



**2007 JOINT STAFF REPORT:  
STOCK STATUS AND FISHERIES FOR  
SPRING CHINOOK, SUMMER CHINOOK, SOCKEYE,  
STEELHEAD, AND OTHER SPECIES,  
AND MISCELLANEOUS REGULATIONS**

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# **2007 JOINT STAFF REPORT: STOCK STATUS AND FISHERIES FOR SPRING CHINOOK, SUMMER CHINOOK, SOCKEYE, STEELHEAD, AND OTHER SPECIES AND MISCELLANEOUS REGULATIONS**

## **INTRODUCTION**

This report is part 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. The second Compact hearing for 2007 management will begin at 10 AM, Thursday January 25, at the Water Resource Education Center, 4600 SE Columbia Way, Vancouver, Washington. Members of the *US v Oregon* Technical Advisory Committee (TAC) have reviewed this report.

## **THE COMPACT**

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

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

## **SEASONS CONSIDERED**

At the January 25, 2007 Columbia River Compact/Joint State hearing, the Compact will consider the following non-Indian and treaty Indian commercial seasons: 1) mainstem winter/spring seasons for spring Chinook, steelhead, and white sturgeon; 2) mainstem spring/summer seasons for shad; and 3) winter, spring, and summer seasons in Select Area fishing sites. Winter commercial seasons occur from January through mid-April, and spring commercial seasons generally occur from mid-April through mid-June. Summer Select Area commercial seasons occur from mid-June through July. At this time, commercial sockeye seasons are not anticipated in 2007. Recreational spring Chinook seasons and recreational sturgeon seasons in the area above Wauna will also be considered during the Joint States portion of the hearing.

Winter seasons for non-Indian commercial white sturgeon and smelt seasons were adopted at the December 14, 2006 Compact/Joint State hearing along with recreational seasons for white sturgeon and smelt. Modifications to these seasons may be considered at the January 25, 2007 Compact/Joint State hearing. General permanent commercial fishery rules may also be

considered at this hearing. Other recreational and commercial seasons, or modifications to seasons adopted at the January 25, 2007 hearing will be considered at future hearings as additional information on fish runs and ongoing fisheries become available.



## **STOCKS CONSIDERED**

### **Spring Chinook**

Spring Chinook entering the lower Columbia River during mid-February to mid-March are predominantly larger, 5-year-old 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 4-year-old fish enter in increasing numbers after mid-March, reaching peak abundance during April. Upriver spring Chinook returning to areas above Bonneville Dam begin to enter the Columbia River in substantial numbers after mid-March and generally reach peak abundance in the lower Columbia River in mid to late April.

Visual stock identification (VSI), and coded-wire tag (CWT) recoveries indicate that spring Chinook destined for the Willamette River typically comprise the majority of spring Chinook caught during past winter commercial seasons and during March in Columbia River recreational fisheries. Willamette River fish predominate because they exhibit a broader migration pattern and contain a greater proportion of early-entering 5-year-old fish than other spring Chinook runs. The remaining spring Chinook landed are typically destined for the upper Columbia River or lower river tributaries such as the Cowlitz, Kalama, Lewis, and Sandy rivers, as well as Select Area sites at Youngs Bay, Blind Slough, Tongue Point, and Deep River (Table 1). Early April recreational fisheries and spring commercial season landings include increasing numbers of upriver stock spring Chinook and 4-year-old spring Chinook destined for lower river tributaries, including the Willamette. Catches during late April seasons are predominately upriver spring Chinook and 4-year-old Willamette River spring Chinook. Mainstem catch in May and June are predominately fish of upriver origin.

### **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 in May.

Historically, wild spring Chinook spawned in nearly all east side Willamette tributaries above Willamette Falls. During 1952-1968, the U.S. Army Corps of Engineers (USACE) constructed dams on all major east side tributaries above 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. Recent estimates place the percentage of wild fish in the current Willamette spring Chinook population at about 10-12%, with the majority destined for the McKenzie River. Passage over Leaburg Dam on the McKenzie River and North Fork Dam on the Clackamas River, plus redd 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, now NOAA Fisheries) classified spring Chinook destined for the Willamette River above Willamette Falls and the Clackamas River into a single Evolutionarily Significant Unit (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. During 1946-1989, it was generally believed that the 1953 run was the largest on record, at 125,000 fish. The 1953 run was predominantly wild. This 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 143,700 fish, again comprised primarily of hatchery fish.

Four large hatcheries above 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. Below 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.

### ***2006 Return***

The Willamette River return of 59,700 spring Chinook entering the Columbia River in 2006 was similar to the 2005 return of 61,000 fish (Table 2). The 2006 return was 28% greater than the pre-season forecast of 45,600, but was well below the recent 5-year average of 106,600, and, for the second time since 2002, was less than the old Willamette Basin Fish Management Plan (WFMP) objective of 100,000 Willamette River spring Chinook entering the Columbia River (Table 2). Similar to recent years, wild fish were estimated to comprise about 11% of the 2006 Willamette spring Chinook run.

### ***2006 Escapement***

Slightly more spring Chinook passed Willamette Falls in 2006 (37,000 fish) than in 2005 (36,600 fish). This was only 52% of the recent 5-year average of 71,500 fish (Table 3). Since 1971, the number of spring Chinook passing Willamette Falls has ranged from 20,600 to 95,970 and averaged 43,200 fish. The escapement goals of 34,000 spring Chinook at Willamette Falls and 3,600 at Clackamas Hatchery (7,300 fish returned) were achieved in 2006.

With good returns of upriver spring and summer Chinook in 2006, the Columbia River treaty tribes were able to meet the minimum ceremonial and subsistence (C&S) entitlement set forth in the expired Columbia River Fish Management Plan (CRFMP) through their own fishing efforts. Therefore, Willamette River hatchery spring Chinook were not provided as part of the minimum C&S entitlement (Table 4). Some surplus fish from upper Willamette hatcheries were provided to Oregon coastal Indian tribes or local food banks. Other surplus Willamette River spring Chinook were recycled downstream through fisheries.

### ***2007 Forecast***

The ODFW staff is forecasting a return of 52,000 Willamette River spring Chinook to the Columbia River mouth in 2007, which includes adjustments for expected ocean harvest in Canadian and Southeast Alaskan fisheries. The 2007 forecast is slightly higher than the 1995-

1999 average return of 42,400 fish, and is similar to the 2006 preseason forecast of 46,500 fish (Table 2). Age-specific returns for 2007 are expected to total 1,600 3-year-olds (range 500-2,100), 7,500 4-year-olds (range 3,600-15,200), 42,500 5-year-olds (range 33,500-54,000), and 300 6-year-olds (range 290-900). The 2007 return is expected to include about 5,200 wild fish (10% of total return), which would be higher than the estimated return of 4,700 wild fish in 2006.

## **Clackamas River Spring Chinook**

### ***2006 Return***

The return of spring Chinook (including jacks) to the Clackamas River in 2006 totaled 10,400 fish, which is 69% of the recent 5-year average of 15,000 (Table 3). Wild fish comprised approximately 16% (1,600 fish) of the 2006 run. The run entering the Clackamas River has generally increased from an annual average of 2,600 in the 1970s, 8,200 in the 1980s, and 8,700 in the 1990s, to 15,000 since 2000. The larger returns in recent years are due to production from Clackamas Hatchery at McIver Park, which came on-line in 1979, and an increase in passage over North Fork Dam with a corresponding increase in natural production. The 2006 Clackamas River was slightly below the average annual run-size goal of 12,400 fish entering the Clackamas River specified in the Clackamas River spring Chinook chapter of the WFMP.

### ***2006 Escapement***

The North Fork Dam count of 2,169 spring Chinook in 2006 included 1,079 unmarked fish that were passed upstream and 1,090 marked fish that were recycled downstream to provide additional recreational fishing opportunity. Furthermore, an estimated 550 fish remained below North Fork Dam to spawn naturally. The 1,079 spring Chinook passed over North Fork Dam exceeded the interim escapement goal of 400-800 adults set in the Clackamas River spring Chinook chapter of the WFMP, but was less than half of the WFMP's long term escapement goal of 2,900 adults. The dam count has generally increased from an annual average of 500 in the 1970s, 2,600 in the 1980s, and 2,300 in the 1990s, to 3,400 since 2000. 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 were mass-marked with an adipose fin clip was 2003.

## **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. Hatchery releases of Willamette spring Chinook into the Sandy were doubled in the mid-1980s and have been mass marked with an adipose fin clip since 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 trapped at Marmot Dam have been used for Sandy River broodstock. Spring and fall Chinook destined for Columbia River tributaries below the mouth of the Klickitat River (excluding Willamette River Basin spring Chinook) form a single ESU that was listed as threatened under the ESA effective May 24, 1999. This ESU includes wild spring Chinook destined for the Sandy River in Oregon and the Cowlitz, Kalama, and Lewis rivers in Washington. The current Biological Opinion specifies an allowable impact of 2% of the total run of the spring component of the Lower Columbia Chinook ESU.

The minimum spring Chinook run entering the Sandy River is the sum of the Marmot Dam count, Sandy hatchery return, and recreational catch below Marmot Dam. The preliminary 2006 Sandy River run size of 5,695 adults (Table 1) was the eighth largest return on record but was only 69% of the 8,250 preseason adult forecast. The 2007 Sandy River forecast of 7,900 spring Chinook is based on the recent five-year average and is greater than the 2006 return (Table 1). The total adult spring Chinook return to Marmot Dam in 2006 was 2,500 fish and included 1,430 wild fish, of which the majority were passed upstream to spawn naturally in the upper Sandy River Basin. Of the 1,430 wild fish trapped at Marmot, 200 were collected for broodstock. Hatchery spring Chinook returns in 2006 consisted of 935 adults collected at Sandy River Hatchery and 1,069 adults trapped at Marmot Dam.

### **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. The Cowlitz, Kalama, and Lewis River runs are genetically similar and are essentially supported by hatchery production. These fish 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. Estimated adult returns to the Cowlitz, Kalama, and Lewis rivers for recent years are shown in Table 1. Beginning in 2002, spring Chinook recreational fisheries in the Cowlitz, Kalama, and Lewis rivers were managed using selective fishery regulations that required the release of all unmarked spring Chinook (those with an intact adipose fin).

#### ***Cowlitz River Returns***

The adult return of 7,000 spring Chinook in 2006 (Table 1) was 80% the 2006 forecast of 8,700 adults. A return of 7,000 adults is less than the 2000-2004 average (8,300 adults), and less than the 2005 return (9,200 adults). The hatchery escapement of 5,375 adults far surpassed the minimum 1,150 fish escapement goal

The forecast for the Cowlitz River in 2007 is for a return of 6,400 adult spring Chinook. The 2007 forecast is lower than the 2005 and 2006 actual returns. An adult run size of approximately 1,400 is needed to achieve the minimum hatchery escapement goal, since a portion of the run spawns naturally.

### ***Kalama River Returns***

The adult spring Chinook return of 5,600 fish (Table 1) to the Kalama River in 2006 easily surpassed the preseason forecast of 2,100 fish. The hatchery return of 3,780 adults exceeded the minimum hatchery escapement goal of 450. The natural spawn escapement for the reach downstream from the hatchery barrier was less than 300 adults.

The forecast for the Kalama River in 2007 is estimated to total 4,000 fish. The 2007 forecast is less than the 2006 return, but greater than both the 2005 return and the average return for the five years prior (2000-2004). A run of approximately 600 adults is needed to achieve the minimum hatchery escapement goal, since a portion of the run spawns naturally.

### ***Lewis River Returns***

The adult spring Chinook return of 7,500 fish (Table 1) to the Lewis River in 2006 was much greater than the preseason forecast of 4,400 fish. The minimum hatchery escapement goal of 950 adults was easily met. Natural spawn escapement was estimated at 800 adults, which was much greater than the 100 fish estimate for 2005.

The forecast for the Lewis River in 2007 is expected to total 5,500 fish. The 2007 forecast is less than the 2006 return, but greater than both the 2005 return and greater than the average return for the five years prior (2000-2004). An adult return of approximately 1,600 is needed to achieve the minimum hatchery escapement goal, since a portion of the run spawns naturally.

## **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. Spring Chinook releases in Oregon Select Areas are Willamette stock while the Washington site utilizes Cowlitz and/or Lewis stocks. Most select area spring Chinook are reared in hatcheries supported by the BPA-funded SAFE Project: Gnat Creek Hatchery (ODFW) and South Fork Klaskanine Hatchery (Clatsop Economic Development Commission (CEDC)) in Oregon and Grays River Hatchery (WDFW) in Washington although some smolts are trucked directly to Oregon net pens from Willamette Basin hatcheries. 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. Recently the South Fork Klaskanine Hatchery reared and released three broods of spring Chinook (brood years 2002-04) but this program has been discontinued due to chronic disease issues and loss of year-round water rights for the hatchery.

Spring Chinook releases in all select areas combined ranged between 890,400-1,077,600 smolts annually during 1996-2003 but increased to 1.50-1.65 million smolts annually in 2004 and 2005 (Table 5). Beginning with the 2001 releases (1999 brood year), all spring Chinook hatchery production in SAFE areas has been mass marked with an adipose fin clip. During 1995-2003, annual releases of spring Chinook in Youngs Bay averaged 454,800 smolts. Releases in 2004-2005 were doubled (1,006,000 annual average) due to the additional South Fork Klaskanine

Hatchery production. The 2004 South Fork Klaskanine Hatchery brood was released early due to disease, causing the 2006 spring Chinook release of 391,800 smolts to be lower than average. Releases of spring Chinook smolts into Tongue Point and Blind Slough began in 1996. Since then, smolt releases into Blind Slough have averaged 306,900 fish annually although 451,400 spring Chinook were released in 2006. Annual releases at the Tongue Point site during 1996-2000 averaged 254,400 smolts prior to termination of the program due to straying of returning adults. A new rearing site has been developed at the Marine and Environmental Research and Training Station (MERTS) dock approximately 1.2 miles upstream of the former site. Between 2003 and 2006, experimental groups of 20,900-57,100 spring Chinook smolts were released from this site each year and an additional 25,000-27,000 were released from net pens in the nearby John Day River to evaluate the effectiveness of relocations. Releases into Deep River began in 1998, and have averaged 120,800 annually through 2005, except in 2000 when no spring Chinook were released. Production has recently been increased and approximately 336,300 spring Chinook were released from Deep River in 2006. Starting with the 2005 release (2003 brood), smolts from Deep River have been released into the mainstem Columbia River, in an attempt to reduce potential interactions with naturally-produced chum.

### ***2006 Returns***

Select area spring Chinook fisheries are intended to harvest 100% of returning adults to minimize straying and maximize economic value of returns. Commercial landings of Chinook salmon in 2006 select area winter/spring/summer fisheries totaled 7,245 Chinook (7,178 spring Chinook) of which 5,798 were landed in Youngs Bay, 1,419 were landed in Blind Slough, and 28 in Deep River (Table 6). Landings in 2006 winter/spring/summer SAFE fisheries were greater than the 1998-2005 average of 6,600 Chinook.

### ***2007 Forecast***

The 2007 select area spring Chinook return will be comprised of age-5 and age-4 adults from smolt releases of 1.65 and 1.66 million smolts in 2004 and 2005, respectively (Table 5). Based on these releases and site- and age-specific return rates, the expected SAFE harvest in 2007 is 9,700 adult Chinook, of which 6,700 will be destined for Youngs Bay, 2,400 for Blind Slough, 400 for Deep River, and 200 for Tongue Point. The 2007 run benefits from the additional releases in 2004 and 2005 from the South Fork Klaskanine Hatchery, and harvest is expected to exceed the 2000-2005 average.

## **Upriver Spring Chinook**

Upriver spring Chinook begin entering the Columbia River in late February and early March and reach peak abundance in the lower river during April and early May. 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, and is 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.

The upriver spring run is comprised of stocks from three geographically separate production areas: 1) the Columbia River system above the confluence with the mouth of the Snake River, 2)

the Snake River system, and 3) Columbia River tributaries between Bonneville Dam and the Snake River. In each of these 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 to the point that about two-thirds of the current run is hatchery-produced. Beginning in 2002, the majority of the hatchery production returning to the Columbia River was mass marked with an adipose fin clip. With considerable numbers of hatchery eggs, fry, smolts, and adults being outplanted in recent years, it is likely that some of the current natural production is also an indirect hatchery product. Snake River summer Chinook are destined for areas above Lower Granite Dam. Under the ESA, the NMFS listed Snake River wild spring/summer Chinook as threatened in May 1992 and upper Columbia wild spring Chinook as endangered effective May 24, 1999. A stepped harvest rate schedule is in place for mainstem fisheries impacting upriver spring and Snake River spring/summer chinook.

Data in Table 7 illustrates recent trends in upriver spring Chinook run sizes. The data shows runs were poor in the early 1980s averaging 63,200 fish with a range of 52,100-76,900 fish. The returns in 1985-1989 showed improvement, with an average run size of 104,800 fish, ranging from 89,500-127,800 fish. The average return between 1990 and 1994 totaled 81,600 fish (range 23,800-119,200 fish), which was comparable to the 10-year average of the 1980s. The average run size between 1995-1999 was 55,600 fish (range 12,600-123,800 fish), which was less than the average run size of the 1980s. The 1995 run marked an all-time low of 12,600 fish. The 2000-2004 run sizes were large, with an annual average return of 283,900 adults, and an all-time record high of 437,900 fish in 2001. Run sizes have declined since the peak of 2001, but have remained strong overall.

The 2005 return of upriver spring Chinook totaled 106,900 adults, which was less than the average returns seen in the recent five years, but was still considered a strong return (Table 7). The 2005 Snake River wild spring/summer Chinook run size of 13,100 adults was also less than the average returns seen in the recent five years. The 2005 upper Columbia wild spring Chinook return of 2,400 adults was comparable to recent years, with the exception of the 2001 return (Table 8).

