



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

**JOINT STAFF REPORT
CONCERNING COMMERCIAL SEASONS FOR
SPRING CHINOOK, STEELHEAD, STURGEON, SHAD, SMELT,
AND OTHER SPECIES AND MISCELLANEOUS
REGULATIONS FOR 2004**

Joint Columbia River Management Staff

Oregon Department of Fish & Wildlife

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JOINT STAFF REPORT CONCERNING COMMERCIAL SEASONS FOR SPRING CHINOOK, STEELHEAD, STURGEON, SHAD, SMELT, AND OTHER SPECIES AND MISCELLANEOUS REGULATIONS FOR 2004

INTRODUCTION

This report is the second in an annual series the Joint Columbia River Management Staff of the Oregon Department of Fish & Wildlife (ODFW) and Washington Department of Fish & Wildlife (WDFW) produces prior to each major Columbia River Compact hearing. The second Compact hearing for 2004 management will begin at 10 AM, Thursday February 5, at the Museum of the Oregon Territory located in Oregon City, Oregon. The data and recommendations in this report were reviewed by members of the *US v Oregon* Technical Advisory Committee (TAC).

THE COMPACT

The Columbia River Compact is the entity charged with 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 salmon, steelhead, and sturgeon, the Compact must consider the effect of the commercial fishery on escapement, treaty rights, and sport fisheries, as well as the impact on species listed under the Endangered Species Act (ESA).

Although the Compact has no authority to adopt sport fishing seasons or rules, it is an inherent responsibility of the Compact to address the allocation of limited resources between sport, commercial, and tribal users. This responsibility has become increasingly demanding in recent years. The Compact can be expected to continue the recent trend of conservative management when considering fisheries that will impact listed Columbia River salmon and steelhead stocks.

SEASONS CONSIDERED

On February 5, 2004, the Compact will consider non-Indian and treaty Indian commercial winter seasons for spring chinook, steelhead, sturgeon, and smelt. Winter commercial seasons occur from January through March and spring commercial seasons occur from April through mid-May. The Compact will also be considering non-Indian commercial shad seasons which usually occur in late May and June. At this time, commercial sockeye seasons are not anticipated in 2004. Non-Indian commercial sturgeon (January through mid-February) and smelt (January through March) seasons were adopted at the December 19, 2003 Compact hearing and modifications to these seasons may be considered at the February 5, 2004 Compact hearing. Finally, there are the anchovy and herring fishery, which is open all year in the lower Columbia River, and general commercial fishery permanent rules to be considered. Other commercial seasons or modifications to seasons adopted at the February 5, 2004 Compact hearing will be considered at future Compact hearings as additional information on fish runs and ongoing fisheries become available.

STOCKS CONSIDERED

Spring Chinook

Spring chinook entering the lower Columbia River from mid-February to mid-March are predominantly large, 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 destined for above Bonneville Dam begin entering the Columbia River in substantial numbers after mid-March and generally peak in the lower Columbia River near mid-April.

Results of genetic stock identification (GSI), visual stock identification (VSI), and recovery of coded-wire tags (CWTs) indicate that spring chinook destined for the Willamette River typically comprise the majority of the chinook caught during past winter commercial seasons and March Columbia River sport fisheries. Willamette 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 were destined for the upper Columbia River and other lower river tributaries such as the Cowlitz, Kalama, Lewis, and Sandy rivers, plus Select Area sites of Youngs Bay, Tongue Point, Blind Slough, and most recently Deep River (Table 1). Early April sport fisheries and spring commercial seasons include increasing numbers of upriver stock spring chinook and 4-year old spring chinook fish destined for lower river tributaries while catches during late April seasons are predominately 4-year old spring chinook destined for the Willamette River.

Willamette River Spring Chinook

Although Willamette fish predominate in the winter gillnet season catch, the bulk of the run actually enters the lower Columbia River after the season closes. The 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 tributaries above Willamette Falls. During 1952-1968, dams were completed by the U.S. Army Corps of Engineers (USACE) on all the major east side tributaries above Willamette Falls, blocking over 400 stream miles of rearing area for wild spring chinook. Some residual spawning areas remain, including about two-thirds of the McKenzie River and about one-quarter of the North Santiam River; however, these areas are affected by upstream dams through alteration of flows and temperature. Additionally, the majority of the Clackamas River basin remains accessible although the 3-dam complex (River Miles 23-31) has impacted migration and rearing conditions in the mainstem Clackamas River. Recent estimates place the percentage of wild fish in current Willamette spring chinook runs 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) combined 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 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. A new record run size was established in 1990, with a run of 130,600 fish. The 1990 run was comprised of primarily hatchery produced spring chinook.

Current runs are predominately hatchery produced with four large hatcheries above Willamette Falls producing up to 4.4 million smolts each year, plus additional fingerlings to seed reservoir and stream areas. About three-quarters of this hatchery production is funded by USACE as mitigation for the lost production areas. Below Willamette Falls, hatchery releases in the Clackamas River total about 1.0 million smolts annually.

2003 Run

The Willamette return of 126,600 spring chinook (including jacks) entering the Columbia River in 2003 was the largest return since 1990 and the second largest run on record, continuing an increasing trend observed since the record low return of 34,800 in 1996 (Table 2). The 2003 return exceeded the preseason forecast of 109,800, exceeded the recent 5-year average of 71,800, and exceeded the Willamette Basin Fish Management Plan (WFMP) objective of 100,000 Willamette River spring chinook entering the Columbia River for the second straight year (Table 3). Wild fish comprised about 12% of the 2003 Willamette spring chinook run which is an improvement over recent years' estimates of 10%.

2003 Sport Fishery

Beginning with the adoption of the Willamette River spring chinook Fishery Management and Evaluation Plan (FMEP) in 2002, mark selective fishery regulations were required for the freshwater fisheries and all freshwater fisheries were limited to a 15% impact on wild Willamette spring chinook. Similar to the first full selective fishery in 2002, 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 again in 2003. Hatchery-produced spring chinook were nearly 100% marked with an adipose fin clip for selective fishery purposes.

The lower Willamette sport catch totaled 16,200 spring chinook (13,150 kept and 3,050 released) in 2003. The kept catch of 13,150 was the largest total since 1995 (Table 2). Angler trips in 2003 totaled 91,400 and the catch rate of 5.6 angler days to catch one Willamette spring chinook was much improved over the recent 5-year average of 8.4 angler days. The total number of angler trips in the lower Willamette River during 2003 was much higher than effort totals from the late 1990's but less than one half of the record high 236,000 trips expended in 1991. Much of this decline in lower Willamette angler trips can be attributed to the expanded fishing opportunity in the mainstem Columbia River and the commensurate effort shift.

The upper Willamette mainstem spring chinook sport fishery opened on January 1 seven days per week also under permanent mark selective regulations (only adipose fin-clipped fish could be

retained). The daily catch limit was two fish per day and selective fishery regulations were required for the third consecutive year. Release of nonadipose fin-clipped chinook was first required in the McKenzie River beginning in 1995 and was required in all Willamette River tributaries beginning in 2002. The 1980-2000 sport catch above Willamette Falls (mainstem and tributaries combined) has ranged from 1,900 to 10,900, or 6-26% of the Willamette Falls count (Table 4). The 2001-2003 sport catch totals for above Willamette Falls are not currently available because of delays in receiving and processing angler returned catch records.

2003 Escapement

For the second straight year, the Willamette Falls escapement was record high with 87,750 spring chinook passing the falls which was considerably higher than the recent 5-year average of 50,200 fish (Table 2). Since 1970, the number of spring chinook passing Willamette Falls has ranged from 20,600 to the new record high of 87,750 and averaged 41,900 fish.

In December 2001, the OFWC adopted a revised Willamette 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. Unlike previous management plans, the sliding scale for escapement was not designed to increase wild fish escapements but to provide for enhanced tributary fisheries when runs are large. Wild fish escapements are protected through the full implementation of mark selective fisheries.

Preliminary returns to Leaburg Dam in the McKenzie River during 2003 totaled 9,913 (5,500 wild) fish as compared to the preseason expectation of 5,100 total fish. The total return is the largest in the database, dating back to 1970. The total spring chinook passage over Leaburg Dam averaged 4,900 during the strong return years of 1988-1993 and 1,600 during the poor return years of 1994-1999. Escapement of wild spring chinook past Leaburg Dam has only been estimated since 1994, during which time wild counts have ranged between 825 and 5,500. The preliminary estimate of 5,500 wild spring chinook past Leaburg Dam in 2003 would be the largest count in the database and was within the range of escapement goals set forth in the McKenzie River spring chinook chapter of the WFMP.

The return to North Fork Dam on the Clackamas River in 2003 was a record high of 9,984 which more than doubled the preseason expectation of 4,000 total fish. The spring chinook passage over North Fork Dam averaged 3,500 during the strong return years of 1988-1993 and 1,400 during the poor return years of 1994-1999.

The hatchery egg take needs for the combined Willamette and Clackamas River programs have been met annually from 1980-2003, excluding 1984. Also in 1994, the McKenzie River Hatchery achieved only 67% of the eggs necessary for the McKenzie River smolt program goal; however, other Willamette and Clackamas River hatcheries met their egg take goals that year. The 2003 spring chinook count at Willamette Falls of 87,749 fish (85,898 adults) resulted in 25,528 returning to upper Willamette River hatcheries.

With an exceptional return of upriver spring chinook (208,900 adults), the Columbia River treaty tribes were able to meet their minimum ceremonial and subsistence (C&S) entitlement, as set forth in the expired Columbia River Fish Management Plan (CRFMP), through their own fishing

efforts; therefore, no Willamette hatchery spring chinook were provided to the Columbia River tribes as part of the minimum C&S entitlement. Some surplus fish from upper Willamette hatcheries were either provided to Oregon coastal Indian tribes or supplied to local food banks. Additionally, surplus spring chinook returning to upper Willamette River hatcheries were either passed upstream or recycled downstream through fisheries.

2004 Forecast

The ODFW staff is projecting a return of 109,400 Willamette spring chinook to the Columbia River mouth in 2004. Age specific returns are expected to total 1,900 3-year olds, 64,800 4-year olds, 41,200 5-year olds, and 1,500 6-year olds. The 2004 forecast includes adjustments for expected ocean harvest in Canadian and Southeast Alaskan fisheries. The 2004 forecast is similar to the 2003 preseason forecast of 109,800, but is less than the 2003 actual return of 126,600 (Table 3). The 2004 preseason forecast is comprised of 59% 4-year old fish, unlike the 2003 actual return which was nearly 62% 5-year olds. The 2004 return of 109,400 fish is expected to include about 13,100 wild fish (12% of total return) which would be slightly less than the preliminary estimate of 15,200 wild fish which returned in 2003.

Clackamas River Spring Chinook

The return of spring chinook (including jacks) to the Clackamas River in 2003 totaled 15,400 fish, which is the largest return on record and exceeds the recent 5-year average of 9,600. Wild fish comprised approximately 24% (3,760 fish) of the 2003 Clackamas River spring chinook run. The run entering the Clackamas River has increased from an annual average of 2,600 chinook in the 1970s, 8,200 in the 1980s, 8,700 in the 1990s, and 12,100 in the new millennium. 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 2003 Clackamas return exceeded the average annual run size goal (12,400 fish entering the Clackamas River) stated in Objective 6 of the Clackamas River spring chinook chapter of the WFMP for the second year.

2003 Sport Fishery

The 2003 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 sport fishery. In accordance with the Willamette River spring chinook FMEP, a full selective fishery with only adipose fin-clipped salmon retained was in effect for the third year in the lower Clackamas River. The 2003 lower Clackamas sport fishery catch totaled 1,660 spring chinook (1,345 kept and 315 released) from 11,700 angler trips. The total catch was similar to the recent 5-year average of 1,900 and the angler trip total was slightly less than the recent 5-year average of 12,900. The catch rate of 7.1 angler days to catch one Clackamas River spring chinook was similar to the recent 5-year average of 6.6 angler days per fish.

