



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

**2010 JOINT STAFF REPORT:  
STOCK STATUS AND FISHERIES FOR  
SPRING CHINOOK, SUMMER CHINOOK, SOCKEYE,  
STEELHEAD, AND OTHER SPECIES,  
AND MISCELLANEOUS REGULATIONS**

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## **INTRODUCTION**

This report describes winter/spring and summer season fisheries in the mainstem Columbia River and includes a summary of 2009 winter/spring and summer fisheries and management guidelines and expectations for 2010 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 2010 management season is scheduled for 10 AM, Thursday February 18, 2010 at the Museum of the Oregon Territory, 211 Tumwater Drive, Oregon City, Oregon. 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**

Non-Indian commercial seasons in the mainstem Columbia River and Select Areas include the winter (January through mid-April), spring (mid-April through mid-June), summer (mid-June through July), and fall (August through October). Winter 2010 seasons for non-Indian commercial mainstem white sturgeon and smelt were adopted at the December 17, 2009 Compact/Joint State hearing along with 2010 recreational smelt seasons for the mainstem Columbia River.

At the February 18 hearing, the Compact will consider the following non-Indian seasons: 1) mainstem winter/spring seasons for spring Chinook; 2) recreational seasons for white sturgeon for the remainder of 2010; 3) winter, spring, and summer seasons in Select Area fishing sites. 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 federally listed under the 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 occurs from mid-April to mid-June, 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, due to lower returns to the Willamette in general and fewer Age-5 Willamette fish in the returns.

Historically, wild spring Chinook spawned in nearly all east side Willamette tributaries upstream of Willamette Falls. During 1952-1968, the U.S. Army Corps of Engineers (USACE) constructed dams on all major east side tributaries upstream of Willamette Falls, blocking over 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 current Willamette spring Chinook population were previously estimated at about 10-12%, with the majority destined for the McKenzie River. However, recent information indicates that the wild percentage of the run

may be higher. 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. Since 2005, the run has been less than 60,000 fish per year.

Four large hatcheries upstream from Willamette Falls produce up to 4.4 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 1.0 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.

### ***2009 Return***

The Willamette River return of 39,410 spring Chinook entering the Columbia River in 2009 was 36% more than the 2008 return of 27,016 fish and was 105% of the preseason forecast of 37,600 (Tables 1 and 2). The 2009 return was made up of 3,978 Age-3, 27,547 Age-4, 7,725 Age-5, and 160 Age-6 Chinook. Approximately 23% (8,883) of the 2009 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.

### ***2009 Escapement***

Passage of spring Chinook over Willamette Falls in 2009 (28,514 fish) was nearly double that of 2008 (14,672 fish; Table 3). From 1975-2008, the number of spring Chinook passing Willamette Falls ranged from 14,700 to 96,700 and averaged 42,400 fish. Of the fish passing Willamette Falls, about 21,000 were hatchery fish, which met the 20,000 hatchery fish escapement goal specified in the Willamette Fishery Management and Evaluation Plan (FMEP).

The Columbia River treaty tribes were able to meet the minimum ceremonial and subsistence (C&S) entitlement set forth in the 2008-2017 Management Agreement through their own fishing efforts in 2009. As a result Willamette River hatchery spring Chinook were not provided as part of the minimum C&S entitlement to treaty tribes. Approximately 300 surplus spring Chinook from Clackamas Hatchery and upper Willamette hatcheries were provided to Oregon coastal tribes or local food banks in 2009.

### ***2010 Forecast***

The ODFW staff is forecasting a return of 62,700 Willamette River spring Chinook to the Columbia River mouth in 2010 which would be greater than the 2006-2009 actual returns (Table

2). Age-specific returns for 2010 are expected to total 1,400 Age-3s (range 1,260-1,600), 46,000 Age-4s (range 21,643-74,297), 14,600 Age-5s (range 12,176-19,449), and 660 Age-6s (range 308-700). The 2010 return is expected to include about 15,700 non-fin-clipped fish (25% of total return), based on the proportions of unmarked fish seen in the 2007-2009 returns.

Returns to the Willamette River in 2007 and 2008 were heavily affected by exceptionally poor survival of the 2003 brood. The poor performance of the 2003 brood which returned as Age-3 fish in 2006 (2<sup>nd</sup> lowest Age-3 return on record), Age-4 fish in 2007 (tied for lowest Age-4 return on record), and Age-5 fish in 2008 (lowest Age-5 return on record), caused dramatic reductions in overall returns during 2007 and 2008.

The 2004 brood, which produced 7,709 Age-5 fish in 2009, returned in fewer numbers than expected (19,880 predicted), given the numbers of the same brood in 2008 (21,917 Age-4s). However, the return of the 2005 brood (27,521 Age-4s in 2009) was greater than expected (16,220 predicted). The Age-4 returns in 2008 and 2009 were both larger than predicted, but the Age-5 returns in 2008 and 2009 were well below expectations.

Age-3 fish from the 2006 brood year, returned in relatively high numbers in 2009 (3,963 fish; 6<sup>th</sup> highest since 1971). However, the highest Age-3 return from 1971-2009 (4,400 in 1991) was followed by the 11<sup>th</sup> lowest return of Age-4 fish (20,840 fish) in 1992. The top ten Age-3 returns from 1971-2009 have been followed by Age-4 returns ranging from 2<sup>nd</sup> through 29<sup>th</sup> highest (19,300-81,300 fish), demonstrating the high variability in Age-3-to-Age-4 conversion rates, and also indicated by the large range provided around the Age-4 prediction for 2010.

## **Clackamas River Spring Chinook**

### ***2009 Return***

The run entering the Clackamas River generally increased from an annual average of 2,600 in the 1970s, 8,200 in the 1980s, and 8,500 in the 1990s, to 14,100 in the early 2000s. The larger returns since 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. The returns in 2008 and 2009 were below the recent average with 7,200 in 2008 and 4,300 in 2009 (Table 3).

### ***2009 Escapement***

The North Fork Dam count of 2,045 spring Chinook in 2009 included 944 unmarked fish that were passed upstream, 93 marked fish that were recycled downstream (to provide additional recreational fishing opportunity), and 1,008 marked fish that were taken directly to Clackamas Hatchery where the swim-in return was 1,845 fish. An estimated 24 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 and 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, therefore, only Age-6 fish returning in 2009 could potentially include unclipped hatchery fish with CWTs; however, no Age-6 fish were identified in the 2009 return.

### ***2010 Forecast***

The ODFW staff is forecasting a return of 6,800 spring Chinook to the Clackamas River. The 6,800 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 averages of 120 fish during 1954-1970, 1,000 during the 1980s, 2,900 during the 1990s, and 3,900 since 2000. 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.

Prior to 2008, the minimum spring Chinook run entering the Sandy River was calculated as the sum 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. Lacking more recent data, an average harvest rate based on the most recent five years available is used to estimate annual catch. Once final catch estimates become available, the run reconstructions are updated. As a result of the removal of Marmot Dam in late 2007, counts of spring Chinook on the Sandy River are currently unavailable.

Because Marmot Dam counts are no longer available, 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. Average number of fish per redd and spawner carcass survey data were also considered. Although the data set used contains only eight data points and the range of the variables is limited, the fit of the regression is strong ( $r^2 = 0.83$ ).

The 2009 actual adult spring Chinook return to the Sandy River is estimated at 2,678 adults, compared to the 2009 forecast of 5,200 adults. The 2010 forecast is 3,700 adult fish, based on 2007-2009 average returns (Table 1). Recreational catch and harvest rates 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 runs are listed under the ESA and are genetically similar. 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 mid-March to mid-May. 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. Forecast 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 2009 Cowlitz River adult spring Chinook return of 4,900 adult fish was slightly greater than the preseason forecast of 4,100 adults. The 2009 return was larger than the returns observed in the past few years, but less than the recent ten-year (1999-2008) average of 6,700 adults. The minimum hatchery escapement goal of 1,250 adults was met, with 3,600 adults (and 1,600 jacks) returning to the hatchery. Natural spawning escapement for 2009 is estimated at 741 adults, which is similar to the recent ten-year average of 660 adults. An adult run size of approximately 1,400 fish is needed to achieve the minimum hatchery escapement goal, since a portion of the run spawns naturally.

An estimated 12,500 adult spring Chinook are expected to return to the Cowlitz River in 2010, which is much greater than the recent ten-year (2000-2009) average of 7,000 adults.

### ***Kalama River Return and Forecast***

The 2009 Kalama River adult spring Chinook return was poor, with only 352 adult fish returning to the tributary mouth. The actual return was one-third of the preseason forecast of 900 adults. The 2009 return was the lowest since at least 1985. The minimum hatchery escapement goal of 500 adults was not met despite restrictions to the recreational fishery. A total of 261 adults and 81 jacks returned to the hatchery. An additional 26 adults are estimated to have spawned naturally. A run of approximately 600 adults is needed to achieve the minimum hatchery escapement goal, since a portion of the run spawns naturally.

An estimated 900 adult spring Chinook are expected to return to the Kalama River in 2010, which would be the second lowest return since 1998 and 24% of the recent ten-year average of 3,400 adult fish.

### ***Lewis River Return and Forecast***

The 2009 Lewis River adult spring Chinook return of 1,900 fish was similar to the preseason forecast of 2,200 adults. The 2009 return was the lowest since 1999 and less than half of the recent ten-year average of 4,500 adults. A total of 1,019 adults and 369 jacks returned to the hatchery in 2009. Natural spawning escapement is estimated to be 58 adults. An adult return of

1,350 fish is needed to achieve the minimum hatchery escapement goal, since a portion of the run spawns naturally.

An estimated 6,000 adult spring Chinook are expected to return to the Lewis River in 2010, which is much greater than the poor 2009 return and about 130% of the recent ten-year average.

### **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 Areas are Willamette stock while the Washington site utilizes Cowlitz and/or Lewis stocks. Currently, all Select Area spring Chinook are 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. Spring Chinook were reared and released from the South Fork Klaskanine Hatchery (operated by the Clatsop County Fisheries project) during brood years 2002–2004 but this program was discontinued due to chronic disease issues and lack of year-round water rights for the hatchery.

Spring Chinook releases in all Select Areas combined ranged between 890,400–1,079,000 smolts annually during 1996–2003, increased to 1.65–1.83 million smolts annually between 2004 and 2006, and have since decreased to 1.06 million in 2007 and 2008 (Table 5). Beginning with the 2001 releases (1999 brood year), all hatchery spring Chinook released in the Select Areas have been mass-marked with an adipose fin clip. In Youngs Bay, annual releases of spring Chinook averaged 466,300 smolts during 1996–2003. Releases doubled briefly during 2004–2006 with the addition of production from the South Fork Klaskanine Hatchery (since discontinued) and now average 472,900 (release years 2007–2009). Releases of spring Chinook smolts into Tongue Point and Blind Slough began in 1996. Since then, smolt releases into Blind Slough have averaged 303,000 smolts annually. Annual releases at the original Tongue Point net pen site averaged 254,400 smolts during 1996–2000; releases at this site were terminated due to undesirable straying of returning adults. A new rearing site for the Tongue Point Select Area was constructed in 2003 at the Marine and Environmental Research and Training Station (MERTS) dock approximately 1.2 miles upstream of the former site. By relocating the rearing site higher into Cathlamet Bay, further from the mainstem Columbia River and closer to a unique water source (John Day River), the propensity for straying is expected to be reduced. Since then, experimental groups of spring Chinook smolts, averaging 75,500 annually, have been released into the Tongue Point site. Releases into Deep River began in 1998 and averaged 167,800 annually through 2009, 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, in an attempt to reduce potential interactions with native juvenile chum.

### ***2009 Returns***

Select Area spring Chinook fisheries are intended to harvest 100-percent of returning hatchery-produced adults to minimize straying and maximize economic value. Commercial landings of Chinook salmon in 2009 Select Area winter/spring/summer fisheries totaled 4,175 Chinook (3,427 spring Chinook; remainder primarily early-returning SABs) of which 3,123 were landed in Youngs Bay, 797 were landed in Blind Slough, 133 in Tongue Point (only open in late April) and 122 in Deep River. Landings in 2009 winter/spring/summer SAFE fisheries were much lower than the ten-year (1999–2008) average harvest of 6,900 Chinook. The 2009 harvest was the second lowest since 2000; only the drastic season reduction in 2005 resulted in fewer fish caught (Tables 1 and 6).

### ***2010 Forecast***

The 2010 Select Area spring Chinook return will be comprised of Age-5 and Age-4 adults from smolt releases of 1.06 million smolts each in 2007 and 2008 (Table 5). Based on these releases and recent site- and age-specific return rates, 4,600 spring Chinook are expected to return to Select Areas in 2010. Approximately 3,500 will return to Youngs Bay, 700 to Blind Slough/Knapka Slough, 300 to Tongue Point/South Channel, and 80 to Deep River. The combined Select Area commercial harvest is expected to be below average but slightly improved over 2009 actual harvest.

## **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 fish of upriver origin 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 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/natural 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 was mass-marked with an adipose fin clip.

Upriver spring Chinook returns have ranged widely in recent decades. Upriver runs were poor in the 1980s averaging 84,300 fish per year (range 52,400-128,300) and decreased further during the 1990s when annual returns averaged 68,800 fish (range 12,900-123,800). The 1995 run marked an all-time low of 12,800 fish. The average annual return during 2000-2009 improved substantially to 209,900 adults (range 86,200 to 439,900). The 2001 run marked a high (since counting began in 1938) of 439,900 adult upriver spring Chinook (Table 7).

Upper Columbia River spring Chinook have typically represented around 16% of the aggregate upriver spring Chinook run since 1980. 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) blocks the upriver migration of these fish. For 20 years prior to the completion of Chief Joseph Dam, the Grand Coulee Dam (RM 597) blocked upriver salmon migration. Returns of upper Columbia spring Chinook to the Columbia River mouth in the 1980s averaged around 20,700 adults, including 7,700 wild fish. Returns severely declined during the 1990s averaging 9,700 adults (2,100 wild). Since 2000, the annual returns have improved averaging 22,700 adults, including 2,300 wild fish (Table 8).

Snake River spring/summer Chinook have typically represented around 47% of the aggregate upriver spring Chinook run since 1980. Returns of Snake River spring/summer Chinook to the Columbia River mouth in the 1980s averaged around 40,500 adults, including 19,400 wild fish. Returns declined during the 1990s averaging 30,300 adults (11,700 wild). Since 2000, annual returns have improved, averaging 109,100 adults including 29,800 wild fish (Table 9).

### ***2009 Return***

The 2009 upriver spring Chinook return to the Columbia River mouth totaled 169,300 adults (Table 7) and consisted of 135,800 Age-4 fish and 32,800 Age-5 fish. The 2009 return included 92,000 (20,900 wild) adult Snake River spring/summer Chinook and 17,400 (1,809 wild) adult upper Columbia Chinook. The 2009 return was less than the recent ten-year average (1999-2008) of 197,300 adults, but was well above the average return of the 1980s and 1990s. The Snake River and upper Columbia components, along with their wild counterparts, followed the same trend as the overall run in 2009; with returns being less than the recent ten-year average, but greater than the average returns over the prior two decades (Tables 7-9).

Since 2005, peak counts and 50% passage dates at Bonneville Dam have been later than the 1977-2004 average, and this trend continued in 2009. In 2009, the peak count occurred on May 2, followed 10 days later by the 50% passage completion date of May 12 (compared to the historical average of April 28). Jack counts at Bonneville Dam and Snake River Dams were the highest on record (since 1977) in 2009, following very high counts in 2007 and 2008.

## ***2010 Forecast***

The spring Chinook forecast produced by TAC for the total upriver run in past years has been derived from traditional cohort relationships, which historically have been very strong. Age composition of the upriver run is determined from scale samples collected from landed catch (sport and commercial), from the adult fish trap at Bonneville Dam, and at various hatcheries. As with any predictive model, there has always been variation between the forecasts and actual returns, but overall, the models tended to be unbiased, with predictions having equal likelihood of being over or under the actual returns. However in four of the last six years, the actual return has been less than the forecast by an average of 45%. The record high jack counts observed basin-wide in 2009, and the significant errors in the 2008 and 2009 forecasts, lead TAC to consider alternative methodology and criteria for forecasting the upriver spring Chinook return in 2010.

After review of numerous alternative models, TAC chose seven models that appeared to reflect actual returns reasonably well. These models resulted in 2010 return estimates ranging from 366,000 to 528,000 adults. No one model was deemed clearly superior, so TAC's forecast for 2010 is the average output of the models, resulting in a forecast for upriver spring Chinook returning to the Columbia River of 470,000 adults. This forecast includes 272,000 Snake River fish (73,400 wild) and 57,300 upper Columbia spring Chinook (5,700 wild), with the remainder of the run comprised of spring Chinook returning to mid-Columbia tributaries. The overall return is expected to consist of 439,000 four-year-old fish and 31,000 five-year-old fish. If accurate, this projection would represent the highest return since counting began in 1938, surpassing the previous record return in 2001.

## **Washington Tributaries Upstream of Bonneville Dam**

The Washington tributary returns and forecasts listed below are included in the aggregate 2009 return and 2010 forecast for upriver spring Chinook.

### ***Wind River Return and Forecast.***

Production of spring Chinook began in the late 1950s at the Carson Hatchery. Since 1970, the average return of hatchery spring Chinook entering the mouth of the Wind River is nearly 7,000 adults. The 2009 return of spring Chinook to the Wind River was nearly 4,700 adults (and 1,200 jacks), compared to the preseason forecast of 6,900 adults. The 2010 forecast is for a large return of 14,000 adults.

### ***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 2009 return of spring Chinook to the Little White Salmon River was 10,700

adults (and 3,000 jacks) compared to the preseason forecast of 9,600 adults. The 2010 forecast is for a very strong return of 28,000 adults, compared to the recent ten-year average of 10,300 adults.

### ***Klickitat River Return and Forecast***

The Klickitat River spring Chinook return consists of hatchery-origin fish from the Klickitat Hatchery (RM 42) and a smaller, depressed wild population that spawns upstream of the hatchery. Prior to 1920, there were large spring Chinook runs in the Klickitat River and a significant tribal fishery at Lyle Falls (RM 2), 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 (RM 42.5) 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 spring Chinook (adults and jacks) returning to the Klickitat River mouth have ranged from about 500 to 5,300 fish, averaging about 1,900 fish annually. The 2009 return of adult spring Chinook totaled 1,500 adults to the Klickitat River mouth (2,000 adults were forecast to return). The 2010 forecast is for a strong return totaling 4,500 adults. The recent ten-year average return is approximately 1,900 adults.

### ***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. 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 7,500 adult spring Chinook returned to the Yakima River in 2009, which was much less than the 15,900 expected. The 2010 return is forecasted at 16,600 adult spring Chinook, compared to the recent ten-year average of 10,300 adults.

## **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 Columbia, Wenatchee, Okanogan, and Similkameen rivers. Access to over 500 miles of the upper Columbia River (excluding tributaries) 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 19,400 and 15,300 fish, respectively. Supplementation programs and improved natural habitat have played a significant role in the increased abundance trends observed since 1999. The average run size between 1999 and 2008 was 56,600 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). Since 2002, the majority of the hatchery production has been mass-marked with an adipose fin clip. Natural-spawning populations also contribute to the run, and may represent as much as half of the total return.

Because of run timing similarities, Snake River summer Chinook are included in the Snake River component of the upriver spring Chinook run. The Columbia River summer Chinook run consists only of the upper Columbia component and the Columbia River mouth run size is calculated as the sum of the Bonneville Dam count and the number of fish caught in lower river fisheries during June 16 through July 31. Upper Columbia summer Chinook are not ESA-listed, and the population is currently considered healthy.

### ***2009 Return***

The 2009 upper Columbia River summer Chinook return totaled 53,900 adults (Table 10), compared to the preseason forecast of 70,700 adults. The 2009 return was slightly less than the recent ten-year average of 56,600 adults, but well above average return of the 1980s and 1990s. The 2009 adult return was comprised of 29,100 Age-4 fish, 23,500 Age-5 fish and 1,200 Age-6 fish. Jack counts at Bonneville Dam followed the same trend as upriver spring Chinook with very high counts. Nearly 22,300 jacks were counted crossing Bonneville Dam, which is at least the second highest count since 1960 and three times the 1999-2008 average count of 7,500 jacks.

### ***2010 Forecast***

Similar to upriver spring Chinook forecasts, the methodology used for summer Chinook forecasts has historically depended on cohort relationships using linear regression models. With the high jack count observed in 2009 for both upriver spring and upper Columbia summer Chinook, TAC used the same sets of models used for the 2010 upriver spring Chinook forecast when developing the 2010 forecast for upper Columbia summer Chinook. The average of the seven models used resulted in a forecast of 88,800 adults for the 2010 upper Columbia River summer Chinook return. The forecast includes 59,700 Age-4 fish and 29,300 Age-5 fish. This return would represent the highest return since 2002 and continues the generally positive trend observed for the past ten years.

## **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 on the Oregon shore and the Klickitat River on the Washington shore. All wild winter steelhead are ESA-listed, except those within the Southwest Washington Distinct Population Segment (DPS) that 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 considered winter steelhead. Columbia River wild winter steelhead returns during 2001 through 2008 averaged 22,100 fish and ranged between 14,000 and 28,000 fish (Table 11).

### ***2009 Return and 2010 Forecast***

The 2009 return to the Columbia River mouth totaled nearly 11,400 fish. The return was less than forecasted (15,200 fish) and less than average return observed in the past five years (17,800 fish). All tributary components were down in 2009 compared to the recent five years, but the Willamette return appeared to be much lower proportionately. Since 2001, the Willamette return has represented around 40% of the Columbia River return. In 2009, the Willamette return only represented 25% of the overall return. The 2010 forecast reflects positive ocean conditions, and is greater than the average return observed in the past five years. The 2010 forecast is 20,100 fish (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, Wind, and Washougal 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 downstream of Bonneville Dam during May and June are classified as Skamania-stock.