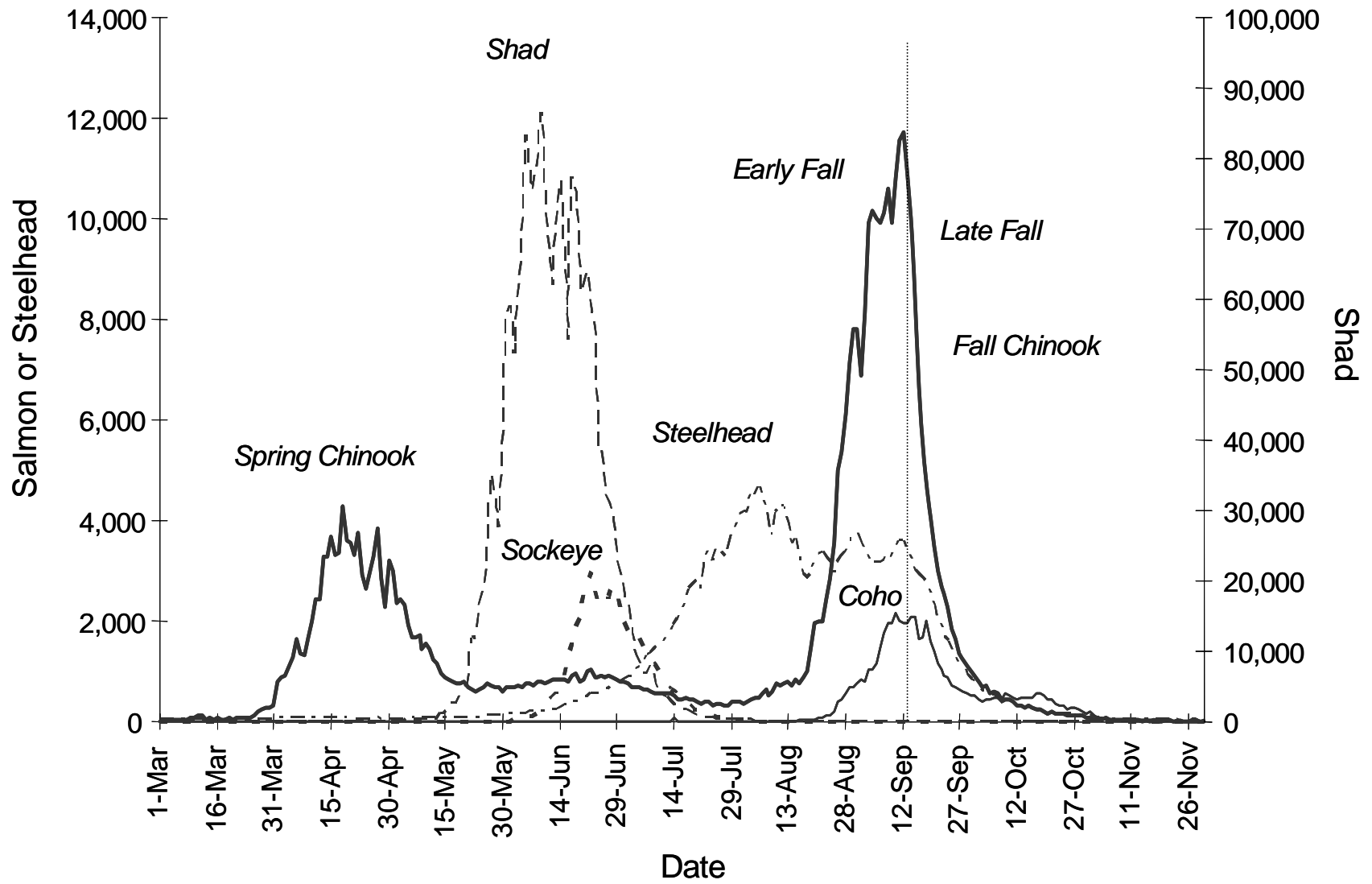


Figure 1. Average Daily Counts of Salmon, Steelhead, and Shad at Bonneville Dam, 1986-2004.



### ***2006 Run***

The 2006 upriver spring Chinook run was predicted to total 88,400 fish, including 46,200 adult Snake River spring/summer Chinook and 12,600 adult upper Columbia Chinook. Although the 2006 upriver run was the latest returning run in recent history, the actual returns of 132,100 adults (Table 7) exceeded expectations, and included 53,000 Snake River spring/summer Chinook, and 21,600 upper Columbia Chinook. The 2006 Snake River wild spring/summer Chinook run size was 16,700 adults, which is comparable to the 2005 return of 15,500 adults, but much less than the average return of 41,700 adults during 2000-2004 (Table 9). The 2006 upper Columbia River wild spring Chinook return was 2,800 fish, which is comparable to the 2005 return of 2,400 adults but less than the average return of 4,900 adults during 2000-2004 (Table 8).

### ***2007 Forecast***

The 2007 forecast of 78,500 adult upriver spring Chinook returning to the Columbia River is expected to consist of 58,400 4-year olds and 20,100 5-year olds. This projected return continues the downward trend from the all time high in 2001, but is still a good return compared to those of the 1990s. The 2007 forecast includes 38,500 Snake River spring/summer Chinook (13,100 wild) and 9,200 upper Columbia spring Chinook (1,200 wild).

## **Upper Columbia River Summer Chinook**

Upper Columbia summer Chinook are destined for production areas and hatcheries above Priest Rapids Dam. Historically, Upper Columbia summer Chinook spawned in the Columbia, Wenatchee, Okanogan, and Similkameen rivers. Since completion of the Columbia River hydropower system, summer Chinook redds are found in the Columbia, Wenatchee, Okanogan, Methow, Similkameen, Chelan and Entiat rivers. Artificial production programs release over 2 million yearlings and 1.5 million sub-yearlings annually. Since 2002, the majority of the hatchery production returning to the Columbia River Basin has been mass marked with an adipose fin clip. Natural spawning populations also contribute to the run. Since 2005, the Columbia River summer Chinook run consists only of the upper Columbia component, and run size is the sum of the Bonneville Dam count and the number of fish caught in lower river fisheries during June 16 through July 31. Snake River summer Chinook are now a component of the upriver spring Chinook run. Upper Columbia summer Chinook are not ESA-listed, and the population is currently considered healthy.

The upper Columbia summer Chinook run size remained at low levels throughout the 1980s and 1990s, with runs averaging 19,800 fish in the 1980s and 15,600 fish in the 1990s. Supplementation programs and improved natural habitat have played a significant role in the increased abundance trends observed since 1999. The average run size between 2000 and 2005 was 63,300 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).

### ***2006 Run***

The 2006 upper Columbia River summer Chinook return totaled 76,200 adults (Table 10), compared to the preseason forecast of 49,000 adults. The 2006 run was the third largest since 1980 and continued the recent positive abundance trend.

### ***2007 Forecast***

The forecast for the 2007 upper Columbia River summer Chinook run is 45,600 adults to the Columbia River. The 2007 forecasted return is less than the 2006 return and, though slightly less than recent years, the forecast continues a positive abundance trend compared to the last two decades (Table 10).

## **Wild Winter Steelhead**

Winter steelhead enter the Columbia River from November through May and spawn from March through June. Most lower Columbia River steelhead spend two summers in the ocean before returning as adults to spawn in natal streams. Juvenile wild steelhead usually rear in freshwater for one to three years before becoming smolts and migrating to sea from March through June. The range of winter steelhead includes all tributaries of the Columbia River upstream to Fifteenmile Creek on the Oregon shore and the Klickitat River on the Washington shore. Major spawning areas include the Hood, Sandy, Clackamas, Molalla, Santiam, and Calapooia rivers in Oregon, and the Klickitat, Wind, Lewis, Kalama, Cowlitz, and Grays rivers in Washington. All wild winter steelhead are ESA listed, except those within the Southwest Washington ESU. The Southwest Washington ESU includes all naturally spawned populations of winter-run steelhead in river basins of, and tributaries to, Grays Harbor, Willapa Bay, and the Columbia River below the Cowlitz River in Washington and the Willamette River in Oregon. Steelhead handled in the lower Columbia River during February and March are considered winter steelhead for management purposes.

The total Columbia River wild winter steelhead river mouth return for 2001 was estimated at 21,800 fish, and the 2002 return was a strong return estimated at 29,700 fish. The 2003 return of 23,600 fish was less than the 2004 run size of 30,000 wild winter steelhead. The 2005 return was estimated at 14,700 fish (Table 11).

### ***2005-2006 Run***

The actual 2006 return of 16,600 wild winter returning to the Columbia River nearly matched the preseason forecast of 16,000 fish. The 2006 return was greater than the 2005 return, and was very similar to the 2001-2005 average of 24,600 fish to the Columbia River mouth (Table 11).

### ***2006-2007 Forecast***

The 2007 forecast is for 16,200 wild winter steelhead returning to the Columbia River mouth which is very similar to the 2006 return (Table 11).

## Summer Steelhead

The Columbia River summer steelhead run is comprised of populations from lower river and upper river 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 steelhead are widely planted in the lower Columbia, including the Willamette Basin. Skamania stock hatchery fish are also released annually in some tributaries above Bonneville Pool. Summer steelhead caught in the mainstem lower Columbia River during May and June each year are classified as Skamania-stock for management purposes. Wild lower river summer steelhead are present in the Cowlitz, Kalama, Lewis, Wind, and Washougal rivers in Washington, and in the Hood River in Oregon. The lower Columbia River steelhead ESU was listed as threatened by the NMFS on May 24, 1999.

Upriver summer steelhead include hatchery and wild steelhead that pass Bonneville Dam from April 1 through October 31 each year (Figure 1 and Table 12). Historically, peak counts at Bonneville Dam were bimodal, with the first peak in early August (Group A stock) and the second peak in mid-September (Group B stock). The Group A fish are characteristically smaller (under ten pounds) fish that spend one or two years at sea and return to tributaries throughout the mid and upper Columbia River system and the Snake River basin. The later arriving Group B fish are larger (over ten pounds), typically having spent two or three years at sea, and return primarily to Idaho's upper Clearwater and Salmon River subbasins in the Snake River system. There is some overlap with some large and small steelhead returning to many different tributaries throughout the basin. The NMFS has divided the upriver summer steelhead run into three ESUs: (1) the middle Columbia ESU which was listed as threatened on May 24, 1999, (2) the upper Columbia ESU which was listed as endangered on May 24, 1999, and (3) the Snake River ESU (including both Group A and B fish) which was listed as threatened on October 17, 1997. Currently, there is no method in place to estimate the composition of the steelhead run at Bonneville Dam into ESU's.

Since 1984, summer steelhead passing Bonneville Dam have been randomly sampled throughout the run to determine age and size composition and hatchery-to-wild ratios for each year's return. Prior to 1999, the Group A run included all fish counted from April 1 through August 25, and the Group B run included all fish counted from August 26 through October 31.

In recent years, distinct summer and fall bimodal peaks at Bonneville Dam have become less evident. The TAC developed a new method of assessing the relative returns of Group A and Group B steelhead in 1999. In this method, all fish counted during April 1-June 30 are classified as "Skamania Index". Fish passing Bonneville Dam from July 1-October 31 that are less than 78 cm fork length (FL) are now classified as "Group A Index", while all fish that are greater than or equal to 78 cm FL are classified as "Group B Index". This method is used to estimate run sizes, and to make inseason fishery management decisions pertaining to the ESA. Since 1999, fall season fisheries impacts have been limited to less than 17% of the wild Group B Index steelhead return. In 2004, high water temperatures at Bonneville Dam precluded sampling during important portions of the late summer run. As a result, the sample size of large fish was particularly small in some weeks, leading to a possible under-estimate of the abundance of the Group B Index stock. In 2005, sampling only occurred for a short period in September and

October. In these years, TAC used preseason stock proportions applied to cumulative steelhead passage from July 1 forward to update the 2005 run.

### ***2006-2007 Run***

The summer steelhead run is the sum of lower river tributary returns (lower river stocks), mainstem harvest during May-October (lower river and upriver stocks), and Bonneville Dam counts during April-October (upriver stocks). Run size estimates for lower river and upriver summer steelhead are presented in Table 12. The total return to Bonneville Dam of upriver summer steelhead was 329,179 fish (74,382 wild fish), with 319,296 fish during the July through October period. The estimated Group A Index steelhead total return was 245,200 (63,700 wild fish) and the Group B Index steelhead total return was 74,100 (8,500 wild fish). Run size and wild escapement at Lower Granite Dam are included in Table 13; however, the 2005-2006 count at Lower Granite Dam will not be complete until May 31, 2007. Final run size data will be included in the 2007 Fall Joint Staff Report, available in July 2007.

### ***2007-2008 Forecast***

The 2007 forecast for upriver summer steelhead at Bonneville Dam consists of 16,700 Skamania stock (4,400 wild), 241,500 Group A Index steelhead (41,600 wild) and 56,400 Group B Index steelhead (10,800 wild).

## **Sockeye**

Sockeye salmon in the Columbia Basin have declined substantially from historic levels. Most of the original 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 Dam (completed 1941) in the upper Columbia system; and by Swan Falls (1901), Sunbeam (1913-1934), Black Canyon (1914), and Brownlee (1958) dams 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 three stocks, the Okanagan, Wenatchee, and Snake River stocks. The Okanagan and Wenatchee stock abundance is cyclic, with occasional strong return years followed by years of low returns. Sockeye have been adversely impacted by hydroelectric development in the basin. Upper Columbia River sockeye consist of four different age groups. Fish returning to Osoyoos Lake in the Okanagan Basin are typically three- and four-year-old fish. Those returning to Lake Wenatchee in the Wenatchee Basin are typically four- and five-year-old fish.

The Snake River sockeye run is extremely depleted. This stock was ESA listed as Endangered in November 1991. The five-year average return to the Stanley Basin is 12. The 2006 return was 3. In some years in the 1990's no fish returned. Production is maintained through a captive brood program and most returning adults are products of this program. The 2007 forecast return to the Stanley Basin is 50-100 sockeye. The total allowed incidental harvest impacts are 6%-8% of the river mouth run size of sockeye. In most years the total harvest impacts are less than 5%.

### ***2006 Run***

The 2006 return of sockeye to the Columbia River totaled 37,100 adults (Table 16), compared to the preseason forecast of 31,100 adults. The 2006 return was similar to the 2005 return, and included about 10,300 Wenatchee fish and 26,700 Okanogan fish. The Snake River component of the run consisted of 79 fish, which is greater than the five-year average of 58 fish.

### ***2007 Forecast***

The forecast for the 2007 Sockeye run is 27,300 adults to the Columbia River. The forecast includes 6,600 Wenatchee fish and 20,700 Okanogan fish. The Snake River Sockeye return for 2007 is forecasted at 300 fish, which would be the largest run since 2000.

## **Shad**

Shad are an introduced species brought to the West Coast from Pennsylvania stock in the 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, 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 strictly regulated to minimize handle and impact on ESA listed salmonids.

### ***2006 Run***

The 2006 minimum shad run size was 4.7 million with a minimum spawning escapement of over 4.6 million above The Dalles Dam, plus an unknown number below The Dalles Dam. The non-Indian (lower Columbia and Willamette River) recreational and commercial combined catch of 130,666 shad was the lowest since 1987 and amounted to 2.8% of the estimated total minimum run size. The 2006 shad run in the Columbia River was the fifth straight run over 4.0 million, but substantially lower than the 2005 record return of 6.3 million shad (Table 17).

## 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 sturgeon for both commercial and recreational fisheries. The healthy white sturgeon population allowed the commercial industry to develop stable, dependable fisheries in a time when commercial salmon fishing opportunities had been drastically reduced. Under the Olympia Accord, target sturgeon seasons were allowed to provide the commercial fishery access to the commercial catch guideline, while minimizing impacts on listed or depressed salmon stocks and to improve market stability for white sturgeon. Since the adoption of the first Joint State Sturgeon Management Agreement in 1997, commercial fisheries have been managed to remain within catch guidelines, maximize economic benefit, and remain consistent with conservation objectives for other species. Commercial sturgeon fisheries have been developed with input from industry representatives and have resulted in predictable and consistent commercial fishing opportunities.

Season structure of winter commercial sturgeon fisheries has been similar in recent years, with one-two weekly fishing periods conducted from early to mid-January through mid- to late February. Weekly sturgeon landing limits have not been adopted initially, but limits are applied in-season if the winter guideline may be exceeded. Protocol for management of white sturgeon retention in 2007 will also be similar to that of recent years. Retention of green sturgeon in commercial fisheries was prohibited in July 2006 in response to the ESA listing. Commercial fisheries are allocated 20% (8,000 white sturgeon) of the total harvest guideline (40,000 white sturgeon). In order to provide market stability and allow sales of white sturgeon during salmon seasons, guidelines for each fishing season were developed to further allocate the harvestable sturgeon (Tables 18 and 19). Beginning July 2006, retention of green sturgeon in commercial fisheries was prohibited in response to the ESA listing. More detailed information concerning past sturgeon management and 2007 fishery expectations can be found in the document titled "2007 Joint Staff Report: Stock Status and Fisheries for Sturgeon and Smelt" dated December 4, 2006.

Winter gillnet salmon seasons have been established since 1878. Since 1957, all non-Indian commercial fisheries have been restricted to Zones 1-5 (below Bonneville Dam) and treaty Indian commercial seasons to Zone 6 (Bonneville Dam to McNary Dam; Figure 2). No salmon fishing has been allowed above Kelley Point at the Willamette River mouth during winter salmon seasons since 1975, to reduce catch of upriver spring Chinook. 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, until the introduction of small mesh "tangle nets" 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 since 1970 are included in Table 18.

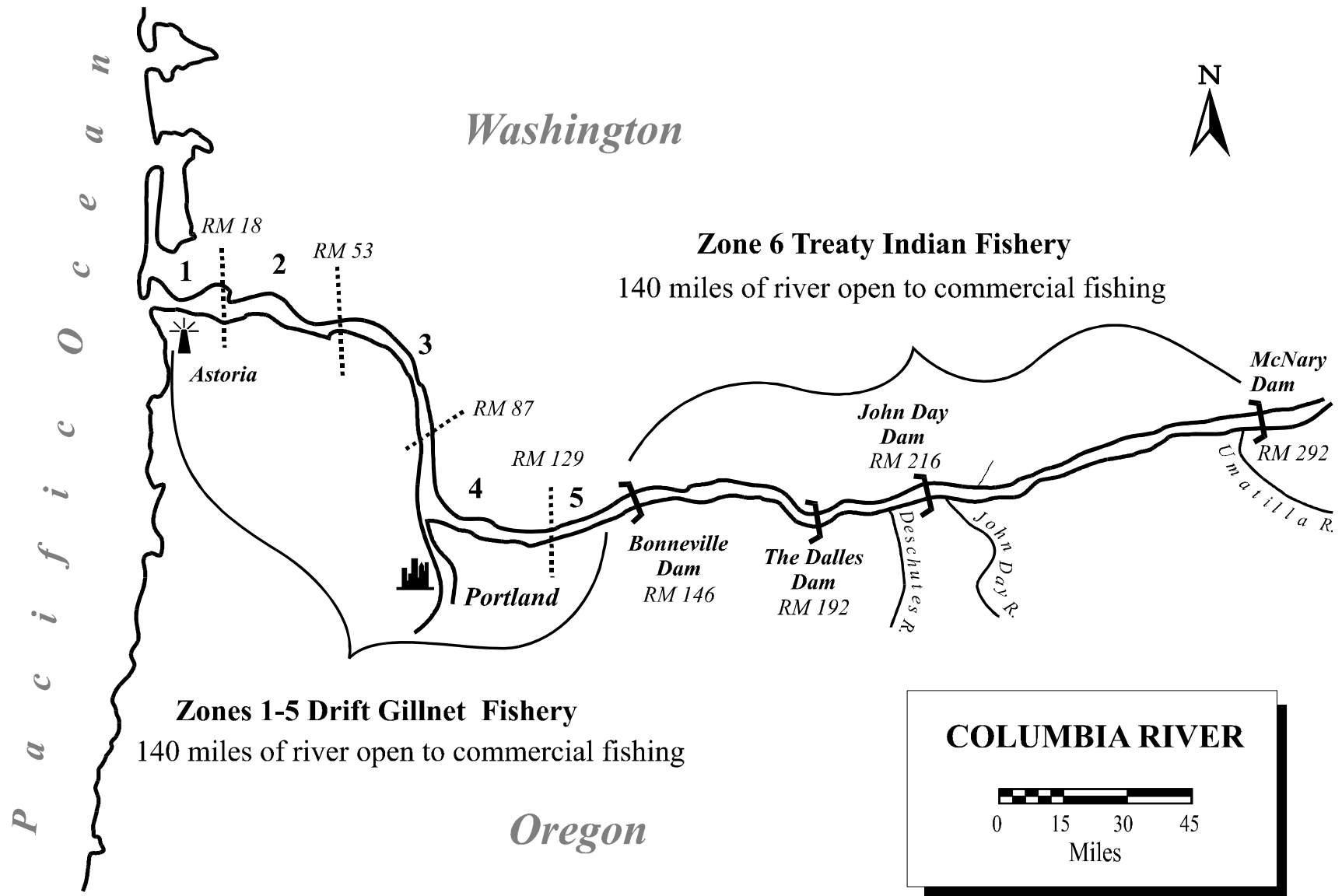


Figure 2. Map of the Columbia River Below McNary Dam Showing Areas Open to Commercial Fishing.