2003 Escapement

The North Fork Dam count of 9,964 spring chinook in 2003 included 3,647 unmarked fish that were passed upstream and 6,337 marked fish that were recycled downstream to provide additional sport fishing opportunity or sold to a wholesale fish buyer at Clackamas Hatchery. Additionally, about 500 fish remained below North Fork Dam in 2003 of which 140 fish were

observed spawning. The 3,647 spring chinook that passed over North Fork Dam exceeded not only the interim escapement goal of 400-800 adults set forth in objective 4 of the Clackamas River spring chinook chapter of the WFMP, but also surpassed the long term escapement goal of 2,900 adults past North Fork Dam as set forth in objective 5 of the Clackamas River chapter. The dam count has increased from an annual average of 500 in the 1970s, 2,600 in the 1980s, 2,300 in the 1990s, to 5,300 in the new millennium. 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. In 2003, a total of 3,630 fish returned to Clackamas Hatchery; of which 98 were unmarked and released back into the river.

Sandy River Spring Chinook

Fish returning to the Sandy River originate from transferred hatchery stocks produced in the Willamette River system. Spring chinook smolt releases were initiated in 1976 and subsequently doubled beginning in 1986. The purpose of these releases was to supplement the depleted native run with Willamette spring chinook. The Marmot Dam count has increased from an average of 124 fish during 1954-1970, to 1,000 during the 1980s, to 2,900 during the 1990s. The NMFS combined spring and fall chinook destined for Columbia River tributaries below the mouth of the Klickitat River (excluding the Willamette River Basin spring chinook) to 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 minimum spring chinook run entering the Sandy River is the sum of Marmot Dam passage plus sport catches below Marmot Dam. The preliminary 2003 Sandy run size of 6,400 is the second largest return since 1993 and exceeds the recent 5-year average of 4,800. The 2004 Sandy River forecast of 5,200 spring chinook is based on the recent 5-year average and would be less than the 2003 return of 6,400 (Table 5). The total return to Marmot Dam in 2003 was 3,950 fish. Wild spring chinook totalled 1,241 fish with the majority passing the Marmot facility to spawn naturally in the upper Sandy basin and about 190 collected as broodstock for the hatchery program. Wild run size forecasts are not available for Sandy River spring chinook at this time.

2003 Sport Fishery

For the second year, the Sandy River spring chinook sport fishery was conducted under selective fishing regulations which required the release of all nonadipose fin-clipped spring chinook. The sport fishery for spring chinook in the Sandy River is not sampled for catch and effort; therefore, catch is estimated from angler returned catch records. Catch records for 2001-2003 are not available at this time due to delays in receiving and processing angler returned catch records. Since 1986 harvest rates in the Sandy River have ranged between 28% and 54% and averaged 38%. Based on the average harvest rate and the Marmot Dam escapement of 3,950, the projected sport catch for 2003 is 2,400 fish.

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 stocks with the majority of the run passing through the lower Columbia River from mid-March to mid-May. Contribution of this run is included under "other lower river" in Table 1 and "Cowlitz, Kalama, and Lewis rivers combined (adults)" in Table 3. Estimated adult returns to the Cowlitz, Kalama, and Lewis rivers for recent years are shown in Table 5. The NMFS combined spring and fall chinook destined for Columbia River tributaries below the mouth of the Klickitat River (excluding the Willamette River Basin spring chinook) to 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. Beginning in 2002, spring chinook sport fisheries in the Cowlitz, Kalama, and Lewis rivers were managed using selective fishery regulations that required the release of all non-adipose fin-clipped spring chinook.

Cowlitz River Returns

The adult return of 13,400 spring chinook in 2003 was significantly larger than the range of low returns observed since 1994. The hatchery escapement of 11,000 adults surpassed the 1,150 fish escapement goal. The natural spawning escapement of 1,900 adults is well above the recent 5-year average. The preseason forecast resulted in a sport fishery that produced a total catch of 400 hatchery fish (Table 6).

The forecast for the Cowlitz River in 2004 is for a return of 15,900 adult spring chinook of which 65% are expected to be age 5 fish. A return of 15,900 adults would be the largest return since 1987 and would represent the fourth consecutive year of increasing run sizes. Adult returns had been in a general pattern of decline since 1984 and had stabilized at low levels during 1994-2000 when adult returns ranged between 1,100-3,100 and averaged 1,900. An adult run size of approximately 1,400 is needed to achieve the 1,150 fish minimum hatchery escapement goal because a portion of the run spawns naturally. Surplus hatchery fish are available to support a sport fishery in 2004.

Kalama River Returns

The adult spring chinook return of 5,100 fish to the Kalama River in 2003 was the largest return since 1982. The hatchery return of 3,000 adults exceeded the hatchery escapement goal of 450. Escapement included more than 2,000 adults passed upstream to spawn in the area above the hatchery barrier. The natural spawn escapement for the reach downstream from the hatchery barrier was less than 800 adults. The preseason forecast resulted in a 7-day per week sport fishery in 2003 with a catch of 1,300 hatchery fish (Table 6).

The forecast for the Kalama River in 2004 is for a return of 6,000 adult spring chinook, which would exceed the actual return in 2003. Age 4 fish are expected to comprise 66% of the 2004 forecast. The 2004 forecast shows continued improvement from the extremely poor return years of 1995-1998 when returns ranged between 400 and 700 adults annually and would represent the largest return since 1982. A run of approximately 600 adults is needed to achieve the 450 fish

minimum hatchery escapement goal because a portion of the run spawns naturally. The 2004 forecasted return would be adequate to support a full area sport season.

Lewis River Returns

The adult spring chinook return of 4,200 fish to the Lewis River in 2003 was the strongest return observed since 1993. The hatchery return of 2,600 adults achieved the hatchery escapement goal of 700 adults. Natural spawning escapement was 700 adults. The sport fishery was not restricted by area and daily catch limits due to the strong preseason forecast. Sport catch totaled 1,000 hatchery adults in 2003 (Table 6).

The forecast for the Lewis River in 2004 is for a return of 5,400 adult spring chinook of which 76% are expected to be age 4 fish. A return of 5,400 would be similar to the 2003 return and larger than the 2002 return of 2,900. Adult returns had been in a general state of decline since 1989, which appears to have culminated with the record poor return of 1,600 adults in 1998. During 1999-2001 returns remained low, ranging between 1,800-2,200 adults. An adult return of approximately 1,600 is needed to achieve the 700 fish minimum hatchery escapement goal because a portion of the run spawns naturally. Surplus hatchery fish are available to support a sport fishery in 2004.

Select Area Spring Chinook

The spring chinook program in Select Areas began modestly in 1989 with the Clatsop County Economic Development Council (CEDC) conducting releases of primarily sub-yearling (age-0+) juveniles from net pens in Youngs Bay and the South Fork Klaskanine Hatchery through 1992. No fish were released in 1993 to accommodate a change in rearing strategies from sub-yearling (0+) to yearling (1+) life history patterns starting in 1994. Beginning in 1995 the Bonneville Power Administration (BPA) funded the Select Areas Fisheries Evaluation (SAFE) Program which allowed for expansion of the SAFE spring chinook program. Currently, adult spring chinook returning to Select Areas originate from transferred hatchery stocks that are acclimated in net pens located in Youngs Bay and Blind Slough in Oregon plus Deep River in Washington. Spring chinook releases in Oregon Select Areas are Willamette stock while the Washington site utilizes Cowlitz and/or Lewis stocks. Juvenile spring chinook are reared to smolt size in hatcheries supported by the BPA-funded SAFE Project: Gnat Creek Hatchery in Oregon and Grays River Hatchery in Washington. Prior to release, smolts are acclimated for two to four weeks in net pens located in SAFE sites that have good water quality for rearing fish and are conducive for developing known-stock terminal fisheries.

Prior to 1994 most spring chinook released from the SAFE Project were sub-yearling fish with only 54,300 smolts released in 1990 and 32,000 smolts released in 1992. Since 1994 only spring chinook smolts have been reared in Youngs Bay with releases averaging 386,000 fish annually. Releases of smolts into Tongue Point and Blind Slough began in 1996. Since 1996 smolt releases into Blind Slough have ranged between 171,200 and 426,300 smolts annually, with an average annual release of 254,000 fish. During 1996-2000 releases into Tongue Point ranged between 224,300 and 301,800 smolts annually; however, excessive straying resulted in termination of full scale releases in 2000. To resolve this issue, a new rearing site is currently being developed at the MERTS dock approximately 1.2 miles upstream (east) of the present site. In 2003, the first of three experimental groups of ~35,000 spring chinook treated with a chemo-

attractant (morpholine) was released from this site along with a non-treated group of ~25,000 smolts released approximately 3.0 miles up the John Day River. The actual combined release in 2003 from these two sites was 57,800 smolts. Consequently, full-fleet winter or spring commercial fisheries are not anticipated at the Tongue Point site until 2007 or later. Releases into Deep River began in 1998 and have ranged from 39,700-159,600 annually except in 2000 when no spring chinook were released. Spring chinook releases in all Select Areas combined have ranged between 892,800 and 1,077,700 smolts annually since 1996. Spring chinook releases are expected to increase in future years because coho production at CEDC's South Fork Hatchery was converted to spring chinook in 2003. Spring chinook releases from CEDC's South Fork Hatchery will be initiated in 2004 with a total release of approximately 650,000 smolts. Beginning with the 2001 releases (1999 brood year) all spring chinook hatchery production in SAFE areas have been mass marked with an adipose fin clip.

2003 Run

Since Select Area spring chinook originate from transferred hatchery stock that are acclimated in net pens, fisheries are adopted with the intent of harvesting 100% of the returning adults to minimize straying and maximize economic value of the returns. Commercial landings of chinook salmon in 2003 Select Area winter-summer fisheries totaled 7,820 chinook (7,647 spring chinook) of which 5,316 were landed in Youngs Bay, 348 were landed in Tongue Point, 2,039 were landed in Blind Slough, and 117 in Deep River. The 2003 combined chinook harvest of 7,820 in SAFE fisheries represents 67% of the record 2002 harvest of 11,699 chinook salmon but is comparable to landings in 2000-2001 of 6,496 and 9,269 fish, respectively.

2004 Forecast

Smolts released in 2002 and 2001 will return as age-4 and age-5 adults in 2004. Based on a total release of 1.8 million smolts, survival rates of 1998-1999 brood years for each site, and average non-target harvest rates, the expected SAFE harvest in 2004 is for 7,200-8,200 adult chinook of which 4,100-4,500 will be destined for Youngs Bay, 2,400-2,900 for Blind Slough, and 700-800 for Deep River. No adults are expected to return to the Tongue Point site in 2004 since production-level releases of spring chinook were discontinued at this site in 2000. A return of 7,200-8,200 chinook to Select Areas would be less than the 2000-2003 average annual harvest of 8,800 fish.

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 (below Bonneville Dam) during April and early May. All chinook passing Bonneville Dam from March through May are counted as upriver spring chinook (Figure 1). The upriver run size is the sum of the Bonneville Dam count and the number of fish of upriver origin landed in lower river fisheries (kept catch plus release mortalities) during February through May (Table 7).

The upriver spring chinook run is comprised of stocks from three geographically separate production areas: 1) the Columbia River system above 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, it can be assumed those runs were predominantly wild. Hatchery production in the 1960s and early 1970s was very limited in comparison to current production. Since the 1970s, spring chinook hatchery production in the upriver system has expanded to the point that in recent years about two-thirds of the 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. 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. The expired CRFMP included interim management goals of 115,000 adult spring chinook passing Bonneville Dam and 35,000 passing Lower Granite Dam, of which 25,000 should be wild/natural fish.