The NMFS has divided the upriver wild summer steelhead run into three Distinct Population Segments (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 combined summer steelhead run is estimated as the sum of lower river tributary returns (lower river stocks), mainstem fisheries mortalities 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 and Tables 12 and 14). Summer steelhead counted at Bonneville Dam between April 1 and June 30 are considered Skamania stock steelhead destined for tributaries within Bonneville Pool. Summer steelhead counted at Bonneville Dam between July 1 and October 31 are considered to be either Group A or Group B index. 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 (greater than 78 cm length) and 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 for at least the past 25 years (1984-2008). During 1984-2008 Bonneville Dam passage has ranged from 160,800 fish up to 630,200 fish with a 25-year average of 297,300 upriver summer steelhead (23% wild). The most recent five-year average (2004-2008) is 325,000 fish (25% wild). The Skamania stock has shown a slight decline in total return, but the wild component has increased from the 25-year average of 20% to a recent five-year average of 22%. The Group A return to Bonneville Dam has ranged from 115,600 fish to 515,100 fish over the past 25 years, averaging 228,200 fish (25% wild). The 5-year average for Group A steelhead passage has improved slightly to 250,400 fish (27% wild). Group B steelhead returns are much smaller than the Group A returns. Group B passage at Bonneville Dam over the past 25 years has ranged from 13,200 fish up to 129,900 fish. The Group B run size has also increased from a 25-year average return of 53,400 fish (19% wild) up to the recent five-year average of 61,100 fish. The wild component of the Group B run has increased proportionately to the overall Group B run size, and has consistently averaged 19% of the return for the past five, ten, and 25 year periods.

### ***2009 Return***

The total return to Bonneville Dam (April-October passage) of upriver summer steelhead in 2009 was 601,600 fish, compared to the preseason forecast of 351,800 upriver steelhead. Upriver summer steelhead passage at Bonneville Dam in 2009 was the second highest on record since 1938 (the 2001 return was 630,200 fish).

Skamania stock steelhead passage at Bonneville Dam during April-June totaled 13,900 fish including 3,500 wild fish. The Skamania return was 87% of the preseason expectation and the recent ten-year average (both around 16,000 fish). The majority of steelhead passage at Bonneville Dam occurs during the Group A/B counting period of July through October. During these months in 2009, a total of 587,700 steelhead passed Bonneville Dam, compared to the recent ten-year average of 341,100 fish and the expected passage of 335,800 fish for 2009. August passage accounted for 60% of the July-October passage and record daily counts were observed during mid-August (34,000 steelhead counted on August 13, 2009). The 2009 upriver steelhead return to Bonneville Dam included 543,200 Group A stock (154,000 wild) and 44,500 Group B stock (13,700 wild).

Wild (non-adipose fin clipped) steelhead passing Bonneville Dam during April-October in 2009 totaled 171,300 fish, compared to the preseason expectation of 89,900 fish. The wild fish component in 2009 represented 28% of the passage, which is greater than the recent ten-year average of 26%.

### ***2010 Forecast***

The 2010 forecast for upriver summer steelhead at Bonneville Dam had not been developed at the time this report was published. The 2010 forecast will be included in the Fall Joint Staff Report, typically published in late 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 (completed 1941) 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.

The Columbia River sockeye run consists of the Okanogan, Wenatchee, and Snake River stocks. The Okanogan and Wenatchee stock abundance is 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.

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 Snake River component has similar run timing 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. During the 1990s the number of sockeye returning to the Snake River basin averaged 12 fish per year. During 2000-2007, Snake River sockeye returns improved over the 1990s but the run remained severely depressed with average annual returns of less than 100 fish. The 2008 sockeye return to the Snake River of 984 was the highest since at least 1980, and was surpassed in 2009 hopefully signaling the beginning of an upward trend for Snake River sockeye. The total return of sockeye in 2008 was the largest since 1959 (Table 16).

### ***2009 Return***

The 2009 return of sockeye to the Columbia River of 179,000 adults was slightly less than the preseason forecast of 183,800 adults. The 2009 return proved to be a strong return year, following the record returns of 2008. The 2009 return included 32,100 Wenatchee stock, 145,400 Okanogan stock, and 1,400 Snake River stock. Although the run was slightly less than forecast, both the Snake River and Wenatchee components exceeded expectations. Sockeye counts at Lower Granite Dam exceeded 1,200 fish, which is the highest count since the facility came online in 1975. The 2009 Columbia River return of 1,400 Snake River sockeye was the

highest observed since at least 1980, far exceeding the recent ten-year average (81 fish), and was over ten times the average annual return observed since 1980 (Table 16).

### ***2010 Forecast***

The forecast for the 2010 sockeye run is 125,200 adults to the Columbia River, which includes 14,300 (11%) Wenatchee fish and 110,300 (88%) Okanogan fish. The Snake River sockeye return for 2010 is forecasted at 600 fish.

## **Shad**

Shad are an introduced species brought to the West Coast from Pennsylvania in the late 19<sup>th</sup> century. Since the extensive development of mainstem hydroelectric projects, 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, all shad runs have 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 shad run overlaps with upriver Chinook, sockeye, and steelhead runs, harvest opportunities for shad are regulated to minimize impacts to ESA-listed salmonids.

### ***2009 Return***

The 2009 minimum shad run size was 1.7 million, with a minimum spawning escapement exceeding 1.6 million upstream of The Dalles Dam, plus an unknown number of spawners downstream of The Dalles Dam and downstream of Willamette Falls. The non-Indian (lower Columbia and lower Willamette) recreational and commercial combined catch of 85,200 shad was the lowest since 1985 and amounted to 4.9% of the estimated total minimum run. The 2009 shad run in the Columbia River was the lowest since 2000 and continued a declining trend from the 2005 record return of 6.3 million shad (Table 17).

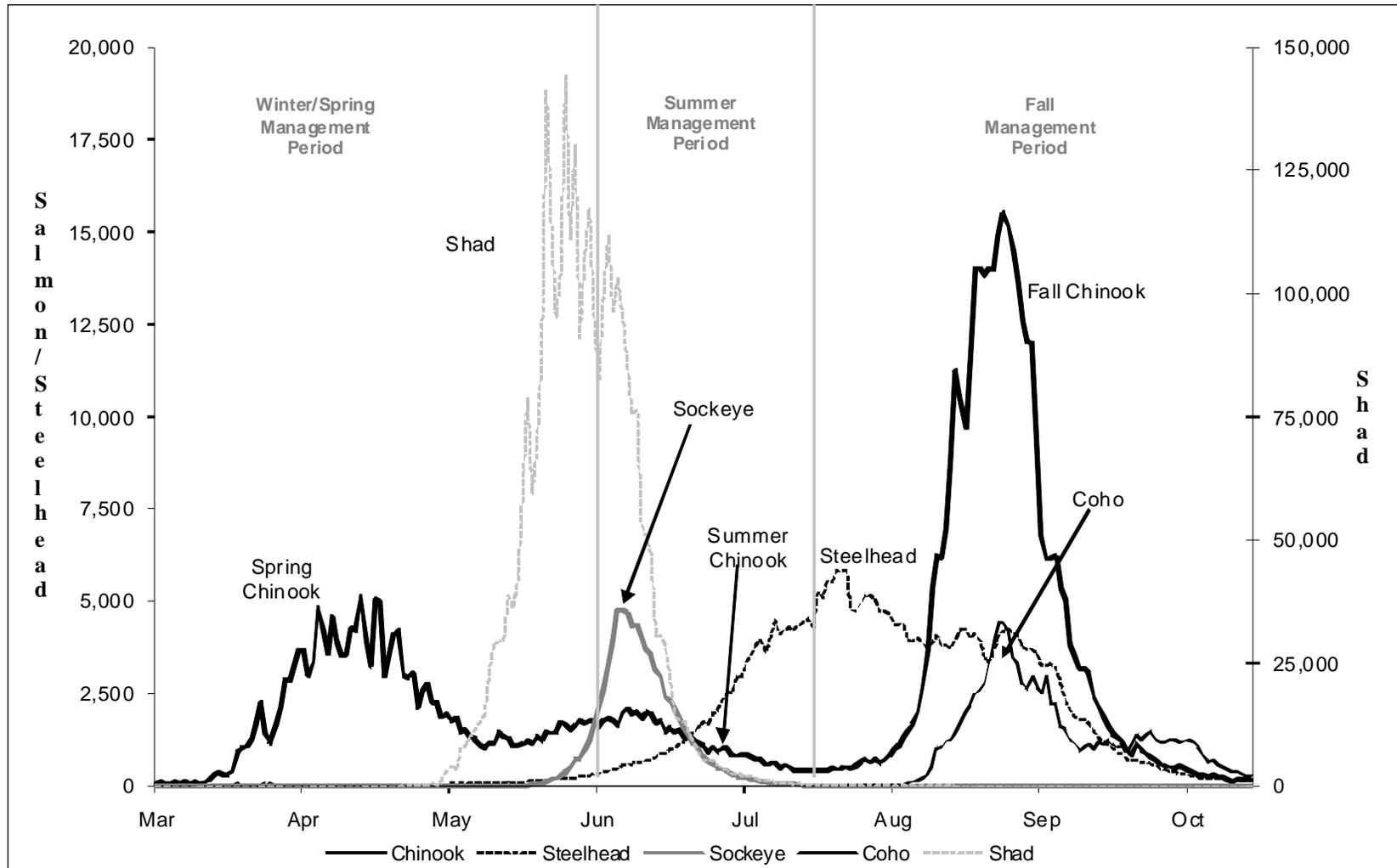


Figure 1. Average Daily Counts of Salmon, Steelhead, and Shad at Bonneville Dam, 2000-2009.

## 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 and are 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 from Oregon tributaries that were listed by the State of Oregon in 1999.

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

<sup>1</sup> The *ESU/DPS*s in bold are present in the Columbia River basin during the time when fisheries described in this report occur and therefore may be impacted by these fisheries.

<sup>2</sup> 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.

### ***Salmon and Summer Steelhead***

Spring (and fall) Chinook destined for Columbia River tributaries downstream of the mouth of the Klickitat River (excluding Willamette River Basin spring Chinook) form a single Evolutionarily Significant Unit (ESU) that was listed as threatened under the ESA effective May 24, 1999 (reaffirmed in 2005). This ESU includes wild spring Chinook destined for the Sandy River in Oregon and the Cowlitz, Kalama, and Lewis rivers in Washington. Excluded from the ESU are Carson hatchery spring Chinook and hatchery-reared spring Chinook released at terminal fishery areas in Youngs Bay, Blind Slough, Tongue Point, and Deep River. Populations of spring Chinook in the Willamette, including the Clackamas, are also ESA-listed and classified as a separate ESU.

Wild lower river summer steelhead are present in the Kalama, Lewis, Wind, and Washougal 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.

The upriver wild summer steelhead run is divided 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, downgraded to threatened in June, 2009), and 3) the Snake River DPS which includes steelhead returning to the Snake River basin (listed as threatened in October 1997).

### ***Wild Winter Steelhead Management***

All wild winter steelhead are ESA-listed, except those within the Southwest Washington DPS that includes populations in Grays Harbor, Willapa Bay, and the Columbia River downstream of the Cowlitz River in Washington and the Willamette River in Oregon. 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.

### ***Green Sturgeon***

The Southern DPS of the North American green sturgeon (those spawning in the Sacramento River, California) are ESA-listed as threatened. These green sturgeon do occasionally “dip-in” to the Columbia River and are therefore a consideration when developing Columbia River fisheries, and were included in the current BA and BO. Given that 1) green sturgeon are

essentially absent from the Columbia River during the winter and spring months, and 2) retention of green sturgeon from Columbia River commercial and recreational fisheries is prohibited, impacts to green sturgeon from fisheries described in this report are expected to be *de minimus*.

### ***Eulachon***

In November, 2007 the NMFS was petitioned to designate populations of eulachon smelt south of the international border of the United States and Canada as a DPS, and further to list this DPS as threatened or endangered pursuant to the ESA. NOAA Fisheries has not made a determination to list eulachon smelt; however, a decision may become available during the course of 2010. Fisheries described in this report are expected to be *de minimus*.

## **Columbia River Salmon Management Guidelines**

The Columbia River Fish Management Plan (CRFMP) expired on December 31, 1998, but was extended through July 31, 1999. The parties to *US v Oregon* re-negotiated numerous interim plans covering fisheries since 2000. 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, steelhead, and sockeye. Guidelines from the MA and other agreements applicable to fisheries considered in this report are highlighted below.

### ***Upriver Spring Chinook***

Non-Indian and treaty Indian winter and spring season fisheries are managed in accordance with harvest rate schedules provided in Table A1 of the 2008-2017 MA (excerpted below). This harvest rate schedule is the first to incorporate a sliding scale, with increasing or decreasing allowable impact rates dependant 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 and non-Indian fisheries. In developing Table A1, the parties to *U.S. v Oregon* expect to achieve catch balancing, where the catch from treaty Indian fisheries roughly match those of non-Indian fisheries. Stipulations within the 2008-2017 MA allow for modification to the 2008-2017 MA if catch balance expectations are widely divergent.

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 fisheries during the winter/spring management period (January 1 through June 15). Tributary harvest of spring and summer Chinook is not included in this entitlement.

<b>2008-2017 Harvest Rate Schedule for Chinook in Spring Management Period</b>						
Total Upriver Spring and Snake River Summer Chinook Run Size <sup>6</sup>	Snake River Natural Spring/Summer Chinook Run Size <sup>1</sup>	Treaty Zone 6 Total Harvest Rate <sup>2,5</sup>	Non-Treaty Natural Harvest Rate <sup>3</sup>	Total Natural Harvest Rate <sup>4</sup>	Non-Treaty Natural Limited Harvest Rate <sup>4</sup>	
<27,000	<2,700	5.0%	<0.5%	<5.5%	0.5%	
27,000	2,700	5.0%	0.5%	5.5%	0.5%	
33,000	3,300	5.0%	1.0%	6.0%	0.5%	
44,000	4,400	6.0%	1.0%	7.0%	0.5%	
55,000	5,500	7.0%	1.5%	8.5%	1.0%	
82,000	8,200	7.4%	1.6%	9.0%	1.5%	
109,000	10,900	8.3%	1.7%	10.0%		
141,000	14,100	9.1%	1.9%	11.0%		
217,000	21,700	10.0%	2.0%	12.0%		
271,000	27,100	10.8%	2.2%	13.0%		
326,000	32,600	11.7%	2.3%	14.0%		
380,000	38,000	12.5%	2.5%	15.0%		
434,000	43,400	13.4%	2.6%	16.0%		
488,000	48,800	14.3%	2.7%	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 downstream of 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 reinstate consultation with NOAA Fisheries if necessary.

### **Upper Columbia River Summer Chinook**

Mainstem Columbia River Chinook fisheries occurring from June 16 through July 31 will be managed based on the abundance of upper Columbia River summer Chinook (destined for areas upstream of Priest Rapids Dam) as 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. The following table outlines the framework for upper Columbia summer Chinook harvest rates.

<b>Upper Columbia Summer Chinook Fishery Framework Matrix</b>		
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%	56%
32,000- <36,250 (125% of 29,000 goal)	10%	7%
36,250-50,000	50% of total harvestable <sup>1</sup>	50% of total harvestable <sup>1</sup>
>50,000	50% of 75% of margin above 50,000 plus 10,500 <sup>2</sup>	50% of 75% of margin above 50,000 plus 10,500 <sup>2</sup>

*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.

### ***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 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.

<b><i>Treaty Indian Sockeye Harvest Rate Schedule, 2008-2017.</i></b>	
<b>Upriver Sockeye Run Size</b>	<b>Harvest Rate</b>
<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.

## **2009 Non-Indian Impact Allocations of Upriver Spring Chinook**

The Oregon and Washington Fish and Wildlife commissions provide staff with policy guidance when shaping fisheries preseason and managing fisheries in-season. In 2009, both commissions adopted new sharing principles following the conclusion of several constituent working group meetings.

Both commissions adopted a matrix approach for allocating impacts between recreational and commercial non-Indian fisheries. These matrices utilized a combination of run sizes for upriver spring Chinook and Willamette spring Chinook to allocate the sharing of impacts and the percentage of impacts that may be used before a run update. The use of the matrices also means that impacts available for each fishery can be different before and after a run update occurs, if the actual returns differ from forecasts. Both commissions provided guidance to use 0.150% upriver spring Chinook impacts from the commercial allocation to conduct Select Area fisheries, and specified that 25% of the recreational upriver spring Chinook impacts be allocated to fisheries upstream of Bonneville Dam. Both commissions also adopted impact rate buffers, constraining the amount of upriver spring Chinook impacts that each fishery could utilize prior to a run update, to ensure that, in the event of a run downgrade, fisheries would not exceed ESA impacts.

Although both commissions agreed on a basic structure for allocating impacts among non-Indian fisheries, they did not agree on the specific rates within the matrices. Under the plan adopted by the WFWC, the 2009 sharing would have been 60% for recreational fisheries and 40% for commercial fisheries, based on the preseason forecast. The OFWC plan specified shares of 55% for recreational fisheries and 45% for commercial fisheries. In order to enact fisheries for 2009, the ODFW and WDFW utilized the most limiting impact sharing for each fishery from either commissions adopted matrix to specify recreational and commercial shares, leaving 5% of the total available impacts unallocated. As a result, prior to the run size update, non-Indian fisheries conducted during 2009 were managed on an impact allocation of 55% to recreational fisheries and 40% to commercial fisheries. Prior to a run size update, the recreational fishery was allowed to use up to 80% of their allowable impact and the commercial fishery up to 60%.

Based on the allocation matrices and 2009 final run sizes of 169,300 upriver spring Chinook and 39,410 Willamette spring Chinook, the final allowable impact shares for each fishery were 65% for recreational and 30% for commercial. The total allowable impact for non-Indian fisheries at this run size was 1.9%.

## **Upper Columbia River Summer Chinook Harvest Sharing Guidelines**

The allocation for non-Indian fisheries is determined by the 2008-2017 MA and the Upper Columbia Management Agreement (UCMA). The UCMA provides a harvest sharing matrix based on run strength of upper Columbia River summer Chinook. This matrix allocates harvestable Chinook to fisheries upstream and downstream of Priest Rapids Dam. In recent years, preseason negotiations between WDFW and the Colville Tribe have resulted in additional fish being available for harvest in the areas downstream of Priest Rapids Dam. The Oregon and Washington Fish and Wildlife commissions provide staff with policy guidance in the sharing of

harvestable fish available downstream of Priest Rapids Dam. Over the past several years, the commissions determined the harvestable fish should be shared 50/50 between commercial and recreational fisheries.

<b>Upper Columbia Management Agreement: Non-treaty Harvest Framework for Upper Columbia Summer Chinook</b>			
River mouth run size	Percentage of allowable catch upstream of Priest Rapids Dam	Harvest regime 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	90% - 70%	Recreational and/or commercial	C&S for Wanapum and Colville, recreational
60,001 – 75,000	70 - 65%	Recreational and/or commercial	C&S for Wanapum and Colville, recreational
75,001+	65% - 60%	Recreational and/or commercial	C&S Wanapum and Colville, recreational

### **Willamette Spring Chinook Management**

#### ***Fishery Management and Evaluation Plan for Willamette Spring Chinook***

In accordance with the threatened 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. 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.

<b><i>Hatchery Spring Chinook Escapement Goals at Willamette Falls and the Clackamas River</i></b>			
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 fisheries in Willamette River tributaries and the mainstem Willamette River upstream of Willamette Falls, and meet hatchery broodstock escapement goals. The increase in escapement goals as the hatchery run size increases allows fisheries upstream of Willamette Falls to share in increased fishery benefits available to lower Willamette River and mainstem Columbia River recreational and commercial fisheries created by increased abundances of hatchery fish.

The recreational and commercial allocation of hatchery-produced Willamette spring Chinook at various hatchery fish run sizes is shown in the table below. Recreational fisheries included in the recreational allocation are those occurring in 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 occur in the lower Columbia River downstream of Beacon Rock and in Select Areas. The allocation plan is designed to allow for recreational fisheries in the mainstem Willamette and Clackamas rivers at hatchery run sizes greater than 23,000 fish, and increases the commercial share gradually (up to 30%) as the forecasted run of hatchery fish increases. At low run sizes (<40,000 hatchery fish), the commercial fishery is restricted to <1% of the predicted return to allow for incidental harvest of Willamette hatchery fish during other fisheries.

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

### ***Lower Columbia River White Sturgeon Management***

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 “2010 Joint Staff Report: Stock Status and Fisheries for Sturgeon and Smelt” dated December 7, 2009. Although the last three-year agreement was set to expire

December 31, 2008, the states opted to extend the agreement for one additional year. The extended agreement expired December 31, 2009. Both WDFW and ODFW expect to receive further guidance from their respective commissions regarding 2010 sturgeon management in February 2010.

In 2008, ODFW initiated development of the Oregon White Sturgeon Conservation Plan (WSCP) for the lower Columbia River. Concurrent with ODFW's effort, WDFW is developing a Comprehensive Statewide White Sturgeon Management Plan (CSWSMP) for Washington state waters. The intent is for both plans to be complimentary in addressing lower Columbia River white sturgeon management. The Oregon WSCP will examine factors and threats that are limiting the abundance and productivity of lower Columbia River white sturgeon and identify critical unknowns and data gaps pursuant to these factors and threats. Population goals and objectives will be refined and strategies and actions will be developed to address the limiting factors and threats. A preliminary draft of the WSCP is due to be completed in 2010. Because of its importance to setting the context for fisheries management, Oregon and Washington fisheries managers have agreed that completing the plan prior to adopting a multi-year "White Sturgeon Management Accord" is essential. Therefore, the intent for 2010 is to draft a new one-year management agreement and postpone adoption of a multi-year agreement until the new management and conservation plans are available.

## **REVIEW OF MAINSTEM, SELECT AREA, AND TRIBUTARY FISHERIES**

### **Non-Indian Fisheries**

#### ***Past Lower River Mainstem Commercial Winter Sturgeon and 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 predictable recreational salmon fisheries, and increased recognition of white sturgeon as a sport fish have resulted in increased 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, 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 in maintaining consistent commercial fisheries since first adopted in 2002. Since 2003, the harvestable number of white sturgeon has been 40,000 fish annually. The harvestable number of white sturgeon is allocated 80% (32,000 fish) to recreational fisheries and 20% (8,000 fish) to commercial fisheries. Annual fishing plans for distribution of commercially harvestable sturgeon are developed each year to provide predictable commercial fishing opportunities and stable markets throughout the year.

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- to late February. Weekly sturgeon landing limits have not been adopted initially, but limits can be applied in-season if necessary to remain within the winter allocation.