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 commercial fishery requiring the release of unmarked spring Chinook occurred in the spring of 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 demonstration 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-captive 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 sales of sturgeon and adipose fin-clipped Chinook. The 2003 winter salmon fishery incorporated regulations similar to those of 2002, in order to maximize harvest of the target Willamette hatchery spring Chinook and minimize handle of ESA-listed Chinook and steelhead. New gear regulations were adopted, with large mesh nets (8-inch minimum) being 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 increase tangling efficiency for both spring Chinook and steelhead.

The 2004 and 2005 seasons were conducted with guiding principles and fishery management objectives in place as adopted by the WFWC and OFWC to provide the Joint Staff with guidance when shaping and managing fisheries. In addition, a winter season fishing plan was adopted which gave the commercial industry a plan for marketing, and provided the data necessary for making management decisions. This plan outlined a weekly schedule of fishing periods based on test fishing, in order to maximize commercial harvest of Willamette hatchery spring Chinook and minimize handle of listed upriver spring Chinook and wild winter steelhead. This routine would continue until the upriver Chinook allocation, the hatchery Willamette allocation, or the wild winter steelhead impact limit was reached.

Commercial fisheries in 2006 were initiated with a winter target sturgeon season consisting of seven 24-hour and three 12-hour fishing periods between January 10 and February 22 in Zones 1-5 (Table 19). Gear regulations included 9-inch minimum and 9¾-inch maximum mesh size restrictions to target sturgeon and minimize the handle of spring Chinook and steelhead. Even with adoption of three additional 12-hour fishing periods in-season, landings during the 2006 winter target sturgeon fishery were less than expected, with a total catch of 288 white sturgeon, compared to the 2001-2005 average of 1,900 white sturgeon.

### ***2006 Lower River Winter Commercial Salmon Season***

Based on 2006 preseason run size forecasts, a 2% impact rate on listed upriver spring Chinook was allocated to non-Indian fisheries. Because the preseason forecast was close to 82,000 fish, which is the trigger for the impact rates to be reduced to 1.5%, all non-Indian fisheries were managed with a 25% buffer, which resulted in a 1.5% limit. This buffer was intended to be adjusted once in-season information gave managers confidence in the actual run size. The states also operated under a new two-year agreement (2006-2007) allocating 57% of non-Indian upriver spring Chinook impacts to recreational fisheries and 43% to commercial fisheries. This



allocation was different from the previous two-year agreement providing 60% to the recreational fishery and 40% to the commercial fishery. Additional ESA restrictions included a total non-Indian fishery impact rate of 2.0% for wild winter steelhead ESUs. The allowable impact rate for wild Willamette River spring Chinook was 15% for all freshwater fisheries.

The 2006 commercial fishery was conducted under the same guiding principles, management objectives and fishing plan that was adopted for 2004 and 2005. The fishery was managed in accordance with the Willamette FMEP, which set forth a commercial catch allocation of 2,500 Willamette hatchery spring Chinook (20% of the harvestable number). This number was greatly reduced from previous years, and was also near a trigger point that would further reduce the harvestable catch. The 2006 expected mark rate was 90% for Willamette River spring Chinook and 65% for upriver spring Chinook. Considering the 43% allocation of upriver impacts to the commercial fishery, a range of 900-2,000 harvestable upriver Chinook was estimated. This range, plus the Willamette allowance, gave an expected harvest of around 3,400-4,500 hatchery spring Chinook.

The first salmon-directed fishery for 2006 was an 18-hour fishery from 12 PM (noon) Thursday February 23 through 6 AM Friday February 24. The fishery was conducted in Zones 1-4 (up to Kelley Point), with an 8-inch minimum mesh restriction. Sturgeon harvest was allowed without a weekly limit. Based on VSI, 100% of the Chinook landed were of lower river origin.

Test fishing (using 4¼-inch nets) was initiated on Tuesday February 28, 2006. Data collected from test fishing resulted in the Compact adopting a 24-hour (12 PM-12 PM) fishing period occurring March 2-3, 2006. Following the structure set forth in the 2006 fishing plan, test fishing resumed on Sunday March 5, which led to the Compact adopting a 24-hour (6 AM-6 AM) fishing period occurring on March 7-8. Based on landings/monitoring data from the March 7-8 fishery, another 18-hour fishing period was adopted between 12 PM (noon) and 6 AM March 9-10. Test fishing was conducted on March 12, and a fifth 18-hour fishing period took place from 12 PM (noon) -6 AM March 14-15. An 8-inch minimum mesh size restriction was required during all fishing periods, and all periods were conducted in Zones 1-4 below Kelly Point (Table 19).

Low catch and poor upriver spring Chinook passage at Bonneville Dam prompted the Joint Staff to not recommend a salmon fishery at the March 15 Compact, although only 1,000 salmon had been harvested to date, and upriver impacts remained available. With uncertainty about the actual upriver run size, management took a conservative approach until additional information was available. Test fishing occurred on the following Tuesday (March 21), and again on Sunday March 26; however, no additional fishing periods were adopted in March due to concerns that the upriver spring Chinook run would not meet the forecast. By this time, the commercial fishery had used around 27% of the preseason upriver allocation, and around 22% of the Willamette allocation.

Test fishing resumed on Sunday, May 14, resulting in the Compact adopting a 10-hour fishery from 2 PM through 12 AM (midnight) Tuesday May 16. Based on landings and monitoring data from this fishery, an additional 12-hour fishing period was adopted from 7 PM Thursday May 18 through 7 AM May 19. These fishing periods were conducted in Zones 1-4, upstream to Kelley Point. Large mesh gear (8-inch min.) was used, since the high number of shad in the Columbia

River system made small mesh gear (4¼-inch tangle net) impractical. Sturgeon landings were limited to eight sturgeon during the week of May 16, but increased to 12 sturgeon per week for the May 18-19 fishery. Two additional 12-hour periods took place in all of Zones 1-5 from 7 PM-7 AM on May 23-24 and May 25-26. An 8-inch minimum gear restriction was in place and the weekly sturgeon limit was increased to 15 fish. The shad fishery scheduled for the evening of May 23 and May 25 was closed, and ongoing Select Area fisheries were modified to allow sales of only adipose-fin-clipped salmon on days when the mainstem was open to salmon sales.

Total landings for the 2006 commercial fishery were within the preseason catch expectations for both salmon and sturgeon. Based on CWT and VSI data, the spring Chinook harvest during non-Indian winter commercial seasons was comprised of 28% upriver stock, 50% Willamette stock, and 22% Cowlitz, Kalama, Lewis, and Sandy stocks, while the released catch was comprised of 55% upriver stock, 35% Willamette stock, and 10% Cowlitz, Kalama, Lewis, and Sandy stocks. All steelhead handled through March are considered winter steelhead. A total of 168 steelhead were handled, of which 48 were unmarked. Unmarked steelhead included wild and unmarked hatchery fish. Wild winter mortalities resulting from incidental handle were estimated to be 14 fish.

### ***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 closed April 1 through July 31. The area from the I-5 Bridge upstream to the Oregon/Washington border above McNary Dam has been closed under permanent regulations during January 1 through July 31 since 1993. Historically, the purpose of these regulations was to target early migrating Willamette spring Chinook and to protect upriver spring and summer 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 Biological Opinion 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 total expected return of 434,000 adult spring Chinook, including lower river spring Chinook stocks, to the Columbia River with a majority of adipose fin-clipped fish allowed the states to adopt the first-ever selective recreational fishery for adipose fin-clipped spring Chinook on the lower Columbia River. Additionally, beginning March 12, 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 successful with record high angler effort and catch rates. In-season management action was necessary to maintain the fishery within ESA guidelines and resulted in a brief 7-day closure. A limited selective fishery was also adopted for the mainstem Columbia River upstream of Bonneville Dam. The fishing area extended from The Dalles Dam upstream to McNary Dam

and was open during May 6-8. Selective fishing regulations requiring the release of unmarked fish were in effect during the 3-day fishery (Table 23).

Selective recreational fisheries for spring Chinook also occurred during 2002-2005. These fisheries were generally characterized by high effort and catch rates, as well as excellent compliance among anglers with the selective fishing regulations. In 2002, selective adipose fin-clipped regulations for spring Chinook were permanently adopted during January 1-March 31 of each year. Since 2004, a new regulation prohibiting the removal of unmarked fish from the water has been added to provide additional protection for released fish. In-season management was necessary each year to maintain the fishing impacts within ESA guidelines and/or harvest-sharing allocations with the lower river commercial fishery. During all four years, the states attempted to balance the opportunity for anglers above Bonneville Dam. Regulations for the 2002-2005 Columbia River recreational spring Chinook fisheries are listed in Table 21 and catch and effort totals are shown in Table 23.

### ***2006 Lower Columbia River Spring Chinook Recreational Fishery***

In 2006, the total spring Chinook run size was forecast to be 161,400 adults to the mouth of the Columbia, comprised of an upriver component of 88,400 fish, and a lower river component of 73,000 fish, including 46,500 Willamette spring Chinook. The “*2005-2007 Interim Management Agreement*” provided for a 2% impact to ESA-listed upriver spring Chinook in all non-Indian fisheries in 2006, based on the preseason forecast of 88,400. The 2.0% allocation was further divided between the recreational and commercial fisheries with 1.14% for the recreational fishery (including fisheries above McNary Dam) and 0.86% for the commercial fishery (including SAFE). Of the total recreational fishing impact, the states planned to use about 0.64% in the fishery between Buoy 10 and Bonneville Dam and left a buffer of 25% to prevent exceeding the recreational impact guideline.

Recreational fishing regulations for the 2006 spring Chinook fishery were adopted at the January 26 Compact hearing. The adopted recreational season was January 1-April 19 (or until guideline was reached) for the Columbia River from Buoy 10 to the I-5 Bridge, and March 16-April 30 from Tower Island upstream to McNary Dam and the Oregon bank between Bonneville Dam and Tower Island. Regulations adopted for the 2006 season included a seven-day per week fishery with a two fish daily bag limit for the Columbia River from Buoy 10 to the I-5 Bridge, and from Bonneville Dam to McNary Dam. Selective regulations for spring Chinook (permanently adopted in 2002 for January 1-March 31 of each year) were extended for the duration of the 2006 fishery.

The Columbia River was low, clear, and cold at the start of 2006 with below average flows and temperatures well into March. The first spring Chinook was sampled on February 28, 2006 at Dibblee Beach, but effort and catch were light during February and early March. In February, anglers caught 19 spring Chinook (all kept) and 58 steelhead (19 adipose fin-clipped fish kept and 39 unmarked fish released; Table 22) from 2,471 trips. VSI sampling indicated that 100% of the February spring Chinook catch was comprised of lower river fish. Angler effort and catch increased during March as more fish entered the river, but the fishery continued to be limited by cold water conditions for most of the month. The total catch in March was 2,223 spring Chinook (1,810 kept and 413 released) and 358 steelhead (235 kept and 123 released) from 27,418 angler trips. Based on VSI sampling the March catch consisted of 52% upriver spring Chinook.

As water conditions in the Columbia River improved during April, more fish entered the river, and catch rates improved particularly in the lower river downstream of Puget Island. By April 9, approximately 60% of the upriver impact (0.64%) reserved for the mainstem recreational fishery below Bonneville Dam had been utilized, and the fishery appeared to be on track with the preseason expectation: however, record low counts of upriver spring Chinook at Bonneville Dam raised concerns that the upriver run would be significantly smaller than originally forecast. Through April 10, the Bonneville Dam count was only 121 adult spring Chinook, the second lowest cumulative total count for that date on record. In absence of a run size update from TAC, the States decided to close the Columbia River below the I-5 to salmon and steelhead angling effective April 14 because the likelihood of exceeding the lower river recreational impact allocation increased significantly if the upriver run size declined to less than 82,000. During April 1-13, anglers made 33,750 trips and caught 4,307 spring Chinook (3,595 kept and 712 released) and 307 steelhead (233 kept and 74 released). Upriver fish comprised 65% of the spring Chinook catch in the lower river during April. The fishery above Bonneville Dam closed as scheduled on May 1.

On May 8, the TAC revised the upriver run size to a range of 65,000 to 88,400, and the states reopened the recreational fishery above Bonneville Dam effective May 13. On May 15, the TAC revised the upriver run size to 100,000 spring Chinook, at which point the cumulative, combined recreational impact was 0.802 or 70% of the guideline. Conservative management of the recreational fishery during April allowed managers to reopen the spring Chinook fishery during May 17-June 15 from Tongue Point to the Hwy 395 Bridge near Pasco, Washington seven days per week with a two fish bag limit. Angler effort was high during the re-opener, but success was somewhat limited by high water. During May 16-June 15, anglers made 23,196 trips below Bonneville Dam and caught 2,897 spring Chinook (1,561 kept and 1,336 released) and 2,011 steelhead (1,893 kept and 118 released).

The total catch for the 2006 spring Chinook recreational fishery below Bonneville Dam was 9,446 adult spring Chinook (6,985 kept and 2,461 released; Table 24), eight spring Chinook jacks, and 2,734 steelhead (2,380 kept and 354 released) from 86,835 angler trips. Both effort and catch were the lowest since selective spring Chinook fisheries were initiated in 2001. Upriver spring Chinook comprised 63% of the total number of spring Chinook handled. The final catch for the fishery above Bonneville Dam was 634 fish kept and 137 fish released from an estimated 4,200 anglers.

### ***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 below Bonneville targeting sockeye but also allowing the retention of Chinook. Prior to 2005, no summer Chinook season had occurred below Bonneville Dam since the 2-day season in 1964. The 2005 season consisted of six 10-hr fishing periods between June 23 and July 26 in Zones 1-5 with an 8-inch minimum mesh size requirement.

### ***2006 Lower River Summer Commercial Salmon Season***

A total of thirteen 10-12 hour fishing periods were conducted between June 26 and July 31 in Zones 1-5 with an 8-inch minimum mesh restriction. A limit of three sturgeon per week was in

place throughout the season. The number of deliveries ranged from 20-86 per period. Total catch during the summer season was 4,819 Chinook (Table 19).

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

The mainstem Columbia River is open to the retention of hatchery summer steelhead during May 16-December 31 from the Tongue Point/Rocky Point line upstream to the I-5 Bridge and during June 16-December 31 from the I-5 Bridge upstream to the Highway 395 Bridge at Pasco, Washington. During 1992-1999, this fishery was directed specifically toward the harvest of hatchery summer steelhead. In 2000, the states modified the season to allow the retention of Chinook jacks ( $\leq 24$  inches).

In 2002, the states opened a summer Chinook fishery below 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 selective fishery regulations to provide an opportunity to harvest hatchery Chinook while limiting the impact to ESA-listed summer Chinook to less than 1%. In July, the states also opened the area from Bonneville Dam upstream to the Oregon/Washington border for the retention of adipose fin-clipped summer Chinook.

Selective recreational fisheries for summer Chinook also occurred in 2003 and 2004. During both years, the Management Agreements allowed a 1% non-Indian impact to ESA-listed summer Chinook, and the states adopted selective summer Chinook fisheries for the Columbia River from Tongue Point upstream to McNary Dam during June 16-July 31 to match the summer steelhead season above the I-5 Bridge.

In 2005, the states delayed the traditional May 16 opening of the lower Columbia recreational summer steelhead fishery below the I-5 Bridge 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 above the I-5 Bridge was also opened.

Beginning in 2005, the management period for summer Chinook at or below Bonneville Dam was reclassified from June 1-July 31 to June 16-July 31. 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. The fishery was selective for adipose fin clipped Chinook through June, and non-selective regulations were in place during July.

### ***2006 Columbia River Summer Steelhead and Summer Chinook Recreational Fisheries***

Beginning May 13, 2006 the states reopened the spring Chinook fishery from Bonneville Dam upstream to McNary Dam. The 2006 summer steelhead fishery below the I-5 Bridge opened 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 both spring Chinook seasons, the states allowed the retention of adipose fin-clipped summer steelhead, whereas under permanent regulations, the summer steelhead fishery would not open above the I-5 until June 16. During May 16-June 15, 2006 anglers made 23,196 trips below Bonneville Dam and caught 2,011 summer steelhead (1,893 kept and 118 released).

Retention of both adipose fin-clipped and unmarked summer Chinook was allowed from June 16 to July 31 based on the preseason forecast of 49,000. Sockeye retention was prohibited in 2006. During June 16-July 31, anglers made 43,806 trips below Bonneville Dam and caught 4,940 adult summer Chinook (4,924 kept and 16 released; Table 22), 56 Chinook jacks, 5,476 summer steelhead (3,927 adipose fin-clipped summer steelhead kept and 1,549 released), and 10 sockeye (all released). Both the total summer Chinook catch and catch per unit effort were the highest since the fishery reopened in 2002. The total summer steelhead catch in the lower Columbia River during May 16-July 31, 2006 was 7,487 (5,820 kept and 1,667 released). During the 2006 summer Chinook fishery from Bonneville Dam to McNary Dam, and estimated 40 summer Chinook were kept.

### ***Spring Chinook Fisheries Above McNary Dam***

A selective recreational fishery occurred in 2006 on the Snake River upstream of Little Goose Dam from May 17 through June 30. The fishery was open seven days a week during daylight hours with a daily limit of one adipose fin-clipped Chinook. Total catch was 193 adult spring Chinook from an estimated 1,552 angler trips. The Wanapum Tribe did not conduct a C&S fishery in the mainstem Columbia River below Priest Rapids Dam during the spring of 2006.

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

Tributary spring Chinook recreational fisheries below Bonneville Dam are conducted under selective fishing regulations requiring the release of all unmarked spring Chinook. The 2006 preseason forecast of 7,000 adult spring Chinook of the Cowlitz River stock provided for a liberal recreational fishery that produced a total catch of nearly 900 hatchery fish (Table 25). The 2006 preseason forecast for the Kalama River resulted in a 7-day per week recreational fishery with a catch of nearly 1,500 hatchery fish. The Lewis River recreational fishery was not restricted by area and daily catch limits due to the strong preseason forecast. Recreational catch totaled 3,000 hatchery adults in 2006, which was twice the number of fish kept in 2005. 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. However, final catch records for 2005-2006 are not available at this time due to delays in receiving and processing angler catch record cards. An alternate method of estimating catch utilizes recent harvest rates and escapement data. Since 1986, annual harvest rates on the Sandy River have ranged between 26% and 58%, averaging 39%. Based on the recent five-year average harvest rate of 35% and the 2006 Marmot Dam and hatchery return total of 3,433 fish, the estimated recreational catch for 2006 was 2,262 adult spring Chinook.

Beginning with the adoption of the Willamette River Spring Chinook Fishery Management and Evaluation Plan (FMEP) in 2001, mark selective fishery regulations were required for all lower Columbia River freshwater fisheries and freshwater impacts were limited to 15% of the wild Willamette River spring Chinook return. In 2006, the lower Willamette River mainstem was open for spring Chinook angling seven days per week under permanent mark selective regulations (only adipose fin-clipped fish could be retained), with no quota in effect. The daily catch limit was two fish per day. Hatchery-produced spring Chinook were nearly 100% marked with an adipose fin clip for selective fishery purposes.