In general, runs were extremely poor in 1979-1984 (49,000-71,000 fish) with a low point in 1984. The returns in 1985-1993 (60,000-121,000 fish) were somewhat improved, with a high point in 1986. The 1994 and 1995 runs were the lowest on record at 21,100 and 10,200, respectively. The 1996 run of 51,500 and the 1997 run of 114,100 showed an improvement after the 2-year low; however, the 1998 and 1999 returns, which were primarily offspring of the record low returns in 1994 and 1995, were near record lows at 38,400 and 38,700, respectively. The 2000 return of 178,600 showed a dramatic improvement which continued in 2001 and 2002 and the 2001 return of 416,500 fish was the largest return on record (since 1938), and the 2002 return of 295,100 as the second largest return on record.

2003 Run

The preseason prediction for the 2003 upriver spring chinook run was 145,400 adults and the actual run entering the Columbia River was 208,900. Based on fish sampled at Bonneville Dam, the age 5 component made up about 60% of the total adults. The 5-year old component of the return greatly exceeded the preseason expectation and was the largest return of that age class in the database (since 1989).

2004 Forecast

The 2004 forecast is for another very strong return of 360,700 adult upriver spring chinook to the Columbia River which is projected to include 339,200 4-year olds and 21,500 5-year olds. This would be the second largest return on record since 1938. A comparison of predicted and actual upriver adult returns for 1980-2003 is shown in Table 3.

Upriver Summer Chinook

All chinook passing Bonneville Dam from June 1 through July 31 are counted as summer chinook (Figure 1). The summer chinook run is destined for production areas and hatcheries above Priest Rapids (upper Columbia River stock) and Lower Granite (Snake River stock) dams. Since 2002, the majority of the hatchery production returning to the Columbia River basin was mass marked with an adipose fin clip. The upriver run size is the sum of the Bonneville Dam count and catch or mortalities in lower river fisheries during late May through July. The Snake River wild summer chinook were combined with Snake River wild spring chinook to form a single ESU that has been listed as a threatened species under the ESA since May 1992. The

Interim Management Agreement provides for an escapement goal of 85,000 summer chinook at Bonneville Dam.

2003 Run

During 1973-2000, the summer chinook adult returns were at record low levels, but fairly stable, ranging between 15,000 and 38,700. The return in 2001 increased significantly to 76,400 adults and in 2002 a record high 129,000 summer chinook adults returned to the Columbia River. The 2003 return of 116,900 summer chinook to the Columbia River was the second largest run since 1960 (Table 8). The Bonneville Dam escapement goal of 80,000-90,000 was again achieved in 2003. A selective sport fishery for marked summer chinook was adopted in 2003 during the summer chinook time frame (June-July) and a total of 1,850 summer chinook hatchery adults were harvested below Bonneville Dam. The summer chinook returns to the upper Columbia River, as measured at Priest Rapids Dam, was 83,000 fish which is the second largest count since Priest Rapids Dam was built in 1959 (Table 10).

2004 Forecast

The projection for the 2004 summer chinook run is for a strong return of 102,800 adults to the Columbia River. The 2004 forecasted return is less than the record returns observed in 2002 and 2003, but would be the third largest return overall.

Upriver Spring/Summer Chinook

In 2003 the TAC completed an assessment of run timing of spring and summer chinook destined for the Snake River and Upper Columbia River (upstream of Priest Rapids Dam) basins. Analysis of PIT tag data indicates that a differential run timing exists between Snake River summer chinook and the Upper Columbia River summer chinook with the Snake River component being earlier timed than the Upper Columbia River component. The TAC developed two new databases: 1) combines upriver spring chinook with Snake River summer chinook and 2) includes only Upper Columbia summer chinook (Tables 9 and 10). The listed portion of the combined upriver spring/Snake River summer chinook run will be used to determine impacts to spring and summer chinook stocks listed under the ESA in the future. Upper Columbia River summer chinook are not listed under the ESA.

2003 Run

The combined return of upriver spring chinook (includes Snake River springs) and Snake River summer chinook totaled 242,600 adults which is the third largest return in the database (Table 9). Returns of wild fish included 62,300 adult spring/summer chinook destined for the Snake River Basin and 2,600 adult spring chinook destined for the Columbia River Basin above Priest Rapids Dam. The Snake River wild spring/summer chinook run size was the largest in the database (since 1979) while the upper Columbia wild summer chinook run size was the lowest since 1999 (Table 11 and 12). The total upper Columbia summer chinook run size of 83,100 adults was the second largest return in the database (since 1979) and was exceeded only by the 2002 return of 92,800 adults (Table 10).

2004 Forecast

The combined upriver spring/Snake River summer chinook run is forecasted to total 394,400 in 2004, which would be the second largest return in the database (Table 9). The upriver spring/Snake River summer chinook run is comprised of 360,700 adult upriver spring chinook and 33,700 adult Snake River summer chinook with the upriver spring chinook forecasted return to be a 160% increase over the 2003 return of 208,900 and the Snake River summer chinook forecast is similar to the 2003 return of 33,800 adults. The Snake River wild spring/summer chinook run is forecasted to total 46,200 adults which is less than the 2003 return of 62,300 adults but would still be the third largest return in the database (Table 11). The forecasted upper Columbia wild spring chinook return of 3,400 is an improvement from the 2003 return of 2,600 but would still be less than the stronger return years of 1979-1990 when returns ranged between 5,400 and 10,900 adults (Table 12). The upper Columbia adult summer chinook return is forecasted to total 69,100 adults which would be the third largest return in the database, exceeded only by 2001 and 2002 when adult returns totaled 92,800 and 83,100, respectively (Table 10).

Sockeye

Sockeye salmon migrate through the lower Columbia River during June and July, with normal peak passage at Bonneville Dam around July 1 (Figure 1). Sockeye runs include fish from the Okanogan and Wenatchee rivers in the upper Columbia River basin plus a remnant Snake River run that has been listed as endangered since December 1991. The Wenatchee stock generally migrates earlier than the Okanogan stock although run timing overlaps. Current run timing information for the Snake River stock is not available. The goal of 65,000 sockeye salmon at Priest Rapids Dam, as described in the Interim Management Agreement, requires 75,000 fish past Bonneville Dam, assuming average migration conditions.

2003 Run

The preseason forecast for sockeye in 2003 was for a return of 22,100 fish to the Columbia River, as compared to the actual return of 39,400 fish. The 2003 return was the smallest return since 1999 and the fifth smallest return since 1980 (Table 13). Stock composition estimates, based on run reconstruction data, for the 2003 return include 7,100 Wenatchee stock, 32,300 Okanogan stock, and 28 Snake River stock.

The escapement goal of 65,000 at Priest Rapids Dam was not achieved in 2003 with a count of only 36,300 sockeye. The Priest Rapids Dam escapement goal has been achieved only twice (2000 and 2001) since 1993. The escapement of Wenatchee stock was 4,400 and the escapement of Okanogan stock past Wells Dam was 28,800. A total of 14 sockeye were counted at Lower Granite Dam in the Snake River.

2004 Forecast

An estimated 80,600 sockeye are expected to enter the Columbia River in 2004 which would be a significant improvement over the poor returns of the last two years. The return is expected to be comprised of 27,500 Wenatchee stock, 53,000 Okanogan stock, and 154 Snake River stock.

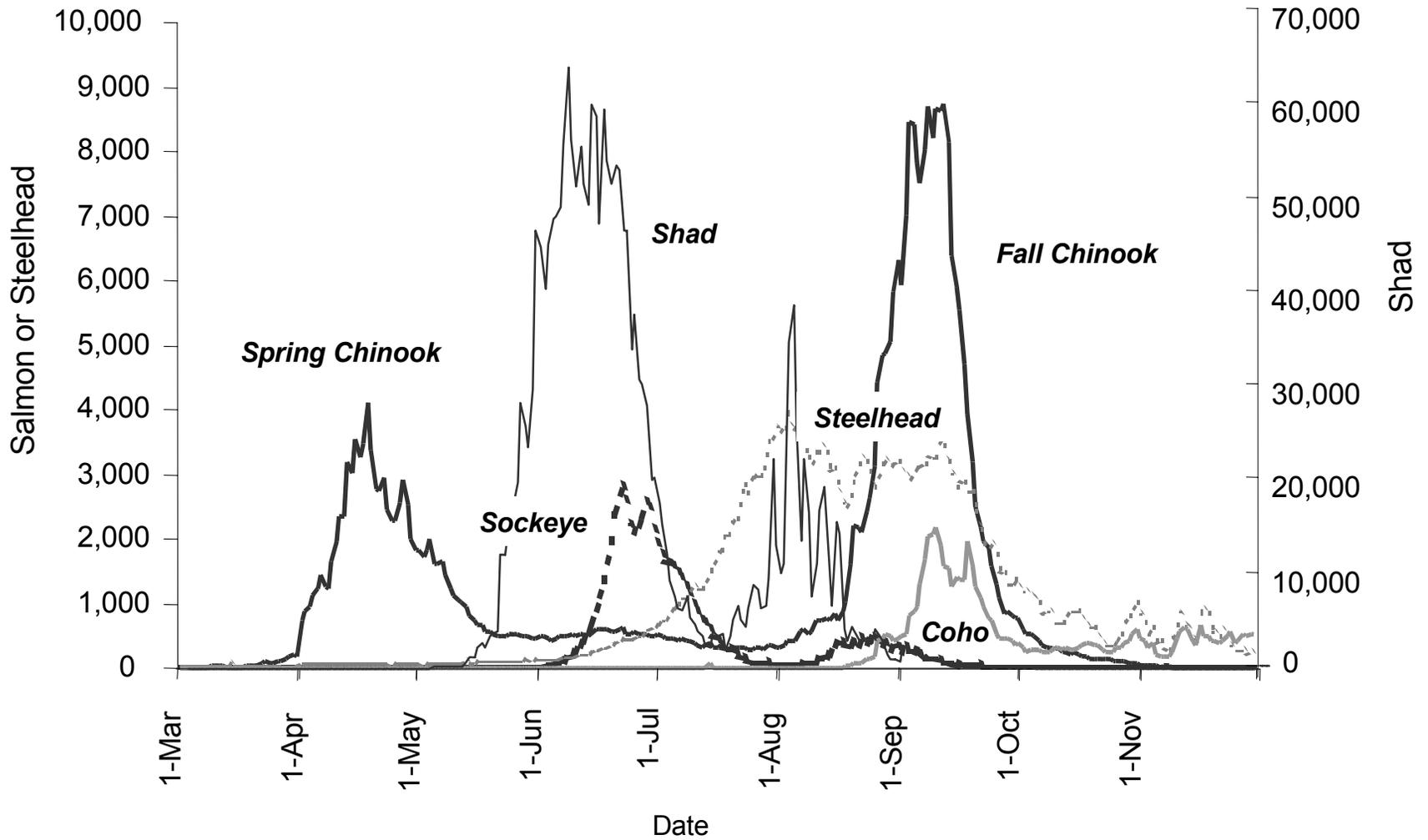


Figure 1. Average Daily Counts of Salmon, Steelhead, and Shad at Bonneville Dam, 1986-2002.

