42	10	4 - 5	8" - 9 3/4"	Prohibited	16	385	66	- -	0	Prohibited	Prohibited
	Oct 16, 6 AM - 6 PM	42	12	1 - 3	≤ 6"	Prohibited	37	179	513	- -	0	Prohibited	Prohibited
	Oct 17, 7 PM - Oct 18, 7 AM	42	12	4 - 5	8" - 9 3/4"	Prohibited	13	378	28	- -	0	Prohibited	Prohibited
	Oct 18, 6 AM - 6 PM	42	12	1 - 3	≤ 6"	Prohibited	31	132	589	- -	0	Prohibited	Prohibited
	Oct 20, 7 PM - Oct 21, 7 AM	43	12	4 - 5	8" - 9 3/4"	Prohibited	16	288	35	- -	0	Prohibited	Prohibited
	Oct 21, 6 AM - 6 PM	43	12	1 - 3	≤ 6"	Prohibited	34	159	518	- -	0	Prohibited	Prohibited
	Oct 22, 7 PM - Oct 23, 7 AM	43	12	4 - 5	8" - 9 3/4"	Prohibited	7	266	9	- -	0	Prohibited	Prohibited
	Oct 23, 6 AM - 6 PM	43	12	1 - 3	≤ 6"	Prohibited	24	61	211	- -	0	Prohibited	Prohibited
	Oct 24, 7 PM - Oct 25, 7 AM	43	12	4 - 5	8" - 9 3/4"	Prohibited	7	257	21	- -	0	Prohibited	Prohibited
	Oct 25, 6 AM - 6 PM	43	12	1 - 3	≤ 6"	Prohibited	33	48	152	- -	0	Prohibited	Prohibited
	Oct 27, 7 PM - Oct 28, 7 AM	44	12	4 - 5	8" - 9 3/4"	Prohibited	5	239	6	- -	0	Prohibited	Prohibited
	Oct 29, 7 PM - Oct 30, 7 AM	44	12	4 - 5	8" - 9 3/4"	Prohibited	5	188	2	- -	0	Prohibited	Prohibited
	Oct 31, 7 PM - Nov 1, 7 AM	44	12	4 - 5	8" - 9 3/4"	Prohibited	3	169	3	- -	0	Prohibited	Prohibited
	Late-Fall Season Totals (and average number of deliveries):						**35**	**41,753**	**9,206**	**0**	**4**	**324**	**0**
								Chinook *	**Coho**	**Sockeye**	**Pink**	WSTG	GSTG
	2013 TOTALS:							**91,477**	**9,584**	**119**	**4**	**1,658**	**0**
	Average number of deliveries per fishing period during 2013:						**48**	**Includes 293 ChS jacks from spring season.*			**Chum [2]**	**= 0**	

1. *White sturgeon possession and sales limit (per vessel per week). The retention of green sturgeon has been prohibited since July 6, 2006.*
2. *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.*

Table 20. Stock Composition of Hatchery Spring Chinook (in Thousands) Landed during Non-Indian Mainstem Commercial fisheries 1990-2013.

	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

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

[2] *Adults only.*

Table 21. Columbia River Recreational Spring Chinook Fishing Regulations, 2002-2013.				
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 21. Columbia River Recreational Spring Chinook Fishing Regulations, 2002-2013 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 Oregon/Washington border above McNary 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 from I-5 upstream to Beacon Rock plus the Oregon and Washington banks between Beacon Rock and Bonneville Dam during 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 16-May 6 and May 19-20 from Tower Is. powerlines upstream to the Oregon/ Washington border above McNary 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 from I-5 upstream to Beacon Rock plus the Oregon and Washington banks between Beacon Rock and Bonneville Dam during March 1-April 12 (except closed Tuesdays March 26, April 2 and 9) and May 25-June 7. Open from I-5 to Bonneville Dam during June 8-15. One adipose fin-clipped adult spring Chinook in the daily bag limit.	Open from Tower Is. powerlines upstream to the Oregon/ Washington border above McNary plus the Oregon and Washington banks between Bonneville Dam and Tower Is. powerlines during March 16-May 5 with two adipose fin-clipped adult spring Chinook in the daily bag limit and during June 8-15 with one adipose fin-clipped adult spring Chinook in the daily bag limit.

Table 22. Salmonid Angler Trips and Adult Chinook Catch by Month on the Lower Columbia River, 2003-2013.

Year	Month	Angler Trips	Adult Chinook Kept	Adult Chinook Released
2003	Feb	9,573	209	223
	Mar	65,841	5,597	3,193
	Apr	66,351	9,110	4,729
	May	24,875	1,976	1,122
	Jun 1-15	7,776	0	106
	Jun 16-30	15,114	1,348	908
	Jul	24,053	506	763
2003	Total	213,583	18,746	11,044
2004	Feb	9,467	48	31
	Mar	44,576	2,614	727
	Apr	102,058	21,078	6,482
	May	5,891	0	180
	Jun 1-15	2,046	0	59
	Jun 16-30	17,929	619	844
	Jul	21,875	500	422
2004	Total	203,842	24,859	8,745
2005	Feb	7,551	39	0
	Mar	36,865	1,899	542
	Apr	65,705	8,653	2,389
	May	4,082	0	143
	Jun 1-15	10,492	724	486
	Jun 16-30	12,824	669	485
	Jul	25,681	902	15
2005	Total	163,200	12,886	4,060
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