The 2006 lower Willamette River recreational catch totaled 8,692 spring Chinook (7,027 kept and 1,665 released). The 2006 kept catch of 7,027 was 26% higher than the 2006 kept catch of 5,572, but was 29% lower than the recent 5-year average kept catch of 9,900 (Table 3). Angler effort in 2006 (74,967 trips) was slightly lower than in 2005 (78,677 trips), but the catch rate of 0.12 spring Chinook per angler day was higher than the 0.09 catch rate observed in 2005. The total number of angler trips in the lower Willamette River during 2006 was higher than effort totals from the late 1990s, but was only one third of the record high 236,000 trips expended in 1991. Much of the recent decline in lower Willamette angler trips can be attributed to expanded spring Chinook fishing opportunities in the mainstem Columbia River and a commensurate shift in effort.

The upper Willamette River mainstem spring Chinook recreational fishery opened on January 1, seven days per week, with regulations identical to the lower Willamette River. Release of unmarked Chinook was first required in the McKenzie River beginning in 1995 and was required in all Willamette River tributaries beginning in 2001. The 1980-2000 recreational catch above Willamette Falls (mainstem and tributaries combined) has ranged from 1,900 to 16,100, and has ranged from 6-26% of the total Willamette Falls count (Table 4). Estimates of the 2006 recreational catch for the fishery above Willamette Falls are not available because of delays in receiving and processing angler returned catch records.

The lower Clackamas River fishery was open to salmon and steelhead angling seven days per week and catch limits were consistent with the lower Willamette River recreational fishery. In accordance with the Willamette River spring Chinook FMEP, a selective fishery allowing only adipose fin-clipped salmon to be retained was in effect in the lower Clackamas River. Anglers in the 2006 lower Clackamas River recreational fishery caught an estimated 513 spring Chinook (397 kept and 116 released) from 3,530 angler trips. The kept catch was below the recent 5-year average of 1,440 fish and effort was well below the recent 5-year average of 12,700 trips. The catch rate of 0.15 spring Chinook per angler day was slightly better than the recent 5-year average of 0.11 per angler day.

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

Spring Chinook commercial fisheries in Select Areas were initiated in Youngs Bay in 1992. Through 1996, fishing time was limited to less than 15 days annually with landings ranging from 155-851 spring Chinook. Landings in the spring Youngs Bay commercial fishery have increased significantly from 1,821 Chinook landed in 1997 to 4,500-5,700 Chinook landed in 2002-2006, with the exception of 2005. Table 6 lists Chinook harvest for all Select Area sites. Initial seasons in Youngs Bay were restricted to the spring fishing period with open periods occurring primarily from late April through early June. As production increased, winter and summer seasons were added in an attempt to harvest 100% of the returning adults. Winter seasons during late February through mid-March were initiated in 1998 to harvest early returning 5-year old spring Chinook. Beginning in 1999, summer seasons during mid-June through July were adopted to increase harvest of late returning 4-year old spring Chinook and early returning Select Area Bright (SAB) fall Chinook. Prior to 2006, fisheries were consistently closed during mid-March through mid-April to minimize the handle of non-local spring Chinook stocks, which tend to be most abundant in SAFE areas during this period.

Commercial fisheries for spring Chinook in Blind Slough began in 1998 with spring seasons only until 2000, when the first winter season was established. Nighttime weekday fishing periods have been consistently adopted to minimize interactions with recreational boaters. Annual landings have varied since the inception of the fishery in 1998. In most years, fishing periods have opened concurrent with Youngs Bay and other select areas to minimize congestion. The fishing area was initially limited to Blind Slough but was expanded downstream to include the waters of Knappa Slough in 1999 as returns increased. A one-year trial summer season was adopted in Blind Slough in 1999 but resulted in a harvest of only three spring Chinook and no summer seasons have been adopted since.

Spring commercial fisheries in Tongue Point were initiated in 1998 and continued through 2003, with additional winter seasons occurring in 2000-2001. In most years, seasons and open hours were consistent with Blind/Knappa Slough. The 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 straying into 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 higher than anticipated straying of returning adults, and no winter or spring seasons have been adopted since 2003.

Spring fisheries have been conducted in Deep River since 2003 with harvest ranging between 28-117 fish annually. Winter/Spring/Summer Commercial and recreational catch in all Select Areas since 1993 can be found in Table 6.

### ***2006 Youngs Bay Winter/Spring/Summer Gillnet Season***

A winter commercial fishery was adopted for 2006 in Youngs Bay to target early arriving 5-year old SAFE spring Chinook prior to the time when significant numbers of non-local Chinook stocks are present in the lower Columbia River area. In accordance with the goal of adaptive management for SAFE fisheries, the winter season structure used since 2004 was expanded on in 2006. A progressive fishery schedule was developed to allow the fishery to bridge the gap between the typical end of the winter season and the start of the spring season, and to access returning adults from South Fork Klaskanine Hatchery releases. To accomplish this, the fishery was constricted in time and area to avoid encounters of non-local stocks. A standard winter season was adopted consisting of eight fishing periods (five 12-hour and three 18-hour) between February 15 and March 13. In addition, two short 4-hour periods (March 16 and March 23) were set for the entire bay followed by six 12- to 14-hour periods between March 27 and April 13 held in upper Youngs Bay, above the powerlines located immediately below the Walluski River mouth. Gear regulations were modified for this upper Youngs Bay fishery to allow the use of heavy nets above the mouth of the Walluski River. This strategy of constricting the fishery into the upper bay when non-local stocks were present in the lower reach appears to have been an effective alternative to closing the fishery during this timeframe. The minimum mesh size for all winter fishing periods was restricted to seven inches 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 (with the exception noted above). The 16 fishing periods resulted in landings of 592 spring Chinook and eight white sturgeon, the second highest Chinook catch since winter seasons began in 1998.



The 2006 spring season in Youngs Bay began in late- rather than mid-April and consisted of progressively longer fishing periods through mid-June. The first period was four hours on April 17, with the area restricted to the area above the old Youngs Bay Bridge. Eleven 12-hour to 4-day seasons occurred between April 20 and June 16. The shorter, staggered fishing periods during the early portion of the fishery were intended to allow fishery managers time to summarize harvest sampling data between openings and adjust future proposed seasons to minimize impacts on non-local spring Chinook. The 2006 Youngs Bay spring fishery landed 4,730 Chinook and 242 white sturgeon, which is the fourth highest Chinook harvest on record for this season. Throughout the spring season, an 8-inch maximum mesh size restriction was in effect to target Chinook instead of sturgeon.

To provide harvest opportunity on early returning SAB-stock fall Chinook and any remaining local spring Chinook, a six-week summer gillnet season was set in Youngs Bay from June 21-July 27. The 2006 summer season was open noon Wednesday through noon Friday each week during the first two weeks, and noon Wednesday through noon Thursday for the remainder of the season. An 8-inch maximum mesh size restriction was adopted to target Chinook instead of sturgeon. Sturgeon retention was prohibited following the first summer period. The Youngs Bay summer fishery yielded landings of 476 Chinook and 32 white sturgeon, and is the third highest harvest since this season was established in 1999.

The combined Youngs Bay winter/spring/summer fishery stock composition was based on VSI and CWT analysis with a total of 3,228 Chinook (56% of the combined catch of 5,798 Chinook) examined for fin marks and CWTs and 254 CWTs being collected. Based on scale readings, verified with CWTs, the age composition of the catch was <1% age-3, 89% age-4, 10% age-5, and 1% age-6 fish. The 2006 combined winter/spring/summer catch was comprised of 92.2% spring Chinook and 1.0% SAB fall Chinook destined for select area sites, 1.9% spring Chinook and 0.2% summer (upper Columbia) Chinook destined for locations above Bonneville Dam, 3.5% Willamette River spring Chinook, and 1.3% spring Chinook destined for the Cowlitz, Kalama, Lewis, or Sandy rivers.

### ***2006 Blind Slough/Knappa Slough Winter/Spring Gillnet Season***

Similar to 2000-2005, a winter gillnet season with a 7-inch minimum mesh restriction was adopted for Blind Slough (excluding Knappa Slough) in 2006 to harvest early arriving, larger 5-year-old Chinook. The season adopted at the January 26, 2006 Compact hearing consisted of six 12-hour periods (7 PM-7 AM) on Wednesday and Sunday nights during February 22-March 13. Over the course of the season, eight 12-hour periods were added, extending the winter season through April 13. To ensure minimal impacts to upriver spring Chinook stocks, the additional fishing periods were also restricted to Blind Slough only. During the 14 winter fishing periods in 2006, a total of 167 spring Chinook and one white sturgeon were landed, which is the second highest winter season Chinook harvest, and is a substantial increase over the 2005 season.

During the spring fishery, the Blind Slough Select Area site was 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. After the first three periods, the lower deadline in Knappa Slough was extended further downstream, to the western end of Minaker Island for the remaining 14 periods of the spring season. An 8-inch maximum mesh size

restriction was enacted 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 2006 spring fishery consisted of 17 12-hour (7 PM-7 AM) fishing periods occurring one or two weeknights each week between April 20 and June 16. The 2006 Blind/Knappa Slough spring fishery landed 1,252 spring Chinook and 25 white sturgeon. This harvest was the lowest total since 2000 but was similar to the 2005 spring season.

The combined Blind Slough/Knappa Slough winter and spring fishery stock composition was based on VSI and CWT analysis with a total of 1,237 Chinook (87% of the combined catch) examined for fin marks and CWTs, and 239 CWTs being collected. Based on scale readings, verified with CWTs, the age composition of the catch was 83% age-4, 13% age-5, and 4% age-6 fish. The 2006 Blind Slough/Knappa Slough catch was comprised of 93.0% spring Chinook destined for Select Area sites, 0.4% upriver spring Chinook, 0.0% summer Chinook, 4.9% Willamette River spring Chinook, and 1.7% spring Chinook destined for the Cowlitz, Kalama, Lewis, or Sandy rivers.

### ***2006 Deep River Spring Gillnet Season***

For the first time, a winter season of four weekly 14-hour periods from February 20 to March 14 was adopted for the Deep River site. A spring fishery consisting of 17 spring fishing periods occurring one or two nights (7 PM-7 AM) weekly between April 20 and June 16 was also adopted at the January 26, 2006 Compact hearing. The fishing area during all periods was restricted to the area from markers at navigation marker #16 upstream to the Highway 4 Bridge. Gear regulations included a 100-fathom maximum length, a 7-inch minimum mesh size for the winter season and an 8-inch maximum mesh size for the spring season, and no weight restrictions. 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, the seasons have been considered experimental with 100% sampling of the landed catch required before harvested fish could be transported out of the fishing area. No fishers participated in the winter season, and a total of 28 Chinook and nine white sturgeon were harvested in the spring season. The 2006 spring Chinook catch was substantially lower than any of the previous three years of spring seasons at this site.

### ***Past Select Area Recreational Fisheries***

Since 1998, year-round recreational seasons have been in effect for Chinook and adipose fin-clipped coho in Youngs Bay and Blind Slough. Similar regulations were adopted for South Channel and Knappa Slough in 1999, and for Deep River in 2000. In 2003, regulations to allow year-round angling for adipose-fin-clipped steelhead were adopted in all Oregon select areas. To minimize impacts to listed stocks of spring Chinook, selective regulations were permanently adopted for select area recreational fisheries effective January 1, 2004. 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 forced closure of select area commercial fisheries.

Despite the fact that select area sites have been open for recreational fishing since the inception of the SAFE project, participation has expanded slowly due to limited adult returns early in the

program's history. Recently, both effort and harvest in SAFE recreational fisheries have increased, likely due to increasing adult returns resulting in higher quality fishing opportunities (Table 6). The estimated recreational harvest of 1,081 spring Chinook in 2004 SAFE fisheries was a record high. Within select areas, the most popular and productive spring Chinook fisheries occur in Blind Slough/Knappa Slough and Youngs Bay during March-May. Based on limited creel data, the estimated annual recreational spring Chinook harvest in Youngs Bay from 1998-2006 was 53 fish per year (range 9-121) with success usually dictated by water conditions. In Blind Slough/Knappa Slough an average of 269 spring Chinook have been landed annually since 2000. During the same period, recreational harvest in nearby Gnat and Big creeks has ranged from 0-700 fish annually (Table 6).

### ***2006 Commercial Shad Seasons***

The Compact adopted a 29-day commercial shad season for Area 2S in 2006 which included all weekdays (except Memorial Day) from May 15 to June 23 during the hours of 3 PM to 10 PM. No Camas-Washougal Reef shad fishery was adopted during 2000-2004 and again in 2006 due to the lack of participation in the season requested by the commercial industry and adopted in 2005 (Table 17).

Regulations for the Area 2S shad fishery included the following gear specifications designed to minimize the handle of salmonids since 1996: mesh size restriction of 5<sup>3</sup>/<sub>8</sub> to 6<sup>1</sup>/<sub>4</sub>-inches, 10-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 could be kept and sold, and all salmon, steelhead, walleye, and sturgeon were required to be released immediately.

On May 22 the Compact adopted two commercial salmon fishing periods and rescinded the May 23 and 25 shad fishing periods to avoid conflicting gear and sales regulations in the 2S Area. Both salmon and shad fishing periods were scheduled for May 30 and June 1, and instead of rescinding the shad periods, salmon nets were prohibited onboard vessels participating in the shad fishery.

The 2006 shad fishery produced landings of 21,045 shad (56,815 pounds); the lowest landings since 1984. Based on past years' monitoring observations of salmonids handled per shad landed, salmonid handle consisted of seven spring Chinook, zero summer steelhead, and zero sockeye. The total estimated release mortality in the Area 2S fishery was two adult spring Chinook.

### ***2006 Non-Indian Impacts to ESA Listed Stocks***

The 2006 impact guideline for listed upriver spring Chinook in non-Indian Columbia River fisheries was 2.0%. The impact rate was allocated 57% to recreational fisheries including fisheries above McNary Dam, and 43% to commercial fisheries including SAFE. The actual impact rate for all listed upriver spring Chinook totaled 1.41% combined, compared to the ESA limit of 2.00%. The impact rate from non-Indian fisheries in 2006 on Snake River wild spring Chinook was 1.41% and 1.35% to upper Columbia wild spring Chinook.

The impact rate on ESA-listed upriver spring Chinook in the recreational fisheries was 0.574% compared to the allocation of 1.14%. The impact rate on ESA-listed upriver spring Chinook in

the commercial fishery was 0.831%, compared to the allocation of 0.860%. The sport fishery used 50% of their impact rate allocation and the commercial fishery used 97% of their impact rate allocation. The total non-Indian impact rate of 1.41% was considerably less than the 2% allowed because of conservative management and the exceptionally late upriver run timing, resulting difficulty in predicting the actual run size in-season.

Impacts to wild winter steelhead are estimated to be 0.22% (0.08% commercial and 0.14% sport), compared to the 2% impact rate limit allowed by NOAA Fisheries during 2006.

It is estimated that no Snake River sockeye mortalities occurred as a result of non-Indian fisheries conducted during 2006. Total impacts to Snake River sockeye are estimated to be zero in 2006, compared to the allowable impact rate of 1%.

### **Treaty Indian Fisheries**

#### ***2006 Treaty Indian Winter Commercial Season***

The 2006 winter sturgeon setline fishery was open in all of Zone 6 from January 1 to January 31. No harvest was recorded. The winter sturgeon gillnet season was open for 48 days from February 1 through March 21 in all three pools in Zone 6. The 2006 winter gillnet season commercial sturgeon catches were less than those observed during 2005 with 815 sturgeon caught. The steelhead and walleye catches were less than 2005 and the Chinook catch was the same with a total catch of 139 steelhead, 1 spring Chinook, and 186 walleye (Table 26). The winter season steelhead catch has been low in recent years, due to fishers targeting sturgeon.

<b>2006 Winter Commercial Landings</b>					
Pool	Steelhead	White Sturgeon		Walleye	Chinook
		Setline	Gillnet		
Bonneville	108	0	115	68	1
The Dalles	30	0	388	54	0
John Day	1	0	312	64	0
<b>Total</b>	<b>139</b>	<b>0</b>	<b>815</b>	<b>186</b>	<b>1</b>

#### ***2006 Treaty Indian Mainstem Spring and Summer Chinook and Sockeye Fisheries***

Tribal intent for 2006 spring Chinook fisheries was to remain within impact rates allowed by the 2005-2007 Interim Management Agreement. The preseason planning for the 2006 treaty mainstem harvest was 6,188 spring Chinook (7% of the 88,400 forecasted run). Additionally, preseason planning was for 10,000 summer Chinook (20.4% of 49,000 forecasted run), and 1,555 sockeye (5.0% of 31,100 forecasted run). The four tribes issued permits for gillnet C&S fisheries for spring Chinook from March through June 15, and allowed the platform/hook and line fishery to retain spring Chinook for subsistence purposes. There were no spring season commercial fisheries in 2006. The estimated C&S gillnet permit catch was 5,081 spring

Chinook (3.8% of 132,100 upriver run). One spring Chinook was caught during the winter commercial fishery. The estimated catches for the platform and hook-and-line C&S fisheries were 2,900 spring Chinook (2.2% of 106,900 upriver run) and 548 summer Chinook (0.7% of 76,200 upriver run). There were also 15,771 summer Chinook harvested in four commercial gillnet openings. During 2006, the spring Chinook harvest totaled 7,982 and summer Chinook harvest was 16,319. Estimates of stock composition are based on upriver run proportions determined by the TAC run reconstruction. Winter and spring fisheries harvested 6.0% of the upriver spring Chinook return (Table 7). The summer Chinook catch of 16,319 was 21.4% of the actual 2006 summer Chinook return of 76,200 (Table 10).

There were 935 sockeye caught in platform and hook-and-line C&S fisheries and 661 sockeye caught incidentally (and retained for subsistence) in commercial gillnet fisheries. The overall catch of 1,596 was 4.3% of the return of 37,100 as compared to the allowed harvest rate of 5%. The TAC estimated that three of the sockeye caught were Snake River sockeye (Table 16).

Steelhead harvest during winter and spring fisheries was one fish less than 2005, with tribal fishers harvesting 171 steelhead during winter and spring fisheries. Harvest was much less than 2005 in the summer fisheries with 1,345 steelhead landed. These fish were not sampled to determine a hatchery-to-wild ratio, and there is no definitive method of determining the number of winter steelhead or hold-over steelhead in the early season catch. Many of the 1,345 total 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 2004-2005 run.

***2006 Ceremonial and Subsistence Entitlement***

The Interim Management Agreement as well as the expired CRFMP identified a minimum C&S annual entitlement to the Columbia River treaty tribes of 10,000 spring and summer Chinook, or fish of equivalent quality. After spring and summer C&S platform and permit gillnet 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 for the full entitlement, without using surplus fish from ODFW or WDFW.

<b>2006 Ceremonial and Subsistence Entitlement Summary</b>		
C&S permit gillnet spring fishery	5,081	spring Chinook
Winter gillnet fishery	1	spring Chinook
C&S platform winter/spring fishery	2,900	spring Chinook
C&S permit gillnet summer fishery	0	summer Chinook
C&S platform summer fishery	548	summer Chinook
Commercial gillnet fishery	15,771	summer Chinook
<b><i>Total</i></b>	<b><i>24,301</i></b>	<b><i>Spring and summer Chinook</i></b>

### ***2006 Shad Fisheries***

The 2006 treaty shad catch estimate is less than 100 shad caught in the Zone 6 platform fishery. There was no directed commercial harvest of shad in 2006.