Summer Steelhead

The Columbia River summer steelhead run is comprised of populations from lower river and upper river tributaries. Summer steelhead enter fresh water over a protracted time period (March through October) each year. The lower river component of the run is primarily hatchery produced, derived from Skamania stock, and tends to be earlier timed than the upriver stocks with abundance peaking during May and June. Lower river summer steelhead return to the Elochoman, Cowlitz, Kalama, Lewis, and Washougal rivers in Washington and the Willamette and Sandy River basins in Oregon. In addition, hatchery fish of the Skamania stock are released annually in Bonneville Pool tributaries of both states. Summer steelhead caught on the mainstem lower Columbia River through June each year are classified and counted as Skamania stock. The lower Columbia River wild 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; however, those counted at Bonneville Dam in April, May, and June are now considered Skamania stock returning to Bonneville Pool tributaries and are therefore included in the lower Columbia River ESU (Figure 1). The majority of the upriver run is comprised of Group A and Group B fish. 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 10 pounds) fish that spend one or two years at sea and return to tributaries throughout the mid and upper Columbia River system plus the Snake River basin. The later arriving Group B fish are larger (over 10 pounds), typically having spent two or three years at sea and only return to Idaho's upper Clearwater and Salmon River subbasins in the Snake River system. The NMFS has further divided the upriver summer steelhead run into three ESU's: (1) the middle Columbia ESU (wild fish only) which was listed as threatened on May 24, 1999, (2) the upper Columbia ESU (hatchery and wild fish) which was listed as endangered on May 24, 1999, and (3) the Snake River ESU (wild fish only) which was listed as threatened on October 17, 1997.

Since 1984, summer steelhead passing Bonneville Dam have been randomly sampled throughout the run (April-October) to ascertain age and size composition plus hatchery to wild ratios of each year's return. Prior to 1999, managers used the date method which classified the Group A run as all fish counted during April 1 through August 25 and the Group B run as all fish counted during August 26 through October 31. Based on the date method, the expired CRFMP had an interim management goal of 75,500 wild steelhead (62,200 Group A and 13,300 Group B) at Bonneville Dam, which was expected to provide 30,000 wild escapement above Lower Granite Dam under past production and average upstream passage conditions.

During recent years, the Group A and Group B runs have not shown the bimodal peaks and there has been considerable overlap between the two runs. In an attempt to alleviate the problems overlapping runs created for fisheries management, a new method (index method) of assessing the relative returns of Group A and Group B steelhead was developed by the TAC in 1999. The index method classifies all fish counted during April 1-June 30 as Skamania Index, July 1-October 31 that are less than 78 cm fork length as Group A Index, and July 1-October 31 that are greater than or equal to 78 cm fork length as Group B Index. The index method will be used to estimate run sizes and to make inseason fishery management decisions pertaining to the ESA. No escapement goals have been developed based on the index method; however, since 1999

fisheries impacts have been limited to less than 17% of the wild Group B Index steelhead return. The date method will continue to be tracked and used as a historical index.

2003-2004 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). The 2003-2004 run is still in progress at upriver dams, some harvest has yet to occur, and escapement estimates are incomplete. Final run size data will be included in the *"Joint Staff Report Concerning 2004 Fall In-River Commercial Harvest of Columbia River Fall Chinook Salmon, Summer Steelhead, Coho Salmon, Chum Salmon, and Sturgeon"* but preliminary estimates are included in this report. Based on preliminary run reconstruction data the total 2003-2004 summer steelhead run of 416,000 was the fifth largest return during the post Bonneville Dam era (since 1938). Run size estimates and dam counts, based on the date method, through 2003 for lower river, Group A, and Group B summer steelhead are presented in Tables 14-15. The Group A Index steelhead total return of 304,500 fish was the third largest and the 66,400 wild return was the fourth largest observed since sampling began in 1984. However, the Group B Index steelhead total and wild returns of 38,500 and 6,500 respectively were the smallest observed since 1999 (Table 16). Run size and wild escapement at Lower Granite Dam are included in Table 17; however, the 2003-2004 count at Lower Granite Dam will not be complete until May 31, 2004.

2004-2005 Forecast

Using the index method, the 2004-2005 prediction for upriver summer steelhead at Bonneville Dam of 388,100 fish (306,600 Group A Index, 63,200 Group B Index, and 18,300 Skamania Index) would be the eighth largest return past Bonneville Dam since counting began in 1938. Run size forecasts for 2004-2005 are based on the recent 5-year averages with independent estimates being produced for Group A Index and Group B Index, and wild and hatchery fish (Table 16). The Group A Index predicted return at Bonneville Dam for the 2004-2005 run year is 306,600, of which 82,400 (27%) are expected to be wild. The total return would be the third largest since 1984 and the wild component would be the fourth largest since 1984. The Group B Index predicted return at Bonneville Dam for the 2004-2005 run year is 63,200, of which 12,700 (20%) are expected to be wild. The total return would be the sixth largest return since 1984 and the wild component would be the second largest since 1989 (Table 16). No prediction was made for lower river summer steelhead returning in 2004.

Shad

Shad are an introduced species brought to the West Coast from Pennsylvania stock in the 19th century. Since the extensive development of mainstem hydro-electric 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 1970's, all shad runs have exceeded 1 million fish, with a peak of nearly 5 million in 2003. Shad run timing extends from mid-May through early August at Bonneville Dam, with peak daily counts occurring in June (Figure 1). Since the run timing of the prolific shad runs overlap with upriver chinook, sockeye, and steelhead runs, harvest opportunities are strictly regulated to minimize handle and impact on ESA listed salmonids.

2003 Run

The 2003 shad run size was a minimum of 4,790,000, with a minimum spawning escapement of about 3,218,000 above The Dalles Dam, plus an unknown number below The Dalles Dam. The non-Indian (lower Columbia and Willamette rivers) sport and commercial combined catches of 231,546 fish was about 5% of the minimum estimated shad run size. The 2003 minimum shad run in the Columbia River, at nearly 4.8 million fish, is the largest shad run on record with the previous record return of 4.0 million fish set in 1990 (Table 18).

REVIEW OF MAINSTEM AND SELECT AREA FISHERIES

Non-Indian Fisheries

Past Lower River Mainstem Winter Gillnet Salmon Seasons

Winter gillnet salmon season dates have been established since 1878. Past season dates were January 1-March 1, 1878-1942; January 29-March 1, 1943-1958; February 15-March 1, 1959-1967; and since 1968 (excluding 1995 and 1997-1999) seasons opened as early as February 10 and closed as late as March 11 with seasons varying from one to 20 days. No lower river winter gillnet salmon seasons occurred 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 19. Since 1970, chinook landings have ranged from 100 to 18,300 fish. A minimum mesh size restriction of 7-¼ inches was placed on the fishery in 1970 to reduce steelhead handle. Subsequent to the prohibition on the sale of steelhead in 1975, the minimum mesh size restriction was increased to 8 inches which continued through 2001. 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. 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).

During the 1975-1990 winter salmon seasons, the Joint Staff estimated that an average of about 250 steelhead were handled each fishing day, with a seasonal average of less than 500 dead steelhead annually. The steelhead estimates were based on changes in time, area, and mesh size regulations plus observations made onboard gillnet boats during 1970-1977 and 1986 winter salmon seasons. Monitoring data collected indicated that about 17% of the steelhead handled were immediate mortalities, which corresponds to an average of 40 steelhead mortalities per day. Based on observations during the 1991-1993 winter salmon seasons in the Marine Mammal Observer Program, less than 100 steelhead per fishing day were handled, with 17% assumed to be immediate mortalities based on the aforementioned sampling data. This provided a current average of 16 steelhead mortalities per fishing day, considerably less than the 40-per-day average assumed for prior winter salmon seasons.

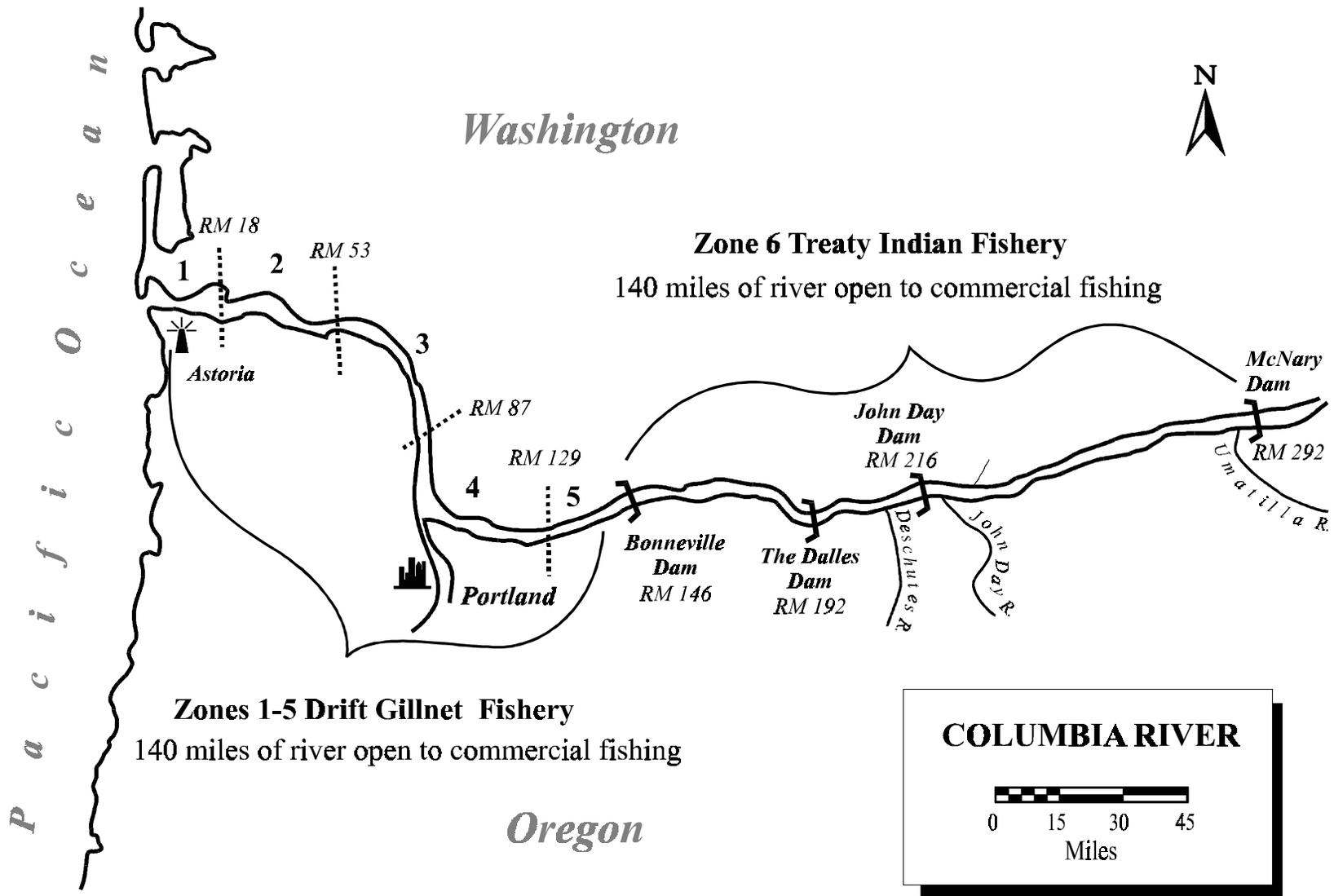


Figure 2. Map of the Columbia River Below McNary Dam Showing Areas Open to Commercial Fishing.

White sturgeon have been an important commercial species during winter salmon seasons. Catches ranged from 500-1,200 during the 1989-1993 winter salmon seasons. White sturgeon landings during winter salmon seasons comprised 10-21%, and averaged 15%, of the total annual white sturgeon gillnet landings during 1989-1993. Sturgeon management and quotas changed several times between 1993 and 1997. These changes culminated with the adoption of the original Olympia Accord on sturgeon management by Oregon and Washington in October 1996, and since 1997 sturgeon management has been guided by three joint state agreements on sturgeon management. Since 1997 sturgeon directed fisheries have operated from early January through mid-February with landings during winter sturgeon seasons averaging 2,400 white sturgeon or 22.6% of the annual white sturgeon gillnet landings. More detailed information concerning past sturgeon management can be found in the document titled "*Joint Staff Report Concerning Commercial Seasons for Sturgeon and Smelt in 2004*".