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 2002. 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 these 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. This live-capture fishery consisted of a permit fishery with participation limited to 20 vessels. The fishery consisted of one 8-hour fishing period per week 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 legal gear, and had attended 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 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 Chinook and steelhead catch rates.

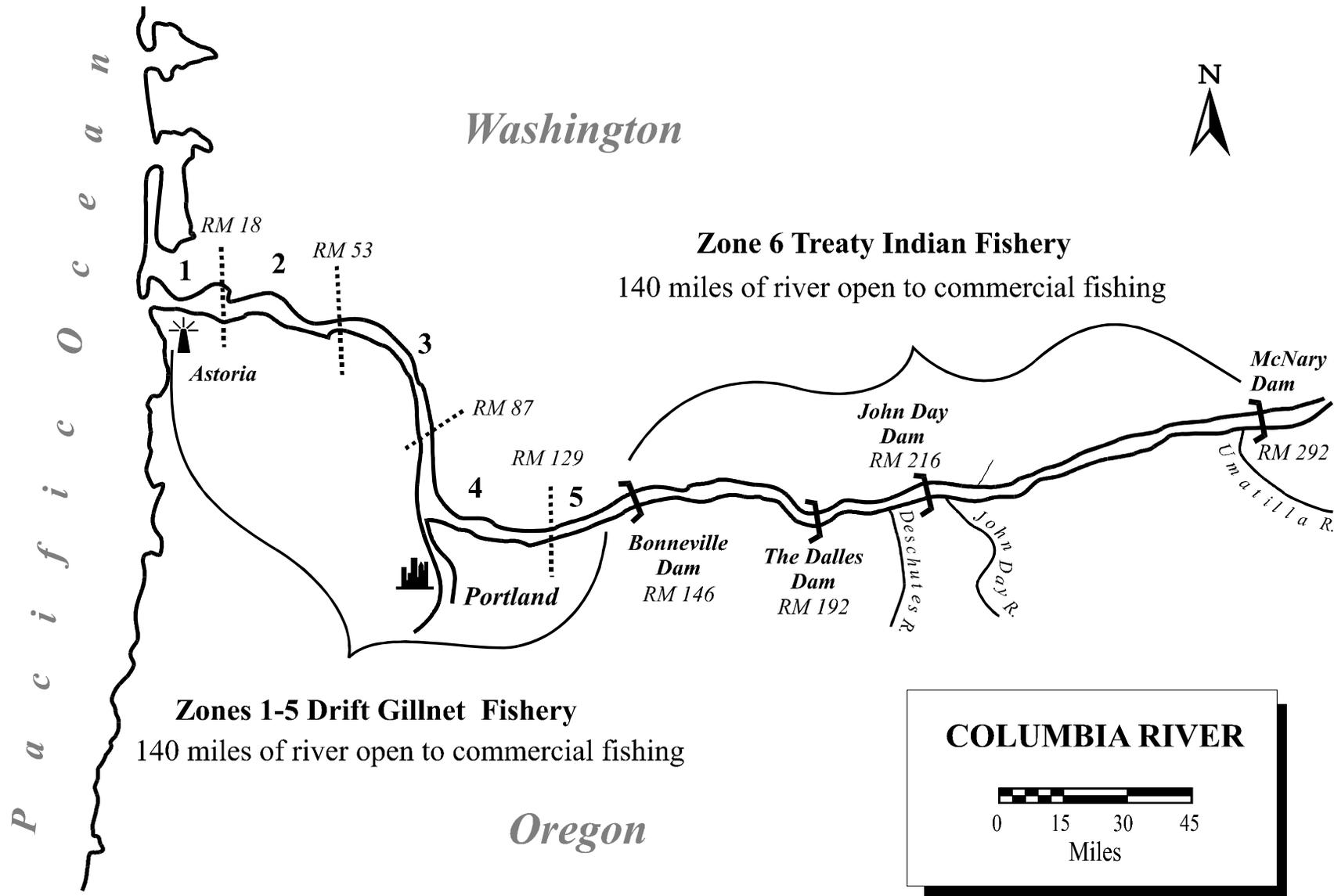


Figure 2. Map of the Columbia River Downstream of McNary Dam Showing Areas Open to Commercial Fishing.

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 winter season 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 hatchery spring Chinook, wild 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. Openers 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 was 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 release 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%, and release mortality rates for fish caught with large mesh gear (8-inch minimum) remained unchanged at 40% for Chinook and 30% for steelhead.

### ***2009 Lower River Winter Commercial Salmon Season***

The 2009 commercial fishery was conducted under similar guiding principles, management objectives, and basic fishing plans in effect since 2004. Based on 2009 preseason run size forecasts and the harvest rate schedule in the 2008-2017 MA, non-Indian fisheries were limited to a 2.2% impact rate on listed upriver spring Chinook. As discussed above (see **Non-Indian Impact Allocations of Upriver Spring Chinook**), 40% of the non-Indian allowable ESA impact was allocated to commercial fisheries for 2009. In addition, an impact buffer of 40% for commercial fisheries was in place prior to a run size update and 0.150% impact from the commercial allocation was allocated to Select Area fisheries. Mainstem commercial fisheries were managed for an impact limit of 0.378% prior to a run size update.

The fishery was also managed for hatchery and wild Willamette River spring Chinook in accordance with the Willamette FMEP. Based on the preseason forecast, only 3,660 Willamette River hatchery spring Chinook were available for harvest in all fisheries downstream of Willamette Falls (including Columbia River fisheries). Nearly all (3,400) hatchery fish were

allocated to recreational fisheries, with less than 1% (260 fish) allocated to commercial fisheries for use in Select Area and winter mainstem sturgeon fisheries.

Additional ESA restrictions included a non-Indian fishery impact limit of 2.0% for ESA-listed wild winter steelhead. Because the commercial spring Chinook fishery was expected to be limited to the area upstream of the Willamette River in order to avoid catch of Willamette spring Chinook, the TAC decided to calculate wild winter steelhead impacts on the subcomponent of the run destined for tributaries upstream of and including the Sandy River, as it had done in 2008.

The structure of 2009 spring fishing season was similar to the 2008 season, which posed challenges unlike those of past years. The Willamette run forecast was poor with very few fish available for harvest and the upriver Columbia run forecast was large. This resulted in the need to shift the majority of the fishing effort upstream of the mouth of the Willamette to avoid handle of Willamette spring Chinook. The 2009 commercial catch expectation prior to a run size update was 5,800 spring Chinook. According to the 2009 preseason commercial fishing plan, test fishing would be conducted in the traditional fishing area (Zones 1-3) to maintain the historical database, as well as upstream of the mouth of the Willamette after the fisheries were complete in order to collect new information. Test fishing was also to be conducted prior to considering full fleet fisheries. Full fleet fisheries were expected to occur between Monday nights and Wednesday mornings (which coincided with recreational closures on Tuesdays) and not to exceed 24 hours. Commercial fisheries were likely to be conducted during both daylight and nighttime hours. As in past years, regulations included gear restrictions, limited soak times (45 minutes), and mandatory use of recovery boxes. Participating fisherman must also have completed the state sponsored workshop concerning live capture techniques and were required to cooperate with the on-board observer program conducted by the state agencies.

Test fishing with tangle net gear (4¼-inch mesh) occurred weekly during March 9 through April 27 to collect information on stock composition, mark rates, and catch rates to determine whether a fishery should be scheduled. Most test fishing occurred upstream of the Willamette River except during early March (9, 17, and 23) when test fishing took place in Zones 1-3 to maintain the historical data base. On April 20 and April 27, test fishing was conducted in Zones 2 and 4 in an effort to collect additional information on run strength. These two test fishing periods mimicked those conducted in the late 1980s near Corbett and Woody Island. As has been the case in recent years, all adipose fin-clipped salmon caught during test fishing operations were kept and sold by the state to help fund test fishing and research, while unmarked fish were released. Because passage of upriver spring Chinook at Bonneville Dam was low early in the run, members of several treaty tribes accompanied test fishing vessels during March and early April and retained 52 unmarked and three marked spring Chinook for ceremonial purposes. Impacts for these fish are included in the treaty impact summary for 2009.

Passage of upriver spring Chinook over Bonneville Dam started off slowly, as has been the case in recent years. During preseason planning, it was anticipated that commercial fishing periods could start in mid to late March. With low passage at Bonneville Dam, the Compact did not consider commercial fisheries until the March 20 hearing. Test fishing was conducted in Zones 4-5 on March 19 and resulted in a catch rate of 0.4 Chinook/ drift. Onboard observers saw no steelhead handled during the fishery, indicating that steelhead abundance was low, as expected.

At the March 20 hearing, two fishing periods were recommended (March 23 and March 29), but the Compact only adopted one fishing period, based on the majority of testimony from commercial fisherman who asked the Compact to delay fishing for one week, and adopt only the March 29 fishery.

Test fishing was conducted on March 26, which showed only a slight improvement of Chinook catch per drift (0.6) compared to the week prior (0.4). The first salmon-directed fishery for 2009 was a ten-hour (1 PM-11 PM) fishery on Tuesday, March 29 resulting in a catch of 340 Chinook. The fishery was conducted with tangle net gear in Zones 4-5, from the west powerlines on Hayden Island upstream to the commercial fishing boundary at Beacon Rock. Sanctuaries around the Washougal and Sandy rivers were in place to protect ESA-listed steelhead and Chinook. White sturgeon harvest was allowed with no weekly limit.

Test fishing data collected the following week (April 5) indicated that Chinook catch rates had increased (3.8 Chinook per drift) and the Chinook-to-steelhead ratio remained high (many Chinook and few steelhead). Based on this information, the Compact adopted a second fishing period for Tuesday, April 7 with the same time area and gear restrictions as the March 29 fishery. Landings of 2,693 for this fishing period were within the 2,000-3,000 Chinook catch expectation.

With 3,000 Chinook landed to date and an estimated 2,900 additional fish available for commercial harvest, test fishing was conducted again on Sunday April 12. Test fishing results were positive, showing a very high catch rate of 7.4 Chinook per drift. Bonneville Dam counts remained low however, with only 1,100 spring Chinook counted through April 12. Staff recommended a very conservative four hour fishing period, recognizing the volatile nature of the spring Chinook run timing during mid-April. The Compact met on April 13 to consider the recommendation and take public testimony. The Columbia River treaty tribes continued to ask the Compact to modify or discontinue lower river fisheries in order to allow fish to pass Bonneville Dam. The tribes shared the concern of the Compact that the run may be less than forecast, and fish needed for ceremonial purposes remained scarce. The majority of the commercial fishermen who testified agreed with tribal testimony, and were willing to wait a week before fishing again. The Joint Staff indicated that further commercial fishing would likely be postponed until May if fishing were not conducted during this small window of opportunity. The Compact adopted staff recommendation and a third (and final) fishing period took place on Tuesday, April 14 from 9 AM to 1 PM (4 hours). Catch was expected to range from 2,000-3,000 fish, and the area and gear restrictions were the same as the initial two periods. Landings were 1,117 Chinook in 100 deliveries from this four-hour period.

The TAC met on April 21 to review the upriver spring Chinook run. TAC reported that it was too early to update the run (given passage to date and variability in run timing) and urged fishery managers to continue the conservative management strategy for all fisheries until a run update is available.

On April 22 the Joint Staff issued a report which reviewed non-Indian fisheries to date. At that time, just over 4,000 Chinook had been commercially landed, representing 69% of the commercial allocation of ESA impacts (based on the pre-season forecast) available prior to a run size update. Given the small balance of the commercial allocation remaining, the high

abundance of Chinook in the fishing area and run size concerns, the Joint Staff felt that the risk of exceeding the available commercial impacts was too high to recommend additional mainstem fishing periods at that time.

TAC reviewed the run size again on May 11 and downgraded it to a range of 120,000 to 150,000 upriver spring Chinook to the Columbia River mouth. A run size in this range would have reduced non-Indian ESA impacts limits allowed for all fisheries to 1.7% to 1.9 %. By May 26 TAC was able to refine the in-season forecast to 160,000 (+/- 5,000) fish, equating to 1.9% non-Indian ESA impacts.

Total landings for the 2009 commercial fishery (Tables 18 and 19) included a Chinook catch of 4,168 marked fish kept (including 18 fish kept in the winter sturgeon fishery) and 921 unmarked released (six fish released during the winter sturgeon season). Ex-vessel prices averaged \$6.99 per pound for Chinook and \$2.28 per pound for white sturgeon. Due to the area restrictions in place, 99% of the Chinook handled were of upriver origin. Mark rates for Chinook in the commercial fishing periods ranged from 80%-86%, and averaged 82% for the season. Winter steelhead handle totaled 49 fish, of which 21 were unmarked (wild and unmarked hatchery fish combined). Wild winter steelhead mortalities resulting from incidental handle were estimated to be four fish. Random onboard monitoring was conducted during the three fishing periods. A total of 256 drifts were observed with 538 Chinook handled, resulting in a 12% observation rate (range 10%-17%). Landed catch was sampled at a rate of 52% (range 45%-54%). Average Chinook weight was 13 pounds.

### ***Past Lower Columbia River Spring Chinook Recreational Fisheries***

Under permanent regulations, the mainstem Columbia River from the mouth to the I-5 Bridge (RM 106) is open to angling for spring Chinook salmon 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 which prompted the OFWC to formally allocate 1,200 Willamette spring Chinook to the mainstem Columbia River recreational fishery. However, problems with the issuance of a BO from the NMFS resulted in an early (March 16) closure of the 2000 recreational fishery (Table 21) and a catch of only 322 adult spring Chinook (Table 22).

The 2001 expected return of 430,400 adult spring Chinook to the Columbia River, including 364,600 upriver spring Chinook and a majority of adipose 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, 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 (Table 21). The recreational fishery had not been open upstream of the I-5 Bridge during the month of April since 1977. The 2001 recreational spring Chinook fishery was both extremely popular and highly successful, with record-high angler effort and catch rates; and in-season management action 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 area downstream of the I-5 Bridge during January 1-March 31 of each year. 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 post-release 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 for management purposes.

The daily bag limit for the recreational spring Chinook fishery downstream of Bonneville Dam was two adult spring Chinook during 2000-2007, except for 2005 when a one-fish bag limit was enacted for the area between Rooster Rock and Bonneville Dam. In 2008, the bag limit was changed to two fish with only one adult spring Chinook in the daily limit for the entire area downstream of Bonneville Dam during the majority of the fishery (Table 21). In-season management has been necessary in each year to maintain the fishing impacts below ESA guidelines and/or within non-Indian harvest-sharing allocations while allowing the states to maximize fishing opportunities. During all years, the states have attempted to balance the opportunity for anglers upstream and downstream of Bonneville Dam. Regulations for 2000-2009 Columbia River recreational spring Chinook fisheries are listed in Table 21, and catch and effort totals are shown in Table 22. Regulations and catch and effort totals for the Zone 6 sport fishery are shown in Tables 21 and 23.

### ***2009 Lower Columbia River Spring Chinook Recreational Fishery***

In 2009, the total spring Chinook run size was forecast to be 353,100 adults to the mouth of the Columbia, comprised of an upriver component of 298,900 fish and a lower river component of 54,200 fish, including 37,000 Willamette spring Chinook. While the upriver run size was predicted to be the third largest since 1977, the Willamette run size forecast was only marginally better than the very poor return of 27,000 fish in 2008, which was the lowest run size since at least 1960. The “2008-2017 *US v Oregon* Management Agreement” provided for a 2.2% impact to ESA-listed upriver spring Chinook in all non-Indian fisheries in 2009, based on the upriver Chinook run size forecast.

Due to discrepancies between OFWC and WFWC guidance, (see **Non-Indian Impact Allocations of Upriver Spring Chinook**), staff used the following assumptions when considering Columbia River recreational fisheries for spring Chinook in 2009:

- ✓ 2.2% total upriver impact with 55% allocated to sport fisheries (1.21%),
- ✓ 75% of that total for the fishery downstream of Bonneville Dam (0.908%),
- ✓ 80% of impacts for use prior to a run size update, leaving an impact of 0.726% for the recreational fishery downstream of Bonneville Dam.

- ✓ The OFWC allocated 1,000 Willamette fish out of the available 3,400 forecasted surplus hatchery return for the mainstem Columbia River recreational fishery.

Recreational fishing regulations for the 2009 spring Chinook fishery were adopted at the February 11 Compact hearing. The permanent recreational season for the Columbia River from Buoy 10 to the I-5 Bridge that began January 1 was allowed to continue through February 28. The remainder of the season was modified. The lower Columbia was open March 1-15 and then three days per week (Thursdays through Saturdays) during March 16-April 18 from Buoy 10 to the Hayden Island power lines. The area from the Hayden Island power lines upstream to Bonneville Dam was open March 1-22 and then four days per week (Wednesdays through Saturdays) during March 23-April 22. The area upstream of Bonneville Dam was open from March 16-April 30 from the Tower Island powerlines upstream to McNary Dam including the Oregon and Washington banks between Bonneville Dam and Tower Island.

The 2009 regulations included a two fish (salmon/steelhead) daily bag limit with not more than one adult spring Chinook in the fishery between Buoy 10 and Bonneville Dam effective March 1, and a standard seven-day per week season with a two Chinook daily limit for the fishery between Bonneville Dam and McNary Dam. Mark-selective regulations for spring Chinook were implemented for the duration of the 2009 fishery in all areas. The 2009 Columbia River recreational season was designed to maximize angler opportunity and overall catch within ESA limits and the 1,000 Willamette spring Chinook guideline.

The Columbia River and many lower river tributaries were high and muddy at the start of 2009 with fairly normal snow-pack accumulation across the basin; however, precipitation and snow-pack decreased during mid-January through late February and most streams were low, clear, and cold at the onset of the spring fishing season. The first spring Chinook was sampled on February 25, 2009 in Vancouver, but effort and catches were light through the end of February with an estimated catch of 35 spring Chinook (34 kept and one released) from 4,539 angler trips.

Effort increased during March when the river opened upstream of the I-5 Bridge as anglers anticipated a repeat of the previous year's success in that area, but catches lagged behind expectations despite nearly ideal water conditions. Water conditions deteriorated in the Willamette River after the middle of the month, but the overall effects on the Columbia recreational fishery were negligible. By the end of March, catch rates were highest in the area downstream of Puget Island, although effort was highest in the Portland-Vancouver metropolitan area. The total catch in March was 4,839 adult spring Chinook (3,906 kept and 933 released), 12 spring Chinook jacks, and 233 steelhead (175 kept and 58 released) from 55,061 angler trips, which was the third highest angler trip total for the month since 1977. Based on VSI sampling, the March catch consisted of 91% upriver spring Chinook.

Water conditions remained excellent in the Columbia River through April 10, when flows started to increase at Bonneville Dam. With a limited number of fishing days per week, angler effort was record high on the open fishing days with almost 2,000 boats per weekday and 3,000 boats per Saturday participating. Catch rates remained high in the area around Puget Island and began to increase in the Bonneville area by mid-month. Joint State hearings were held on April 6 and 13 to update catch information and impacts to upriver spring Chinook. At the April 13 hearing, the states estimated anglers had made 51,365 trips and handled 9,300 spring Chinook on the

eight fishing days during April 1-11, which brought the cumulative upriver impact to approximately 62% of the total reserved for the lower river recreational fishery for use prior to a run size update. Counts of adult spring Chinook at Bonneville Dam totaled 1,110 spring Chinook through April 12, indicating the likelihood that the run was smaller than forecast. With no run size update available from the TAC, catch projections estimated that the sport fishery would handle an additional 7,900 fish and reach a total upriver impact of 0.709% by April 22, and the fishery remained open as scheduled. The final April catch was slightly less than expected with a total of 15,287 adult spring Chinook caught (12,983 kept and 2,304 released) from 82,693 trips. Based on VSI sampling, upriver spring Chinook comprised 93.5% of the total catch.

The final catch in the recreational fishery during February 1-April 22, 2009 was 20,161 adult spring Chinook (16,923 adipose fin-clipped spring Chinook kept and 3,238 unclipped fish released), 1,132 spring Chinook jacks, and 744 steelhead (590 adipose fin-clipped fish kept and 154 unclipped fish released) from 142,293 angler trips. Anglers upstream of Hayden Island made 62,190 trips (43%) and caught 9,396 (47%) adult spring Chinook (7,852 kept and 1,544 released), 419 spring Chinook jacks, and 51 steelhead (43 kept and eight released). Anglers downstream of Hayden Island made 80,103 trips and caught 10,765 adult spring Chinook (9,071 kept and 1,694 released), 713 spring Chinook jacks, and 693 steelhead (547 kept and 146 released). Post season analysis showed that 1,300 Willamette spring Chinook were kept in the lower Columbia River. Based on the preseason upriver run size, some recreational impact remained on the guideline for the lower river after the April 22 closure; however, counts of adult spring Chinook at Bonneville continued to lag so the fishery was not extended. No in-season management action was required.

TAC met on Monday, May 11 and concluded that the upriver run size was likely 120,000-150,000, or 40-50% of the preseason forecast. In response to the in-season run downgrade, the states delayed the traditional May 16 opening of the summer steelhead fishery downstream of the I-5 Bridge until June 12, 2009 in order to avoid accruing any further impacts to upriver spring Chinook. Based on the final 2009 upriver run size of 169,300 and a final handle of 17,864 upriver spring Chinook, the recreational fishery downstream of Bonneville had an impact rate of 1.055% compared to a final guideline of 0.926%.

### ***2009 Zone 6 (Bonneville Dam to McNary Dam) Spring Chinook Recreational Fishery***

Following Commission guidance, 25% of the recreational ESA impact allocation was dedicated to fisheries upstream of Bonneville Dam, including areas upstream of McNary Dam and fisheries in the Snake River. A total of 0.097% ESA impacts were set aside specifically for the Zone 6 recreational fishery for use prior to a run size update. The fishery was open under mark-selective regulations from March 16 through April 30 from the Tower Island powerlines upstream to McNary Dam and along the Oregon and Washington banks between Bonneville Dam and Tower Island. 2009 marked the second year in which the Washington bank was open in all of Bonneville Reservoir. The fishery lagged behind preseason catch expectations due to low passage but remained open until the scheduled closing date of April 30. Catch estimates included 284 Chinook kept and 58 released from an estimated 2,400 angler trips (Table 23).