## 2007 MANAGEMENT GUIDELINES

### Endangered Species Act

#### *Salmon and Steelhead*

Status reviews occurring since 1991 have resulted in the majority of Columbia Basin salmon and steelhead stocks being listed under the ESA. The *U.S. v Oregon* Technical Advisory Committee (TAC) has prepared biological assessments (BA's) for combined fisheries based on relevant *U.S. v Oregon* management plans and agreements. The TAC has completed BA's of impacts to all ESA-listed salmonid stocks (including steelhead) for all mainstem Columbia River fisheries since January 1992, and for Snake River Basin fisheries since January 1993. A BA concerning Columbia River treaty Indian and non-Indian fisheries, as described in the recently adopted "2005-2007 Interim Management Agreement for upriver Chinook, sockeye, steelhead, coho, and white sturgeon", was submitted to NOAA Fisheries during the spring of 2005, and a Biological Opinion (BO) was issued by NOAA Fisheries on May 9<sup>th</sup>, 2005.

<i>Federally-listed Species Found in Columbia River Fishery Management Areas.<sup>1</sup></i>			
Species - ESU	Designation	Listing Date	Effective Date
<u>Chinook</u>			
Snake River Fall	Threatened	April 22, 1992	May 22, 1992
Snake River Spring/Summer	Threatened	April 22, 1992	May 22, 1992
Upper Columbia Spring	Endangered	March 24, 1999	May 24, 1999
Upper Columbia Summer/Fall	Not warranted	--	--
Middle Columbia Spring	Not warranted	--	--
Lower Columbia River Spring/Fall	Threatened	March 24, 1999	May 24, 1999
Upper Willamette Spring	Threatened	March 24, 1999	May 24, 1999
Deschutes River Fall	Not warranted	--	--
<u>Steelhead</u>			
Snake River	Threatened	August 18, 1997	October 17, 1997
Upper Columbia River <sup>2</sup>	Endangered	August 18, 1997	October 17, 1997
Lower Columbia River	Threatened	March 19, 1998	May 18, 1998
Middle Columbia River	Threatened	March 25, 1999	May 24, 1999
Southwest Washington	Not warranted	--	--
Upper Willamette	Threatened	March 25, 1999	May 24, 1999
<u>Sockeye – Snake River</u>	Endangered	November 20, 1991	December 20, 1991
<u>Chum – Columbia River</u>	Threatened	March 25, 1999	May 24, 1999
<u>Coho – Columbia River<sup>3</sup></u>	Threatened	June 28, 2005	August 26, 2005
<u>Green Sturgeon- Southern DPS</u>	Threatened	April 7, 2006	July 7, 2006

<sup>1.</sup> The ESUs 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> Includes hatchery fish.

<sup>3.</sup> This ESU includes all naturally spawning population of coho salmon in the Columbia River and its tributaries from the mouth of the Columbia up to and including the White Salmon and Hood rivers. Lower Columbia River coho destined for Oregon tributaries were listed as an endangered species under Oregon state law in July 1999.

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

Non-Indian fisheries conducted during the winter season incidentally handle wild winter steelhead while targeting hatchery Chinook or hatchery steelhead. Historically, recreational fisheries occurring in the mainstem Columbia River have had minimal handle of wild winter steelhead, as Chinook is the target species. Most impacts on wild winter steelhead populations occur in the tributaries of the Columbia River where hatchery steelhead are a target species. Tributary fisheries are conducted under a separate permit issued by NOAA Fisheries and the associated impacts are considered separately from mainstem fisheries.

Prior to 1975, winter steelhead were an important species targeted by lower Columbia River commercial fisheries during December through March. After commercial sales were eliminated in the mid 1970s, steps were taken to minimize the incidental impact to winter steelhead during commercial fisheries targeting Willamette hatchery spring Chinook. When lower Columbia and upper Willamette steelhead were listed under the federal ESA, a 2% annual impact rate was institutionalized as part of the Biological Assessment and Biological Opinion for mainstem spring Chinook fisheries.

### ***Green Sturgeon***

In June 2001, the NMFS was petitioned to list green sturgeon. The Biological Review Team (BRT) identified two Distinct Population Segments (DPS) within the North American green sturgeon population. On April 5, 2005, NOAA Fisheries filed a proposed rule to list the Southern DPS of the North American green sturgeon (those spawning in the Sacramento River, California) as threatened (70 FR 17386) and subsequently listed the Southern DPS as threatened (71 FR 17757) on April 7, 2006. A supplemental BA was submitted to NOAA Fisheries on June 21, 2006 with a corresponding BO covering 2006-2007 U.S v Oregon fisheries issued on October 11, 2006. Fish from the southern (and northern) DPS are present in the Columbia River estuary during the summer months, but are typically offshore from late fall through early spring. Winter and spring test fisheries and commercial landings over the last few decades have recorded few green sturgeon. Commercial sale of green sturgeon from Columbia River commercial fisheries was prohibited effective July 7, 2006, and the states intend to prohibit retention of green sturgeon in Columbia River recreational fisheries effective in January 2007. Impacts to green sturgeon from fisheries described in this report are expected to be minimal.

### ***Marbled Murrelet***

The threatened status of the marbled murrelet has not changed since initially listed October 1, 1992. Fisheries described in this report are not likely to adversely affect this species.



## 2007 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 *United States v Oregon* have re-negotiated a new plan covering fisheries from January 2005 through December 2007. This interim agreement titled “2005-2007 Interim Management Agreement for Upriver Chinook, Sockeye, Steelhead, Coho and White Sturgeon” provides specific fishery management constraints for upriver spring and summer Chinook, steelhead, and sockeye. Guidelines from the Interim Management Agreement, and other agreements, are highlighted below.

### *Upriver Spring Chinook*

Non-Indian and treaty Indian winter and spring season fisheries will be managed in accordance with Table A1 of the “2005-2007 Interim Management Agreement for Upriver Chinook, Sockeye, Steelhead, Coho and White Sturgeon”. Based on 2007 preseason forecasts, the spring Chinook harvest allocation table allows for non-Indian impacts up to 1.5% of the upriver spring Chinook run and treaty Indian impacts up to 7.0%.

<b>Table A1. Spring Management Period Chinook Harvest Rate Schedule.</b>					
Total Upriver Spring and Snake River Summer Chinook Run Size	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%
<b>55,000</b>	<b>5,500</b>	<b>7.0%</b>	<b>1.5%</b>	<b>8.5%</b>	<b>1.0%</b>
82,000	8,200	7.0%	2.0%	9.0%	1.5%
109,000	10,900	8.0%	2.0%	10.0%	
141,000	14,100	9.0%	2.0%	11.0%	
217,000	21,700	10.0%	2.0%	12.0%	
271,000	27,100	11.0%	2.0%	13.0%	
326,000	32,600	12.0%	2.0%	14.0%	
380,000	38,000	13.0%	2.0%	15.0%	
434,000	43,400	14.0%	2.0%	16.0%	
488,000	48,800	15.0%	2.0%	17.0%	

<sup>1</sup> 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.

<sup>2</sup> 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.

<sup>3</sup> 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.

<sup>4</sup> 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.

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.

The Interim Management Agreement provides for a minimum 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 from the January 1 through June 15 management period. Tributary harvest of spring and summer Chinook is not included in this entitlement. It is understood that if the total mainstem Columbia River treaty Indian harvest of spring and summer Chinook is greater than or equal to 10,000 spring and summer Chinook, then this entitlement has been met. If the total mainstem Columbia River treaty Indian harvest of spring and summer Chinook is less than 10,000, then the difference will be distributed to the tribes from spring Chinook hatcheries below Bonneville Dam as first priority. If spring Chinook are not available from hatcheries below Bonneville Dam, or by agreement of the parties, the entitlement may be filled from other hatchery sources of equivalent quantity and quality.

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

Non-Indian and treaty Indian summer fisheries will be managed in accordance with Table A2 of the "2005-2007 Interim Management Agreement for Upriver Chinook, Sockeye, Steelhead, Coho and White Sturgeon". 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 above Priest Rapids Dam. The parties agree 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. Mainstem fisheries will not be managed for these individual components. The following table lists the components of the goal:

<b>Table A2. Upper Columbia Summer Chinook Harvest Rate Schedule.</b>		
<b>Run Size at River Mouth</b>	<b>Allowed Treaty Harvest</b>	<b>Allowed Non-Treaty Harvest</b>
<5,000	5%	<100 Chinook
5,000-<16,000	%	<200 Chinook
16,000-<29,000	10%	5%
29,000-<32,000	10%	5-6%
32,000-<36,250 (125% of 29,000 goal)	10%	7%
<b>36,250-50,000</b>	<b>50% of total harvestable<sup>1</sup></b>	<b>50% of total harvestable<sup>1</sup></b>
>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>

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

<sup>2</sup> 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:  $(0.75 * (\text{runsize} - 50,000)) + 21,000$ .

Based on the run forecast for 2007 of 45,600 upper Columbia summer Chinook at the mouth of the Columbia River, the available harvest is 16,600 fish divided equally between treaty Indian

fisheries and all recreational and commercial non-Indian fisheries, including recreational and tribal fisheries above McNary Dam.

***Sockeye***

The management goal for upper Columbia River sockeye is 65,000 adult sockeye as measured 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 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:

<b>Upriver Sockeye Run Size</b>		<b>Harvest Rate</b>
<50,000		5%
50,000-75,000		7%
>75,000		7%, with further discussion

All fishery impacts on sockeye will be included in the specified harvest rates. 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. Parties shall prepare a revised Biological Assessment of proposed Columbia River fishery impacts on ESA-listed sockeye, and shall submit the Biological Assessment to NOAA Fisheries for consultation under Section 7 of the ESA.

**Non-Indian Allocation of Upriver Impacts**

The 2005-2007 Interim Management Agreement currently provides a harvest rate for upriver spring Chinook of 1.5% for non-Indian recreational and commercial fisheries for 2007, based on the preseason forecast. Guiding principles and fisheries management objectives have been adopted to provide staff with guidance when shaping fisheries preseason and managing fisheries in season. Guidelines for fisheries in 2007 are similar to those adopted since 2004.

The Directors of WDFW and ODFW also provide staff with additional guidance for implementing OFWC and WFWC Commission policies concerning allocation of non-Indian spring Chinook impacts between recreational and commercial fisheries.

***Mainstem Columbia River Spring Chinook Allocation for Non-Indian Fisheries, 2006-2007.***

**Guiding Principles**

- Meet conservation requirements for wild spring Chinook, including populations listed under the federal Endangered Species Act.
- Manage non-Indian harvest of spring Chinook within the provisions of the *U.S. v Oregon* Management Agreement for upriver spring/summer Chinook.
  - Manage harvest to meet hatchery escapement goals.
  - Focus recreational and commercial fisheries allocation on harvest of hatchery fish by implementing live capture and release of unmarked spring Chinook.

**Fisheries Management Objectives**

- Specific structure of recreational and commercial fisheries will be set by the Columbia River Compact on an annual basis to meet adopted allocation policies and fisheries objectives after annual run size forecasts are available.
- Provide for inseason management flexibility to utilize the non-Indian upriver spring Chinook impact allocation to meet the objectives of both fisheries, i.e., upriver impact sharing adjustments in response to inseason information pertaining to catch and run size.
- Adjustments to the recreational fishery may occur in-season if it is estimated the fishery will not continue through April. Inseason adjustments may include such options as day and area closures.
- Recognize economic benefits of recreational and commercial fisheries in the Columbia River.
- Provide for recreational fisheries throughout the Columbia River downstream of McNary Dam, sport/tribal fisheries in the Snake River and Upper Columbia River, commercial fisheries in the lower Columbia River, and commercial and recreational fisheries in Select Areas.

**Willamette Spring Chinook Management**

***Fishery Management and Evaluation Plan For Willamette Spring Chinook***

On May 24, 1999 wild spring Chinook destined for the Willamette River Basin were listed as threatened under the ESA. In accordance with the threatened listing, the state of Oregon completed an FMEP to comply with Section 4(d) of the ESA. The FMEP sets forth wild Willamette River spring Chinook freshwater impact limits of 20% for 2001 and 15% for 2002 and beyond. The FMEP also addresses impacts associated with recreational fisheries occurring in the Willamette River Basin and recreational and commercial fisheries occurring in the mainstem Columbia River. In addition to the impact limits, the FMEP also requires that all wild Willamette River spring Chinook landed in freshwater fisheries be released. The ODFW is conducting a comprehensive review of this plan to evaluate whether fisheries and wild populations are performing as expected. Comprehensive reviews will be repeated by the ODFW at 5-year intervals until such time as wild stocks are recovered or de-listed. In accordance with the FMEP, recreational and commercial fisheries occurring in 2007 will be managed such that cumulative freshwater impacts from recreational and commercial fisheries will not exceed 15% on wild spring Chinook destined for the Willamette River. Additionally, all wild Willamette spring Chinook landed in 2007 recreational and commercial fisheries in the mainstem Columbia and Willamette rivers will be released.

### ***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 for the main-stem Willamette River, the Clackamas River Basin, the Molalla and Pudding rivers, the Santiam and Calapooia River basins, the McKenzie River Basin, and the Willamette River Basin above the mouth of the McKenzie River. On February 27, 1998 the OFWC adopted revisions to spring Chinook chapters of the WFMP, and on February 19, 1999 the OFWC further revised the fishery matrix regime in the “Mainstem Willamette Spring Chinook” chapter. Beginning in 2001, freshwater fisheries were managed in accordance with the FMEP, which superseded the fishery matrix regime in the “Mainstem Willamette Spring Chinook” chapter. For mainstem Columbia River fisheries in 2001, impact limits of 6-7% for commercial fisheries and 1.7% for recreational fisheries were adopted by the OFWC.

More recently, the operating policies and objectives of the mainstem WFMP for spring Chinook were revised in accordance with the recently completed FMEP for Willamette spring Chinook, and these revisions were adopted at the OFWC meeting on December 14, 2001. Revisions to the WFMP included adoption of escapement goals for hatchery-produced spring Chinook over Willamette Falls and to the Clackamas River, and determination of the recreational/commercial allocation of hatchery-produced spring Chinook in excess of the escapement goal. These revisions to the WFMP are designed to allow for the orderly implementation of live-capture selective fishing strategies for all freshwater fisheries beginning in 2002.

In December 2001, the OFWC adopted a revised Willamette River spring Chinook allocation and escapement schedule based on the abundance of hatchery origin Willamette spring Chinook. Like previous management plans, it included a sliding scale for escapement, and an increased commercial allocation on large runs. However, since wild fish escapements are now protected through the full implementation of mark-selective fisheries, the sliding scale for escapement was designed to provide for enhanced tributary fisheries when runs are large. The escapement goals adopted by the OFWC are shown in the table below. These escapement levels provide for full selective fisheries in Willamette River tributaries, and meet hatchery broodstock escapement goals. The increase in escapement goals as the hatchery run size increases allows tributary areas to share in increased fishery benefits created by increased abundances of hatchery fish.

<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

The recreational and commercial allocation of hatchery-produced Willamette spring Chinook at various run sizes is shown in the table below. Recreational fisheries included in the recreational allocation are those occurring in the lower Columbia River (below Bonneville Dam), lower Willamette River (below Willamette Falls), and lower Clackamas River (below North Fork Dam). Commercial fisheries occur in the lower Columbia River below Bonneville Dam. The recreational/commercial allocation plan is designed to allow for full recreational fisheries in the mainstem Willamette and Clackamas rivers at hatchery run sizes greater than 32,000 fish, and to allow the commercial share to gradually increase as the forecasted run increases.

<i>Recreational/Commercial Allocation of Willamette Hatchery Spring Chinook</i>		
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%
<b>45,000-49,999</b>	<b>80%</b>	<b>20%</b>
50,000-59,999	76%	24%
60,000-75,000	73%	27%
>75,000	70%	30%

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

A Joint State Agreement has been in effect and renewed every three years since 1997 with adjustments as necessary to protect sturgeon populations while maintaining harvest opportunity. The 2006-2008 agreement provides guidance on season structure, allocation and other issues for recreational and commercial fisheries in the mainstem Columbia River and Select Areas. For detailed information, see the 2007 Sturgeon and Smelt Joint Staff Report.

## 2007 WINTER, SPRING, AND SUMMER SEASON EXPECTATIONS

Fisheries conducted in 2007 will be managed in accordance with the “2005-2007 Interim Management Agreement for Upriver Chinook, Sockeye, Steelhead, Coho and White Sturgeon”, along with Commission guidance regarding allocation between recreational and commercial fisheries of harvestable fish and/or impacts to ESA listed species.

A sliding scale harvest matrix is currently in effect for upriver spring Chinook. Based on the current matrix and the 2007 river mouth run size forecast for upriver spring Chinook, the total harvest rate on upriver spring Chinook will be 8.5%, with 1.5% allocated to non-Indian fisheries, and 7% allocated to treaty Indian fisheries. Non-Indian fisheries will include selective recreational and commercial spring Chinook fisheries where the release of unmarked Chinook will be required, in accordance with the Willamette River spring Chinook FMEP. Release mortality impacts will be estimated and monitored in season to ensure that non-Indian fisheries do not exceed the allowable ESA-limit based on the upriver spring Chinook run size (Table A1). Mainstem summer Chinook fisheries occurring after June 15 will be managed based on the 2005-2007 Interim Management Agreement and the draft Upper Columbia Management Agreement. Impacts to listed sockeye will vary depending on run size, which will be updated in season. Impacts to steelhead in non-Indian fisheries will occur as release mortalities during selective recreational and commercial fisheries.

Recognizing the complexities of managing a mixed stock fishery, the Compact will continue to be cautious and creative in shaping and adopting seasons that minimize impacts on listed and depressed runs. Potential mainstem Columbia River commercial fisheries for the winter, spring, and summer time frames will be considered at the January 25, 2007 Compact/Joint State hearing. Ongoing and proposed fisheries will be considered at future hearings and other management forums.

### 2007 Non-Indian Fisheries

#### *Commercial Winter Sturgeon Fishery*

*(Adopted by the Compact on December 14, 2006)*

- The currently adopted season consists of seven 24-hour fishing periods (6 PM Tuesday to 6 PM Wednesday) in all of Zones 1-5 from January 9 - February 21, 2007.
- Season dates, gear restrictions, and expected catches are included in the **2007 Winter Fact Sheet #1** and action notices dated December 14, 2006.

#### *Commercial Spring Chinook Fisheries*

*(Compact consideration January 25, 2007)*

- Allocated 43% on upriver spring Chinook ESA limit during 2007.
- Mark-selective fishery – release of all unmarked salmon required.
- Approximately 4,100 Willamette hatchery spring Chinook available for harvest.
- Regulations similar to previous years (net length, soak times, recovery boxes, and observers).
- Fishing plan similar to previous years (expected calendar days on which test fishing and commercial fishing periods are to occur).

- Fishery structure designed to maximize harvest of hatchery Willamette fish while minimizing handle of ESA-listed salmonids.
- Fishing likely to begin in mid- to late February.