The adoption of the Willamette River spring chinook FMEP required the release of unmarked spring chinook in commercial fisheries. The initial live capture commercial fishery requiring the release of non-adipose fin-clipped spring chinook occurred in the spring of 2001. The 2001 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 time frame and resulted in a kept catch of 1,300 adipose fin-clipped spring chinook. The first live capture demonstration commercial fishery that included participation of the entire fleet occurred in 2002. The 2002 fishery regulations included a 5½" maximum mesh size restriction, soak times not to exceed 45 minutes, use of recovery boxes on lethargic fish and sales of only adipose fin-clipped chinook. The season consisted of 15 fishing days between February 25-March 27 and produced a kept catch of 14,200 adipose fin-clipped spring chinook. Steelhead handle exceeded expectations with a total of 20,900 steelhead (8,400 marked and 12,400 unmarked) handled in the fishery. Additionally, the use of 5½" mesh gear in this fishery resulted in a non-benign handle of steelhead with the majority of the steelhead handled in this fishery being captured by the gills or the body which reduces survival rates of released fish.

2003 Lower River Winter Gillnet Season

For the third consecutive 3-year period (2003-2005), the Oregon and Washington Fish and Wildlife Commissions adopted a Joint State Agreement on Columbia River Sturgeon Fishery Management. The agreement for 2003-2005 retained major tenets of the original 1997-1999 Olympia Accord on sturgeon management which included allowing target sturgeon seasons to access the commercial white sturgeon catch allocation; however, the harvestable number was reduced from 50,000 to 40,000 white sturgeon (32,000 for sport fisheries and 8,000 for commercial fisheries) beginning in 2003. The reduced commercial catch guideline required additional restrictions on commercial fisheries beginning in 2003 to ensure that landings did not exceed the 8,000 white sturgeon catch guideline. Management of white sturgeon retention in commercial fisheries during 2003-2005 was considered at two public meetings and two Compact hearings that occurred during the December 2002-February 2003 time period. Discussions culminated at the February 6, 2003 Compact hearing with the adoption of a protocol for management of white sturgeon retention in 2003-2005 commercial fisheries. The key features of the adopted protocol were commercial catch guidelines for the January-July (2,000 white sturgeon), August (2,000 white sturgeon), and September-October (3,600 white sturgeon) timeframes and allocation among individual commercial fishers via per vessel possession and

sales limits. Additionally, SAFE fisheries were allocated 400 white sturgeon, of which only 300 could be sold prior to August 1.

The winter season target sturgeon fishery was managed in accordance with the Joint State Management Agreement and the anticipated adoption of the commercial fishery sturgeon retention protocol. A 2003 winter target sturgeon season consisting of six consecutive 30-hour weekly fishing periods from noon Tuesdays to 6 PM Wednesdays during January 7 through February 12 in all of Zones 1-5 was adopted at the December 18, 2002 Compact hearing. Both 9-inch minimum and 9¾-inch maximum mesh size restrictions were adopted for this season to minimize the catch of chinook, the handle of steelhead and sublegal sturgeon, and to facilitate the catch of legal-size sturgeon. All chinook sold were also required to have an adipose fin-clip. Preseason catch expectations for the six weeks were 1,500 white sturgeon and up to 200 chinook and the fishery was managed not to exceed the 1,500 white sturgeon catch expectation. Catches started out strong with nearly 400 sturgeon landed in each of the first three weeks for a total of 1,162 white sturgeon. At the January 24, 2003 Compact hearing the final fishing period was eliminated and the remaining two periods were reduced to 12-hour periods from 6 AM to 6 PM Tuesdays on January 28 and February 4. The fourth fishing period resulted in a catch of 330 white sturgeon and the final fishing period, scheduled for February 4 was eliminated at the January 31, 2003 Compact hearing to remain within the 1,500 catch expectation. The final lower river winter gillnet season landings totalled 1,490 white sturgeon and 2 spring chinook. The spring chinook stock composition for the winter gillnet season was based on run timing with the catch being comprised of 2 lower river fish.

2003 Demonstration Lower River Salmon Season

For the second consecutive year a full fleet live capture commercial spring chinook fishery was conducted in the lower Columbia River. The live capture fisheries were adopted in response to the Willamette Spring Chinook FMEP that required the release of wild Willamette spring chinook in all freshwater fisheries. The 2003 fishery occurred from the mouth upstream to Kelley Point (Zones 1-4) with allowable sales of adipose fin-clipped salmon and sturgeon. As was the case in 2002, additional restrictions adopted for this fishery included maximum net length of 150 fathoms, maximum soak time of 45 minutes, and use of a recovery box on all lethargic or bleeding fish required. These rules were adopted to improve survival rates of fish captured and released during this fishery. Finally, all participants in this fishery were required to attend joint state sponsored workshops that covered regulations for the fishery and proper fish handling techniques necessary to improve survival rates for released fish.

This fishery was managed in accordance with the *"Interim Management Agreement for Upriver Spring Chinook, Summer Chinook, and Sockeye"* which allocated impacts to treaty Indian and non-Indian fisheries based on run sizes of upriver spring chinook. Based on 2003 preseason run size forecasts, the Interim Management Agreement allowed for an 11% total impact rate on listed upriver spring chinook, of which 2% was allocated to non-Indian fisheries. In addition, the states adopted a harvest sharing matrix to further allocate the non-Indian portion of the upriver spring chinook impact between the sport and commercial fisheries in the lower Columbia River. For 2003 the harvest sharing matrix allowed a 0.59% impact rate for commercial fisheries below Bonneville Dam. The live capture fishery was also managed in accordance with the WFMP which allocated surplus Willamette hatchery spring chinook between sport and commercial fisheries based on a sliding scale matrix that increased commercial shares with increased run

sizes. For 2003 the WFMP set forth a commercial catch allocation of 17,500 Willamette hatchery spring chinook (30% of the harvestable number). Additional significant ESA restrictions included a total non-Indian fishery impact rate of 2% for wild steelhead ESU's. The allowable impact rate for wild Willamette spring chinook ESU was 15% for all freshwater fisheries.

Based on these management guidelines, the initial portion of the live capture commercial fishery was adopted at the February 6, 2003 Compact hearing and included six 16-hour (5 AM-9 PM) fishing periods on Mondays, Wednesdays, and Fridays during February 17-28. With an expected 80% Willamette River spring chinook mark rate, the early season was shaped to reduce steelhead handle while maximizing the opportunity to access the 17,500 Willamette allocation by requiring an 8" minimum mesh size. Sturgeon catch was limited with a three sturgeon possession and sales per vessel limit in effect during each open fishing period. The first two 16-hour periods resulted in 27 white sturgeon landed and a total handle of 1,084 spring chinook with less than half (519 kept) adipose fin clipped. Based on expected mark rates by stock and VSI of the kept catch, the total handle of spring chinook was estimated to be over 80% upriver spring chinook even though catches in mid-February are typically 90-95% lower river stocks. With nearly half the commercial allocation of upriver spring chinook impacts accrued, the remaining fishing periods were rescinded at a February 20 Compact hearing. Several commercial fishers volunteered their boats, gear, and time to test fish and allow monitors to collect data regarding spring chinook and steelhead abundance, spring chinook stock composition, and ascertain mark rates of the catch (all released) to determine the optimum time for a final fishing period to occur. Test fishing occurred with small mesh (4¼") tangle nets on February 25, March 3, March 10, and March 17 with corresponding Compact hearings occurring on February 26, March 4, March 12, and March 19. No additional fishing periods were set until the March 19 Compact hearing where the final 10-hour (9 AM- 7 PM) fishing period was set to occur on March 21 with small mesh tangle nets of 4¼" maximum mesh size and optional use of steelhead excluder devices. The 4¼" maximum mesh size regulation was adopted to improve survival rates of steelhead handled in this fishery. Chinook handle for this period totalled 4,357 of which 2,527 were kept and over 75% of the chinook handled were of upriver origin.

A total of 5,441 spring chinook were handled during the live capture fishery, of which 3,046 were kept and 2,395 were released which was far less than the previous year's live capture fishery when over 14,200 spring chinook were sold. Based on CWT and VSI data, the kept spring chinook catch was comprised of 2,085 upriver stock; 759 Willamette stock; 113 Cowlitz, Kalama, Lewis, and Sandy stock; and 89 SAFE stock while the released catch was comprised of 2,165 upriver stock; 184 Willamette stock; 6 Cowlitz, Kalama, Lewis, and Sandy stock; and 40 SAFE stock. The large number of upriver stock spring chinook kept and released in this fishery resulted from a large proportion of early returning age 5 fish in a larger than forecasted upriver return compounded with the fact that not all hatchery fish returning to upriver areas in 2003 were mass marked with an adipose fin-clip. The impact rate on wild upriver spring chinook was 0.62% which is similar to the guideline of 0.59%. Impacts to wild Willamette spring chinook totaled 36 fish or 0.24% of the return.

Unlike the preceding year, the steelhead catch in this fishery remained within preseason catch expectations due to an extremely short season and adopted gear restrictions including the 8" minimum mesh size regulation and optional steelhead excluder devices. A total of 2,097

steelhead were handled in this fishery, of which 1,054 were marked and 1,043 were unmarked. Unmarked steelhead include wild fresh run winter and summer steelhead, unmarked hatchery fresh run winter and summer steelhead, and spawned out winter and summer steelhead kelts. Based on preseason run sizes, the impact rate on listed wild winter steelhead was well below the 2% limit.

Past Lower Columbia River Spring Chinook Sport Fisheries

Under permanent regulations, the main-stem Columbia River from the mouth to the I-5 Bridge (RM106) is open to angling for chinook salmon January 1 through March 31 to target early migrating Willamette spring chinook, and closed April 1 through July 31 to protect upriver spring and summer chinook. 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-July 31 since 1993 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 run size of 59,900, which prompted the OFWC to formally allocate 1,200 Willamette spring chinook to the mainstem Columbia River sport 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 and a catch of only 322 adult spring chinook.

An unprecedented forecast for a return of 364,600 upriver spring chinook to the Columbia River in 2001 coincided with negotiations by the parties of *US v Oregon* for a new management agreement regarding the harvest of upriver spring chinook in Columbia River fisheries. The *"Interim Management Agreement for Upriver Spring Chinook, Summer Chinook, and Sockeye"* was signed on February 16, 2001 and allowed up to a 15% impact to listed upriver spring chinook based on the expected upriver run size and abundance of ESA-listed Snake River wild spring chinook. A total impact of 2% was allocated to non-Indian fisheries, and managers expected to accrue about a 0.8% impact in the lower river recreational fishery. The total expected return of 434,000 adult spring chinook, including lower river spring chinook stocks, to the Columbia River during 2001 was the largest predicted run size of the post-Bonneville Dam era (since 1938). The high percentage of adipose fin-clipped fish returning in 2001 allowed the states to adopt the first-ever, selective recreational fishery for adipose fin-clipped spring chinook on the lower Columbia River. Selective regulations began on March 12, 2001 and required the release of non-adipose fin-clipped spring chinook for the purpose of maximizing both the conservation of ESA-listed fish and the harvest of surplus hatchery fish while maintaining consistent sport fishing regulations for the lower Columbia and Willamette rivers. 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, and established a closure date of April 30. 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. Additionally, angler compliance with the selective fishing regulations was excellent. Inseason management action was necessary to maintain the fishery within ESA guidelines, and resulted in a brief closure of the fishery during April 18-24; however, the fishery was reopened during April 25-29. During February 1-April 29, 2001,

anglers made 172,312 trips and caught 41,172 adult spring chinook (25,711 kept and 15,461 released) and 2,048 steelhead (1,631 kept and 417 released). 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 non-adipose fin-clipped fish were in effect during the 3-day fishery which resulted in 1,432 angler trips producing a total catch of 272 chinook, 73 kept and 199 released.