Table 23. 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	1,519	971	Mar 16- May 6	BON- McNary
2005	363	245	Mar 16- Apr 21, June 4-15	BON-McNary, BON-Hwy 395
2006	1,220	245	Mar 16- Apr 30, May 12-jun 15	BON-McNary, BON-Hwy 395
2007	1,343	245	Mar 16-May 3, June 6-15	BON- McNary
2008	2,149	660	Mar 16-May 10	BON- McNary
2009	703	144	Mar 16-April 30	BON- McNary
2010	3,839	906	Mar 16-May 10	BON- McNary
2011	2,308	712	Mar 16-May 1, May 7-10, May 28-Jun 2	BON- Oregon/Washington border
2012	856	298	Mar 16-May 6, May 19-20	BON- Oregon/Washington border
2013	586	273	Mar 16-May 5, Jun 8-15	BON- Oregon/Washington border

Snake River Spring Chinook Recreational Fishery

	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

Zone 6 Summer Chinook Recreational Fishery

	Kept	Released	General Season	General Area
2002	110		July 9- July 31	Bonneville Dam (BON) - Hwy 395
2003	376		June 16-July 31	BON - Hwy 395
2004	232		June 16-July 31	BON - Hwy 395
2005	450		June 16-July 31	BON - Hwy 395
2006	357	--	June 16-July 31	BON - Priest Rapids Dam (PRD)
2007	198	--	June 16-July 3	BON - PRD
2008	1,077	--	June 16-July 1	BON - PRD
2009	273	--	July 1- 31	BON - PRD
2010	416	205	June 16-July 31	BON - PRD
2011	189	139	June 16-July 31	BON - PRD
2012	75	47	June 16- July 31	BON - PRD
2013	9	6	June 16- July 31	BON - PRD

1. Columbia River data based on Catch Record Cards through 2009. Snake River based on creel.

Table 24. Stock Composition of Hatchery Spring Chinook (in Thousands) Kept during the Mainstem Lower Columbia Recreational Fisheries, 1990-2013.

	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

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

Table 25. Adult Spring Chinook Recreational Catch and Harvest Rates for the Cowlitz, Kalama, Lewis, and Sandy Rivers

	Cowlitz River		Kalama River		Lewis River		Sandy River		Total	
Year[1]	Kept Catch	Harvest Rate	Kept Catch	Harvest Rate	Kept Catch	Harvest Rate	Kept Catch	Harvest Rate	Kept Catch	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	41%	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%	1,151	46%	3,624	40%
1996	29	2%	190	30%	351	20%	1,299	34%	1,869	24%
1997	144	8%	5	1%	781	36%	1,203	27%	2,133	24%
1998	0	0%	0	0%	228	14%	1,006	28%	1,234	19%
1999	491	24%	8	1%	692	39%	1,481	41%	2,672	32%
Ave.	**139**	**7%**	**41.2**	**0.064**	**897.8**	**35%**	**1,228**	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	19%	1,372	39%	1,588	27%	5,089	29%
2003	2,985	19%	821	18%	1,916	38%	1,595	28%	7,317	23%
2004	1,919	12%	906	21%	3,035	40%	4,452	35%	10,312	25%
Ave.	**1,419**	**18%**	**612**	**22%**	**1,921**	**44%**	**2,097**	31%	**6,048**	**29%**
2005	1,327	14%	1,029	31%	1,569	45%	1,844	24%	5,769	24%
2006	838	12%	1,371	25%	2,788	38%	903	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	29%	416	28%	293	12%	2,647	26%
Ave.	**1,068**	**19%**	**963**	**25%**	**1,837**	**39%**	**831**	18%	**4,700**	**25%**
2010[2]	2,081	24%	351	39%	510	22%	788	11%	3,730	19%
2011[2]	2,495	43%	213	29%	254	19%	1,352	25%	4,314	32%
2012[2]	5,426	43%	471	57%	381	20%	1,142	21%	7,420	36%
2013[2]	4,257	45%	0	0%	130	8%	938	16%	5,325	30%

1. *1995-2001 and 2008 harvest rates reflect fishery restrictions due to extremely low returns.*
2. *Data preliminary.*

Table 26.	*Winter Season Commercial Landings in Treaty Fisheries, 1977-2013.*					
		Peak Net	Numbers of Fish Sold Commercially [2]			
Year	Season [1]	Count	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	3

1. *Season dates during 1994-1999 (except March, 1999) include weekend closures of 42-48 hours.*
2. *Treaty Indian sales to licensed fish buyers.*
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.*

Table 27. Spring Season Commercial Landings in Treaty Fisheries, 2009-2013[1].

Spring Season

		Numbers of Fish Sold Commercially to wholesale fish buyers			
Year	Season	Chinook	Steelhead	Sockeye	Walleye
2009	Jun 1-14	1,039	44	11	1
2010	April 27-May 19	2,090	46	0	1
2011[2]	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

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

Table 28 Summer Season Commercial Landings in Treaty Fisheries, 2009-2013[1].

Summer Season

		Numbers of Fish Sold Commercially to wholesale fish buyers			
Year	Season	Chinook	Steelhead	Sockeye	Walleye
2009	Jun 16- Jul 17	9,730	1,040	5,958	6
2010	June 16- Jul 29	15,569	10,957	21,843	57
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

[1] *Includes platform and hook and line fisheries since 2010.*