Due to the in-season run size downgrade, this fishery was not extended into May. Based on the final 2009 upriver run size of 169,300 and a final handle of 342 upriver spring Chinook, the recreational fishery in Zone 6 had an impact rate of 0.020% compared to a final guideline of 0.124%.

### ***2009 Spring Chinook Fisheries Upstream of McNary Dam***

A total of 0.145% ESA impacts from the recreational allocation were set aside specifically for recreational fisheries upstream of McNary Dam occurring prior to a run size update. Similar to 2008, a mark-selective recreational fishery was scheduled to occur on the Snake River in two areas. The Ice Harbor fishery was scheduled to open around April 20 from the Highway 12 Bridge near the mouth of the Snake River upstream to Ice Harbor Dam, but the fishery did not occur due to the reduced in-season run size projection. Consideration of an additional proposed fishery downstream of Lower Granite Dam was also terminated due to the reduced run size. The Little Goose fishery that has occurred annually since 2001 opened on April 24 from the Texas Rapids boat launch upstream to the Corps of Engineers boat launch approximately one mile upstream of Little Goose Dam. This fishery was scheduled to remain open seven days per week through June 15 during daylight hours with a daily limit of two adipose fin-clipped Chinook. On May 11, the run size was downgraded, which resulted in a reduction in available impacts for all recreational fisheries upstream of McNary Dam, and an early closure on May 18. Total catch was 508 adult spring Chinook kept and 104 adults released (Table 23).

In addition to the fisheries in the Snake River, a recreational fishery occurred on the mainstem Columbia River in the area of Ringold Hatchery for adipose fin-clipped hatchery Chinook for the third consecutive year. Boat angling was prohibited with bank angling restricted to the hatchery side of the river only. This fishery opened May 1 and was scheduled to remain open seven days a week through May 31 during daylight hours with a daily limit of two adipose fin-clipped Chinook. On May 11, the run was downgraded which resulted in an early closure on May 18. A total of 81 adult Chinook were kept and 25 released (Table 23). 2010 will likely mark the final year for the Ringold Hatchery fishery since production of spring Chinook has been discontinued at the Ringold facility.

The Wanapum Tribe has not conducted a C&S fishery in the mainstem Columbia River downstream of Priest Rapids Dam during the spring since 2004, when they harvested 14 fish.

Based on the final 2009 upriver run size of 169,300 and a final handle of 718 upriver spring Chinook, recreational fisheries in areas upstream of McNary Dam had an impact rate of 0.138% compared to a final guideline of 0.185%.

### ***Lower Columbia River Tributary Spring Chinook Fisheries***

Tributary spring Chinook recreational fisheries downstream of Bonneville Dam have been mark-selective since 2001. The 2009 pre-season forecasts for adult spring Chinook returns to the Cowlitz River provided a liberal sport fishery there while anglers on the Kalama and Lewis rivers were restricted to a one adult daily limit beginning March 1. As the 2009 season progressed, hatchery returns and recreational catches were low on these two systems, triggering emergency closures beginning May 11. Those rivers remained closed for the rest of the spring Chinook season (July 31) while the Cowlitz River rules remained unchanged.

Preliminary hatchery adult spring Chinook recreational catch estimates for Washington lower Columbia River tributaries are based upon creel sampling and escapement data as Catch Record Card (CRC) data are currently unavailable. An estimated 1,340 hatchery adult spring Chinook were harvested in Washington tributaries in 2009, including 750 from the Cowlitz, 40 from the Kalama and 550 from the Lewis. Estimated harvest rates ranged from 12-14% on the Kalama and Cowlitz rivers, respectively, to 33% for the Lewis River. The 2009 Washington tributary hatchery adult spring Chinook sport catch (1,994 fish) was the lowest since at least 1999 when fisheries were restricted for several years due extremely low returns (Table 25).

The recreational fishery for spring Chinook on the Sandy River is not sampled for catch and effort; therefore, catch is estimated from angler-returned catch records. Final catch estimates for 2008-2009 are not available at this time due to normal delays in receiving and processing this information. Based on average catch rates from 2003-2007 the 2009 angler catch in the Sandy is estimated at 654 fish.

In 2009, the lower Willamette River (downstream of Willamette Falls, including Multnomah Channel and the Clackamas River downstream of the Highway 99 Bridge) opened for retention of spring Chinook seven days per week effective January 1 with a two fish daily bag limit under permanent mark-selective (adipose fin-clip) regulations. Due to concerns of meeting the escapement goal of 20,000 hatchery fish over Willamette Falls and 3,000 to the Clackamas River, effective March 1 the daily bag limit was reduced to include only one hatchery Chinook, and effective March 16 the fishery was limited to three days a week (Thursday through Saturday). The retention of spring Chinook was prohibited in the mainstem Willamette River downstream of Willamette Falls effective April 30 and did not re-open.

The recreational catch in the lower Willamette River has generally declined in recent years consistent with declining adult returns since 2005 and significant fishing opportunity available in the mainstem Columbia River. The 2009 lower Willamette River recreational catch was 5,279 spring Chinook (4,229 kept and 1,050 released). The 2009 kept catch was similar to 2008 (4,369) and 40% lower than the recent 5-year average of 7,100 (Table 3). Willamette River anglers harvested 15% of the available hatchery return. Angler effort in 2009 (32,469 trips) was lower than 2008 (47,318 trips) and was 39% of the average trips from 2000-2008 (83,000 trips). The kept catch rate in 2009 (0.13 Chinook per angler day) was higher than the recent ten-year average of 0.10 Chinook per angler day. Weekly closures during March 16-April 30 which were intended to reduce total fishing effort likely contributed to higher catch rates on open days than would normally be expected at similar run sizes.

The upper Willamette River (upstream of Willamette Falls) spring Chinook recreational fishery opened on January 1, seven days per week, with a two fish daily bag limit under permanent mark-selective regulations. No in-season modifications were made in 2009. Estimates of the 2008-2009 recreational catch for the fishery upstream of Willamette Falls are not yet available because of normal delays in receiving and processing angler catch records. The 1980-2007 recreational catch upstream of Willamette Falls (mainstem and tributaries combined) has ranged from 1,900 to 13,300 per year, and has represented from 6-26% of the total fish passing Willamette Falls (Table 4).

The lower Clackamas River (Highway 99 Bridge to North Fork Dam) spring Chinook recreational fishery opened on January 1, seven days per week, with a two fish daily bag limit under permanent mark-selective regulations. No in-season modifications were made in 2009. Anglers caught an estimated 401 spring Chinook (306 kept and 95 released) from 6,527 angler trips. The kept catch and effort were well below the recent 5-year averages of 638 fish and 5,570 trips. The catch rate of 0.06 spring Chinook per angler day was 55% of the recent 5-year average of 0.11 per angler day.

Based on mark-recapture studies conducted in the Willamette River during 1999-2001, post-release mortality for Chinook in the Willamette River and tributaries is estimated to be 12.2%.

### ***Past Lower River 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 allowing 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. A limit of three white sturgeon per vessel per week was in place throughout the season. For 2007, two periods occurred in Zones 1-5 with an 8-inch minimum mesh restriction and a weekly landing limit of five white sturgeon per vessel. Both fisheries were ten-hour periods from 7 PM to 5 AM, occurring on June 25-26 (98 deliveries) and July 2-3 (77 deliveries). In 2008, three 10-hour fishing periods were conducted during June 24 through July 8 with an 8-inch minimum mesh size restriction. A weekly limit of five white sturgeon per vessel was in place for all three periods. The number of deliveries ranged from 55-92 per period. Ex-vessel prices (per pound landed) averaged \$3.00 for Chinook and \$2.72 for white sturgeon. A total of 83 sockeye were also landed in these three periods. Also in 2008, one sockeye-directed fishery occurred in the 2S area (Washougal to Beacon Rock) on July 30. The fishery was a six-hour daylight fishery with a 4 ½ inch mesh size restriction. A total of 296 sockeye were caught and the ex-vessel price for sockeye averaged \$1.71 per pound.

### ***2009 Lower River Summer Commercial Salmon Season***

Based on the preseason forecast and management agreements, 4,000 summer Chinook were available for commercial harvest in 2009. In addition, a total of 600 white sturgeon were set aside for commercial harvest during the summer season. A total of three to five fishing periods were anticipated during the six-week summer season. On June 10 the Compact adopted three weekly fishing periods scheduled during June 18 and July 1. All fisheries were conducted with an eight-inch minimum mesh restriction and sanctuaries were in place to protect ESA-listed steelhead. White sturgeon harvest was allowed with a five fish weekly limit. Sockeye retention was allowed.

The first summer Chinook fishery for 2009 was a 12-hour (6 PM-6 AM) fishery on June 18-19 in Zones 1-3, up to the Longview Bridge. Restricting the fishery to the lower three fishing zones was designed to allow harvest of upper Columbia River summer Chinook entering the Columbia

River, while avoiding any additional harvest of spring/summer Chinook remaining near Bonneville Dam. The next two fishing periods were ten hours (7 PM-5 AM) and occurred on June 24-25 and June 30-July 1 in Zones 1-5. Staff anticipated a catch of 4,000 Chinook for the combined three fishing periods, with catch and effort declining as the fishery progressed. The short weekly periods were designed to allow staff time to verify landings and estimate catch rates prior to future fisheries. Actual catch from these three fishing periods was roughly 2,400 Chinook, 200 sockeye, and 600 white sturgeon (Table 19). The number of deliveries ranged from 91-109 per period. Ex-vessel prices (per pound landed) averaged \$2.53 for Chinook, for \$3.45 sockeye and \$2.16 for white sturgeon.

On June 29, TAC downgraded the summer Chinook run size to 58,000 fish. With the downgrade also came a reduction of available summer Chinook for commercial harvest. No additional commercial seasons were set for the summer of 2009.

### ***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 fishery have been necessitated by protection for 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 beginning June 16 from the I-5 Bridge upstream to the Highway 395 Bridge at Pasco, Washington. The summer steelhead fishery is closed during April 1-May 15 downstream of the I-5 Bridge and April 1-June 15 upstream of I-5, when spring Chinook abundance is high to avoid handle of upriver spring Chinook, and steelhead caught after October 31 are no longer considered summer steelhead. When spring Chinook fisheries are open during these timeframes/areas, however, hatchery steelhead retention is allowed in conjunction with those opportunities. Conversely, when too few upriver spring Chinook impacts remain to allow incidental hooking mortality during the target steelhead fishery, the steelhead season can be postponed (as late as June 16), as was the case in 2005, 2008, and 2009. The retention of sockeye in all non-Indian fisheries (recreational and commercial) is prohibited at run sizes less than 75,000 fish, and cannot exceed 1% of the total at runs greater than 75,000.

The Columbia River recreational summer Chinook fishery was closed to retention of adult Chinook salmon under permanent regulations during June 1-July 31 every year during 1974-2001. In 2002, the states opened a recreational summer Chinook fishery downstream from 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 to provide an opportunity to harvest abundant hatchery Chinook while limiting the impact to ESA-listed wild Snake River summer Chinook to less than 1%. In July 2002, the states also opened the area from Bonneville Dam upstream to the Oregon/Washington border for the retention of adipose fin-clipped summer Chinook.

Mark-selective recreational fisheries for summer Chinook also occurred in 2003 and 2004, with the same non-Indian limit of 1% impacts on wild Snake River summer Chinook established in 2002. 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.

In 2005, the states delayed the traditional May 16 opening of the lower Columbia recreational summer steelhead fishery downstream of the I-5 Bridge until May 22 because of concerns regarding the size of the upriver spring Chinook run. When the spring Chinook fishery was reopened on June 4, the summer steelhead fishery upstream of the I-5 Bridge was also opened (compared to the scheduled opening date of June 16).

Beginning in 2005, the management period for upper Columbia River summer Chinook at or downstream 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 contains significant numbers of listed Snake River spring/summer Chinook. The later portion of the summer run is predominated by 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 also allowing for more substantial fishing opportunities for the later, 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 a conservative approach for the lower Columbia sport fishery because of concerns that the summer run might follow the pattern shown by the 2005 spring Chinook run, which by early June was projected to be only half of the preseason forecast. By late June, the summer Chinook run appeared to be on target, and the states removed the mark-selective regulations, allowing the retention of both adipose fin-clipped and unmarked summer Chinook during July 1-31.

The 2006 summer steelhead fishery opened downstream of the I-5 Bridge as scheduled on May 16, and beginning May 17 the states reopened the spring Chinook fishery from Tongue Point upstream to Bonneville Dam. In conjunction with the spring Chinook fishery upstream of I-5, the states allowed the retention of adipose fin-clipped summer steelhead. A recreational fishery for summer Chinook (not mark-selective) occurred downstream of Bonneville Dam during June 16 to July 31, but sockeye retention was prohibited. The area upstream of Bonneville Dam was also open for non-mark-selective retention of summer Chinook during June 16 through July 31.

The 2007 summer steelhead fishery downstream of the I-5 Bridge opened as scheduled on May 16. In addition, the states also reopened the spring Chinook fishery between Tongue Point and the I-5 Bridge on May 16. Beginning June 6, 2007 the states reopened the spring Chinook fishery from I-5 upstream to Bonneville Dam and allowed the retention of adipose fin-clipped summer steelhead in conjunction with spring Chinook. Retention of summer Chinook (not mark-selective) was allowed during June 16-30, but sockeye retention was prohibited.

In 2008, spring fisheries exceeded the allowable upriver spring Chinook impact, and the 2008 summer steelhead fishery downstream of the I-5 Bridge was delayed until June 16 in order to avoid any additional handle of upriver spring Chinook in this fishery. The retention of summer Chinook was allowed during June 21-28 based on the preseason forecast of 52,000. Sockeye retention was initially prohibited in 2008, based on the preseason run size forecast; however, TAC upgraded the sockeye run size in-season. Based on this information, the states allowed the retention of sockeye during the recreational summer Chinook fishery and subsequently extended the sockeye retention fishery through July 6 based on updated information from TAC that the

sockeye run would be 210,000 fish. Beginning in 2008, all sockeye were considered part of the adult salmon limit regardless of size.

### ***2009 Columbia River Summer Steelhead and Summer Chinook Recreational Fisheries***

By mid-May, spring fisheries were near the maximum allowable pre-run-update impact to upriver spring Chinook. When TAC updated the run to 165,000 on June 8, the run size projection was much less than forecast. As a result, non-Indian impacts already accrued increased while available impacts decreased, and the 2009 summer steelhead fishery downstream of the I-5 Bridge was delayed until June 12 in order to avoid any additional handling mortality of upriver spring Chinook. Sockeye retention was initially scheduled to be allowed in conjunction with the summer steelhead season through July 31 based on the preseason run size forecast of 183,800 sockeye; however, the sockeye fishery also remained closed until June 12 to limit spring Chinook impacts. A non-mark-selective summer Chinook fishery was open during June 22-July 5 with a daily limit of two adult fish based on the preseason forecast of 70,700 and a catch expectation of 3,000 fish in the recreational fishery downstream of Bonneville Dam.

During June 12-15, anglers made 4,109 trips downstream of Bonneville Dam and caught 148 adult spring Chinook (all released; Table 22), 167 Chinook jacks, 493 summer steelhead (415 adipose fin-clipped summer steelhead kept and 78 released), and 87 sockeye (kept). During June 16-30, anglers made 23,569 trips downstream of Bonneville Dam and caught 2,130 adult summer Chinook (1,749 kept and 381 released; Table 22), 745 Chinook jacks, 1,345 summer steelhead (966 adipose fin-clipped summer steelhead kept and 379 released), and 737 sockeye (672 kept and 65 released). During July 1-31, anglers made 39,644 trips and caught 976 adult summer Chinook (507 kept and 469 released), a record 15,944 summer steelhead (8,221 kept and 7,723 released), 161 sockeye (141 kept and 20 released), and 472 summer Chinook jacks (kept). The July effort and steelhead catch (including released fish) were record highs. The total summer steelhead catch in the lower Columbia River during June 12-July 31, 2009 was 17,782 fish (9,602 kept and 8,180 released). The total summer Chinook catch was 2,256 adult fish kept during June 22-July 5. The total sockeye catch during June 12-July 31 was 900 fish kept and 85 released, which is the second highest recreational catch of sockeye on record.

A summer Chinook fishery (not mark-selective) was open from July 1 through July 31 from Bonneville Dam upstream to Priest Rapids Dam, with a 1,000 Chinook guideline. An estimated 200 Chinook were kept in the area between Bonneville and the Highway 395 Bridge (Table 23). An additional 22 adult summer Chinook were kept in the area from the Highway 395 Bridge upstream to Priest Rapids Dam. Summer Chinook sport fisheries in the mainstem Columbia River upstream of Priest Rapids Dam are estimated to have kept 3,233 adults.

### ***Past Select Area Commercial Fisheries***

Spring Chinook commercial fisheries in the Select Areas were initiated in Youngs Bay in 1992. Initial 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/mid-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 mid-April timeframe. These extended-season fisheries have been 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. Fishing opportunity, measured in open hours and/or area, during the extended winter season has been expanded incrementally each year with very low impacts to non-local stocks. Beginning in 1999, summer seasons during mid-June through July were adopted to provide harvest opportunity on late returning Age-4 spring Chinook and early returning Select Area Bright (SAB) fall Chinook. Harvest of Chinook increased as opportunity was expanded, ranging from 3,200–6,900 during the years 2000–2008 (excluding 2005). Table 6 lists Chinook harvests during winter, spring, and summer seasons for all Select Area sites since 1993.

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. 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. Since 2006, the winter season has been expanded into the late-March/early-April timeframe with minimal increase in impacts to listed upriver stocks. 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 60–3,500 Chinook since 1998.

Spring commercial fisheries in Tongue Point were initiated in 1998 and continued through 2003, with additional 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 period. Production-level releases of spring Chinook at Tongue Point were discontinued in 2000 (Table 5) due to chronic high stray rates of returning adults. Experimental releases have been maintained since 2003 at the relocated MERTS net-pen site. Recently, test fishing and full-fleet commercial test fisheries have been conducted in Tongue Point/South Channel and staff is optimistic that increased spring Chinook releases and spring season fisheries will be feasible in the near future.

Spring fisheries have been conducted in Deep River since 2003 with harvest ranging between 28–117 fish annually. Experimental winter seasons have been adopted annually since 2006 but resulted in little effort and no salmonid catch until the 2009 season (see below).

### ***2009 Youngs Bay Winter/Spring/Summer Gillnet Season***

Due to unresolved upriver spring Chinook allocation issues, the Compact discussed fishery options but did not adopt any non-Indian Chinook (including Select Area) or shad fisheries at the January 29, 2009 hearing. At the February 11, 2009 Compact/Joint State hearing, fisheries were

adopted, but only through April 30. This action allowed Select Area commercial fisheries to begin on time but left the remaining anticipated spring season periods from April 30 – June 15 undecided.

The 2009 winter season consisted of seven 18-hour fishing periods between February 15 and March 9. The winter season extension consisted of one 12-hour period (March 11) set for the entire bay, followed by two 12-hour periods and two 4-hour periods upstream of the old Youngs Bay Bridge between March 15 and April 6. Consistent with preseason planning and public input, this structure for the winter-to-spring season “bridge” period was designed to provide opportunity with the maximum area possible. This strategy of constricting the fishery by area (with in-season flexibility) when non-local stocks may be most abundant appears to be an effective alternative to closing the fishery entirely during this timeframe. The 7-inch minimum mesh size regulation was in effect for all winter fishing periods since steelhead handle is minimal in this fishery. As is the case for all commercial fisheries in Youngs Bay, maximum net length was restricted to 250 fathoms, with no more than two pounds of leadline per fathom of net, except in the area upstream of the mouth of the Walluski River. The 12 fishing periods resulted in landings of 155 spring Chinook which is less than half the average catch of 349 Chinook observed since winter seasons began in 1998. Additionally, five white sturgeon were landed in the Youngs Bay winter season. A five white sturgeon (per vessel per week) landing limit was in place for the entirety of the winter, spring, and summer seasons.

The 2009 spring season in Youngs Bay began on April 16 with 12-hour periods scheduled on Mondays and Thursdays through May 1. Uncertainty in the upriver spring Chinook run size, a mid-season run size downgrade, and management actions necessary to ensure non-Indian fisheries did not exceed impacts to listed stocks resulted in significant restrictions of the spring commercial fishery in Youngs Bay in 2009. Youngs Bay was closed for a two week block in early May, then reopened from May 18 through June 12 with restricted time and area (two 12-hour periods per week with the area restricted to upstream of the Old Youngs Bay Bridge for the last two weeks of May and the first week of June). In addition to the two week closure, the restricted periods adopted for Youngs Bay for May 18 – June 12 resulted in an additional reduction of fishing opportunity (measured by open hours) by 75-percent. The fishery was also constrained to the area upstream of the Old Youngs Bay Bridge for three of the four remaining weeks of the spring season, resulting in an additional loss of opportunity (area). The 2009 Youngs Bay spring fishery landed 1,985 Chinook and 103 white sturgeon. The Chinook harvest was just over one half of the ten-year average Chinook harvest (3,800). Throughout the spring season, an 8-inch maximum mesh size restriction was in effect to target Chinook instead of sturgeon.

The 2009 summer season in Youngs Bay was open 6 AM Wednesday through 6 AM Friday weekly from June 17 – July 31. As in the spring fishery, an 8-inch maximum mesh size restriction was adopted to target Chinook instead of sturgeon. The Youngs Bay summer fishery landed 983 Chinook, more than double the ten-year (1999–2008) average Chinook harvest of 422 fish and second only to last year’s record harvest. The high landings were again driven by an increased abundance of SABs returning to Youngs Bay (718 landed) primarily due to the heavily restricted ocean commercial and recreational Chinook fisheries. In addition, 106 white sturgeon were harvested.

The combined Youngs Bay winter/spring/summer fishery stock composition is based on VSI and CWT analysis with a total of 1,098 Chinook (35% of the combined catch of 3,123 Chinook) examined for fin marks and CWTs and 86 CWTs collected. The 2009 combined winter/spring/summer catch was comprised of 63.5% spring Chinook and 23.0% SAB fall Chinook destined for Select Area sites, 2.8% upriver spring Chinook, 0.7% upper Columbia summer Chinook (after June 15), 4.9% Willamette River spring Chinook, and 5.2% spring Chinook destined for the Cowlitz, Kalama, Lewis, or Sandy rivers. Based on scale readings, which were verified with CWTs, the age composition of the catch was <1% Age-2 (all SAB jacks), 13% Age-3, 70% Age-4, 16% Age-5, and <1% Age-6 fish.