Expectations for the 2002 Columbia River spring chinook run and recreational fishery were again high with biologists predicting a near record return of 333,700 upriver spring chinook adults. In addition, biologists predicted a return of nearly 85,000 lower river spring chinook for a total of 418,000 spring chinook, which was the second highest predicted spring chinook return to the mouth of the Columbia during the post-Bonneville era. The *"Interim Management Agreement for Upriver Spring Chinook, Summer Chinook, and Sockeye"* allowed for a 2% impact to ESA-listed upriver spring chinook in all non-Indian fisheries. At the January 31 Compact hearing, the states adopted a harvest-sharing matrix for the allocation of the non-Indian portion of the upriver spring chinook impact between the sport and commercial fishery in the lower Columbia River. For 2002, the harvest-sharing matrix allowed a 1.02% upriver impact in the recreational fishery compared to the 2001 impact rate of 0.80%.

Regulations adopted for 2002 included a January 1-May 15 season for the Columbia River below the I-5 Bridge and a March 16-May 15 season from The Dalles Dam upstream to the Oregon-Washington border. The Bonneville Pool remained closed because of the large, non-selective, tributary sport fisheries in the reservoir and possible sampling and enforcement problems. On April 3, 2002 the states opened the area in Bonneville Pool from Tower Island upstream to The Dalles Dam to increase opportunity in the upper Bonneville Pool above the tributary fisheries. During the 2002 regulation review process, adipose fin-clipped only retention regulations for spring chinook were permanently adopted for the recreational fishery for January 1-March 31 and were subsequently extended for the duration of the 2002 fishery at the January 31, 2002 Joint State hearing.

The 2002 lower Columbia River recreational spring chinook fishery was again very popular and successful, and similar to 2001, required inseason management changes to maintain the fishery within ESA impact guidelines. Lower than expected counts of spring chinook at Bonneville through mid-April prompted TAC to make two successive downgrades of the upriver run size, which caused managers to close the lower Columbia River recreational fishery Sunday, April 28. Improved passage just prior to and during the recreational fishery closure allowed the states to reopen the recreational fishery for four more days during May 5-8, and continued good passage during the four-day reopener allowed the states to extend the fishery through the original closure date of May 15. The fishery below Bonneville Dam occurred during February 1-April 27 and May 5-15, 2002 and produced catches of 34,442 adult spring chinook (20,464 kept and 13,978 released), 247 fin-clipped spring chinook jacks, and 2,376 steelhead (1,982 kept and 394 released) from a record 175,052 angler trips. No inseason management changes were necessary for the fishery above Bonneville Dam. The estimated catch total for the fishery above Bonneville Dam was 2,024 spring chinook (1,149 kept and 875 released) from 7,996 angler trips.

2003 Lower Columbia River Spring Chinook Sport Fishery

Expectations in 2003 were for a return of 145,400 upriver spring chinook to the Columbia River, the fourth highest predicted run size since 1973 but down from the modern record runs of 2001 and 2002. In addition, biologists predicted a strong return of 126,200 lower river spring chinook to the Columbia River in 2003, which included 109,800 Willamette spring chinook. The “*Interim Management Agreement for Upriver Spring Chinook, Summer Chinook, and Sockeye*” provided for a 2% impact to ESA-listed upriver spring chinook in all non-Indian fisheries in 2003. The harvest-sharing matrix adopted January 31, 2002 further divided the non-Indian impact between the sport and commercial fisheries with 1.11% for the sport fishery, 0.59% for the commercial fishery, and 0.30% for other fisheries occurring in 2003.

Sport fishing regulations for the 2003 spring chinook fishery were adopted at the February 6, 2003 Joint State meeting. The adopted sport season was January 1-May 15 for the Columbia River from Buoy 10 to the I-5 Bridge and February 15-May 15 for the Columbia River from I-5 to Bonneville Dam, Tower Island upstream to McNary Dam, and the Oregon bank between Bonneville Dam and Tower Island. Selective, adipose fin-clipped only regulations for spring chinook were permanently adopted in 2002 for January 1-March 31 and subsequently extended for the duration of the 2003 fishery. Additionally anglers were allowed to keep adipose fin-clipped steelhead and shad during the open spring chinook fishery. Managers would modify or close the fishery early if upriver impacts were reached with some consideration of fairness for opportunity in the fishery above Bonneville Dam. Other state bag limits and permanent rules applied.

The Columbia River was low, clear, and warm at the start of 2003 with snowpack only 50% of normal at the end of January. The first spring chinook was sampled on February 8, 2003 at Prescott Beach, but effort and catch were light during early February as local rains muddied the Cowlitz and Willamette rivers leaving much of the lower Columbia River unfishable. The warm, clear Columbia water provided excellent early migration conditions for spring chinook and good angling opportunity from Bachelor Island upstream to Bonneville Dam after the 15th of February. The bank fishery at Bonneville Dam picked up by the end of the February accounting for 73% of the total catch for the month. During February 2003 anglers made a total of 9,573 trips and caught 432 spring chinook (209 adipose fin-clipped fish kept and 223 unmarked fish released) and 130 steelhead (26 adipose fin-clipped fish kept and 104 unmarked fish released), which was the highest February spring chinook catch on record. Based on VSI sampling and the location of the fishery, the February catch was estimated to be 100% upriver spring chinook.

Angler effort and catch increased during March as more fish entered the river, but the fishery continued to be limited by poor water conditions downstream from the mouth of the Willamette for most of the month. As a result the majority of the March catch occurred in the clear Columbia water plume from Bonneville Dam downstream to Bachelor Island. The total catch during March was 8,790 spring chinook (5,597 kept and 3,193 released) and 616 steelhead (390 kept and 226 released) from 65,841 angler trips. The total catch for March was the second highest catch for the month on record and nearly double the 2002 catch. Despite similar upriver and lower river spring chinook run size expectations and generally earlier run timing for Willamette spring chinook, upriver spring chinook continued to dominate the sport catch during March. Of the 8,790 spring chinook caught in March, over 7,200 or 82% were estimated to be upriver spring chinook. The higher than expected catch of upriver spring chinook could be

explained in part by the magnitude of the fishery above the I-5 Bridge and high early counts of upriver spring chinook at Bonneville Dam, but raised questions about the true size of the upriver spring chinook run and accuracy of the Willamette run size forecast.

Upriver impacts in the sport fishery were much larger than expected through the end of March, and the fishery moved into April with improving water conditions and increasing effort at a time when the upriver spring chinook migration generally peaks. As catches continued to build in the area upstream of the I-5 Bridge, managers were forced to take action to avoid a total closure of the recreational fishery by mid-April. At the April 2 Joint State sport meeting, the states closed the fishery between the I-5 Bridge and Bonneville Dam effective April 6. Additionally beginning April 6 the fishery below the I-5 Bridge was reduced to a four-day per week (Wednesday through Saturday) fishery. No changes were made to the fishery above Bonneville Dam. The estimated sport catch for the lower Columbia during April 1-5 was large at 7,541 spring chinook (4,518 kept and 3,023 released) and 198 steelhead (172 kept and 26 released) from 26,011 angler trips. Through April 5 the sport fishery had used approximately 79% of its 1.11% upriver spring chinook impact based on the preseason run size forecast of 145,400.

During the April 9-12 reopener below I-5, anglers made approximately 19,000 angler trips and caught 2,418 spring chinook (1,706 kept and 712 released). CPUE during the reopener was significantly lower than during the April 1-5 fishing period and the proportion of upriver spring chinook in the catch dropped to 26%. On April 14 the TAC met and upgraded the upriver spring chinook run size to between 158,000 and 190,000. Based on the increased run size forecast and associated drop in fishery impacts to upriver spring chinook, the states allowed the sport fishery to continue for another four-day period at the April 15 Joint State sport hearing. During the April 16-19 reopener, anglers caught 1,725 spring chinook (1,260 kept and 465 released) from 12,740 trips. On April 21, the TAC revised the upriver run size to 193,000, which further reduced impacts and allowed yet another four-day fishing period during April 23-26. The catch during the April 23-26 fishing period was approximately 1,924 (1,342 kept and 582 released). On April 28, with impacts still below the allowed level, the states allowed another four-day fishing period during April 30-May 3, and reduced the fishery above Bonneville Dam to the same four-day per week fishing schedule that was in effect for the fishery below Bonneville. The final catch in the lower Columbia River during April 1-30 was 13,839 spring chinook (9,110 kept and 4,729 released) and 680 steelhead (605 kept and 75 released) from 66,351 angler trips. Upriver spring chinook comprised 52% of the total catch during April, most of which were caught during April 1-5.

As the fishery in the lower Columbia River continued into May, effort began to wane and the proportion of upriver spring chinook in the catch continued to drop. During May 1-3 anglers made 7,405 trips and caught 1,190 spring chinook (864 kept and 326 released) of which 399 or 34% were upriver spring chinook. At a Joint State sport meeting on May 5, 2003 the states decided to allow both the lower Columbia and above Bonneville sport fisheries to continue on the same four-day per week fishing schedule through May 15. The spring chinook catch in the lower Columbia River during May 1-15 totaled 2,958 (1,976 kept and 982 released) and 400 steelhead (361 kept and 39 released) from 19,000 angler trips. Upriver spring chinook comprised about 38% of the catch during May. The total catch for the 2003 spring chinook sport fishery below Bonneville Dam was 26,019 adult spring chinook (16,892 kept and 9,127 released), 473 spring chinook jacks, and 1,878 steelhead (1,428 kept and 450 released) from 160,765 angler

trips. Upriver spring chinook comprised 62% of the total fish handled (8,833 kept and 7,233 released). The 2003 final upriver run size was 208,850, which was 44% above the preseason forecast, and the final impact rate to ESA-listed upriver spring chinook for the lower Columbia River sport fishery was 0.76%. The Zone 6 sport catch was 2,069 spring chinook (1,206 kept and 863 released) from 15,100 angler trips, which was a 0.10% impact to ESA-listed upriver spring chinook. The total impact for non-Indian sport fisheries totaled 0.86% as compared to the 1.11% allocated to non-Indian sport fisheries.

2003 Columbia River Summer Steelhead Sport Fishery

The main-stem 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. Beginning in 2000 the states allowed the retention of chinook jacks ($\leq 24''$) and sockeye salmon during the same time frame. During 2002, the retention of sockeye was prohibited April 1 in Washington and June 25 in Oregon when it was determined the 2002 sockeye return was less than the management goal of 75,000 fish.

The states opened the summer chinook fishery below Bonneville Dam on June 28, 2002 for the first time since 1973 when the 2002 summer chinook run size was upgraded to 140,000. The high mark rate of hatchery summer chinook allowed the states to adopt selective fishery regulations for summer chinook to provide an opportunity to harvest hatchery summer chinook while maintaining the impact to ESA-listed summer chinook to less than 1%. On July 9, 2002 the states also opened the area from Bonneville Dam upstream to the Oregon/Washington border for the retention of adipose fin-clipped summer chinook. The total catch below Bonneville during May 16-July 31, 2002 was 10,904 summer steelhead (7,785 adipose fin-clipped fish kept and 3,029 released), 3,435 summer chinook (1,352 kept and 2,083 released), 60 sockeye (13 kept and 47 released), and 145 chinook jacks. The Zone 6 sport catch was less than 100 fish from 1,000 angler trips.

Expectations for 2003 were for a summer chinook run of 87,600 adults entering the Columbia River. With a desired escapement goal of 85,000 adult summer chinook past Bonneville Dam and a 1% non-Indian impact to ESA-listed summer chinook, there was an opportunity for a limited sport fishery in 2003. On May 28, 2003 the states adopted a summer chinook fishery for the Columbia River from Tongue Point upstream to the Oregon/Washington border above McNary Dam during June 16-July 31 to match the summer steelhead season above the I-5 Bridge. The daily bag limit was two adipose fin-clipped adult summer chinook. Other permanent rules and state bag limits applied.