***Lower Columbia River Spring Chinook Recreational Fishery  
(Joint State consideration January 25, 2007)***

- Allocated 57% on upriver spring Chinook ESA limit during 2007.
- Mark-selective fishery – release of all non-adipose fin clipped salmon required.
- Catch expectations and impact limits are set forth in the Interim Management Agreement and the FMEP.
- Approximately 16,600 Willamette hatchery spring Chinook available for harvest below Willamette Falls (including the mainstem).
- Under permanent regulations, the fishery is currently scheduled to remain open for adipose fin-clipped Chinook and adipose fin-clipped steelhead from Buoy 10 upstream to the I-5 Bridge through March 31, 2007. This fishery may be extended in area and time. The extension may include areas between the I-5-Bridge upstream to McNary Dam, with the duration of the season depending on catch rates, effort levels, and impacts to listed species.
- The staff will meet with the Columbia River Recreational Advisory Group on January 18, 2007 to solicit input in developing a fishing plan.
- Proposed fishery regulations will be included in the 2007 Winter Fact Sheet #2, prepared for the January 25, 2007 Compact/Joint State hearing.

***Select Area Commercial Fisheries  
(Compact and Joint State consideration January 25, 2007)***

- Proposed seasons for 2007 fisheries in the Blind Slough, Deep River, and Youngs Bay select areas will be described in the **Winter Fact Sheet #2** developed for the January 25, 2007 Compact hearing.
- Winter and spring seasons will be proposed for all sites, and, a summer season will be proposed for Youngs Bay. Additional fishing time in upper Youngs Bay similar in structure to that in 2006 may be considered.
- A limited spring season may be proposed for Tongue Point at a later Compact hearing, after impacts have been assessed for the winter and early spring seasons.
- The Compact will set seasons for select areas in concurrent jurisdiction waters, and ODFW and WDFW will set seasons for select areas in state waters.
- Impacts to listed salmonids in these fisheries will be included in the commercial fishery share of total non-Indian impacts.
- Season proposals for 2007 will be similar to those proposed in 2006, but will be finalized based on input from a public meeting concerning spring select area fisheries scheduled for January 18, 2007, in Astoria, Oregon.



***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.
- Retention of sockeye is not expected to be allowed in Oregon or Washington waters during 2007.

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

- Summer season occurs during June 16 to July 31.
- Fisheries are expected to be non-selective.
- Non-treaty Indian allocation is 8,300 summer Chinook (based on the preseason forecast).
- Draft Upper Columbia Management plan calls for majority of the allocation to be harvested in areas above Priest Rapids Dam.
- Commission guidance provides for the remaining harvestable fish to be split 50/50 between commercial fisheries and recreational fisheries conducted below Priest Rapids Dam.

***Area 2S Shad Fishery***

***(Compact consideration January 25, 2007)***

- Recommendations are that the Area 2S shad fishery operate using modified gill nets and restricted hours as during 1996-2006.
- Only shad may be kept and sold. All salmonids, walleye, and sturgeon must be returned immediately to the water, and those alive must be released unharmed.
- The number of incidental species that will be handled in the proposed 2007 shad fishery is expected to be similar to the low levels observed during 1996-2006 fisheries.

***Washougal Reef Shad Fishery***

***(Compact consideration January 25, 2007)***

- A commercial shad season for the Washougal Reef area will not be proposed for 2007.

**2007 Treaty Indian Fisheries**

Spring Chinook harvest in treaty Indian fisheries has occurred primarily in the C&S fisheries except in years of high abundance, such as in 2000-2004. 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 fishery is pursued. Treaty Indian 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 fisheries. Tribal staffs will continue to monitor the C&S fishery and provide in-season accounting of this fishery. The tribes may implement commercial spring Chinook fisheries depending on the run size and would bring any commercial proposal before

the Compact. 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 in 2007. The tribes would monitor and provide accounting for any commercial salmon fishery as well as any proposed experimental shad fishery, if it occurs.

***2007 Treaty Winter Commercial Fisheries  
(Compact consideration January 25, 2007)***

- The winter sturgeon setline fishery occurs by permanent regulation from January 1 through January 31.
- The tribes plan to manage the winter gillnet fishery consistent with the expired Columbia River Fish Management Plan (CRFMP) which states in section II.B.1. "The treaty Indian winter gillnet fishery shall commence on February 1 and shall terminate on March 21 to minimize the incidental harvest of upriver destined spring Chinook."
- The 2007 winter gillnet fishery is expected to be open in all of Zone 6 from February 1 to March 21. The fishery may close early if sturgeon harvest guidelines are met. In recent years, most of the winter gillnet harvest has been sturgeon with incidental catches of steelhead and Chinook. The steelhead catch is likely a mix of hatchery and wild steelhead. The wild steelhead harvest would be comprised of winter steelhead and kelts, and holdover summer steelhead.
- The 2007 winter season fisheries are expected to have similar effort and similar impacts to salmon and steelhead.
- The 2007 Zone 6 sturgeon harvest guidelines will be set by the states and tribes in late January.

***2007 Treaty Indian Spring Season Fisheries***

- The treaty tribes have not yet determined the structure of their 2007 spring Chinook fisheries.
- Treaty Indian winter and spring season fisheries will be managed in accordance with Table A1 of the "2005-2007 Interim Management Agreement for Upriver Chinook, Sockeye, Steelhead, Coho and White Sturgeon".
- Based on the Interim Management Agreement and the preseason run size forecast, the tribes will manage for a 7% harvest rate on upriver spring Chinook.
- The tribes anticipate that no more than 1,000 steelhead will be caught in spring fisheries. The majority of the catch would be Skamania stock hatchery returns, holdovers, and kelts.

***2007 Treaty Indian Summer Season Fisheries***

- The treaty tribes have not yet determined the structure of their 2007 summer Chinook and sockeye fisheries (platform and permit gillnet or potential commercial fisheries). Summer Chinook, sockeye, and steelhead are expected to be caught in the summer fishery.
- Summer season fisheries will target unlisted upper Columbia summer Chinook. Based on the pre-season forecast, treaty fisheries will be allowed a Chinook catch of approximately 8,000 fish. The 2007 summer steelhead harvest is expected to be similar to, or less than, that of recent years. Commercial fisheries targeting summer Chinook are likely.

### ***2007 Treaty Indian Shad Fisheries***

Implementation of a shad dipnet fishery at The Dalles Dam east ladder exit will depend on identifying a market. Any new gears or methods would be expected to have little or no adverse impact to listed salmonids. Run timing data indicate that shad fishing in Zone 6 should occur in the month of June. This is generally the period of maximum shad-to-Chinook and shad-to-sockeye ratios, based on counts at Bonneville Dam (Figure 1). Daily fish ladder counts during this period average about 50,000 shad, 370 Chinook, and 30 sockeye.

Summer Chinook counting at Bonneville Dam begins on June 16. Results of experimental fisheries in 1994-1996 suggest that trap net and dip net harvest methods will encounter very few salmonids. This information suggests that less than 20 Chinook will be handled, with zero mortalities. Any Chinook or sockeye mortalities will be counted as part of the allowable impacts for those species. Sockeye salmon will begin to enter the shad fishing area in mid-June. On average, 45% of the sockeye run will have passed The Dalles Dam by June 28.

Primary issues with the experimental shad fishery are related to safety, possible delay in upstream salmonid migration, and associated delayed mortality of salmonids that may be caused if fishing activities are carried out in the immediate vicinity of fishway entrances and exits. Resolution of these issues and mutual agreement by the managing entities will be sought before exact fishing locations are established. Based on the 1996 experience, it is considered unlikely that significant numbers of salmonids will be encountered in dip nets or trap nets. However, in the event that a salmon is observed in the dip net or trap net, it will be immediately released unharmed upstream of the fishing area and gear. Impacts associated with experimental shad fisheries will be included in the total harvest of all treaty Indian fisheries.

The Joint Staff recommends that treaty Indian fishers continue to be allowed to sell shad caught incidentally to commercial salmonid seasons and in traditional dipnet fisheries, as well as the proposed trap and dipnet fisheries.

## **MISCELLANEOUS REGULATIONS**

Miscellaneous regulations including dam sanctuaries, river mouth closures, gear requirements, sturgeon rules, etc., are usually adopted annually at the January Compact hearing. The Joint Staff will include any recommended changes to miscellaneous regulations in the January 25, 2007 Fact Sheet.

The Sturgeon Management Task Force (SMTF) will meet January 18, 2007 to discuss and develop a management plan for 2007 Zone 6 white sturgeon fisheries. Results of the SMTF meetings will be presented at the January 25, 2007 Compact hearing.

Oregon Department of Fish and Wildlife  
Washington Department of Fish and Wildlife  
January 12, 2007

**Table 1. Minimum Adult Spring Chinook Run Entering The Columbia River, 1980-2006. <sup>1</sup>**

Year	Select Areas <sup>2</sup>	Kalama			Willamette			Total
		Cowlitz River	River	Lewis River	Sandy River	River	Upriver Run <sup>3</sup>	
<i>1980-1984 Ave.</i>	--	22,737	4,165	3,834	2,020	64,800	58,942	156,498
<i>1985-1989 Ave.</i>	--	11,176	1,552	10,312	1,980	93,700	97,586	216,306
1990	--	7,555	1,987	9,299	3,527	130,600	99,486	252,454
1991	--	8,945	2,613	8,334	3,652	109,900	59,883	193,327
1992	--	10,353	2,430	6,025	8,551	75,000	89,969	192,328
1993	851	9,458	2,874	8,195	6,369	65,900	111,758	205,405
1994	155	3,149	1,265	3,068	3,498	49,600	21,075	81,810
<i>1990-1994 Ave.</i>	<i>503</i>	<i>7,892</i>	<i>2,234</i>	<i>6,984</i>	<i>5,119</i>	<i>86,200</i>	<i>76,434</i>	<i>185,366</i>
1995	201	2,102	697	3,726	2,686	42,600	10,197	62,209
1996	789	1,787	627	1,730	3,997	34,800	51,530	95,260
1997	1,821	1,877	505	2,196	4,625	35,300	114,124	160,448
1998	2,313	1,055	407	1,611	3,768	45,100	38,376	92,630
1999	1,980	2,069	977	1,753	3,985	54,200	38,700	103,664
<i>1995-1999 Ave.</i>	<i>1,421</i>	<i>1,778</i>	<i>643</i>	<i>2,203</i>	<i>3,812</i>	<i>42,400</i>	<i>50,585</i>	<i>102,842</i>
2000	6,631	2,199	1,418	2,515	3,778	57,500	178,659	252,700
2001	9,719	1,649	1,784	3,777	5,742	80,300	416,468	519,439
2002	12,251	5,019	2,883	3,554	6,366	121,700	295,111	446,884
2003	8,783	15,890	4,528	5,104	5,848	126,600	208,850	375,603
2004	11,643	16,712	4,573	11,090	12,186	143,700	193,377	393,326
<i>2000-2004 Ave.</i>	<i>9,805</i>	<i>8,294</i>	<i>3,037</i>	<i>5,208</i>	<i>6,784</i>	<i>105,960</i>	<i>258,493</i>	<i>397,581</i>
2005	2,553	9,200	3,100	3,400	9,519	61,000	106,935	195,707
2006 <sup>4</sup>	7,581	7,000	5,600	7,500	5,695	59,700	132,138	225,214

<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.

<sup>3.</sup> Upriver counts prior to 2005 not adjusted for new management spring management period. Counts since 2005 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>4.</sup> Preliminary.

**Table 2. Predicted and Actual Spring Chinook Entering the Columbia River, 1985-2006 and 2007 Projections.**

Year	Willamette River (All Age Classes)			Cowlitz, Kalama, & Lewis Rivers Combined (Adults)			Upriver (Adults)		
	Preseason Forecast	Actual Return	% of Predicted	Preseason Forecast	Actual Return	% of Predicted	Preseason Forecast	Actual Return	% of Predicted
1985	70.0	68.1	97	--	--	--	52.6	84.7	161
1986	65.0	73.6	113	--	--	--	115.0	120.6	105
1987	78.0	93.6	120	--	--	--	79.7	99.8	125
1988	97.0	118.1	122	32.0	24.8	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	18.9	102	120.8	99.1	82
1991	110.0	109.9	100	19.7	19.8	101	61.9 <sup>3</sup>	59.2	96
1992	106.0	75.0	71	26.6 <sup>4</sup>	18.4 <sup>4</sup>	69	71.4	89.8	126
1993	70.0	65.9	94	21.3 <sup>4</sup>	19.0 <sup>4</sup>	89	76.2	111.0	146
1994	75.0	49.6	66	12.3 <sup>4</sup>	7.4 <sup>4</sup>	60	49.0	20.8	42
1995	49.0	42.6	87	4.6	6.6	143	12.0	9.8	82
1996	41.0	34.8	85	4.4	4.1	93	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	107	36.2	38.3	106
1999	46.5	54.2	117	3.9	4.9	126	24.6	38.7	157
2000	59.9	57.5	96	6.0	6.1	102	134.0	178.6	133
2001	61.0	80.3	132	4.8	7.2	150	364.6	416.5	114
2002	73.8	121.7	165	6.7	11.5	172	333.7	295.1	88
2003	109.8	126.6	115	11.6	25.5	220	145.4	208.9	144
2004	109.4	143.7	131	27.3	32.4	119	360.7	193.4	54
2005	116.9	61.0	52	24.8	15.7	63	254.1	106.9	42
2006	46.5	59.7	121	15.2	20.1	132	88.4	132.1	149
2007	52.0			15.6			78.5		

<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.

<sup>2.</sup> New upriver predictor developed by Joint Staff and approved by TAC.

<sup>3.</sup> New upriver predictor refined by Joint Staff and approved by TAC.

<sup>4.</sup> Excludes Willamette stock released in Lewis River.

<sup>5.</sup> Actual returns are preliminary.

**Table 3. Components (in Thousands) of the Minimum Willamette River Spring Chinook Run and Percentage Caught in Lower Willamette Recreational Fishery, 1970-2006.**

Year	Minimum Run Entering Columbia R. <sup>1</sup>	Mainstem Columbia River Catch		Run Entering Willamette R.	Lower Willamette R. Recreational Catch		Willamette Falls Count	Run Entering Clackamas R.
		Comm. <sup>2</sup>	Sport <sup>3</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	143.7	7.2	5.9	130.5	12.0	9	96.0	21.9
2000-2004								
Average	106.0	4.2	4.5	97.3	10.6	11	72.0	14.1
2005	61.0	2.3	2.8	55.8	5.8	9	36.6	12.7
2006	59.7	2.7	2.0	54.9	7.2	12	37.0	10.4

<sup>1.</sup> Includes small numbers of observed or estimated losses below Willamette Falls each year.

<sup>2.</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>3.</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>4.</sup> Lower Willamette recreational fishery managed for quotas in 1996 (6,000 fish) 1997 (1,900 fish), 1998 (2,000 fish), 1999 (4,600 fish), and 2000 (7,850 fish). Additional fishing was allowed in 1998 and 1999 when run size was greater than expected and in 2000 during an adipose fin-clipped only experimental fishery. Includes estimated hook and release mortalities in the Lower Willamette selective recreational fishery of 299 in 2000, 706 in 2001, 369 in 2002, 373 in 2003, 327 in 2004, 231 in 2005, and 203 in 2006.

<sup>5.</sup> Early closure on April 28 reduced catch and harvest rate.

<sup>6.</sup> Includes 700 and 400 spring Chinook catch from late January-early February 1986 and 1987 sturgeon seasons.

**Table 4. Willamette Falls Spring Chinook Escapement, Upper Willamette Recreational Catch, Number Returning to Hatcheries, and Tribal Use, 1980-2006.**

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	7,184	13	20,256	38	6,155	0
2002	83,136	16,145	19	32,049	39	6,256	0
2003	87,749	13,810	16	25,528	29	3,532	0
2004	95,970	15,375	16	33,560	35	11,530	0
2005	36,633	(4,102)	11	15,386	42	4,464	0
2006	37,041	NA		NA		7,287	0

<sup>1</sup> Includes jacks.

<sup>2</sup> Given toward the 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.

( ) indicates preliminary.



**Table 5. Smolt Releases at Select Area Fisheries Enhancement Project Sites, Brood Years 1993-2004.**

Brood Year	Species <sup>1</sup>	Release Site							
		Youngs Bay			Tongue Point				
		South Fork Klaskanine Hatchery	Klaskanine Hatchery	Youngs Bay Net Pens	Blind Slough Net Pens	Tongue Point Net Pens	Tongue Pt. – MERTS Net Pens	John Day R. Net Pens	Deep River Net Pens
1993	CHS	86,978	--	363,222	--	--	--	--	--
	SAB	--	--	--	--	--	--	--	--
	CO	433,674	--	1,708,499	140,267	130,623	--	--	201,200
1994	CHS	76,618	--	374,438	199,389	242,319	--	--	--
	SAB	15,758	--	1,251,787	--	--	--	--	--
	CO	443,183	--	2,490,901	209,761	190,032	--	--	200,100
1995	CHS	76,821	--	387,228	171,229	301,794	--	--	--
	SAB	--	--	1,366,973	27,380	26,792	--	--	--
	CO	621,932	--	780,128	196,963	430,221	--	--	--
1996	CHS	--	--	456,282	248,714	253,770	--	--	56,414
	SAB	--	26,178	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	--	603,960	117,583	--	--	--	--	--
	CO	429,652	--	1,439,561	197,089	204,143	--	--	414,108
1998	CHS	--	--	464,650	196,401	250,009	--	--	--
	SAB	--	661,977	221,972	--	--	--	--	--
	CO	610,658	--	1,819,500	195,645	754,123	--	--	431,143
1999	CHS	--	--	537,898	250,396	--	--	--	159,565
	SAB	--	703,200	153,928	--	--	--	--	--
	CO	344,738	--	1,724,031	299,411	655,613	--	--	395,337
2000	CHS	--	--	478,062	390,908	--	--	--	95,940
	SAB	--	408,492	205,145	--	--	--	--	--
	CO	583,248	--	1,688,696	343,842	667,758	--	--	354,557
2001	CHS	--	--	451,623	426,309	--	30,385	27,412	141,904
	SAB	--	669,913	467,056	--	--	--	--	--
	CO	641,555	--	1,686,711	316,804	675,712	--	--	366,435
2002	CHS	639,446	--	455,825	408,495	--	20,913	27,143	97,318
	SAB	--	620,527	780,314	--	--	--	--	--
	CO	--	--	1,470,914	298,748	--	697,522	--	357,200
2003	CHS	458,659	--	457,994	433,044	--	26,344	26,955	254,471
	SAB	53,963	702,188	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

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

<sup>2</sup>. Released early (September 26, 2003) due to disease.

**Table 6. Winter/Spring/Summer Season Commercial and Recreational Chinook Harvest in Select Area Sites, 1993-2006**

Year	Commercial				Recreational <sup>2</sup>					Sum
	Youngs Bay	Blind Slough	Tongue Point <sup>1</sup>	Deep River	Youngs Bay	Blind Slough	Tongue Point	SAFE Tributaries	Deep River	
1993	851	--	--	--	--	--	--	--	--	851
1994	155	--	--	--	--	--	--	--	--	155
1995	201	--	--	--	--	--	--	--	--	201
1996	789	--	--	--	--	--	--	--	--	789
1997	1,821	--	--	--	--	--	--	--	--	1,821
1998	2,167	60	31	--	55	--	--	--	--	2,313
1999	1,298	458	199	--	25	--	--	--	--	1,980
2000	4,731	818	947	--	14	121	--	--	--	6,631
2001	5,593	2,045	1,631	--	50	400	--	--	--	9,719
2002	6,643	2,053	3,003	--	121	430	1	--	--	12,251
2003	5,283	2,041	348	117	51	493	--	450	--	8,783
2004	6,916	3,531	--	115	96	285	--	700	--	11,643
2005	969	1,377	--	50	9	81	--	67	--	2,553
2006	5,798	1,419	--	28	53	73	--	210	--	7,581

<sup>1.</sup> No winter, spring, or summer seasons have occurred in Tongue Point since 2003.