### ***2009 Blind Slough/Knappa Slough Winter/Spring Gillnet Season***

Similar to 2000–2008, a winter gillnet season with a 7-inch minimum mesh restriction was adopted for Blind Slough (excluding Knappa Slough) in 2009. The adopted season consisted of thirteen 12-hour periods (7 PM – 7 AM) on Wednesday and Sunday nights during February 18–April 6 (except Wednesday April 1). The six periods (March 15–April 6) 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 2009. During the winter fishing periods, a total of 91 spring Chinook and one white sturgeon were landed, which is greater than the 2000–2008 average Chinook harvest (77). As described for Youngs Bay, a five white sturgeon landing limit was in place for the winter and spring seasons.

During the spring fishery, the Blind Slough Select Area site expanded to include Knappa Slough down to the east end of Minaker Island, to increase fishing area and maximize the opportunity to harvest local SAFE-stock spring Chinook. When fisheries reopened in May, only the Blind Slough area was open for the first two periods and then Knappa Slough was included beginning the last week of May. At this time, the lower deadline in Knappa Slough was extended further downstream to the western end of Minaker Island for the remainder of the spring season. This strategy of area expansion has been successfully employed for several years. An 8-inch maximum mesh size restriction was adopted to target Chinook and limit sturgeon catch. For both the winter and spring fisheries in Blind/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 2009 spring fishery consisted of twelve 12-hour (7 PM – 7 AM) fishing periods on Thursday and Monday nights between April 16 and June 12. The delay in adopting fishing periods for May resulted in the loss of five fishing periods. The restricted 2009 Blind Slough/Knappa Slough spring fishery landed 706 spring Chinook and 32 white sturgeon. The Chinook harvest was less than half of the ten-year average (1,560) and was the lowest since 2000.

The combined Blind Slough/Knappa Slough winter and spring fishery stock composition is based on VSI and CWT analysis. A total of 608 Chinook (76% of the combined catch) were examined for fin marks and CWTs and 204 CWTs were collected. The 2009 Blind Slough/Knappa Slough catch was comprised of 90.8% spring Chinook destined for Select Area sites, 0.9% upriver spring Chinook, and 8.3% Willamette River spring Chinook. Based on scale

readings, which were verified with CWTs, the age composition of the catch was 3% Age-3, 21% Age-4, 76% Age-5, and <1% Age-6.

### ***2009 Tongue Point/South Channel Spring Gillnet Full-Fleet Test Fishery***

Efforts to reinstate a spring Chinook fishery in the Tongue Point/South Channel site continued in 2009. At the February 11 hearing, staff recommended a full-fleet test fishery for the end of April. Test fishing activities were also planned to precede the first scheduled period. Results of test fishing would provide data on presence of non-local stocks during this timeframe and would be used to evaluate the risk of proceeding with the full-fleet experimental test fishery. The Compact adopted a three period full-fleet commercial test fishery in the Tongue Point/South Channel site on Monday and Thursday nights (7 PM – 7 AM) starting on April 21 and ending on April 28 (consistent with all non-Indian fisheries, no periods were initially adopted for post May 1). 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 listed upriver spring Chinook. An 8-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. As in 2008, the new lower deadline was recommended and adopted as an additional precautionary measure. This new Tongue Point deadline is described as “a line extended from the upstream (southern most) pier (#1) at the Tongue Point Job Corps facility through navigation marker #6 to Mott Island”. The deadline is approximately one mile upstream from the deadline used in 2003 and prior. Additionally, all catch was required to be sampled by ODFW staff before being transported out of the fishing area.

Two commercial fishers were contracted to make four drifts per day for five days each, encompassing the timeframe just prior to the season openers in the other sites up to the first scheduled period in Tongue Point/South Channel. All test fishing activities were conducted using live-capture methods with an ODFW biologist on-board to collect data and direct activities. Forty drifts using 4¼-inch tangle nets were made during a six day period between April 15 and 20 capturing 11 spring Chinook (nine identified via VSI as lower river stock and two as upriver) and two steelhead; all fish were tagged and released. Because the abundance of non-target fish was low relative to effort expended, the full-fleet experimental commercial fishery commenced on April 21 as scheduled.

The 2009 full-fleet experimental test fishery in Tongue Point/South Channel consisted of three 12-hour fishing periods on the nights of April 20, 23, and 27. This fishery was not reopened in late May with the rest of the Select Area commercial fisheries. Landings for the fishery totaled 133 spring Chinook and 11 white sturgeon.

The Tongue Point/South Channel spring fishery stock composition was based on VSI and CWT analysis with a total of 128 Chinook (96% of the catch) examined for fin marks and CWTs, and 22 CWTs being collected. The 2009 Tongue Point/South Channel catch was comprised of 36.1% spring Chinook destined for Select Area sites, 27.8% upriver spring Chinook, 31.6% Willamette River spring Chinook, and 4.5% spring Chinook destined for the Cowlitz, Kalama, or Lewis rivers. Based on scale readings, verified with CWTs, the age composition of the catch was 5% Age-3, 68% Age-4, 26% Age-5, and 1% Age-6 fish.

### ***2009 Deep River Winter/Spring Gillnet Season***

For the fourth consecutive year, an experimental winter season was adopted for the Deep River site. The winter season was expanded to eight weekly 12-hour periods occurring primarily on Monday nights (7 PM–7AM) beginning February 16 and ending April 9 (Thursday). A spring fishery consisting of five fishing periods occurring on Wednesday and Sunday nights (7 PM–7 AM) between April 15 and April 30 was adopted at the February 11, 2009 Compact hearing. As was the case with the other Select Areas, additional fishing periods for the May-June timeframe were adopted at the May 13 Compact hearing. Those additional eight fishing periods were scheduled for Wednesday and Sunday nights (7 PM–7 AM) from May 17 to June 11. The fishing area during all periods was restricted to the area from 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 an 8-inch maximum mesh size for the spring season. As in Blind Slough and Knappa Slough, the use of additional weights or anchors was allowed. Since spring seasons have only occurred in Deep River since 2003, they are considered experimental and fishers were required to submit all landed catch for biological sampling before harvested fish could be transported out of the fishing area. A WDFW sampling station was set up in the area for this purpose. A total of 40 Chinook and 27 white sturgeon were reported in the winter season, and 82 Chinook and 26 white sturgeon were reported landed in the spring season. Concurrent with the other Select Areas, weekly white sturgeon landing limits were in place for the winter and spring season.

The Deep River winter/spring fishery stock composition was based on VSI and CWT analysis with a total of 122 Chinook (100% of the catch) examined for fin marks and CWTs, and 12 CWTs being collected. The 2009 Deep River catch was comprised of 59.0% spring Chinook destined for Select Area sites, 13.1% upriver spring Chinook, 17.2% Willamette River spring Chinook, and 10.7% spring Chinook destined for the Cowlitz, Kalama, or Lewis rivers. Based on scale readings, verified with CWTs, the age composition of the catch was <1% Age-3, 37% Age-4, and 62% Age-5.

### ***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 and 2005, when the potential for additional impacts to upriver spring Chinook also forced closure of Select Area commercial fisheries; the recreational fisheries were not closed in the spring of 2008 or 2009 under similar circumstances.

From 2001 to 2004 both effort and harvest in Select Area recreational fisheries increased, due to improved adult returns which resulted in higher quality fishing opportunities (Table 6). The recreational harvest peaked in 2004 with an estimated 1,081 spring Chinook caught. Among the Select Areas, the most popular and productive spring Chinook fisheries have occurred in Blind Slough/Knappa Slough and Youngs Bay during March–May. Based on limited creel survey data, the estimated average annual recreational spring Chinook harvest in Youngs Bay from 1998–2007 was 52 fish per year (range 9–121) with success usually dictated by water conditions. In Blind Slough/Knappa Slough an average of 248 spring Chinook were caught in the years 2000 - 2007. During the same period, recreational harvest in nearby Gnat and Big creeks ranged from 0–700 fish annually (Table 6). Decreased adult returns, especially to Blind Slough/Knappa Slough, have resulted in less than average catch and effort recently. Due to limited resources to carry out a statistical creel program, estimates of recreational catch are not possible for 2009 Select Area spring Chinook fisheries. Based on anecdotal information the recreational harvest in SAFE areas is believed to have been less than 100 spring Chinook in 2009. This information will be compared with catch record card data once it is available.

### ***2009 Commercial Shad Seasons***

Due to the lower than predicted return of upriver spring Chinook and the potential that allowable impact rates in non-Indian fisheries would be exceeded, the Compact did not set commercial shad seasons in 2009 until late May when an in-season update of the upriver spring Chinook run size was available. By that time, approximately 50% of the normal fishery timeframe had passed and interest in the fishery was waning. Nonetheless, the Compact did adopt a 15-day commercial shad season for Area 2S in 2009 which included all weekdays from June 1-19 during the hours of 3 PM-10 PM. Except for 2005, the Camas-Washougal Reef shad fishery has not occurred since 1999 due to lack of participation (Table 17).

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 5<sup>3</sup>/<sub>8</sub> to 6<sup>1</sup>/<sub>4</sub>-inches, ten-lb. 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 the gear used in shad fisheries prior to 1996. Only shad may be kept and sold, and all salmon, steelhead, walleye, and sturgeon are required to be released immediately.

The 2009 shad fishery produced landings of 1,394 shad (3,769 pounds), setting a new record low harvest. No salmonids were observed in the catch during onboard monitoring of the first two weeks of the fishery. Monitoring did not occur during the last week of the fishery. Based on past years' monitoring of salmonids handled per shad landed, salmonid handle is estimated to have consisted of one spring Chinook, one summer steelhead, and two sockeye, with no estimated salmonid release mortalities.

### ***2009 Non-Indian Impacts to ESA-Listed Stocks***

The 2009 impact limit for ESA-listed upriver spring Chinook in non-Indian Columbia River fisheries was 2.2%, based on the preseason forecast. Because the Commission guidance from Oregon and Washington was not consistent, staff applied the lowest of the two impact allocation guidelines to recreational and commercial fisheries, resulting in 55% of the allowable non-Indian

ESA impacts being allocated to recreational fisheries (0.968%) and 40% to commercial fisheries (0.528%), including Select Areas. The states reserved 40% of the commercial allocation and 20% of the recreational allocation as buffers until a run size update was available in season. The states reserved the un-allocated impacts of 5% as well. In total, 0.704% impacts, or 32% of the allowed impacts based on the preseason forecast, were held in reserve as a conservation measure until a run size update was available.

The allowable impact rate limit was reduced to 1.9% for non-Indian fisheries as a result of the in-season run size downgrade and the final run size estimate. Additionally, because the final run size differed from the forecasted run size, the allocation of non-Indian impacts was altered from preseason to post-season. At the final run size of 169,300, impact allocation shifted to 65% recreational and 30% commercial. A total of 5% of the allowable impacts remained unallocated. The final recreational impact total was 1.213% (1.235% allowable) and the final commercial impact total was 0.526% (0.570% allowable). Fishery-specific impacts are shown in the following table. The total non-Indian impact rate was 1.63% on Snake River wild spring Chinook and 1.72% on upper Columbia wild spring Chinook.

<b>2009 Non-Indian Upriver Spring Chinook Impacts (%)</b>				
Fishery	Allowable Impacts Preseason (buffered)	Allowable Impacts Final (post update)	Actual Impacts	% of Allowed
Mainstem Commercial	0.378	0.420	0.439	105%
Select Areas Commercial	0.150	0.150	0.087	58%
<b>Total Commercial</b>	<b>0.528</b>	<b>0.570</b>	<b>0.526</b>	<b>92%</b>
Downstream of Bonneville Recreational	0.726	0.926	1.055	114%
Bonneville–McNary Recreational	0.097	0.124	0.020	16%
Upstream of McNary Recreational	0.145	0.185	0.138	75%
<b>Total Recreational</b>	<b>0.968</b>	<b>1.235</b>	<b>1.213</b>	<b>98%</b>
<b>Total Fishery Impact</b>	1.496	1.805	1.739	
Management Buffer	0.704	0.095		
<b>Total</b>	<b>2.200</b>	<b>1.900</b>	<b>1.739</b>	<b>92%</b>

Impacts to wild winter steelhead were minimal in 2009, as they have been for the past several years. Impacts total 0.13% from 2009 non-Indian mainstem fisheries, which is well within the 2% ESA impact rate limit. Total impacts to Snake River sockeye are estimated to be 0.64%, compared to the allowable impact rate of 1%. Impacts to wild Willamette River spring Chinook are reported separately by ODFW in an annual report submitted to NOAA Fisheries. Final data analyses used to calculate impacts to wild Willamette spring Chinook were not available when this report was completed, but preliminary estimates indicate that total impacts from all freshwater fisheries on wild Willamette spring Chinook were less than 10%, compared to the 15% ESA limit.

Summer Chinook fisheries operated under principles described in the Management Guidelines section of this report. The preseason forecast for summer Chinook was for a run of 70,700 to the Columbia River mouth. The preseason allocation was for 18,263 fish for treaty Indian and non-Indian harvest. The actual run size of 53,878 changed the allocation to 11,954 for each fishery. The treaty Indian harvest totaled 11,650 or 97% of their allocation. The preliminary non-Indian harvest is estimated to be 9,506 or 79.5% of their allocation. The non-Indian harvest by fishery is shown in the table below:

<b>Non-Treaty Harvest of Summer Chinook in 2009</b>	
Sport downstream of Bonneville Dam	2,341
Commercial downstream of Bonneville Dam	2,524
Sport from Bonneville Dam to Priest Rapids Dam	222
Wanapum tribal	185
Sport from Priest Rapids Dam to Chief Joe Dam	3,233
Colville tribal	1,001
<b>Total Non-Treaty</b>	<b>9,506</b>

### **Treaty Indian Fisheries**

#### ***2009 Treaty Indian Winter Commercial Season***

The 2009 winter sturgeon setline fishery was open in all of Zone 6 from January 1 to January 31. There was no reported effort or catch. The tribal winter gillnet fishery in Zone 6 began on February 2. The season was seven days per week in The Dalles and John Day Pools and Monday through Friday in the Bonneville Pool. The Bonneville Pool fishery closed on Friday, February 13. The other pools closed on March 6. Steelhead sales were allowed from the platform and hook and line fishery after the end of the commercial gillnet periods until March 21.

The 2009 winter gillnet season commercial white sturgeon catch (1,602) was slightly higher than 2008, when 1,592 white sturgeon were caught. No Chinook and steelhead were sold to commercial buyers. One walleye was sold which was less than in 2008. The winter season steelhead catch has generally been low in recent years, due to most fishers targeting sturgeon. The total 2009 catch is shown by pool in the table below and combined in Table 26.

<b>2009 Treaty Indian Winter Commercial Landings From Setline, Gillnet, Platform and Hook &amp; Line</b>					
Pool	Steelhead	White Sturgeon		Walleye	Chinook
		Setline	Gillnet		
Bonneville	0	0	409	0	0
The Dalles	0	0	868	1	0
John Day	0	0	325	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>1,602</b>	<b>1</b>	<b>0</b>

### ***2009 Treaty Indian Mainstem Spring and Summer Chinook and Sockeye Fisheries***

Tribal intent for 2009 spring Chinook fisheries was to remain within impact rates allowed by the 2008-2017 MA. The preseason planning for the 2009 treaty mainstem harvest included an expected allowed harvest rate of 10.8% on upriver spring Chinook based on the 298,900 forecasted run. The tribes also planned on a 25.8% harvest rate on Upper Columbia summer Chinook based on the 70,700 forecasted run. Based on a preseason forecast for sockeye of 183,800 the tribal fisheries planned for a 7% harvest rate.

The four tribes issued permits for gillnet C&S fisheries for spring Chinook from late March through mid-May. The platform/hook and line fishery retained spring Chinook and steelhead for subsistence purposes only until sales were allowed beginning May 16. There were no spring season commercial gillnet fisheries in 2009. The estimated C&S gillnet permit catch was 8,523 spring Chinook. The estimated catches for the platform and hook-and-line (C&S and commercial) fisheries were 2,560 spring Chinook upstream of Bonneville and 2,018 downstream of Bonneville Dam. Total harvest of upriver spring Chinook was 13,101 or 7.7% total harvest rate compared to a 9.1% management limit (Table 7). The impact on the ESA-listed Snake River spring/summer Chinook and ESA listed upper Columbia spring Chinook was 8.8%.

During the summer management period, the platform/hook-and-line catch of summer Chinook was 1,209. There were also 10,441 summer Chinook harvested in five weekly commercial gillnet openings (2½-3½ days/week). During 2009, the total summer Chinook harvest was 11,650 (21.6% of the run; Table 10). Based on the final run size, the allowed harvest was 11,954 (22.2%).

There were 3,353 sockeye caught in platform and hook-and-line C&S fisheries and 7,021 sockeye caught in commercial gillnet fisheries. The overall catch of 10,374 was 5.8% of the 2009 actual return as compared to the allowed harvest rate of 7%. The TAC estimated that 82 of the sockeye caught were Snake River sockeye (Table 16).

Steelhead harvest during winter and spring fisheries was minimal, estimated at 400 fish. Platform fisheries were not sampled in 2009 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 2007-2008 run. The summer season harvest was estimated at 1,100 steelhead.

### ***2009 Treaty Indian Tributary Fisheries***

Preliminary landings from Yakama Nation tributary fisheries are estimated at 5,720 adult Chinook, and 122 steelhead. These totals include 85 adults (no steelhead) from the Wind River, 162 adults Chinook and 120 steelhead from the Klickitat River, 150 adult Chinook and no steelhead from the Icicle River and 5,323 Chinook adults and 2 steelhead from Drano Lake. Sales of fish were allowed concurrent with mainstem sales

**2009 Ceremonial and Subsistence Entitlement**

The 2008-2017 MA as well as the expired CRFMP identified a minimum C&S annual entitlement 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 entitlement is to be provided to the tribes by the states of Oregon and Washington. The upriver spring and summer Chinook returns were sufficient to allow the full entitlement to be harvested in treaty fisheries.

<b>2009 Ceremonial and Subsistence Entitlement Summary</b>		
C&S permit gillnet spring fishery	8,523	spring Chinook
Winter commercial gillnet fishery	0	spring Chinook
C&S platform winter/spring fishery	4,578	spring Chinook
Spring commercial gillnet fishery	0	spring Chinook
C&S permit gillnet summer fishery	0	summer Chinook
C&S platform summer fishery	1,029	summer Chinook
Summer commercial gillnet fishery	10,441	summer Chinook
<b>Total</b>	<b>24,751</b>	<b>Spring and summer Chinook</b>

**2009 Shad Fisheries**

There was no directed treaty commercial harvest of shad in 2009. An estimated 750-1,000 fish caught in the Zone 6 platform fishery, and were mostly sold.

**2010 WINTER, SPRING, AND SUMMER SEASON EXPECTATIONS**

**2010 Management Guidelines**

Fisheries conducted in 2010 will be managed in accordance with the 2008-2017 MA, UCMA, Willamette FMEP, and will also follow Commission guidance regarding allocation of harvestable fish and/or impacts to ESA listed species between non-Indian recreational and commercial fisheries. Staff will be meeting with the Commissions in January and February regarding spring Chinook and white sturgeon. Results of the Commission decisions are expected to be available at the February 18 Compact/Joint State hearing.

According to the harvest rate schedule and the 2010 upriver spring Chinook forecast, fisheries will be managed not to exceed a total ESA impact limit of 16% (2.6% for non-Indian fisheries and 13.4% 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 MA for upriver spring Chinook. Under these provisions, non-Indian fisheries will be managed to remain within ESA impacts, but also to not exceed the total allowable catch available for treaty fisheries. Non-Indian fisheries for 2010 will also be restricted to no more than 70% of the available catch specified for treaty fisheries at the preseason forecasted run size for use prior to a run size update. The following table depicts modifications to Table A1 of the MA, reflecting the new catch balancing provisions. This table will take effect in 2010.

**Table A1. Spring Management Period Harvest Rate Schedule**

**Harvest Rate Schedule for Chinook in Spring Management Period**

A	B	C	D	E	F	G	H
Total Upriver Spring and Snake River Summer Chinook Run Size <sup>6</sup>	Snake River Natural Spring/Summer Chinook Run Size <sup>1</sup>	Treaty Zone 6 Total Harvest Rate <sup>2,5</sup>	Treaty Catch Guideline	Non-Treaty Natural Harvest Rate <sup>3</sup>	Non-Treaty Mortality Guideline	Total Natural Harvest Rate <sup>4</sup>	Non-Treaty Natural Limited Harvest Rate <sup>4</sup>
<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 reinstate consultation with NOAA Fisheries if necessary.

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.

Mainstem summer Chinook fisheries will be managed based on the 2008-2017 MA, the UCMA, and Commission guidance. Allowable impacts to ESA-listed sockeye will vary depending on run size, which will be updated in-season. Based on the preseason forecast, harvestable sockeye may be available and retention of sockeye could be allowed in some fisheries. Impacts of up to 1% will be available for non-Indian fisheries and 7% for treaty Indian fisheries. Impacts to wild steelhead in non-Indian fisheries will occur as release mortalities during mainstem recreational and commercial fisheries and will be limited to 2%.

The Joint State Accord for Columbia River Sturgeon Management expired on December 31, 2009. The Commissions will provide guidance regarding white sturgeon management during the months of January and February.

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

## **2010 Non-Indian Fisheries**

### ***Commercial Winter Sturgeon Fishery***

- The currently adopted season consists of six, 24-hour weekly fishing periods in Zones 1-5 from January 19 - February 16, 2010.
- Season dates, gear restrictions, and expected catches are included in Winter Fact Sheet #1 and associated action notices dated December 17, 2009.

### ***Commercial Spring Chinook Fisheries***

*(Compact consideration at the February 18, 2010 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.
- Regulations similar to previous years (net type, net length, soak times, recovery boxes, and observers).
- Fishery structure designed to maximize harvest of hatchery Chinook while minimizing handle of ESA-listed salmonids.
- Fishing plan (expected days when test fishing and commercial fishing periods are expected to occur) similar to previous years. Staff will meet with the Columbia River Commercial Advisory Group in February to solicit input in developing a fishing plan.
- Commercial fishing expected to occur downstream of the Willamette River, as occurred prior to 2008, although fishing farther upstream may be considered.