During May 16-June 15, anglers on the lower Columbia River below the I-5 Bridge made 13,651 trips and caught 1,710 summer steelhead (1,466 kept and 244 released), 73 chinook jacks (all kept), and 246 adult summer chinook (all released). During June 16-July 31, 2003 anglers made 39,167 trips below Bonneville Dam and caught 3,525 adult summer chinook (1,854 kept and 1,671 released), 200 chinook jacks, and 5,514 steelhead (3,513 kept and 2,001 released). The total catch in the lower Columbia River during May 16-July 31, 2003 was 3,771 summer chinook adults (1,854 kept and 1,917 released), 273 chinook jacks, and 7,224 summer steelhead (4,979 kept and 2,245 released). During June 16-July 31, angler trips in the Columbia River upstream

of Bonneville Dam totaled 1,582 and produced catches of 23 summer steelhead kept and 269 adult summer chinook kept.

Spring Chinook Fisheries Above McNary Dam

A selective sport fishery occurred in the Snake River in the area upstream of Little Goose Dam from April 26 through June 15, 2003. A total of 5,600 angler trips produced a total catch of 939 adult spring chinook of which 513 were kept and 426 released (405 wild). In addition, the Wanapum Tribe conducted a C&S fishery in the mainstem Columbia River below Priest Rapids Dam which resulted in a harvest of 15 spring chinook.

Past Select Area Fisheries

Test fishing operations have regularly occurred in Select Areas prior to release of fish or adoption of fisheries. Test fisheries have consistently been the basis on which fisheries were initially proposed. Expansion in time or area has consistently been preceded by positive results from test fishing operations and subsequent corroboration by ensuing commercial fisheries.

Spring chinook commercial fisheries in Select Areas were initiated with 9-day fishing seasons in Youngs Bay only during 1992-1994. Through 1996, fishing time was limited to less than 15 days each year with annual landings ranging from 155-851 spring chinook. Since 1997, landings in the spring Youngs Bay commercial fishery have increased significantly from 1,821 chinook landed in 1997 to 5,749 chinook landed in 2002. Initial seasons in Youngs Bay were restricted to the spring fishing period with seasons occurring primarily during late April through early June. As returns increased, winter and summer seasons were also adopted in an attempt to harvest 100% of the returning adults. Winter seasons during mid-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. Fisheries have consistently been 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 were initiated in 1998 with a 9-day spring season that resulted in a catch of 60 spring chinook. Landings increased steadily during 1999-2000, but have been remarkably stable recently with approximately 2,030 fish harvested each year since 2001. The first winter season in Blind Slough was established in 2000. As with Youngs Bay these winter seasons targeted early returning 5-year old SAFE spring chinook that are present prior to arrival of significant numbers of non-local stocks. Fisheries have consistently been 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. The fishing area was initially limited to Blind Slough but was expanded to include the waters of Knappa Slough from the mouth of Blind Slough to the east end of Minaker Island in 1999 as returns increased. The expanded area was adopted to increase catch and decrease congestion during peak fishing periods. A trial summer season was adopted in Blind Slough in 1999 but it resulted in a harvest of only three spring chinook. No summer seasons have been adopted for Blind Slough since 1999.

Commercial spring fisheries in Tongue Point were initiated in 1998 with a 9-day season that resulted in a catch of 31 spring chinook. Similar to Blind Slough, Tongue Point landings increased steadily each year from 1998-2002, with a peak catch of 2,034 chinook in 2002. The Tongue Point commercial fishery was managed in concert with the Blind Slough fishery with winter seasons being initiated in 2000 to harvest early returning 5-year old spring chinook. To date, no summer fisheries have occurred in the Tongue Point Select Area. The fishing area was expanded in 1999, as was the case in Blind Slough, to include the South Channel between the confluence with the John Day Slough and Prairie Channel to increase catch and reduce congestion during peak fishing periods.

Although spring chinook have been released into the Deep River Select Area since 1998, returns have not been adequate to support a commercial fishery until 2003. The initial season resulted in a harvest of 117 fish, considerably less than the forecasted harvest of 600 fish, although effort was limited.

Select area fishing sites have been open for sport fishing since the inception of the SAFE Project; however, angling participation has expanded slowly due to the many other fishing opportunities in the lower Columbia River and limited adult returns early in the program's history. Recently, both effort and harvest in SAFE sport fisheries have increased, likely due to increasing adult returns and quality fishing opportunities. 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 1998-2003 was 53 fish per year (range 14-121) with success usually dictated by water conditions. The estimated sport harvest of spring chinook in Blind Slough/Knappa Slough has increased steadily from 121 fish in 2000 to 493 in 2003 with most of the harvest occurring near the mouth of Big Creek. During the same period, recreational harvest in nearby Gnat and Big creeks has ranged from 0-450 fish annually. The estimated sport harvest of 994 spring chinook in 2003 SAFE fisheries is nearly twice the number of fish harvested in any previous year. This increased harvest is likely an artifact of reduced commercial fishing opportunities in 2003 and increased popularity of SAFE sport fisheries.

Since 1998, year-round recreational seasons have been in effect for chinook and adipose fin-clipped coho in Youngs Bay, Tongue Point, and Blind Slough. Similar regulations were adopted for South Channel and Knappa Slough in 1999 and for Deep River in 2000. In 2003, regulations 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, in accordance with the Willamette Spring Chinook FMEP, Select Area recreational fisheries will be managed for selective spring chinook harvest effective January 1, 2004 with retention of adipose-fin clipped chinook only allowed.

2003 Youngs Bay Winter/Spring/Summer Gillnet Season

A winter commercial fishery in Youngs Bay was adopted for the sixth consecutive year to target the early arriving 5-year old component of the spring chinook return. This fishery typically occurs prior to the time when significant numbers of non-local chinook stocks are present. Since 2000, fishing time has consisted of one or two fishing periods weekly of 30-54 hours each for three weeks. This season structure has been effective in allowing harvest of early returning local-stock adults while minimizing impacts on listed stocks. Unfortunately in 2003, an unanticipated

high abundance of upriver stocks during the first three fishing periods prompted an emergency closure of the remaining three fishing periods. The 2003 winter fishery consisted of two 16-hour and one 30-hour fishing periods as follows: 5 AM to 9 PM February 18; noon February 22 to 6 PM February 23; and 5 AM to 9 PM February 25. In 2003, an industry request for a minimum mesh size of 7¼-inches was adopted instead of the typical 8-inch minimum since previous monitoring data has shown that steelhead handle during the winter season is negligible. Due to the shortened season, only 74 chinook and 1 white sturgeon were landed during the winter fishery.

As in previous years, the 2003 spring season in Youngs Bay was designed to begin in mid-April and consist of weekly fishing periods of progressively increasing length through mid-June to maximize the harvest of local stocks while minimizing impacts on non-local stocks. The season began at noon on April 16 with a 54-hour fishing period through 6 PM April 18. Unfortunately, unusually high mixing of non-local stocks prompted fishery managers to rescind the following three proposed fishing periods to prevent the fishery from exceeding impact guidelines for upriver spring chinook. The season reopened on May 7 with a short fishing period from 11 AM-7 PM to evaluate stock composition in the area. Results of this fishery indicated upriver stocks had migrated out of Youngs Bay thereby allowing previously adopted seasons to resume. This second opener was followed by several fishing periods as follows: noon May 12 to 6 PM May 16 (4 days); noon May 19 to 6 PM May 23 (4 days); noon May 26 to 6 PM May 30 (4 days); noon June 2 to 6 PM June 6 (4 days); and noon June 9 to 6 PM June 12 (3 days). The season changes resulted in a loss of eight fishing days for the 2003 spring season in Youngs Bay. Throughout the spring season, an 8-inch maximum mesh size restriction was in effect to target chinook instead of sturgeon. The modified 2003 Youngs Bay spring fishery landed 4,963 chinook and 81 white sturgeon.

To provide harvest opportunity on early returning Select Area bright (SAB) stock fall chinook and any remaining local spring chinook, a summer gillnet season was set in Youngs Bay during June 18-July 31, 2003. The 2003 summer season opened for two days from noon June 19 through 6 PM June 20 and continued with six more fishing periods as follows: noon June 25 to 6 PM June 27 (2 days); noon July 2 to 6 PM July 3 (1 day); noon July 9 to 6 PM July 10 (1 day); noon July 16 to 6 PM July 17 (1 day); noon July 23 to 6 PM July 24 (1 day); and noon July 30 to 6 PM July 31 (1 day). An 8-inch maximum mesh size restriction was adopted to target chinook instead of sturgeon. The Youngs Bay summer fishery yielded landings of 279 chinook and 102 white sturgeon.

The combined Youngs Bay winter/spring/summer fishery stock composition was based on VSI and CWT analysis with a total of 2,312 chinook (44% of the combined catch) examined for fin marks and CWT's and 494 snouts being collected. Based on scale readings, verified with CWT's, the age composition of the catch was <1% age-3, 54% age-4, 45% age-5, and <1% age-6 fish. The 2003 combined catch was estimated to include 3,823 spring chinook and 108 SAB fall chinook destined for Select Area sites; 300 spring chinook and 65 summer chinook destined for locations above Bonneville Dam; 775 spring chinook destined for the Willamette River; 56 spring chinook destined for the Sandy River; 140 spring chinook destined for the Cowlitz, Kalama, or Lewis rivers; and 49 spring chinook destined for the Umpqua River.

2003 Tongue Point/South Channel Spring Gillnet Season

Since 2002, winter fishing opportunities in the Tongue Point site have been provided in conjunction with the mainstem winter fishery, not as a separately adopted season. A spring season was adopted for the Tongue Point/South Channel area in 2003 consisting of 16, 12-hour nighttime fishing periods occurring 1-2 times each week between April 17 and June 13. However; a high abundance of upriver spring chinook in this area resulted in only one 12-hour fishing period from 7 PM April 17 through 7 AM April 18 occurring prior to the remainder of the season being rescinded. The fishing area for the one-day season included the South Channel area as in previous years to maximize harvest opportunity of locally released stocks and an 8-inch maximum mesh size restriction to target chinook and limit sturgeon harvest.

The 2003 Tongue Point/South Channel spring gillnet fishery landed 348 chinook and 11 white sturgeon during the one day season. Stock composition was based on VSI and CWT analysis with a total of 69 chinook (20% of the catch) examined for fin marks and CWT's and 18 snouts being collected. Based on scale readings, verified with CWT's, the age composition of the catch was 46% age-4 and 54% age-5 fish. The 2003 Tongue Point/South Channel catch was estimated to include 94 spring chinook destined for Select Area sites; 66 spring chinook destined for locations above Bonneville Dam; 182 spring chinook destined for the Willamette River; and 6 spring chinook destined for the Cowlitz, Kalama, or Lewis rivers.

2003 Blind Slough/Knappa Slough Winter/Spring Gillnet Season

Fashioned after the successful experimental winter seasons that occurred in Blind Slough during 2000-2002, a winter gillnet season was adopted for the Blind Slough area only with a 7¼-inch minimum mesh size restriction in place to target the early arriving, larger 5-year old chinook while minimizing the handle of steelhead. The season was set for three 12-hour periods of 7 PM February 15 to 7 AM February 16; 7 PM February 22 to 7 AM February 23; and 7 PM March 1 to 7 AM March 2. A total of 12 spring chinook and zero sturgeon were landed during the season.