<sup>2.</sup> Estimates of recreational harvest have been made annually starting when effort was first observed in a particular site.

**Table 7. Estimated numbers of Adult Upriver Spring Chinook Entering the Columbia River, Mainstem Harvest and Escapement, 1980-2006.**

Year	Upriver Run <sup>1</sup>	Non-Indian Catch <sup>3</sup>				Bonn. Dam Count <sup>6</sup>	Non-Indian Zone 6 Sport	Treaty Indian Zone 6 <sup>2</sup>				Zones 1-6 % of run	Escapement	
		Comm.	Sport <sup>4</sup>	Misc. <sup>5</sup>	Total			Winter Gillnet	Comm. Gillnet	Ceremonial & platform	Total		No. <sup>7</sup>	% of Run
80-84 Ave.	63,153	951	320	182	1,452	61,700	0	1,008	0	2,306	3,313	7.5%	58,387	92.5%
85-89 Ave.	104,837	2,308	806	222	3,335	101,501	0	208	0	5,991	6,199	0%	95,303	90.9%
1990	105,213	2,082	3,115	150	5,347	99,866	0	4	0	6,924	6,928	11.2%	92,938	88.3%
1991	64,233	897	1,537	120	2,254	61,679	0	5	0	3,871	3,876	9.5%	57,803	90.0%
1992	95,323	235	1,187	162	1,584	93,739	0	48	0	5,711	5,759	7.7%	87,980	92.3%
1993	119,203	238	413	373	1,024	118,179	0	0	0	7,296	7,296	7.0%	110,883	93.0%
1994	23,809	441	409	86	936	22,873	0	10	0	1,151	1,161	8.8%	21,712	91.2%
1995	12,634	0	5	2	7	12,627	0	13	0	620	633	5.1%	11,994	94.9%
1996	55,299	5	17	41	63	55,236	0	0	0	2,911	2,911	5.4%	52,325	94.6%
1997	123,824	9	13	44	66	123,758	0	14	0	8,309	8,323	6.8%	115,435	93.2%
1998	43,512	0	14	27	41	43,471	0	1	0	2,224	2,225	5.2%	41,246	94.8%
1999	42,582	2	21	26	49	42,533	0	1	0	1,983	1,984	4.8%	40,549	95.2%
2000	186,141	88	102	177	367	185,774	0	6	1,348	9,973	11,327	6.3%	174,447	93.7%
2001	437,910	1,579	22,714	964	25,257	412,653	93	85	43,630	10,985	54,700	18.3%	357,860	81.7%
2002	331,303	9,483	16,213	667	26,363	304,940	875	45	24,209	9,208	33,462	18.3%	270,603	81.7%
2003	242,638	2,759	9,615	765	13,139	229,499	1,302	857	8,348	9,090	18,295	13.5%	209,902	86.5%
2004	221,600	5,989	17,041	245	23,275	198,325	1,349	2	8,368	9,114	17,484	19.0%	179,492	81.0%
2005	106,935	2,246	7,235	57	9,538	97,397	449	1	0	6,163	6,164	15.1%	90,784	84.9%
2006	132,138	1,689	4,161	130	5,980	126,158	648	0	0	8,401	8,401	11.4%	117,109	88.6%

- <sup>1</sup> Tribal commercial catches include any spring Chinook sold in the winter season gillnet fishery. Ceremonial and subsistence include catch by gillnet, dipnet, and hook and line since 1982.
- <sup>2</sup> Through 1979 all fish caught in April and May were considered upriver stocks. From 1980 to 1987 the February-March incidental catch in Zone 1-5 and lower Columbia River recreational catch was based on CWT recoveries. Since 1988, incidental commercial catch was based on GSI analysis and incidental recreational catch was based on VSI analysis. Commercial fishery became selective beginning 2002.
- <sup>3</sup> Includes mainstem fisheries up to McNary Dam. Recreational fishery became selective beginning in 2001.
- <sup>4</sup> Miscellaneous fisheries include Select Area, test fisheries, mortalities from area 2S shad fisheries and selective tangle net experimental fishery in 2001.
- <sup>5</sup> Chinook passing from January 1 through June 15 are considered spring Chinook. Dam counts in 1980, and 1981 were not adjusted for fallback; runsize and escapements are maximum in those years.
- <sup>6</sup> Bonneville count minus Zone 6 harvest.

**Table 8. Columbia River Fisheries and Passage Loss Impacts on the Adult Upriver Columbia Wild Spring Chinook Run and Escapement, 1980-2006.**

Year	Upper Columbia Wild Run Size	Non-Indian Catch <sup>1</sup>		Treaty Indian Catch <sup>2</sup>		Fisheries Total		Bonn-McNary Passage Loss <sup>3</sup>		Escapement <sup>4</sup>	
		No.	% of Run	No.	% of Run	No.	% of Run	No.	% of Run	No.	% of Run
1980	8,206	17	0.2	266	3.2	284	3.5	4,336	52.8	3,586	43.7
1981	9,982	141	1.4	506	5.1	647	6.5	2,639	26.4	6,695	67.1
1982	7,626	135	1.8	526	6.9	661	8.7	3,252	42.6	3,714	48.7
1983	8,542	413	4.8	346	4.1	759	8.9	2,624	30.7	5,158	60.4
1984	7,250	252	3.5	483	6.7	736	10.1	1,509	20.8	5,006	69.0
1985	11,006	402	3.7	376	3.4	778	7.1	891	8.1	9,336	84.8
1986	8,175	170	2.1	476	5.8	646	7.9	1,813	22.2	5,716	69.9
1987	7,584	120	1.6	462	6.1	581	7.7	1,628	21.5	5,374	70.9
1988	5,488	354	6.4	365	6.7	719	13.1	891	16.2	3,878	70.7
1989	6,580	158	2.4	495	7.5	653	9.9	2,195	33.4	3,732	56.7
1990	5,643	287	5.1	372	6.6	658	11.7	977	17.3	4,007	71.0
1991	2,514	100	4.0	152	6.0	252	10.0	526	20.9	1,736	69.1
1992	5,007	83	1.7	302	6.0	386	7.7	641	12.8	3,980	79.5
1993	5,268	45	0.9	322	6.1	368	7.0	222	4.2	4,678	88.8
1994	1,804	71	3.9	88	4.9	159	8.8	490	27.2	1,155	64.0
1995	290	0	0.1	15	5.0	15	5.1	118	40.8	157	54.2
1996	308	0	0.1	16	5.3	17	5.4	119	38.7	173	56.0
1997	1,071	1	0.1	72	6.7	73	6.8	343	32.1	655	61.2
1998	401	0	0.1	21	5.1	21	5.2	97	24.1	284	70.7
1999	642	1	0.1	30	4.7	31	4.8	160	25.0	451	70.3
2000	3,007	6	0.2	183	6.1	189	6.3	720	23.9	2,098	69.8
2001	10,103	156	1.5	1,326	13.1	1,482	14.7	574	5.7	8,047	79.6
2002	5,757	112	1.9	625	10.9	737	12.8	982	17.1	4,037	70.1
2003	2,581	40	1.5	204	7.9	243	9.4	553	21.4	1,785	69.1
2004	3,119	65	2.1	271	8.7	337	10.8	519	16.6	2,264	72.6
2005	2,445	40	1.6	153	6.3	193	7.9	474	19.4	1,778	72.7
2006	2,817	38	1.3	185	6.6	223	7.9	787	27.9	1,807	64.1

<sup>1.</sup> Includes incidental mortalities in mainstem recreational and commercial fisheries.

<sup>2.</sup> Includes winter season commercial sales and spring C&S catches. Since 1982 C&S catch includes gill net, dip net and hook and line.

<sup>3.</sup> Bonneville Dam to McNary Dam: calculated by Zone 6 escapement minus Priest Rapids Dam passage.

<sup>4.</sup> Priest Rapids Dam passage

**Table 9. Columbia River Fisheries, Passage Loss and Escapement on Adult Snake River Wild Spring/Summer Chinook, 1980-2006.**

Year	Snake R. Wild Run Size	<u>Non-Indian Catch<sup>1</sup></u>		<u>Treaty Indian Catch<sup>2</sup></u>		<u>Total Fisheries</u>		<u>Passage Loss<sup>3</sup></u>		<u>Escapement<sup>4</sup></u>	
		No.	% of Run	No.	% of Run	No.	% of Run	No.	% of Run	No.	% of Run
1980	18,660	31	0.2	605	3.2	636	3.4	11,370	60.9	6,646	35.6
1981	19,819	270	1.4	1,005	5.1	1,275	6.4	6,407	32.3	12,127	61.2
1982	27,050	471	1.7	1,866	6.9	2,337	8.6	12,894	47.7	11,812	43.7
1983	20,363	983	4.8	825	4.1	1,808	8.9	8,137	40.0	10,417	51.2
1984	14,052	485	3.5	937	6.7	1,422	10.1	4,361	31.0	8,266	58.8
1985	14,551	528	3.6	497	3.4	1,025	7.0	2,749	18.9	10,773	74.0
1986	17,969	368	2.0	1,046	5.8	1,414	7.9	5,811	32.3	10,739	59.8
1987	15,424	240	1.6	939	6.1	1,178	7.6	4,043	26.2	10,198	66.1
1988	17,963	1,154	6.4	1,195	6.7	2,348	13.1	4,394	24.5	11,217	62.4
1989	14,271	340	2.4	1,073	7.5	1,413	9.9	6,068	42.5	6,788	47.6
1990	15,649	788	5.0	1,030	6.6	1,819	11.6	3,987	25.5	9,836	62.9
1991	11,935	471	3.9	720	6.0	1,191	10.0	4,727	39.6	6,013	50.4
1992	19,283	314	1.6	1,165	6.0	1,479	7.7	4,719	24.5	13,079	67.8
1993	15,435	128	0.8	945	6.1	1,072	6.9	1,527	9.9	12,831	83.1
1994	3,401	135	4.0	166	4.9	301	8.8	1,147	33.7	1,954	57.5
1995	3,017	2	0.1	151	5.0	153	5.1	1,678	55.6	1,186	39.3
1996	8,896	10	0.1	468	5.3	478	5.4	4,629	52.0	3,788	42.6
1997	8,126	4	0.1	546	6.7	551	6.8	3,169	39.0	4,406	54.2
1998	13,062	12	0.1	668	5.1	680	5.2	4,990	38.2	7,391	56.6
1999	5,579	6	0.1	260	4.7	266	4.8	2,457	44.0	2,856	51.2
2000	13,201	26	0.2	803	6.1	829	6.3	4,116	31.2	8,255	62.5
2001	60,962	961	1.6	7,999	13.1	8,960	14.7	6,998	11.5	45,281	74.3
2002	48,677	908	1.9	5,286	10.9	6,195	12.7	12,503	25.7	30,213	62.1
2003	52,863	864	1.6	4,156	7.9	5,019	9.5	15,313	29.0	32,325	61.1
2004	32,629	727	2.2	2,821	8.6	3,548	10.9	7,559	23.2	21,367	65.5
2005	15,543	275	1.8	968	6.2	1,243	8.0	4,103	26.4	10,148	65.3
2006	16,730	312	1.9	1,100	6.6	1,412	8.4	5,841	34.9	9,480	56.7

<sup>1</sup> Includes incidental mortalities in mainstem recreational and commercial fisheries and Snake River recreational fisheries.

<sup>2</sup> Includes winter season commercial sales and spring C&S catches. Since 1982 C&S catch includes gill net, dip net and hook and line.

<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, Mainstem Harvest, and Escapement, 1980-2006.**

Year	Upriver Run <sup>1</sup>	Zones 1-5 Non-Indian Catch			Z 1-5 Total	Bonn. Counts	Zone 6 Sport	Zone 6 Treaty-Indian Catch <sup>3</sup>	Zone 6 Total	Escapement <sup>4</sup>		Dam Counts	
		Sport	Comm.	Shad/Misc <sup>2</sup>						No.	%	Priest Rapids	Wells
1980	22,991			16	16	22,975	0	1,181	1,181	21,794	95%	16,000	3,910
1981	19,124			9	9	19,115	0	1,364	1,364	17,751	93%	11,600	3,141
1982	14,677			117	117	14,560	0	1,295	1,295	13,265	90%	8,800	2,223
1983	13,576			92	92	13,484	0	297	297	13,187	97%	8,500	2,002
1984	18,999			22	22	18,977	0	457	457	18,520	97%	16,200	4,768
1985	19,084			36	36	19,048	0	1,353	1,353	17,695	93%	15,910	4,018
1986	19,307	0		109	109	19,198	0	1,116	1,116	18,082	94%	16,161	3,787
1987	23,604	5		141	147	23,457	0	1,684	1,684	21,773	92%	14,131	2,790
1988	23,397	8		81	89	23,308	0	1,497	1,497	21,811	93%	13,400	2,411
1989	22,739	17		9	26	22,713	0	100	100	22,613	99%	19,659	3,115
1990	19,296	6		15	21	19,275	0	111	111	19,164	99%	15,576	3,207
1991	14,569	3		9	12	14,557	0	171	171	14,386	99%	14,815	1,774
1992	9,796	12		35	47	9,749	0	46	46	9,703	99%	8,523	1,343
1993	14,781	15		81	95	14,686	0	328	328	14,358	97%	16,377	3,404
1994	14,977	27		23	50	14,927	0	171	171	14,756	99%	14,859	4,613
1995	12,615	18		0	18	12,597	0	417	417	12,180	97%	12,162	2,767
1996	12,333	27		15	42	12,291	0	374	374	11,917	97%	10,995	2,225
1997	18,277	19		6	25	18,252	0	270	270	17,982	98%	13,107	2,424
1998	16,332	27		1	28	16,304	0	335	335	15,969	98%	13,387	3,385
1999	22,347	41		1	42	22,305	0	411	411	21,894	98%	20,898	7,210
2000	23,169	25		0	25	23,144	0	209	209	22,935	99%	22,306	6,447
2001	54,935	64		1	65	54,870	0	692	692	54,178	99%	53,170	33,244
2002	92,820	1,503		8	1,511	91,309	65	2,061	2,126	89,183	96%	96,326	61,115
2003	83,120	2,007		36	2,043	81,077	269	4,297	4,566	76,511	92%	83,004	46,649
2004	65,446	1,240	233	3	1,476	63,970	38	8,394	8,432	55,538	85%	67,060	31,380
2005	60,060	1,622	2,574	0	4,196	55,864	74	7,642	7,716	48,148	80%	61,227	31,066
2006	76,196	4,924	5,008	9	9,941	67,819	40	16,319	16,359	51,460	68%	52,236	25,671

<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 Run Size Estimates, 2001-2006**

	2001	2002	2003	2004	2005	2006	2007
Above Bonneville Dam	1,927	2,923	1,616	1,335	807	1,076	
<i>Wind River</i>	0	54	28	29	21	26	
<i>Hood River</i>	1,013	1,052	608	472	352	462	
<i>Other Bonneville Pool Tributaries.</i>	914	1,817	980	834	434	588	
Below Bonneville Dam	19,776	27,659	21,595	27,963	13,773	15,506	
<i>Oregon Tributaries</i>	14,312	19,609	11,326	16,831	8,099	7,982	
<i>Washington Tributaries</i>	5,464	8,051	10,269	11,132	5,674	7,524	
Mainstem Mortality	122	3129	240	268	92	31	
Columbia River Runsize	21,825	33,711	23,452	29,566	14,672	16,613	
Columbia River Forecast					27,000	16,000	16,200

**Table 12. Skamania Index, Group A Index, and Group B Index Returns of Summer Steelhead to Bonneville Dam During 1986-2006.**

Year	Skamania Index			Group A Index			Group B Index			Total Upriver		
	Wild	Hatchery	Total	Wild	Hatchery	Total	Wild	Hatchery	Total	Wild	Hatchery	Total
1986	5.5	19.3	24.8	56.6	230.9	287.5	10.0	54.0	64.0	72.1	304.2	376.3
1987	7.4	10.4	17.8	106.7	131.6	238.3	14.0	31.0	45.0	128.1	173.0	301.1
1988	4.2	18.2	22.4	64.3	108.8	173.1	17.7	63.9	81.6	86.2	190.9	277.1
1989	3.8	11.9	15.7	57.5	135.6	193.1	12.4	65.2	77.6	73.7	212.7	286.4
1990	3.7	15.0	18.7	27.1	88.5	115.6	8.8	38.4	47.2	39.6	141.9	181.5
1991	1.2	9.7	10.9	60.3	173.8	234.1	6.2	22.1	28.3	67.7	205.6	273.3
1992	2.9	12.0	14.9	44.3	197.2	241.5	12.7	44.7	57.4	59.9	253.9	313.8
1993	1.3	13.1	14.4	28.6	108.1	136.7	4.4	31.8	36.2	34.3	153.0	187.3
1994	1.4	10.9	12.3	21.2	99.8	121.0	5.2	22.3	27.5	27.8	133.0	160.8
1995	1.1	7.1	8.2	26.0	154.0	180.0	1.8	11.4	13.2	28.9	172.5	201.4
1996	1.3	9.5	10.8	25.7	148.6	174.3	3.9	14.9	18.8	30.9	173.0	203.9
1997	0.9	11.0	11.9	30.9	177.4	208.3	3.9	32.7	36.6	35.7	221.1	256.8
1998	1.6	7.8	9.4	34.8	99.9	134.7	3.4	36.8	40.2	39.8	144.5	184.3
1999	1.3	5.9	7.2	56.6	119.8	176.4	3.7	18.4	22.1	61.6	144.1	205.7
2000	5.7	10.9	16.6	63.6	153.1	216.7	8.4	32.5	40.9	77.7	196.5	274.2
2001	7.9	20.8	28.7	137.2	377.9	515.1	12.1	74.3	86.4	157.2	473.0	630.2
2002	9.7	15.3	25.0	87.3	235.8	323.1	32.3	97.6	129.9	129.3	348.7	478.0
2003	1.8	12.4	14.2	66.4	238.1	304.5	6.5	32.0	38.5	74.7	282.5	357.2
2004 <sup>1</sup>	4.1	16.9	21.0	60.4	190.2	250.6	9.2	28.2	37.4	73.7	235.3	309.0
2005 <sup>2</sup>	2.8	9.2	12.0	58.9	192.7	251.6	9.6	39.3	48.9	71.3	241.2	312.5
2006	2.2	7.7	9.9	63.7	181.4	245.1	8.5	65.7	74.2	74.4	254.8	329.2

*Due to limited biological sampling at Bonneville Dam, 2004 Skamania Index is based on historic proportions of hatchery to wild fish applied to April- June passage and 2004 Group A and Group B data also adjusted by TAC.*

*Due to limited biological sampling at Bonneville Dam, the 2005 Skamania, group A and Group B data is based on the 2005 preseason proportions applied to April through June passage for Skamania stock and between July1- October 31 for Group A and B stocks.*



**Table 13. Summer steelhead Counts by Run Year at Lower Granite Dam with Wild Steelhead Estimates and Goals, 1984-2006. .**

Run Year	Run Year Totals	Wild <sup>1</sup>		Percent of 30,000 Goal
		Number	Percent	
1984-1985	104,400	24,500	23	82
1985-1986	116,300	26,700	23	89
1986-1987	130,000	22,000	17	73
1987-1988	71,300	25,500	36	85
1988-1989	87,100	21,000	24	70
1989-1990	131,400	25,000	19	83
1990-1991	56,900	9,300	16	31
1991-1992	99,100	17,300	17	58
1992-1993	128,300	19,400	15	65
1993-1994	59,800	7,400	12	25
1994-1995	47,300	7,500	16	25
1995-1996	79,100	8,000	10	27
1996-1997	83,300	7,300	9	24
1997-1998	87,000	8,600	10	29
1998-1999	70,700	9,300	13	31
1999-2000	73,800	12,100	16	40
2000-2001	116,300	21,400	18	71
2001-2002	269,300	40,400	15	135
2002-2003	222,200	43,100	19	144
2003-2004	(153,400)	(36,100)	(24)	(120)
2004-2005	(152,700)	(35,200)	(23)	(117)

<sup>1</sup>. The database has been updated since 1994 and is based on fin sampling data from the trap at Lower Granite Dam. Percentages are calculated before rounding.