***Lower Columbia River Spring Chinook Recreational Fishery***

*(Joint State consideration at the February 18, 2010 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.
- Under permanent regulations, the fishery is open for adipose fin-clipped Chinook and adipose fin-clipped steelhead from Buoy 10 upstream to the I-5 Bridge during January 1 through March 31. This fishery will likely be modified in both area and time.
- The staff will meet with the Columbia River Recreational Advisory Group in February to solicit input in developing a fishing plan.

***Bonneville to McNary Dam Spring Chinook Recreational Fishery***

*(Joint State consideration at the February 18, 2010 hearing)*

- Spring season Chinook fisheries are expected in 2010. Fishery structure will be based Commission guidance and public input.

***Select Area Commercial Fisheries***

*(Compact and Oregon State consideration at the February 18, 2010 hearing)*

- Winter and/or spring seasons are expected for Youngs Bay, Blind Slough/Knappa Slough, and Deep River, and a summer season is expected in Youngs Bay.
- A winter season extension in upper Youngs Bay, similar in structure to that in 2009, will be considered.
- A spring full-fleet test fishery starting in late April may be proposed for Tongue Point/South Channel.
- 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 2010 will be similar to previous years and will reflect input from an upcoming public meeting concerning Select Area spring Chinook fisheries.

***Columbia River Steelhead Recreational Fishery***

*(Adopted season as per permanent regulations)*

- 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 open for retention of steelhead concurrent with Chinook retention seasons.
- Retention of sockeye may be allowed.

### ***Columbia River Summer Chinook Recreational and Commercial Fisheries***

- Summer season occurs within the period of June 16 to July 31.
- According to the 2008-2017 MA, and the preseason run size, harvestable summer Chinook are split evenly between treaty and non-treaty fisheries.
- The Upper Columbia Management Agreement calls for the majority of the non-treaty allocation to be harvested in areas upstream of Priest Rapids Dam.
- Washington and Oregon Commission guidance for the allocation of summer Chinook among non-Indian fisheries for 2010 has not been formally agreed upon. Past Commission guidance has been for the non-Indian allocation to be split evenly (50/50) between commercial fisheries and recreational fisheries downstream of Priest Rapids Dam.
- Retention of sockeye may be allowed.
- Season will be developed during the North of Falcon process in March/April 2010.

### ***Commercial Shad Fishery***

*(Adopted season as per permanent regulations)*

- In July 2009, the Compact adopted a permanent annual season for the Area 2S fishery with open hours of 3-10 PM on all weekdays (except the observed Memorial Day holiday from May 10 through June 20).
- A commercial shad season for the Washougal Reef area will not be proposed for 2010.

### **2010 Treaty Indian Fisheries**

Treaty Indian harvest of spring Chinook primarily occurs in C&S fisheries except in years of high abundance, such as in 2000-2004 and 2008-2009, 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 experimental target shad trap-net fishery is pursued.

Treaty Indian commercial and C&S fisheries, including dipnet fisheries, are managed individually by the four Columbia River treaty tribes through a permit and catch-monitoring system. The tribes have defined regulations concerning lawful gear, fishing area, notice restrictions, and other miscellaneous regulations concerning the tribal C&S and commercial fisheries. Tribal staffs will continue to monitor the fisheries and provide in-season accounting of catch and impacts. The tribes may implement commercial spring Chinook fisheries depending on the run size and would bring any commercial proposal before the Compact to approve purchase of harvested fish by non-Indians. Based on the 2010 preseason forecast, spring season commercial fisheries are likely, and would most likely occur in May and/or early June.

Since 2004, the tribes have had directed commercial gillnet fisheries in the summer season targeting upper Columbia River summer Chinook. Summer season commercial fisheries are likely to occur in 2010. Based on the 2010 preseason forecast for sockeye, it is likely that the tribes may use some portion of their allowed sockeye harvest rate for commercial purposes. The tribes will monitor and provide accounting for any commercial fisheries that occur.

### ***Treaty Winter Commercial Fisheries***

- The winter sturgeon setline fishery occurs by permanent regulation from January 1 through January 31.
- The tribes plan to manage the winter gillnet fishery similar to recent years, and is expected to be open February 1 in all of Zone 6 and continue no later than March 21. The fishery may be open up to 7 days per week. The fishery will close early in any pool if sturgeon harvest guidelines are met.
- This fishery generally targets sturgeon, with limited steelhead and minor incidental Chinook harvest.
- The 2010 winter season fisheries are expected to have effort similar to 2009, and to accrue similar impacts to salmon and steelhead.
- The 2010 Zone 6 sturgeon harvest guidelines were set by the states and tribes at the Sturgeon Management Task Force meeting on January 19.

### ***Treaty Indian Spring Season Fisheries***

- The treaty tribes have not yet determined the structure of the 2010 spring Chinook fisheries.
- Based on the 2008-2017 MA and the pre-season run size forecast, the tribes are allowed a 13.4% harvest rate on upriver spring Chinook. 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.
- The tribes anticipate that steelhead catch in the spring fisheries will remain within historic catch levels. The catch would be comprised of Skamania stock hatchery summer steelhead, holdover summer steelhead, and kelts.

### ***Treaty Indian Summer Season Fisheries***

- The treaty tribes have not yet determined the structure of the 2010 summer Chinook fisheries.
- Based on the 2008-2017 MA and the preseason run size forecast, the tribes will plan preseason for a total harvest of 14,550 summer Chinook. Actual harvest will be managed based on the harvest table in the MA and the actual river mouth run size.
- Steelhead harvest during the summer season will be comparable to historic levels.

### ***Treaty Indian Shad Fisheries***

- Implementation of a shad trap fishery at The Dalles Dam east ladder exit will depend on identifying a market as well as agreements with the USACE.
- Platform fisheries are also 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., are usually adopted annually at the first Compact hearing of the management year (December). The Joint Staff will include any recommended changes to miscellaneous regulations in the February 18, 2010 Winter Fact Sheet #2.

The Sturgeon Management Task Force met on January 19, 2010 to discuss and develop management recommendations for 2010 Zone 6 white sturgeon fisheries. The following table reflects the 2010 harvest guidelines developed as a result of that meeting.

<b>2010 Zone 6 Sturgeon Harvest Guidelines</b>			
	<u>Tribal</u>	<u>Sport</u>	<u>Total</u>
Bonneville Dam to The Dalles Dam	1,400	1,400	2,800
The Dalles Dam to John Day Dam	1,000	300	1,300
John Day Dam to McNary Dam	335	165	500
Total	2,735	1,865	4,600

Size limits remains unchanged from 2009.  
Sturgeon between 43-54 inches in fork length in The Dalles and John Day pools and between 38-54 inches in fork length in the Bonneville Pool.

Year	Select Areas <sup>2</sup>	Cowlitz River	Kalama River	Lewis River	Sandy River	Willamette River <sup>3</sup>	Upriver Run <sup>4</sup>	Total
<i>1980-1984 Ave.</i>		22,737	4,165	3,834	2,020	64,800	63,423	160,979
<i>1985-1989 Ave.</i>		11,176	1,552	10,312	1,980	93,700	105,261	223,981
1990		7,555	1,987	9,299	3,527	127,900	105,215	255,483
1991		8,945	2,613	8,334	3,652	105,530	64,235	193,309
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
<i>1990-1994 Ave.</i>	503	7,892	2,234	6,984	5,119	83,448	81,840	188,020
1995	201	2,102	697	3,726	2,686	40,854	12,792	63,058
1996	789	1,787	627	1,730	3,997	33,358	55,552	97,840
1997	1,821	1,877	505	2,196	4,625	34,536	123,827	169,387
1998	2,313	1,055	407	1,611	3,768	43,497	43,512	96,163
1999	1,980	2,069	977	1,753	3,985	52,584	43,067	106,415
<i>1995-1999 Ave.</i>	1,421	1,778	643	2,203	3,812	40,966	55,750	106,573
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	439,885	540,551
2002	12,251	5,209	2,924	3,511	5,905	120,164	334,599	484,563
2003	8,783	15,987	4,553	5,044	5,615	123,352	242,603	405,937
2004	11,643	16,514	4,325	7,406	12,680	143,242	221,519	417,329
<i>2000-2004 Ave.</i>	9,805	8,304	3,003	4,451	6,634	104,196	285,064	421,457
2005	2,563	9,353	3,374	3,500	7,668	59,495	106,920	192,873
2006	7,581	6,967	5,468	7,250	4,382	59,311	132,583	223,542
2007	6,968	3,974	8,016	7,529	2,813 <sup>5</sup>	39,943	86,247	155,490
2008	4,586	2,983	1,615	2,440	5,646 <sup>5</sup>	27,016	178,629	222,915
2009	4,175	4,904	352	1,927	2,678 <sup>5</sup>	39,400	169,296	222,732
<i>2005-2009 Ave.</i>	5,175	5,636	3,765	4,529	4,637	45,033	134,735	203,510

<sup>1</sup> Tributary run sizes are to the tributary mouth and include hatchery returns or dam counts, recreational catch estimates, and (except for the Sandy River), estimates of natural spawning populations.

<sup>2</sup> Minimum run sizes for SAFE stocks is based only on harvest of returning adults. Estimates of escapement are not available. SAFE run size includes minor catches of non-local spring Chinook and early returning Select Area Bright fall Chinook.

<sup>3</sup> Includes jacks (Age-3 fish) and Clackamas River returns.

<sup>4</sup> 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.

<sup>5</sup> Preliminary.

**Table 2. Predicted and Actual Spring Chinook Entering the Columbia River, 1985-2009 and 2010 Projections.**

Year	Willamette River (All Age Classes)			Cowlitz, Kalama, & Lewis Rivers Combined (Adults)			Upriver (Adults)		
	Preseaso n	Actual	% of	Preseaso n	Actual	% of	Preseaso n	Actual	% of
	Forecast	Return	Predicted	Forecast	Return	Predicted	Forecast	Return	Predicted
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 <sup>2</sup>	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 <sup>3</sup>	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	28.2	103	360.7	193.4	54
2005	116.9	61.0	52	24.8	16.2	65	254.1	106.9	42
2006	46.5	59.7	121	15.2	19.7	130	88.4	132.1	149
2007	52.0	40.5	78	15.9	19.5	123	78.5	86.2	110
2008	34.0	27.0	79	12.4	6.7	54	269.3	178.6	66
2009	37.6	39.4	105	7.2	7.2	100	298.9	169.3	57
2010	62.7			19.4			470.0		

<sup>1</sup>. 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, 1970-2009. Includes Jacks.**

Year	Minimum Run Entering Columbia River	Mainstem Columbia River		Run Entering Willamette River	Lower Willamette River Recreational Catch <sup>3</sup>		Willamette Falls Count	Run Entering Clackamas River
		Comm. <sup>1</sup>	Sport <sup>2</sup>		Number <sup>4</sup>	% 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	42.6	0.1	0.0	42.6	14.7	35	20.6	6.4
1996	34.8	0.1	0.0	34.6	6.1	18	21.6	5.9
1997	35.3	0.3	0.0	35.0	1.9	5	26.9	5.8
1998	45.1	0.1	0.0	45.0	2.8	6	34.5	7.4
1999	54.2	0.3	0.0	53.9	5.5	10	40.4	7.4
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

<sup>1</sup>. 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.

<sup>2</sup>. 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.

<sup>3</sup>. 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.

<sup>4</sup>. 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, 1980-2009. Includes jacks.**

Year	Willamette Falls Count <sup>1</sup>	Upper Willamette Recreational Catch		Upper Willamette Hatchery Return		Clackamas Hatchery Return	Received by Columbia River Tribes <sup>2</sup>
		Number	% of Will. Falls Count	Number	% of Will. Falls Count		
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 <sup>3</sup>
1995	20,592	3,380	16	8,757	43	3,112	1,504 <sup>4</sup>
1996	21,605	5,041	23	10,056	47	3,044	4,386 <sup>5</sup>
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	5,758	11	20,256	38	6,155	0
2002	83,136	12,625	15	32,049	39	6,219	0
2003	87,749	11,050	13	25,528	29	5,336	0
2004	95,970	13,277	14	33,560	35	11,231	0
2005	36,633	4,583	13	15,386	42	6,792	0
2006	37,041	5,749	16	16,678	45	7,359	0
2007	23,098	2,133	9	9,756	42	6,106	0
2008	14,672	931	6	7,957	54	5,223	0
2009	28,514	NA	NA	14,424	51	2,853	0

<sup>1</sup>. Includes jacks.

<sup>2</sup>. Given toward the Treaty Tribes' minimum ceremonial and subsistence entitlement per the Columbia River Fish Management Plan.

<sup>3</sup>. Columbia Treaty Tribes at Willamette Falls also harvested 759 Chinook and 396 marked summer steelhead.

<sup>4</sup>. Columbia Treaty Tribes at Willamette Falls also harvested 29 Chinook June 12-17 and 112 summer steelhead.

<sup>5</sup>. Columbia Treaty Tribes at Willamette Falls also harvested 12 Chinook.

<sup>6</sup>. Preliminary; based on average recent harvest rates pending catch card completions.

**Table 5. Smolt Releases at Select Area Fisheries Enhancement Project Sites, Brood Years 1995-2007.**

Brood Year	Species <sup>1</sup>	Release Site									
		Youngs Bay				Tongue Point					
		South Fork Klaskanine Hatchery	Klaskanine Hatchery	Youngs Bay Net Pens	Big Creek Hatchery	Blind Slough Net Pens	Tongue Point Net Pens	Tongue Pt. – MERTS Net Pens	John Day R. Net Pens	Deep River Net Pens	Steamboat Slough Net Pens
1995	CHS	76,821	--	387,228	--	171,229	301,794	--	--	--	--
	SAB	--	26,178	1,366,973	521,952	27,380	26,792	--	--	--	--
	CO	621,932	--	780,128	--	196,963	430,221	--	--	--	--
1996	CHS	--	--	456,282	--	223,318	253,770	--	--	56,414	--
	SAB	--	603,960	463,703	--	27,413	27,482	--	--	--	--
	CO	550,427	--	1,119,632	--	144,958	119,611	--	--	208,350	--
1997	CHS	--	--	426,418	--	200,007	224,277	--	--	39,678	--
	SAB	--	769,126	117,571	--	--	--	--	--	--	--
	CO	429,652	--	2,101,573	--	197,089	204,143	--	--	414,108	210,530
1998	CHS	--	--	464,650	--	196,401	250,009	--	--	--	--
	SAB	--	703,200	221,971	--	--	--	--	--	--	--
	CO	610,658	--	1,819,500	--	195,645	754,123	--	--	431,143	191,543
1999	CHS	--	--	537,898	--	250,396	--	--	--	159,565	--
	SAB	--	408,492	153,928	--	--	--	--	--	--	--
	CO	344,738	--	1,724,031	--	299,411	655,613	--	--	395,337	208,966
2000	CHS	--	--	478,062	--	390,908	--	--	--	95,940	--
	SAB	--	669,913	205,145	--	--	--	--	--	--	--
	CO	583,248	--	1,688,696	--	343,842	667,758	--	--	354,557	273,108
2001	CHS	--	--	453,008	--	426,309	--	30,385	27,412	141,904	--
	SAB	--	620,527	467,056	--	--	--	--	--	--	--
	CO	641,555	--	1,686,711	--	316,804	675,712	--	--	366,435	239,635
2002	CHS	639,446	--	455,825	--	408,495	--	20,913	27,143	97,318	--
	SAB	--	702,188	780,314	--	--	--	--	--	--	--
	CO	--	--	1,470,914	--	298,748	--	697,522	--	357,200	204,600
2003	CHS	458,659	--	457,994	--	433,044	--	26,344	26,955	254,471	--
	SAB	53,963	679,153	519,676	--	--	--	--	--	--	--
	CO	--	--	1,146,068	--	309,527	--	202,727	--	144,900	--
2004	CHS	566,030 <sup>2</sup>	--	391,843	--	451,388	--	57,114	25,451	336,300	--
	SAB	45,247	735,066	161,237	--	--	--	--	--	--	--
	CO	--	--	1,125,609	--	305,573	--	194,442	--	201,300	--
2005	CHS	--	--	417,662	--	272,226	--	76,877	27,272	263,300	--
	SAB	628,888	--	476,497	--	--	--	--	--	--	--
	CO	--	--	1,157,746	--	304,558	--	174,547	--	420,000	--
2006	CHS	--	--	543,803	--	312,612	--	79,343	--	121,500	--
	SAB	708,412	--	564,641	--	--	--	--	--	--	--
	CO	282,201	232,455	768,960	--	310,133	--	597,754	--	368,000	--
2007	CHS	--	--	457,161	--	280,437	--	103,060	--	279,811	--
	SAB	674,181	--	574,020	--	--	--	--	--	--	--
	CO	470,135	510,061	1,014,141	--	300,036	--	477,830	--	435,750	--

<sup>1</sup> CHS = Spring Chinook, SAB = Select Area Bright Fall Chinook, CO = coho.

<sup>2</sup> Released early (September 26, 2005) due to disease.

**Table 6. Winter/Spring/Summer Season Commercial and Recreational Chinook Harvest in Select Area Sites, 1993-2009.**

Year	Commercial					Recreational <sup>2</sup>						Sum
	Youngs Bay	Blind Slough	Tongue Point <sup>1</sup>	Deep River	subtotal	Youngs Bay	Blind Slough	Tongue Point	SAFE Tributaries	Deep River	subtotal	
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	--	1081	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 <sup>3</sup>	3,123	797	133	122	4,175	--	--	--	--	--	100	4,275

<sup>1</sup>. No winter, spring, or summer seasons occurred in Tongue Point from 2004 – 2007. Volunteer test fishing in mid-April 2008 resulted in a full-fleet test fishery beginning in late April and continuing through the remainder of the spring season.

<sup>2</sup>. From 1998 – 2007 annual estimates of recreational harvest were made starting when effort was first observed in a particular site. In 2008 resources were not available to formally estimate recreational harvest

<sup>3</sup>. Preliminary

**Table 7. Estimated Numbers of Adult Upriver Spring Chinook Entering the Columbia River, 1980-2009.**

Year	Upriver Run <sup>3</sup>	Non-Treaty Catch <sup>1</sup>				Treaty Downstream of Bonn	BON Dam Counts	Zone 6 Sport	Zone 6 Treaty Catch <sup>2</sup>				Escapement	
		Downstream of Bonneville Dam							Winter Gillnet	Comm. Gillnet	C&S & Platform	Total	Total <sup>5</sup>	%Run
		Comm.	Sport	Misc. <sup>4</sup>	Total									
80-84	63,423	951	320	182	1,452		61,971	0	1,008	0	2,306	3,313	58,657	92%
85-89	105,260	2,308	805	222	3,334		101,926	0	208	0	5,991	6,199	95,727	91%
1990	105,215	2,082	3,117	150	5,349		99,866	0	4	0	6,924	6,928	92,938	88%
1991	64,235	897	1,539	120	2,556		61,679	0	5	0	3,871	3,876	57,803	90%
1992	95,691	235	1,183	162	1,580		94,111	0	48	0	5,711	5,759	88,352	92%
1993	119,963	238	412	373	1,023		118,940	0	0	0	7,296	7,296	111,644	93%
1994	24,095	441	408	86	935		23,160	0	10	0	1,151	1,161	21,999	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	123,827	9	16	44	69		123,758	0	14	0	8,309	8,323	115,435	93%
1998	43,512	0	14	27	41		43,471	0	1	0	2,224	2,225	41,246	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	439,885	1,579	22,714	964	25,257		414,628	168	160	43,630	10,985	54,775	359,686	82%
2002	334,599	9,507	16,245	667	26,419		308,180	1,684	48	24,209	9,208	33,465	273,031	82%
2003	242,603	2,758	9,581	765	13,104		229,499	1,860	857	8,348	9,090	18,295	209,344	86%
2004	221,519	5,989	17,138	251	23,379		198,140	1,616	2	8,368	9,114	17,484	179,040	81%
2005	106,920	2,247	7,235	42	9,523		97,397	317	1	0	6,163	6,164	90,916	85%
2006	132,583	2,106	4,187	133	6,425		126,158	1,288	0	0	8,401	8,401	116,469	88%
2007	86,247	1,436	3,927	54	5,418		80,829	1,462	3	0	5,624	5,627	73,740	85%
2008	178,629	5,907	19,612	385	25,904	830	151,895	1,853	0	12,314	8,247	21,391	129,481	72%
2009	169,296	4,172	15,246	371	19,789	2,018	147,489	290	0	0	11,083	13,101	136,116	80%

<sup>1</sup>. Includes kept plus release mortalities.

<sup>2</sup>. Ceremonial and subsistence includes catch by gillnet, dipnet, and hook-and-line since 1982. Treaty total includes catch upstream and downstream of BON.

<sup>3</sup>. Run sizes adjusted to reflect the counting period from January 1- June 15. Run includes spring Chinook destined for areas upstream of Bonneville Dam and includes Snake River summer Chinook.

<sup>4</sup>. Includes Select Area, shad, test, experimental fisheries and research.

<sup>5</sup>. Bonneville count minus Zone 6 (Bonneville upstream to McNary) harvest.

**Table 8. Estimated Numbers of Adult Upper Columbia Wild Spring Chinook Entering the Columbia River, 1980-2009.**

Year	Return to Columbia River		Non-Treaty Wild Catch <sup>1</sup>		Treaty wild Catch <sup>2</sup>		Total Wild Catch		Wild Passage Loss <sup>3</sup>		Wild Escapement <sup>4</sup>	
	Total	Wild	No.	% of Run	No.	% of Run	No.	% of Run	No.	% of Run	No.	% of Run
1980	16,776	7,056	12	0.2	229	3.2	241	3.4	4,043	57.3	2,772	39.3
1981	14,375	6,145	83	1.4	310	5.0	393	6.4	2,499	40.7	3,253	52.9
1982	16,261	6,477	112	1.7	445	6.9	557	8.6	2,905	44.9	3,015	46.5
1983	16,433	7,415	356	4.8	298	4.0	654	8.8	2,475	33.4	4,286	57.8
1984	17,153	6,965	239	3.4	462	6.6	702	10.1	1,582	22.7	4,681	67.2
1985	29,099	10,470	380	3.6	358	3.4	738	7.0	682	6.5	9,050	86.4
1986	29,764	8,153	166	2.0	473	5.8	639	7.8	1,889	23.2	5,625	69.0
1987	26,350	9,218	142	1.5	557	6.0	699	7.6	2,068	22.4	6,452	70.0
1988	21,534	7,778	496	6.4	514	6.6	1,010	13.0	1,036	13.3	5,731	73.7
1989	19,022	7,707	183	2.4	579	7.5	763	9.9	2,751	35.7	4,193	54.4
1990	12,746	4,775	241	5.0	314	6.6	555	11.6	1,372	28.7	2,848	59.6
1991	8,789	2,525	100	3.9	152	6.0	252	10.0	707	28.0	1,566	62.0
1992	21,288	4,544	73	1.6	273	6.0	347	7.6	914	20.1	3,283	72.3
1993	26,728	4,830	40	0.8	294	6.1	333	6.9	899	18.6	3,598	74.5
1994	3,715	1,182	46	3.9	57	4.8	103	8.7	442	37.4	637	53.9
1995	1,656	256	0	0.1	13	4.9	13	5.0	121	47.1	123	47.8
1996	3,423	544	1	0.1	29	5.2	29	5.3	215	39.5	300	55.1
1997	9,642	1,229	1	0.1	83	6.7	83	6.8	393	32.0	753	61.3
1998	4,397	532	1	0.1	27	5.1	28	5.2	140	26.3	365	68.5
1999	4,752	486	0	0.1	22	4.6	23	4.7	125	25.6	338	69.7
2000	22,444	1,268	3	0.2	77	6.1	80	6.3	349	27.5	839	66.2
2001	51,379	6,298	92	1.5	824	13.1	916	14.5	523	8.3	4,867	77.3
2002	36,297	2,770	52	1.9	298	10.7	350	12.6	592	21.4	1,834	66.2
2003	23,163	2,116	32	1.5	167	7.9	199	9.4	377	17.8	1,542	72.9
2004	15,038	2,689	56	2.1	234	8.7	290	10.8	449	16.7	1,952	72.6
2005	16,163	2,606	41	1.6	163	6.3	204	7.8	482	18.5	1,920	73.7
2006	15,120	1,369	19	1.4	90	6.6	109	7.9	387	28.3	873	63.8
2007	9,817	713	9	1.2	49	6.9	58	8.1	46	6.4	610	85.5
2008	19,717	1,698	35	2.1	236	13.9	271	16.0	23	1.4	1,405	82.7
2009	17,391	1,809	31	1.7	159	8.8	190	10.5	-154	-8.5	1,776	98.1

<sup>1.</sup> Includes incidental release mortalities in mainstem recreational and commercial fisheries. Includes Wanapum tribal harvest.

<sup>2.</sup> Since 1982 C&S catch includes gill net, dip net and hook and line. Includes harvest downstream of BON from C&S fishery

<sup>3.</sup> Bonneville Dam through McNary Dam: calculated by Zone 6 escapement minus Rock Island Dam passage.

<sup>4.</sup> Estimated Rock Island Dam passage.

**Table 9. Estimated Numbers of Adult Snake River Wild Spring/Summer Chinook Entering the Columbia River, 1980-2009.**

Year	Return to Columbia River		Non-Treaty Wild Catch <sup>1</sup>		Treaty Wild Catch <sup>2</sup>		Total Wild Catch		Wild Passage Loss <sup>3</sup>		Wild Escapement <sup>4</sup>	
	Total	Wild	No.	% of Run	No.	% of Run	No.	% of Run	No.	% of Run	No.	% of Run
1980	27,050	20,757	35	0.2	673	3.2	708	3.4	13,395	65	6,646	32
1981	35,730	25,163	341	1.4	1,269	5.0	1,610	6.4	11,388	45	12,153	48
1982	40,943	28,317	491	1.7	1,946	6.9	2,437	8.6	14,054	50	11,819	42
1983	28,575	21,290	1,021	4.8	857	4.0	1,878	8.8	8,987	42	10,424	49
1984	21,443	14,437	496	3.4	958	6.6	1,454	10.1	4,713	33	8,266	57
1985	40,906	14,942	542	3.6	511	3.4	1,053	7.0	2,613	17	11,273	75
1986	65,299	20,330	414	2.0	1,178	5.8	1,593	7.8	6,743	33	11,989	59
1987	54,059	16,409	253	1.5	991	6.0	1,244	7.6	4,446	27	10,716	65
1988	55,339	17,774	1,134	6.4	1,175	6.6	2,309	13.0	3,889	22	11,573	65
1989	36,125	14,975	356	2.4	1,126	7.5	1,482	9.9	6,657	44	6,833	46
1990	43,827	18,658	940	5.0	1,229	6.6	2,169	11.6	6,630	36	9,851	53
1991	24,003	13,294	525	3.9	802	6.0	1,327	10.0	5,949	45	6,013	45
1992	40,762	21,221	343	1.6	1,277	6.0	1,620	7.6	6,510	31	13,083	62
1993	42,304	18,413	151	0.8	1,120	6.1	1,271	6.9	4,296	23	12,840	70
1994	8,375	4,041	158	3.9	195	4.8	353	8.7	1,735	43	1,954	48
1995	5,295	3,417	3	0.1	169	4.9	172	5.0	2,059	60	1,186	35
1996	16,782	9,033	9	0.1	473	5.2	482	5.3	4,763	53	3,788	42
1997	82,584	9,778	5	0.1	657	6.7	663	6.8	3,805	39	5,310	54
1998	26,133	13,829	13	0.1	707	5.1	720	5.2	5,522	40	7,587	55
1999	13,281	5,626	6	0.1	259	4.6	265	4.7	2,506	45	2,856	51
2000	64,187	13,921	28	0.2	846	6.1	874	6.3	4,791	34	8,255	59
2001	259,038	62,864	928	1.5	8,221	13.1	9,149	14.6	8,649	14	45,281	72
2002	168,916	51,573	907	1.8	5,542	10.7	6,449	12.5	14,969	29	30,213	59
2003	135,903	49,986	760	1.5	3,943	7.9	4,703	9.4	12,756	26	32,325	65
2004	123,342	32,428	682	2.1	2,823	8.7	3,505	10.8	7,502	23	21,367	66
2005	50,052	15,242	250	1.6	954	6.3	1,204	7.9	3,937	26	10,118	66
2006	53,265	16,827	239	1.4	1,106	6.6	1,345	8.0	5,842	35	9,480	56
2007	45,184	10,415	130	1.2	719	6.9	849	8.2	2,323	22	7,093	68
2008	98,957	23,559	496	2.1	3,271	13.9	3,767	16.0	2,214	9	17,573	75
2009	92,008	20,901	341	1.6	1,835	8.8	2,176	10.4	4,093	20	14,965	72

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

**Table 10. Estimated Numbers of Adult Upper Columbia Summer Chinook Entering the Columbia River, 1980-2009**

Year	Upriver Run <sup>1</sup>	Zones 1-5 Non-Indian Catch			Bonn. Counts	Zone 6 Sport	Z 6 Treaty-Indian Catch <sup>3</sup>	Escapement <sup>4</sup>	
		Sport	Comm.	Misc <sup>2</sup>				No.	%
1980	22,991		16	0	22,975	0	1,181	21,794	95%
1981	18,746		9	0	18,737	0	1,364	17,373	93%
1982	14,369		117	0	14,252	0	1,295	12,957	90%
1983	13,145		92	0	13,053	0	297	12,756	97%
1984	18,765		22	0	18,743	0	457	18,286	97%
1985	19,084		36	0	19,048	0	1,453	17,595	92%
1986	18,752	0	109	0	18,643	0	1,116	17,527	93%
1987	22,715	6	141	0	22,567	0	1,684	20,883	92%
1988	22,720	9	81	0	22,630	0	1,497	21,133	93%
1989	22,742	20	9	0	22,713	0	100	22,613	99%
1990	19,294	4	15	0	19,275	0	111	19,164	99%
1991	14,567	1	9	0	14,557	0	171	14,386	99%
1992	9,428	16	35	0	9,377	0	46	9,331	99%
1993	14,021	16	81	0	13,925	0	328	13,597	97%
1994	14,691	28	23	0	14,640	0	171	14,469	98%
1995	12,455	14	0	0	12,441	0	417	12,024	97%
1996	12,080	34	15	0	12,031	0	374	11,657	96%
1997	18,274	16	6	0	18,252	0	270	17,982	98%
1998	16,332	27	1	0	16,304	0	335	15,969	98%
1999	21,867	51	1	0	21,815	0	395	21,420	98%
2000	22,595	17	0	0	22,578	0	209	22,369	99%
2001	52,960	64	1	0	52,895	0	692	52,203	99%
2002	89,548	1,471	8	0	88,069	135	2,093	85,841	96%
2003	83,120	2,007	0	36	81,077	396	4,297	76,384	92%
2004	65,498	1,107	233	3	64,155	257	8,394	55,504	85%
2005	60,445	1,794	2,787	0	55,864	644	7,642	47,578	79%
2006	77,896	5,249	4,819	9	67,819	375	16,319	51,125	66%
2007	37,017	2,196	1,122	0	33,699	207	5,375	28,117	76%
2008	55,532	2,140	1,370	59	51,963	800	9,029	42,134	76%
2009	53,878	2,341	2,524	22	48,991	200	11,650	37,141	69%

<sup>1.</sup> 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.

<sup>2.</sup> Includes incidental non-retention mortality in commercial test, research, shad, and sockeye fisheries, and harvest in SAFE fisheries.

<sup>3.</sup> Includes commercial and C&S catches.

<sup>4.</sup> Bonneville counts minus Zone 6 harvest.

**Table 11. Wild Winter Steelhead Minimum Run Size Estimate and Forecast**

Year	Min. Col R Return	Non-Indian Release Mortalities			Escapement	Forecast
		Mainstem		Tributary		
		Comm.	Sport	Sport		
2001	21,825	100	22	165	21,538	--
2002	33,711	3,095	34	403	30,180	--
2003	23,452	217	23	308	22,903	15,500
2004	29,566	238	30	334	28,965	32,200
2005	14,672	77	15	170	14,410	27,000
2006	16,606	14	17	399	16,176	16,000
2007	15,015	75	15	359	14,566	16,100
2008	14,016	9	14	210	13,783	15,300
2009	11,367	4	11	190	11,162	15,200
2010						20,100

**Table 12. Returns of Upriver Summer Steelhead to Bonneville Dam, 1984-2009.**

Year	Skamania Index			Group A Index			Group B Index		
	Hatchery	Wild	Total	Hatchery	Wild	Total	Hatchery	Wild	Total
1984	18,290	2,490	20,780	143,304	52,447	195,751	84,243	13,768	98,011
1985	16,300	3,690	19,990	229,582	51,922	281,504	27,885	12,986	40,870
1986	19,310	5,520	24,830	230,938	56,570	287,508	54,032	9,984	64,016
1987	10,410	7,380	17,790	131,593	106,690	238,283	30,969	13,990	44,959
1988	18,180	4,180	22,360	108,820	64,331	173,151	63,901	17,742	81,643
1989	11,960	3,770	15,730	135,566	57,513	193,079	65,237	12,367	77,604
1990	15,020	3,690	18,710	88,527	27,102	115,628	38,362	8,811	47,174
1991	9,660	1,220	10,880	173,784	60,264	234,048	22,058	6,207	28,265
1992	11,970	2,940	14,910	197,230	44,294	241,524	44,723	12,715	57,438
1993	13,110	1,250	14,360	108,051	28,650	136,701	31,791	4,378	36,169
1994	10,950	1,380	12,330	99,759	21,212	120,971	22,311	5,152	27,463
1995	7,070	1,150	8,220	154,041	25,997	180,037	11,373	1,847	13,221
1996	9,520	1,310	10,830	148,743	25,721	174,464	14,782	3,912	18,693
1997	10,960	930	11,890	177,358	30,852	208,209	32,750	3,913	36,663
1998	7,830	1,610	9,440	99,851	34,836	134,687	36,826	3,415	40,241
1999	5,850	1,310	7,160	119,840	56,626	176,466	18,397	3,740	22,137
2000	10,891	5,728	16,619	153,095	63,628	216,723	32,541	8,368	40,909
2001	20,773	7,952	28,725	377,849	137,230	515,079	74,379	12,047	86,426
2002	15,320	9,671	24,991	235,848	87,276	323,124	97,549	32,333	129,882
2003	12,353	1,801	14,154	238,745	67,049	305,795	30,811	6,417	37,228
2004	16,859	4,086	20,945	190,194	60,421	250,615	28,196	9,202	37,398
2005	9,098	2,769	11,867	192,714	58,917	251,631	39,348	9,619	48,968
2006	7,701	2,181	9,882	181,433	63,735	245,168	65,662	8,466	74,128
2007	7,748	1,727	9,475	181,580	77,268	258,848	42,058	9,015	51,073
2008	11,343	4,489	15,832	164,175	81,648	245,823	74,900	18,529	93,429
2009	10,356	3,528	13,884	389,150	154,045	543,195	30,813	13,727	44,540

**Table 13. Summer Steelhead Counts by Run Year at Lower Granite Dam, 1984-2009.**

Run Year <sup>1</sup>	Total	Total Wild <sup>2</sup>	Percent Wild	Percent of 30,000 wild fish goal
1984-85	103,916	24,500	23.6%	81.7%
1985-86	116,527	26,700	22.9%	89.0%
1986-87	129,976	21,920	16.9%	73.1%
1987-88	70,501	25,175	35.7%	83.9%
1988-89	87,156	20,285	23.3%	67.6%
1989-90	131,488	24,928	19.0%	83.1%
1990-91	56,901	9,217	16.2%	30.7%
1991-92	99,089	17,094	17.3%	57.0%
1992-93	128,404	19,398	15.1%	64.7%
1993-94	59,674	9,122	15.3%	30.4%
1994-95	47,238	8,104	17.2%	27.0%
1995-96	79,276	8,071	10.2%	26.9%
1996-97	86,911	7,625	8.8%	25.4%
1997-98	86,370	8,742	10.1%	29.1%
1998-99	70,677	9,380	13.3%	31.3%
1999-00	72,855	10,882	14.9%	36.3%
2000-01	117,130	20,551	17.5%	68.5%
2001-02	268,466	40,719	15.2%	135.7%
2002-03	222,176	41,931	18.9%	139.8%
2003-04	172,708	29,169	16.9%	97.2%
2004-05	151,646	23,070	15.2%	76.9%
2005-06	155,184	17,836	11.5%	59.5%
2006-07	149,166	9,510	6.4%	31.7%
2007-08	154,108	14,054	9.1%	46.8%
2008-09	178,870	23,676	13.2%	78.9%
2009-10 <sup>3</sup>	312,430	42,132	13.5%	140.4%

<sup>1</sup> Run year = July 1 through June 30 of following year.

<sup>2</sup> IDFG began estimating wild returns in 1986-87 run year; Dam counts did not report unclipped fish until March 1993.

<sup>3</sup> Counts are through December 31 only.

**Table 14. Minimum Numbers (in Thousands) of Lower River Summer Steelhead Entering the Columbia River, 1980-2009.**

Year	Lower Columbia Recreational (May-June) <sup>1</sup>	Tributary Dam Counts <sup>2</sup>	Hatchery Returns <sup>3</sup>		Tributary Recreational		Minimum Run
			Washington	Oregon	OR	WA	
1980	0.3	20.5	5.1		3.8	18.1	47.8
1981	1.9	23.0	6.3		2.5	22.9	56.6
1982	1.8	19.2	5.8		3.6	18.7	49.1
1983	0.8	8.6	2.0		1.5	6.8	19.7
1984	2.7	43.7	4.6	0.2	6.2	11.3	68.7
1985	1.8	32.3	3.0	0.2	3.9	15.9	57.1
1986	3.0	53.3	2.3		4.4	26.9	89.9
1987	1.6	33.6	1.6		4.2	17.4	58.4
1988	2.7	50.7	3.3		7.0	14.2	77.9
1989	1.7	13.4	3.8		3.5	12.6	35.0
1990	2.2	31.8	5.6		5.1	17.2	61.9
1991	1.2	10.4	2.2		3.0	15.0	31.8
1992	1.2	23.1	3.1		3.0	17.6	48.0
1993	1.8	17.3	4.7		3.2	20.0	47.0
1994	1.2	15.4	5.6		2.1	23.0	47.3
1995	1.4	15.1	7.8	0.1	1.5	13.0	38.9
1996	1.2	7.8	9.9	0.2	1.0	15.1	35.2
1997	1.9	17.5	3.7	0.1	1.4	6.0	30.6
1998	1.2	15.3	5.4		1.4	5.0	28.3
1999	1.3	12.4	4.6		1.5	6.3	26.1
2000	1.6	13.1	9.6	0.4	1.7	10.2	36.6
2001	2.0	28.4	16.4	1.9	3.1	19.7	71.4
2002	4.4	35.2	33.8	2.8	6.0	33.3	115.5
2003	2.7	17.5	23.0	4.5	2.6	26.1	76.4
2004	3.0	36.4	23.1	2.4	5.5	42.4	112.7
2005	2.1	14.6	23.2	4.1	1.8	26.3	72.1
2006	3.0	17.0	18.8	1.3	4.2	29.4	73.7
2007	2.7	13.1	24.8	1.2	4.0 <sup>5</sup>	12.4	(58.2)
2008	2.0	14.2	9.2	0.9	4.0 <sup>5</sup>	24.0	(54.2)
2009	1.4	(14.2)	19.8 <sup>5</sup>	0.7	4.0 <sup>5</sup>	26.9 <sup>5</sup>	(67.0)

<sup>1.</sup> Beginning in 1977, May-June lower Columbia recreational catch determined to be mostly lower river stock.

<sup>2.</sup> Willamette Falls (Willamette R.), North Fork Dam (Clackamas R.), and Marmot Dam through 2007 only (Sandy R); hatchery fish only.

<sup>3.</sup> 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.

<sup>4.</sup> From Oregon and Washington catch record estimates, Washington catches prior to 1975 not corrected for non-response bias. Oregon catch unavailable for 1969-1974.

<sup>5.</sup> Based on recent 5-year average.

( ) indicates preliminary.

**Table 15. Minimum Numbers (in Thousands) of Upriver Summer Steelhead Entering the Columbia River, 1980-2009.**

Year	Lower Columbia Catch		Bonneville Dam Counts <sup>3</sup>	Minimum Run
	Recreational <sup>1</sup>	Commercial <sup>2</sup>		
1980	2.0	--	127.6	129.6
1981	3.2	--	157.9	161.1
1982	2.6	--	156.2	158.8
1983	2.9	--	217.6	220.5
1984	5.4	--	314.5	319.9
1985	6.1	--	342.3	348.4
1986	8.0	--	376.3	384.3
1987	4.9	--	301.1	306.0
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	10.2	--	313.9	324.1
1993	8.5	--	187.3	195.8
1994	4.0	--	160.8	164.8
1995	6.8	--	201.5	208.3
1996	5.1	--	204.0	209.1
1997	5.2	--	256.8	262.0
1998	3.7	--	184.4	188.1
1999	5.9	--	205.7	211.6
2000	8.2	--	274.2	282.4
2001	9.5	--	630.2	639.7
2002	7.5	--	478.0	485.5
2003	6.9	--	357.2	364.1
2004	5.8	--	309.0	314.8
2005	5.3	--	312.5	317.8
2006	7.1	--	329.2	336.3
2007	7.9	--	319.4	327.3
2008	7.1	--	355.1	362.2
2009				

<sup>1.</sup> Recreational catch based on timing of the catch: May 1-October 31 (1969-1976) and July 1-October 31 beginning in 1977. Includes catches from estuary recreational (Buoy 10) fishery beginning in 1992.

<sup>2.</sup> Commercial catch of steelhead by non-Indians (1969-1974) was based on timing of the catch: spring through October. Sale of steelhead by non-Indians prohibited since 1975.

<sup>3.</sup> Dam counts include Skamania Index, Group A Index, and Group B Index steelhead counted from April 1-October 31.

**Table 16. Estimated Number of Sockeye Entering the Columbia River, 1980-2009**

Year	Total Sockeye					Snake River Sockeye			
	Columbia River Return <sup>1</sup>	Non-Treaty Catch	Bonn. Dam Count	Treaty Catch		At Col R. Mouth	Non-Treaty Catch	Treaty Indian Catch	Lower Granite Esc. <sup>2</sup>
				Comm.	C&S				
1980	58,886	4	58,882	14	622	108	0	0	96
1981	56,037	0	56,037	7	1,500	236	0	1	218
1982	50,319	100	50,219	130	645	261	1	6	211
1983	100,628	83	100,545	1,849	1,500	241	0	4	216
1984	161,886	9,345	152,541	22,485	2,131	148	9	8	105
1985	200,759	32,213	166,340	49,393	576	59	10	23	35
1986	59,963	1,840	58,123	4,272	2,400	28	2	15	20
1987	145,546	28,553	116,993	39,460	100	55	11	3	29
1988	99,780	17,632	79,714	30,990	0	45	8	15	23
1989	47,479	36	41,884	38	2,100	4	0	14	4
1990	49,754	173	49,581	2	2,714	1	0	0	1
1991	76,484	3	76,481	5	3,266	10	0	0	9
1992	85,000	8	84,992	5	2,180	35	0	0	33
1993	91,727	64	80,178	7	5,013	18	0	1	17
1994	12,863	1	12,678	0	472	5	0	1	5
1995	9,667	1	8,773	0	445	5	0	0	5
1996	30,899	25	30,255	0	1,414	3	0	0	3
1997	47,487	12	46,927	0	2,046	18	0	0	17
1998	13,220	2	13,218	0	425	4	0	1	3
1999	17,878	1	17,877	0	704	20	0	0	18
2000	93,757	366	93,391	360	2,550	352	1	1	337
2001	120,361	1,690	114,933	5,580	1,720	49	0	11	45
2002	50,539	19	49,610	0	2,564	77	0	3	73
2003	39,375	0	39,375	10	1,080	28	0	4	26
2004	130,045	672	123,320	1,727	2,590	118	1	1	113
2005	77,352	4	72,448	1,085	1,681	20	0	4	19
2006	37,067	1	37,066	661	935	79	0	1	16
2007	26,114	0	24,376	244	1,170	58	0	3	52
2008	214,465	858	213,607	3,517	5,500	984	4	3	907
2009	178,968	1,145	177,823	7,021	3,353	1,410	9	41	1,219

<sup>1</sup>. Upriver run is larger of (Bonn. Count + Zones 1-5 harvest) or (Priest Rapids Dam count + Snake River count + Zones 1-6 harvest).