( ) indicates preliminary

**Table 14. Minimum Numbers (in Thousands) of Lower River Summer Steelhead Entering the Columbia River, 1980-2006. .**

Year	Lower Columbia Recreational (May-June) <sup>1</sup>	Tributary Dam Counts <sup>2</sup>	Hatchery Returns <sup>3</sup>	Tributary Recreational		Minimum Run
				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	6.2	11.3	68.5
1985	1.8	32.3	3.0	3.9	15.9	56.9
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	1.5	13.0	38.8
1996	1.2	7.8	9.9	1.0	15.1	35.0
1997	1.9	17.5	3.7	1.4	6.0	30.5
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	1.9	10.2	36.4
2001	2.0	28.4	16.4	4.1	19.7	70.6
2002	4.4	35.2	33.8	8.1	33.3	114.8
2003	2.7	17.5	23.0	3.2	26.1	72.5
2004	3.0	36.4	23.1	(4.0)	42.4	(108.9)
2005	2.0	14.6	(23.2)	(4.3) <sup>5</sup>	(26.3) <sup>5</sup>	(70.4)
2006	3.0	na	na	na	na	na

- <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 (Sandy R.); hatchery fish. Skamania, Lewis River, and Cowlitz hatcheries and beginning in 1998 Kalama River hatcheries.
  - <sup>3</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>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, 1980-2006.**

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	na

- <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, Mainstem Harvest, and Escapement, 1980-2006.**

Year	Return to Columbia River Mouth <sup>1</sup>	Non-Indian Fisheries Catch	Bonn. Dam Count	Treaty Indian Catch		Dam Counts		Snake River Sockeye			
				Comm	C&S	Priest Rapids <sup>2</sup>	Snake River <sup>3</sup>	At River Mouth	Non-Indian Catch	Treaty Indian Catch	Lower Granite Esc. <sup>4</sup>
1980	58,886	4	58,882	14	622	52,055	96	108	0	1	96
1981	56,037	0	56,037	7	1,500	51,460	218	236	0	6	218
1982	50,319	100	50,219	130	645	40,461	211	261	1	4	211
1983	100,628	83	100,545	1,849	1,500	90,008	216	241	0	8	122
1984	161,886	9,345	152,541	22,485	2,131	114,761	105	148	9	23	49
1985	200,759	32,213	166,340	49,393	576	118,542	35	59	10	15	35
1986	59,963	1,840	58,123	4,272	2,400	43,084	20	28	2	3	15
1987	145,546	28,553	116,993	39,460	100	76,578	29	55	11	15	29
1988	99,780	17,632	79,714	30,990	0	51,135	23	45	8	14	23
1989	47,477	36	41,884	38	2,100	45,301	4	4	0	0	2
1990	49,754	173	49,581	2	2,714	46,331	1	1	0	0	0
1991	76,484	3	76,481	5	3,266	71,245	9	10	0	0	8
1992	85,000	8	84,992	5	2,180	80,857	33	36	0	1	15
1993	84,273	64	80,178	7	5,013	86,626	17	18	0	1	12
1994	12,679	1	12,678	0	472	12,385	5	5	0	0	5
1995	9,178	1	8,773	0	445	9,216	5	5	0	0	3
1996	30,280	25	30,255	0	1,414	29,457	3	3	0	0	3
1997	46,939	12	46,927	0	2,046	45,412	17	19	0	1	17
1998	13,220	2	13,218	0	425	10,769	3	4	0	0	3
1999	17,878	1	17,877	0	704	16,432	18	21	0	1	18
2000	93,757	366	93,391	360	2,550	89,547	337	378	1	11	337
2001	116,623	1,690	114,933	5,580	1,720	111,326	45	51	0	3	43
2002	49,629	19	49,610	0	2,564	47,883	73	81	0	4	65
2003	39,375	0	39,375	10	1,080	36,287	26	30	0	1	14
2004	123,992	672	123,320	1,727	2,590	124,943	113	120	1	5	113
2005	72,452	4	72,448	1,085	1,681	74,563	19	20	0	0	10
2006	37,100	0	37,066	661	935	26,709	57	79	0	3	57

<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> Counts have been adjusted from the actual 24-hour counts to 16-hour counts to maintain a consistent database since 1992.

<sup>3</sup> Greater of Ice Harbor and Lower Granite dam counts. Since 1992, video counts at Lower Granite Dam were used (adjusted for 1989 and 1991 average conversion between Ice Harbor Dam and Lower Granite dams). Kokanee-size fish are not included.

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) 1977-2006.**

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	1,699.4	1.8
2001	29	17.0	--	--	26.2 <sup>4</sup>	5.6	31.8	2,908.3	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	4,791.2	3.9
2004	29	48.4	--	--	48.4	30.0 <sup>5</sup>	78.4	5,678.3	1.4
2005	26	48.8	30	0.0	48.8	30.0 <sup>5</sup>	78.8	6,303.2	1.3
2006	27	21.0	--	--	21.0	na	na	4,742.2	na

1. Washougal Reef landings included in Area 2S landings until 1986. No season set during 2001-2004 and 2006.
2. Includes landings during sockeye seasons, Select Area fisheries, and John Day River shad fisheries in some years.
3. Limited experimental fishery with three boats.
4. Includes shad caught in experimental tangle net permit fishery for spring Chinook.
5. Precise catch estimates not available.

**Table 18. Season Dates, Gear Restrictions, and Commercial Landings During Non-Indian Winter (January-March) and Spring (April-June 15) Mainstem Seasons, 1970-2006.**

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" – 9¾"	994	88
	May 16-Jun 2	6	8" – 9¾"	3,356	1,563

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

<sup>2</sup> Since 1997, maximum mesh size of 9¾" unless specified otherwise.

<sup>3</sup> Catch updated with preliminary fish ticket landings.

**Table 19. Fishing Periods, Gear, and Associated Sturgeon Catch for Mainstem Columbia River Commercial Seasons, 2006.**

Season	Fishing Period	Hrs	Zone s	Mesh	STG Limit <sup>1</sup>	Del.	Chinook	Coho	WSTG	GSTG
Winter Sturgeon	6 PM Jan. 10 – 6 PM Jan. 11	24	1-5	9-9/4"	none	2	0	--	25	0
	6 PM Jan. 17 – 6 PM Jan. 18	24	1-5	9-9/4"	none	4	0	--	61	0
	6 PM Jan 24 – 6 PM Jan. 25	24	1-5	9-9/4"	none	6	1	--	23	0
	6 PM Jan 31 – 6 PM Feb. 1	24	1-5	9-9/4"	none	3	0	--	16	0
	6 PM Feb. 2 – 6 AM Feb. 3	12	1-5	9-9/4"	none	4	0	--	11	0
	6 PM Feb. 7 – 6 PM Feb. 8	24	1-5	9-9/4"	none	8	10	--	36	0
	6 PM Feb. 9 – 6 AM Feb. 10	12	1-5	9-9/4"	none	4	1	--	7	0
	6 PM Feb. 14 – 6 PM Feb. 15	24	1-5	9-9/4"	none	12	14	--	32	0
	6 PM Feb. 16 – 6 AM Feb. 17	12	1-5	9-9/4"	none	9	0	--	19	0
	6 PM Feb. 21 – 6 PM Feb. 22	24	1-5	9-9/4"	none	24	13	--	58	1
						8	39	0	288	1
Winter/ Spring Salmon	noon Feb 23 – 6 AM Feb. 24	18	1-4 <sup>2</sup>	8-9/4"	none	21	28	--	20	0
	noon Mar. 2 – noon Mar. 3	24	1-4 <sup>2</sup>	8-9/4"	none	66	212	--	16	0
	6 AM Mar. 7 – 6 AM Mar. 8	24	1-4 <sup>2</sup>	8-9/4"	none	69	173	--	12	0
	noon Mar. 9 – 6 AM Mar. 10	18	1-4 <sup>2</sup>	8-9/4"	none	66	207	--	13	0
	noon Mar. 14 – 6 AM Mar. 15	18	1-4 <sup>2</sup>	8-9/4"	none	91	374	--	27	0
	2 PM to midnight May 16	10	1-4 <sup>2</sup>	8-9/4"	8	78	615	--	188	1
	7 PM May 18 – 7 AM May 19	12	1-4 <sup>2</sup>	8-9/4"	12	76	678	--	322	6
	7 PM May. 23 – 7 AM May 24	12	1-5	8-9/4"	15	91	430	--	521	1
	7 PM May 25 – 7 AM May 26	12	1-5	8-9/4"	15	89	364	--	319	2
	7 PM May 30 – 7 AM May 31	12	1-5	8-9/4"	3	69	631	--	148	0
	7 PM June 1 – 7 AM June 2	12	1-5	8-9/4"	3	73	368	--	65	0
						72	4,350	0	1,651	10
	Summer	7 PM Jun. 26 – 5 AM Jun. 27	10	1-5	8-9/4"	3	86	1,321	--	131
7 PM Jun. 29 – 5 AM Jun. 30		10	1-5	8-9/4"	3	52	668	--	36	1
7 PM Jul. 5 – 5 AM Jul. 6		10	1-5	8-9/4"	3	61	457	--	68	0
7 PM Jul. 6 – 7 AM Jul. 7		12	1-5	8-9/4"	3	20	293	--	17	Prohibited
7 PM Jul. 10 – 7 AM Jul. 11		12	1-5	8-9/4"	3	54	303	--	61	"
7 PM Jul. 12 – 7 AM Jul. 13		12	1-5	8-9/4"	3	28	162	--	23	"
7 PM Jul. 16 – 7 AM Jul. 17		12	1-5	8-9/4"	3	25	250	--	28	"
7 PM Jul. 17 – 7 AM Jul. 18		12	1-5	8-9/4"	3	26	219	--	9	"
7 PM Jul. 19 – 7 AM Jul. 20		12	1-5	8-9/4"	3	35	349	--	16	"
7 PM Jul. 23 – 7 AM Jul. 24		12	1-5	8-9/4"	3	46	274	--	30	"
7 PM Jul. 24 – 7 AM Jul. 25		12	1-5	8-9/4"	3	35	174	--	19	"
7 PM Jul. 26 – 7 AM Jul. 27		12	1-5	8-9/4"	3	29	140	--	18	"
7 PM Jul. 30 – 7 AM Jul. 31		12	1-5	8-9/4"	3	51	209	--	88	"
						42	4,819	0	544	5
2006 Total						9,208	0	2,483	16	

1. Sturgeon possession and sales limit (per vessel per week). The retention of green sturgeon was prohibited beginning July 7 through the end of the year.
2. Mouth upstream to Kelley Point.

**Table 20. Estimates of the Spring Chinook Stock Composition (in Thousands) in Mainstem Lower Columbia Commercial Fisheries, 1990-2006.**

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	1.3	0.7	2.0	0.0	4.0	--	--	--	--	--
2006	0.6	0.2	0.2	<0.1	1.0	1.7	0.7	<0.1	1.0	3.4

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



**Table 21. Columbia River Recreational Spring Chinook Fishing Regulations, 2000-2006.**

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.	Open January 1-April 30. Two adipose fin-clipped adult spring chinook daily bag limit. Unlawful to remove unclipped fish from the water.	Open March 16-April 21. Two adipose fin-clipped adult spring chinook daily bag limit. Unlawful to remove unclipped fish from the water.	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.
2005	Open January 1-April 20. Two adipose fin-clipped adult spring chinook daily bag limit. Unlawful to remove unclipped fish from the water.	Open January 1-April 20 and June 4-15. Two adipose fin-clipped adult spring chinook daily bag limit. Unlawful to remove unclipped fish from the water.	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. Unlawful to remove unclipped fish from the water.	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. Unlawful to remove unclipped fish from the water.
2006	Open January 1-April 13. Two adipose fin-clipped adult spring chinook daily bag limit. Unlawful to remove unclipped fish from the water.	Open January 1-April 13 and May 17-June 15. Two adipose fin-clipped adult spring chinook daily bag limit. Unlawful to remove unclipped fish from the water.	Open May 17-June 15. Two adipose fin-clipped adult spring chinook daily bag limit. Unlawful to remove unclipped fish from the water.	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. Unlawful to remove unclipped fish from the water.

**Table 22. Salmonid Angler Trips and Chinook Catch by Month on the Lower Columbia River, 2000-2006.**

Year	Month	Angler Trips	Chinook		Year	Month	Angler Trips	Chinook	
			Kept	Released				Kept	Released
2000	Feb	1,523	0	0	2004	Feb	9,467	48	31
	Mar	8,360	322	0		Mar	44,576	2,614	727
	Apr	0	0	0		Apr	102,058	21,078	6,482
	May	6,156	0	92		May	5,891	0	180
	Jun	10,369	0	171		Jun 1-15	2,046	0	59
	Jul	17,669	0	170		Jun 16-30	17,929	619	844
2000	Total	44,077	322	433		Jul	21,875	500	422
					2004	Total	203,842	24,859	8,745
Year	Month	Angler Trips	Chinook		Year	Month	Angler Trips	Chinook	
			Kept	Released				Kept	Released
2001	Feb	5,017	84	0	2005	Feb	7,551	39	0
	Mar	44,356	4,550	2,323		Mar	36,865	1,899	542
	Apr	122,939	21,077	13,138		Apr	65,705	8,653	2,389
	May	5,330	0	56		May	4,082	0	143
	Jun	13,155	0	503		Jun 1-15	10,492	724	486
	Jul	19,157	0	386		Jun 16-30	12,824	669	485
2001	Total	209,954	25,711	16,406		Jul	25,681	902	15
					2005	Total	163,200	12,886	4,060
Year	Month	Angler Trips	Chinook		Year	Month	Angler Trips	Chinook	
			Kept	Released				Kept	Released
2002	Feb	5,147	18	6	2006	Feb	2,471	19	0
	Mar	35,629	2,036	1,699		Mar	27,418	1,810	413
	Apr	107,906	14,428	9,846		Apr	33,750	3,595	712
	May	31,445	3,982	2,670		May	12,225	634	345
	Jun 1-27	13,919	0	895		Jun 1-15	10,971	927	991
	Jun 28-30	5,591	472	221		Jun 16-30	19,089	3,360	5
	Jul	35,329	880	724		Jul	24,714	1,564	11
2002	Total	234,966	21,816	16,061	2006	Total	130,638	11,909	2,477
Year	Month	Angler Trips	Chinook		Year	Month	Angler Trips	Chinook	
			Kept	Released				Kept	Released
2003	Feb	9,573	209	223					
	Mar	65,841	5,597	3,193					
	Apr	66,351	9,110	4,729					
	May	24,875	1,976	1,122					
	Jun 1-15	7,776	0	106					
	Jun 16-30	15,114	1,348	908					
	Jul	24,053	506	763					
2003	Total	213,583	18,746	11,044					

**Table 23. Catch, Effort, and Season Structure of the Spring Chinook Recreational Fishery in Zone 6.**

Year	Anglers	Kept	Released	Season Dates	Open Area
1999				No Season	
2000				No Season	
2001	NA	73	199	May 6-8	The Dalles - McNary
2002	7,996	1,149	875	Mar 16- May 15	The Dalles to McNary
				Apr 3-May 15	Tower Island – The Dalles
2003	15,100	1,206	863	Feb 15-May 3, May 7-10,	Tower Island – McNary, plus
				May 14-15	Oregon bank Bonn. to Tower Isl.
2004	7,600	0	0	Mar 16-May 6	Tower Island – McNary, plus
					Oregon bank Bonn. to Tower Isl.
2005	2,707	0	0	Mar 16- Apr 20, Jun 4-15	Tower Island – McNary, plus
					Oregon bank Bonn. to Tower Isl.
2006	4	0	0	Mar 16- Apr 30, May 12-Jun 15	Tower Island – McNary, plus
					Oregon bank Bonn. to Tower Isl.

**Table 24. Estimates of the Spring Chinook Stock Composition (in Thousands) in Mainstem Lower Columbia Recreational Fisheries, 1990-2006.**

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	--	5.1	2.8	0.4	17.9	--	21.1
2002	0.5	<0.1	1.4	--	1.9	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	0.5	0.2	0.8	--	1.5	1.2	0.6	5.6	--	7.4
2006	0.7	0.3	0.9	--	1.9	1.4	0.6	3.1	--	5.1

<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, 1980-2005.**

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	2437	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	1,407	37	3,602	36
2001 <sup>1</sup>	54	3	487	23	2,020	53	1,995	35	4,504	35
2002	1,466	29	510	18	1,293	36	2,051	32	5,320	30
2003	2,947	19	805	18	1,865	37	1,829	31	7,446	24
2004	2,127	13	1,210	26	6520	59	3,956	33	13,813	31
2000-2004 Average	1,426	18	681	22	2,592	47	2,248	33	6,937	30
2005	1,166	13	979	31	1,472	43	(3,799)	40	9,602	38
2006	862	12	1,491	27	3,016	40	(2,262)	40	7,631	30

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

( ) indicates preliminary.

**Table 26. Winter Season Commercial Gillnet Landings in the Zone 6 Treaty Indian Fishery, 1977-2006.**

Year	Season <sup>1</sup>	Peak Net Count	Numbers of Fish Landed <sup>2</sup>			
			Chinook	Steelhead	Sturgeon	Walleye
1977-1981	Feb 1-Apr 1 <sup>3</sup>	170	1,400	3,700	110	--
Average						
Range		87-246	30-2,800	2,600-4,900	20-220	
1982-1986	Feb 1-Mar 21 <sup>4,5</sup>	107	50	4,700	670	--
Average						
Range		61-180	5-100	3,000-7,800	70-1,700	
1987-1991	Feb 1-Mar 21 <sup>4,5</sup>	183	100	6,700	2,100	500
Average						
Range		124-299	0-280 <sup>6</sup>	2,100-10,800	1,300-3,100	130-1,030
1992	Feb 1-Mar 21 (48 days)	161 (Mar 9)	47	4,600	625 <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 <sup>8</sup> (37 days)	--	2	70	1,748	48
2005 <sup>9</sup>	Feb 1-Mar 16 <sup>10</sup> (44 days)	--	1	8	1,754	27
2006	Feb 1-Mar 21 (48 days)	--	1	139	815	186

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

2. Treaty Indian sales to licensed fish buyers.

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

4. The 1989 season ended on March 26 due to unusually cold weather during regular season. The end date for all other years was March 21.

5. Walleye sales not accounted for prior to 1989.

6. Includes two late fall Chinook in 1991.

7. Sturgeon sales prohibited beginning noon March 5.

8. The closing date for the John Day Pool was March 21 (48 days).

9. Catch statistics preliminary.

10. The closing date for the The Dalles Pool was March 19 (47 days).