<sup>2</sup>. Prior to 1992, Lower Granite Dam sockeye counts may include kokanee. Beginning in 1992, video counts at LWG were used to identify true sockeye.

**Table 17. Commercial Landings of Shad in Area 2S, Washougal Reef, and Treaty Indian Fisheries and Minimum Shad Run Size (in Thousands), 1977-2009.**

Year	Area 2S		Washougal Reef		Total Zone 1-5 Catch <sup>2</sup>	Treaty Indian Catch	Total		% of Landed
	Days	Catch <sup>1</sup>	Days	Catch <sup>1</sup>			1-6 Catch	Run Size	
1977	12	42.4	39	--	61.9	0.6	62.5	929.4	6.7
1978	19	101.7	28	--	113.6	5.6	119.2	1,369.8	8.7
1979	14	117.4	28	-	120.3	7.9	128.2	1,548.7	8.3
1980	19	21.9	32	--	23.2	0.2	23.4	1,223.8	1.9
1981	19	15.5	32	--	21.8	0.0	21.8	1,159.9	1.9
1982	19	72.5	29	--	75.0	1.5	76.5	1,133.4	6.7
1983	19	84.9	29	--	85.0	0.3	85.3	2,082.6	4.1
1984	14	14.4	24	--	18.1	3.1	21.2	1,336.1	1.6
1985	15	33.7	20	--	35.4	0.0	35.4	1,455.0	2.4
1986	19	80.5	24	7.6	88.2	0.7	88.9	1,474.9	6.0
1987	21	103.2	26	4.1	108.7	12.3	121.0	1,417.8	8.5
1988	19	97.4	24	8.9	108.4	19.2	127.7	2,156.1	5.9
1989	19	36.2	28	15.4	51.6	0.1	51.7	3,105.3	1.7
1990	19	161.8	29	6.0	167.8	0.2	168.0	4,012.0	4.2
1991	19	38.8	29	4.9	43.7	<0.1	43.8	2,363.1	1.9
1992	17	130.2	22	11.1	141.3	0.3	141.7	3,070.3	4.6
1993	16	139.2	21	5.3	144.7	1.0	145.7	2,671.3	5.5
1994	15	46.9	30	10.8	57.7	15.3	73.0	1,996.2	3.7
1995	22	54.4 <sup>3</sup>	29	6.7	61.1	49.6	110.7	2,159.5	5.1
1996	24	60.1	29	1.0	61.1	282.8	343.9	2,905.8	11.8
1997	24	20.3	30	4.6	24.9	10.2	35.1	2,748.1	1.3
1998	24	24.4	31	0.0	24.5	24.1	48.6	2,294.9	2.1
1999	24	39.7	31	0.0	39.7	13.8	53.5	1,880.5	2.8
2000	29	30.4	34	0.0	30.5	0.1	30.6	1,709.5	1.8
2001	29	17.0	--	--	26.2 <sup>4</sup>	5.6	31.8	2,908.4	1.1
2002	29	37.1	--	--	37.1	14.5	51.6	3,430.2	1.5
2003	29	79.2	--	--	79.2	105.8	185.0	4,800.1	3.9
2004	29	48.4	--	--	48.4	30.0 <sup>5</sup>	78.4	5,680.4	1.4
2005	26	48.8	30	0.0	48.8	30.0 <sup>5</sup>	78.8	6,323.5	1.2
2006	27	21.0	--	--	21.0	NA	NA	4,833.9	NA
2007	29	14.1	--	--	14.1	NA	NA	3,756.8	NA
2008	31	12.5	--	--	12.5	NA	NA	2,269.1	NA
2009	15	1.4	--	--	1.4	NA	NA	1,726.6	NA

<sup>1.</sup> Washougal Reef landings included in Area 2S landings until 1986. No season set since 2001, except for 2005  
<sup>2.</sup> Includes landings during sockeye seasons, Select Area fisheries, and John Day River shad fisheries in some years.  
<sup>3.</sup> Limited experimental fishery with three boats.  
<sup>4.</sup> Includes shad caught in experimental tangle net permit fishery for spring Chinook.  
<sup>5.</sup> 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, 1970-2009.**

Year	Season	Fishing		Commercial Landings <sup>1</sup>	
		Days	Mesh Size <sup>2</sup>	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	Feb 11-Mar 9	20	"	18,300	700
1991	Feb 10-Mar 1	13	"	12,600	800
1992	Feb 16-28	10	"	5,100	1,200
1993	Feb 16-19 & Mar 2-5	6	8" min.	1,500	1,000
1994	Feb 15-Mar 9	15	"	1,900	3,000
1990-1994 Avg		13		7,900	1,300
1995	None	0	--	--	--
1996	Feb 18-22	3	8" min.	100	600
1997	Jan 27-Feb 18	7	8¾" min.	100	2,700
1998	Jan 12-Feb 13	10	9" min.	<100	2,700
1999	Jan 11-Feb 26	13	9" min.	<100	1,800
1995-1999 Avg		7		<100	1,600
2000	Jan 10-Feb 11	10	9" min.	17	1,200
	Feb 13-29	7	9" min.; above Kelley Pt.	0	325
	" "		8" min; below Kelley Pt.	479	736
2001	Jan 8-Feb 9	10	9" min.	71	2,634
	Feb 26-Mar 9	6	8" min; below Kelley Pt.	5,373	425
2002	Jan 7-Feb 15	11	9" min.	146	2,625
	Feb 25-Mar 27	15	5½" max.	14,238	99
2003	Jan 7-28	4	9" min.	2	1,490
	Feb 17 and 19	2	8" min.	519	21
	Mar 21	1	4¼" max.	2,527	6
2004	Jan 13-Feb 11	5	9" min.	48	1,696
	Mar 2-Mar 19	6	9" min.	3,490	159
	Mar 23-Mar 30	3	4¼" max.	9,620	15
2000-2004 Avg		16		7,306	2,287
2005	<sup>3</sup> 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	<sup>3</sup> 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	<sup>3</sup> 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	<sup>3</sup> Jan 8 – Feb 29	11	9" min.	14	869
	Apr 1 – 15	3	4¼" max.	5,658	17
2009	<sup>3</sup> 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

<sup>1</sup>. Sale of steelhead prohibited since 1975. Catches ranged from 2,100 to 8,500 steelhead during 1970-74.

**Table 19. Fishing Periods, Gear, and Associated Sturgeon Catch for Winter, Spring, and Summer Mainstem Columbia River Commercial Seasons, 2009.**

Season	Fishing Period	Hrs	Zone		STG		Del.	Chinook	Sockeye	WSTG	GSTG
			s	Mesh	Limit <sup>1</sup>						
Winter Sturgeon	6 PM Jan. 6 – 6 PM Jan. 7	24	1-5	9-9¾”	none	9	0	--	382	--	
	6 PM Jan. 13 – 6 PM Jan. 14	24	1-5	9-9¾”	none	11	0	--	296	--	
	6 PM Jan 20 – 6 PM Jan. 21	24	1-5	9-9¾”	none	16	0	--	197	--	
	6 PM Jan 27 – 6 PM Jan. 28	24	1-5	9-9¾”	none	17	0	--	545	--	
	6 PM Feb 3 – 6 PM Feb. 4	24	1-5	9-9¾”	12	20	3	--	90	--	
	6 PM Feb. 5 – noon Feb. 6	18	1-5	9-9¾”	12	16	2	--	60	--	
	6 PM Feb. 10 – 6 PM Feb. 11	24	1-5	9-9¾”	12	18	4	--	91	--	
	6 PM Feb. 12 – noon Feb. 13	18	1-5	9-9¾”	12	12	9	--	36	--	
						15	18	0	1,697	0	
Spring Salmon	1 PM – 11 PM March 29	10	4-5 <sup>2</sup>	≤4¼”	none	68	340	--	7	--	
	7 AM – 11 PM April 7	10	4-5 <sup>2</sup>	≤4¼”	none	133	2,693	--	10	--	
	3 AM – 3 PM April 14	4	4-5 <sup>2</sup>	≤4¼”	none	116	1,117	--	4	--	
						106	4,150	0	21	0	
Summer	6 PM Jun. 24 – 6 AM Jun 19	12	1-3 <sup>3</sup>	8-9¾”	5	109	869	118	290	--	
	7 PM Jun. 24 – 5 AM Jun 25	10	1-5	8-9¾”	5	91	837	77	157	--	
	7 PM Jun 30 – 5 AM Jul. 1	10	1-5	8-9¾”	5	92	665	24	177	--	
						97	2,371	219	624	0	
<b>Season Total</b>							<b>6,539</b>	<b>219</b>	<b>2,342</b>	<b>0</b>	

1. White sturgeon possession and sales limit (per vessel per week). The retention of green sturgeon is prohibited.
2. Open from Hayden Island powerlines (west towers) upstream to upper end of the Zone 5 commercial fishing boundary at Beacon Rock.
3. Zones 1-3 downstream of the Longview Bridge.

**Table 20. Estimates of the Spring Chinook Stock Composition (in Thousands) in Mainstem Lower Columbia Commercial Fisheries, 1990-2009.**

Year	February – March Catch by Stock					April – June 15 Catch by Stock				
	Willamette River	C,K,L,S <sup>1</sup>	Upriver	SAFE	Feb-Mar Total	Willamette River	C,K,L,S <sup>1</sup>	Upriver	SAFE	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	0.1	0.4	0.4	--	0.9	--	--	--	--	--
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 <sup>2</sup>	0.0	<0.1 <sup>2</sup>	0.0	<0.1	0.0	<0.1 <sup>2</sup>	5.6	0.0	5.6
2009	<0.1 <sup>2</sup>	<0.1 <sup>2</sup>	<0.1 <sup>2</sup>	0.0	<0.1	<0.1 <sup>2</sup>	0.0	4.1	0.0	4.1

<sup>1</sup> C = Cowlitz River, K = Kalama River, L = Lewis River, and S = Sandy River.

<sup>2</sup> 2008: 1 Willamette and 13 upriver fish kept Jan-Mar 2008; 0 Willamette and 13 CKLS kept Apr. 2009: 8 Willamette, 8 upriver, and 2 CKLS Jan-Feb; 30 Willamette Jan-Apr.

**Table 21. Columbia River Recreational Spring Chinook Fishing Regulations, 2000-2009.**

Year	Buoy 10 to Tongue Point	Tongue Point to I-5 Bridge	I-5 Bridge to Bonneville Dam	Bonneville Dam to McNary Dam
2000	Open January 1-March 15. Two adult spring Chinook daily bag limit.	Open January 1-March 15. Two adult spring Chinook daily bag limit.	Closed.	Closed.
2001	Open January 1-April 17 and April 25-29. Two adult spring Chinook daily bag limit. Adipose fin-clipped spring Chinook only, beginning March 12.	Open January 1-April 17 and April 25-29. Two adult spring Chinook daily bag limit. Adipose fin-clipped spring Chinook only, beginning March 12.	Open March 12-April 17 and April 25-29. Two adult spring Chinook daily bag limit. Adipose fin-clipped spring Chinook only.	Open May 6-8 from The Dalles Dam upstream to McNary Dam. Two adult spring Chinook daily bag limit. Adipose fin-clipped spring Chinook only.
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 beginning March 25). 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.
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 Bonneville Dam and Tower Is. Two adipose fin-clipped adult spring Chinook daily bag limit.

**Table 22. Salmonid Angler Trips and Chinook Catch by Month on the Lower Columbia River, 2000-2009.**

Year	Month	Angler Trips	Chinook		Year	Month	Angler Trips	Chinook	
			Kept	Released				Kept	Released
2000	Feb	1,523	0	0	2005	Feb	7,551	39	0
	Mar	8,360	322	0		Mar	36,865	1,899	542
	Apr	0	0	0		Apr	65,705	8,653	2,389
	May	6,156	0	92		May	4,082	0	143
	Jun	10,369	0	171		Jun 1-15	10,492	724	486
	Jul	17,669	0	170		Jun 16-30	12,824	669	485
	Total	44,077	322	433		Jul	25,681	902	15
2000	Total	44,077	322	433	2005	Total	163,200	12,886	4,060
Year	Month	Angler Trips	Chinook		Year	Month	Angler Trips	Chinook	
			Kept	Released				Kept	Released
2001	Feb	5,017	84	0	2006	Feb	2,471	19	0
	Mar	44,356	4,550	2,323		Mar	27,418	1,810	413
	Apr	122,939	21,077	13,138		Apr	33,750	3,595	712
	May	5,330	0	56		May	12,225	634	345
	Jun	13,155	0	503		Jun 1-15	10,971	927	991
	Jul	19,157	0	386		Jun 16-30	19,088	3,360	5
	Total	209,954	25,711	16,406		Jul	24,714	1,564	11
2001	Total	209,954	25,711	16,406	2006	Total	130,637	11,909	2,477
Year	Month	Angler Trips	Chinook		Year	Month	Angler Trips	Chinook	
			Kept	Released				Kept	Released
2002	Feb	5,147	18	6	2007	Feb	4,405	24	0
	Mar	35,629	2,036	1,699		Mar	27,949	1,110	311
	Apr	107,906	14,428	9,846		Apr	34,890	4,507	924
	May	31,445	3,982	2,670		May	10,989	505	234
	Jun 1-27	13,919	0	895		Jun 1-15	4,777	330	179
	Jun 28-30	5,591	472	221		Jun 16-30	23,732	2,214	0
	Jul	35,329	880	724		Jul	16,036	0	219
2002	Total	234,966	21,816	16,061	2007	Total	122,778	8,690	1,867
Year	Month	Angler Trips	Chinook		Year	Month	Angler Trips	Chinook	
			Kept	Released				Kept	Released
2003	Feb	9,573	209	223	2008	Feb	4,150	3	1
	Mar	65,841	5,597	3,193		Mar	35,453	4,107	668
	Apr	66,351	9,110	4,729		Apr	63,369	15,930	2,463
	May	24,875	1,976	1,122		May	0	0	0
	Jun 1-15	7,776	0	106		Jun 1-15	0	0	0
	Jun 16-30	15,114	1,348	908		Jun 16-30	30,505	2,051	463
	Jul	24,053	506	763		Jul	20,783	0	427
2003	Total	213,583	18,746	11,044	2008	Total	154,260	22,091	4,022
Year	Month	Angler Trips	Chinook		Year	Month	Angler Trips	Chinook	
			Kept	Released				Kept	Released
2004	Feb	9,467	48	31	2009	Feb	4,539	34	1
	Mar	44,576	2,614	727		Mar	55,061	3,906	933
	Apr	102,058	21,078	6,482		Apr	82,693	12,983	2,304
	May	5,891	0	180		May	0	0	10
	Jun 1-15	2,046	0	59		Jun 1-15	4,109	0	148
	Jun 16-30	17,929	619	844		Jun 16-30	23,569	1,749	381
	Jul	21,875	500	422		Jul	39,644	507	469
2004	Total	203,842	24,859	8,745	2009	Total	209,615	19,179	4,246

**Table 23. Recreational Chinook Fisheries Upstream of Bonneville Dam, 2000-2009.**

Zone 6 Spring Chinook Recreational Fishery				
Year	Kept	Released	Season	General Area
2000			No Season	
2001	157	105	May 6-8	The Dalles - McNary
2002	1,579	1,053	Mar 16- May 15	The Dalles - McNary
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	297	201	Mar 16- Apr 21, June 4-15	BON-McNary, BON-Hwy 395
2006	1,220	677	Mar 16- Apr 30, May 12-jun 15	BON-McNary, BON-Hwy 395
2007	1,403	587	Mar 16-May 3, June 6-15	BON- McNary
2008	1,785	682	Mar 16-May 10	BON- McNary
2009	284	58	Mar 16-April 30	BON- McNary
Snake River Spring Chinook Recreational Fishery				
	Kept	Released	Season	General Area
2000			No Season	
2001	1,439	558	May 1-31	Little Goose Dam (LGO)
2002	866	351	Apr 25-May 27/Jun 2 (4d/wk)	LGO
2003	513	426	Apr 26- Jun 15	LGO/ Lower Granite to ID
2004	1,224	347	April 16- May 7	LGO
2005	76	92	June 11- 30	LGO
2006	190	106	May 17- Jun 30	LGO
2007	287	83	May 9- Jun 30	LGO
2008	511	145	Apr 22/Apr 24- May 11	Ice Harbor/ LGO
2009	508	104	April 24- May 17	LGO
Zone 6 Summer Chinook Recreational Fishery				
	Kept	Released	General Season	General Area
2000			No Season	
2001			No Season	
2002	135		July 9- July 31	BON - Hwy 395
2003	396		June 16-July 31	BON - Hwy 395
2004	257		June 16-July 31	BON - Hwy 395
2005	644		June 16-July 31	BON - Hwy 395
2006	375	--	June 16-July 31	BON - Priest Rapids Dam
2007	207	--	June 16-July 3	BON - Priest Rapids Dam
2008	800	--	June 16-July 1	BON - Priest Rapids Dam
2009	200	--	July 1- 31	BON - Priest Rapids Dam

**Table 24. Estimates of the Spring Chinook Stock Composition (in Thousands) in Mainstem Lower Columbia Recreational Fisheries, 1990-2009.**

Year	February – March Kept Catch by Stock					April – June 15 Kept Catch by Stock				
	Willamette River	C,K,L,S <sup>1</sup>	Upriver	SAF E	Feb-Mar Total	Willamette River	C,K,L,S <sup>1</sup>	Upriver	SAF E	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

<sup>1</sup> 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, 1980-2009.**

Year	Cowlitz River		Kalama River		Lewis River		Sandy River		Total	
	Recr. Catch	Harvest Rate (%)	Recr. Catch	Harvest Rate (%)	Recr. Catch	Harvest Rate (%)	Recr. Catch	Harvest Rate (%)	Recr. Catch	Harvest Rate (%)
1980-1984 Average	7,100	31	1,292	31	2,554	67	1,269	62	12,215	32
1985-1989 Average	2,888	26	584	38	6,262	61	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	38
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
1990-1994 Average	2,432	32	948	40	5,155	72	1,994	39	10,529	47
1995 <sup>1</sup>	33	2	3	0	2,437	66	1,308	49	3,781	41
1996 <sup>1</sup>	29	2	190	30	351	20	1,495	37	2,065	25
1997 <sup>1</sup>	144	8	5	1	781	36	1,418	31	2,348	26
1998 <sup>1</sup>	0	0	0	0	228	14	1,197	32	1,425	21
1999 <sup>1</sup>	491	24	8	1	692	39	1,882	47	3,073	35
1995-1999 Average	139	7	41	7	898	35	1,460	38	2,538	30
2000 <sup>1</sup>	538	24	397	28	1,260	50	1,268	35	3,463	35
2001 <sup>1</sup>	54	3	407	23	2,020	53	1,580	30	4,061	29
2002	1,655	32	551	19	1,369	38	1,588	27	5,163	28
2003	3,029	19	830	18	1,920	37	1,595	28	7,374	23
2004	1,929	12	960	22	2,966	39	4,452	35	10,307	32
2000-2004 Average	1,441	18	629	22	1,907	44	2,097	31	6,074	29
2005	1,301	14	1,051	33	1,557	45	1,844	24	5,753	24
2006	842	12	1,395	26	2,737	38	903	21	5,877	24
2007	746	19	2,056	26	3,521	47	393	14	6,716	30
2008 <sup>1</sup>	604	11	243	15	850	44	(1,379)	(24)	3,076	24
2009	750	15	65	18	850	44	(654)	(24)	2,319	24
2005-2009 Average	849	15	962	26	1,903	42	1,035	22	4,749	26

<sup>1</sup>. Harvest rates reflect fishery restrictions due to extremely low returns.

( ) indicates preliminary.

**Table 26. Winter Season Commercial Gillnet Landings in Treaty Indian Fisheries, 1977-2009.**

Year	Season <sup>1</sup>	Peak Net Count	Numbers of Fish Sold Commercially <sup>2</sup>			
			Chinook	Steelhead	Sturgeon	Walleye
1977-1981 Ave. Range	Feb 1-Apr 1 <sup>3</sup>	170 87-246	1,400 30-2,800	3,700 2,600-4,900	110 20-220	--
1982-1986 Ave. Range	Feb 1-Mar 21 <sup>4,5</sup>	107 61-180	50 5-100	4,700 3,000-7,800	670 70-1,700	--
1987-1991 Ave. Range	Feb 1-Mar 21 <sup>4,5</sup>	183 124-299	100 0-280 <sup>6</sup>	6,700 2,100-10,800	2,100 1,300-3,100	500 130-1,030
1992	Feb 1-Mar 21 (48 days)	161 (Mar 9)	47	4,600	625 <sup>7</sup>	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 <sup>8</sup>	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

<sup>1</sup> Season dates during 1994-1999 (except March, 1999) include weekend closures of 42-48 hours.

<sup>2</sup> Treaty Indian sales to licensed fish buyers.

<sup>3</sup> The 1980 season ended on March 15. The ending date for all other years was April 1.

<sup>4</sup> The 1989 season ended on March 26. The end date for all other years was March 21.

<sup>5</sup> Walleye sales not accounted for prior to 1989.

<sup>6</sup> Includes two late fall Chinook in 1991.

<sup>7</sup> Sturgeon sales prohibited beginning noon March 5.

<sup>8</sup> Catch statistics preliminary.

**Table 27. Spring Season Commercial Landings in Treaty Platform/ Hook & Line Fisheries, 2009.**

Year	Season	Numbers of Fish Sold Commercially			
		Chinook	Steelhead	Sockeye	Walleye
2009	Jun 1-14	1,039	44	11	1

**Table 28. Summer Season Commercial Gillnet Landings in Treaty Fisheries, 2009.**

Year	Season	Numbers of Fish Sold Commercially			
		Chinook	Steelhead	Sockeye	Walleye
2009	Jun 16- Jul 17	9,730	1,040	5,958	6