During the spring fishery, the Blind Slough fishing area was expanded to include Knappa Slough to increase fishing area and maximize the harvest opportunity of locally released stocks. An 8-inch maximum mesh size restriction was also required to target chinook and limit sturgeon catch. The 2003 spring fishery was intended to consist of 16, 12-hour fishing periods open from 7 PM-7 AM on one or two weeknights each week between April 17 and June 13. Unfortunately, the fishery was curtailed temporarily following the opening period (April 17) due to an abnormally high harvest of non-local stocks in the Youngs Bay and Tongue Point fishing areas which forced managers to modify fishing seasons in all Select Areas. In Blind Slough, the second (April 24) and third (April 29) fishing periods were rescinded. The fourth scheduled opener (May 1) was allowed but the fishing area was restricted to Blind Slough only to minimize impacts to non-local stocks. The fifth opener (May 6) was also rescinded since the other SAFE sites remained closed. The final 11 fishing periods were essentially permitted as adopted: 7 PM May 8 to 7 AM May 9 (Blind Slough only); 7 PM May 13 to 7 AM May 14; 7 PM May 15 to 7 AM May 16; 7 PM May 20 to 7 AM May 21; 7 PM May 22 to 7 AM May 23; 7 PM May 27 to 7 AM May 28; 7 PM May 29 to 7 AM May 30; 7 PM June 3 to 7 AM June 4; 7 PM June 5 to 7 AM June 6; 7 PM June 10 to 7 AM June 11; and 7 PM June 12 to 7 AM June 13. Landings for the 2003 Blind Slough/Knappa Slough spring gillnet fishery were nearly identical to 2001-2002 with 2,027 chinook and 32 white sturgeon harvested.

The combined Blind Slough/Knappa Slough winter and spring fishery stock composition was based on VSI and CWT analysis with a total of 1,391 chinook (69% of the combined catch) examined for fin marks and CWT's and 445 snouts being collected. Based on scale readings, verified with CWT's, the age composition of the catch was 1% age-3, 31% age-4, 67% age-5, and <1% age-6 fish. The 2003 Blind Slough/Knappa Slough catch was estimated to include 1,948 spring chinook destined for Select Area sites; 27 spring chinook destined for locations above Bonneville Dam; 54 spring chinook destined for the Willamette River; and 10 spring chinook destined for the Cowlitz, Kalama, or Lewis rivers.

2003 Deep River Experimental Spring Gillnet Season

The 2003 spring fishery in Deep River was established to harvest the first significant adult returns of spring chinook to this site. A season was adopted at the March 4, 2003 Compact Hearing consisting of 25, 12-hour nighttime (7 PM-7 AM) fishing periods on weeknights (Tuesday, Wednesday, and Thursday) between April 17 and June 13. The fishing area was restricted to the area from the U. S. Coast Guard (USCG) navigation marker #16 upstream to the Highway #4 bridge. Nets were restricted to 100-fathoms of 7-inch to 9³/₄-inch mesh with no weight restrictions. As has been the case in other SAFE sites, this initial season was considered experimental with complete (100%) sampling of the landed catch required before harvested fish could be transported out of the fishing area. To facilitate this, a sampling station was established at Kato's dock upstream of the Highway #4 bridge.

The fishery opened on April 17 as scheduled and continued for two additional nights (April 22 and April 23). Due to higher than anticipated interception of non-local stocks in this area and other SAFE sites, the next three fishing periods (April 24, 29, and 30) were rescinded to prevent the fishery from exceeding impact guidelines for upriver spring chinook. An additional fishing period was allowed on May 1 but the following two periods (May 6 and 7) were again rescinded due to continued presence of non-local stocks. Beginning May 8, scheduled fishing periods were resumed as scheduled on the following nights: May 8, 13, 14, 15, 20, 21, 22, 27, 28, 29, and June 3, 4, 5, 10, 11, and 12. The lower fishing boundary on May 1 and May 8 was moved upstream approximately one mile from the normal boundary at the USCG navigation marker #4. Modifications to the season due to abnormally high impacts to listed stocks resulted in a loss of five fishing days.

A total of 117 chinook were landed in the fishery with an 80% mark rate. All fish were examined for fin marks and CWT's with 23 snouts collected. Visual stock identification indicated a harvest of 95 lower river stock and 22 upriver stock spring chinook. Specific stock composition of the landed catch based on code-wire tag analysis has not yet been completed.

2003 Commercial Shad Seasons

The Compact adopted a 29-day commercial shad season for Area 2S in 2003 which included all weekdays (except Memorial Day) from May 19 to June 27 with the following gear specifications that have been in place since 1996: mesh size restriction of 5-3/8 to 6-1/4 inches, 10-lb. breaking strength, and net not to exceed 40 meshes in depth nor 150 fathoms in length. The shallower and shorter nets have substantially reduced the handle of salmonids compared to the traditional gear used in fisheries prior to 1996. The 2003 fishery was restricted to daily periods of 3 PM to 10 PM only, which has also been in effect since 1996. Only shad could be kept and sold and all

salmon, steelhead, walleye, and sturgeon were immediately returned to the water, and those alive were returned to the water unharmed.

As has been the case in recent years, participation was low with only 3-6 boats participating during the 2003 season. A total of 79,169 shad (213,765 pounds) were landed in the Area 2S fishery; with a salmonid handle of 13 summer chinook, 4 summer steelhead, and 1 sockeye (Table 18). Immediate and delayed salmonid mortalities were estimated to be 3 adult summer chinook, 2 summer steelhead, and zero sockeye. No monitoring occurred during the 2003 fishery. The 1999-2001 average shad per salmonid ratios observed from onboard monitoring were adjusted for salmonid run sizes and used to estimate the salmonid handle in the 2003 fishery.

Until 2000, a long-standing Washougal Reef commercial shad fishery had been adopted annually. The physical characteristics of this area allowed shad to be harvested without incidental handle of salmonids. Interest in this fishery waned during the late 1990's with only one fisher participating in this fishery during 1996-1997 and no fishers participating during 1998-2000. Due to lack of interest no Camas-Washougal Reef shad fishery has been adopted since 2000 (Table 18).

2003 Impacts to ESA Listed Stocks

Impacts to listed upriver spring chinook in non-Indian Columbia River fisheries were limited to 2.0% in 2003. The management intent was for mainstem sport and commercial fisheries below McNary Dam to be limited to a 1.7% impact rate with 0.3% impact rate allocated to fisheries above McNary Dam and in Select Areas. Fisheries below McNary Dam included the mainstem sport and commercial fisheries. Impacts in all non-Indian fisheries totaled 1.73% on listed upriver spring chinook, as compared to the guideline of 2%.

Total impacts to Snake River sockeye are estimated to be zero in 2003, compared to the allowable impact rate of 1%. Only one sockeye was handled and no sockeye were harvested in 2003 due to the closed seasons and the poor return of sockeye to the Columbia River. Impacts to wild winter steelhead had not been estimated at the time this document was completed, but based on post season catch and run estimates, impacts are expected to be well below the 2% impact rate guideline.

Treaty Indian Fisheries

2003 Treaty Indian Winter Commercial Season

The 2003 winter setline fishery was open in all of Zone 6 from January 1 to January 31. The winter gillnet season was open for 41 days from February 1 through March 21. The 2003 winter gillnet season commercial sturgeon catches were nearly the same as those observed during 2002. The steelhead and

Pool	2003 Winter Commercial Landings				
	Steelhead	White Sturgeon		Walleye	Chinook
Setline		Gillnet			
Bonneville	568	20	271	54	843
The Dalles	220	0	866	13	14
John Day	0	0	202	46	0
Total	788	20	1,339	113	857

chinook catches were larger with a total catch of 788 steelhead, 1,339 white sturgeon, 113 walleye, and 857 spring chinook (Table 20). The winter season steelhead catch has been low in recent years, due to fishers targeting sturgeon. The sale of spring chinook was discontinued on March 13.

2003 Treaty Indian Mainstem Spring and Summer Chinook and Sockeye Fisheries

Tribal intent for 2003 spring chinook fisheries was to remain within impact rates allowed by the Interim Management Agreement. The preseason planning for the 2003 treaty mainstem harvest was 13,086 spring chinook (9% of the 145,400 forecasted run). Additionally, preseason planning was for 4,380 summer chinook (5.0% of 87,600 forecasted run), and 1,104 sockeye (5.0% of 22,080 forecasted run). The actual run sizes were 208,900 spring chinook, 116,900 summer chinook and 39,400 sockeye.

The four tribes issued permits for gillnet C&S fisheries for spring chinook during March and April, and held a commercial gillnet fishery consisting of three weekly openings from April 24 to May 31. During the commercial fishery, fish were sold to commercial buyers and over the bank to the public. The estimated C&S gillnet permit catch was 5,938 spring chinook (2.8% of 208,900 upriver run). The commercial fishery landed 8,348 spring chinook (4.0% of 208,900 upriver run). Additionally, 857 spring chinook were caught during the winter commercial fishery. The estimated catches for the platform and hook-and-line C&S fisheries were 3,012 spring chinook (1.4% of 208,900 upriver run) and 850 summer chinook (0.7% of 116,900 upriver run). There were also 3,587 summer chinook harvested in two commercial gillnet openings. During 2003 spring chinook harvest totaled 18,155 and summer chinook harvest was 4,437.

Estimates of stock composition are based on upriver run proportions determined by the TAC run reconstruction. The final upriver spring chinook run was estimated to total 208,900 which resulted in an allowed harvest rate of 10%. Winter and spring fisheries harvested 8.7% of the upriver spring chinook return (Table 7). The summer chinook catch of 4,437 was 3.8% of the actual 2003 summer chinook return of 116,900 as compared to the allowed harvest rate of 5% (Table 8).

There were 1,080 sockeye caught in platform and hook-and-line C&S fisheries and 10 sockeye caught in commercial gillnet fisheries. The overall catch of 1,090 was 2.7% of the return of 39,400 as compared to the allowed harvest rate of 5%. The TAC estimated that one of the sockeye caught was a Snake River sockeye (Table 13).

Steelhead harvest during spring and summer fisheries was similar to 2002 with tribal fishers harvesting 1,173 steelhead during winter and spring fisheries and 4,455 steelhead during the summer fisheries. Many of the 5,628 total would be expected to be Group A summer steelhead. Some of the winter and spring season catch may have been winter steelhead and hold over summer steelhead from the 2002-2003 run. 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.

2003 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

2003 Ceremonial and Subsistence Entitlement Summary		
C&S permit gillnet spring fishery	5,938	spring chinook
Winter gillnet fishery	857	spring chinook
C&S platform winter/spring fishery	3,012	spring chinook
Commercial gillnet fishery	8,348	spring chinook
C&S platform summer fishery	850	summer chinook
Commercial gillnet fishery	3,587	summer chinook
Total	22,592	<i>Spring and summer chinook</i>

fisheries are accounted for, the balance of the entitlement is to be provided to the tribes by the states of Oregon and Washington. Due to the large upriver spring chinook return the full entitlement was achieved in 2003 without using surplus fish from ODFW or WDFW.

2003 Shad Fisheries

In 2003, treaty Indian fishers harvested a total of 105,837 shad (216,545 pounds) from eight fishing days between June 11–20 at The Dalles Dam east fish ladder exit. The 2003 shad fishery did seem to elevate fall back rates in the fish ladder with the 10% guideline exceeded in two of the eight days of fishing. The high fall back rate seemed to be caused by fishers not covering their dipnets with protective covering and banging against the boat and the portals on the face of the dam, and/or improper deployment of the trapnet. The fishery closed because of a combination of poor market conditions and high fall back rates in the fish ladder.

2004 MANAGEMENT GUIDELINES

Endangered Species Act Consultation

Salmon and Steelhead

Since 1991, the NMFS has identified the majority of Columbia River basin salmon and steelhead populations as requiring protection under the ESA. The table below describes the status of Columbia River basin ESU's. Unless otherwise noted, the listed component includes wild/natural populations only.

Fisheries considered in this report are in accordance with the *"Interim Management Agreement for Upriver Spring Chinook, Summer Chinook, and Sockeye"* and are included in the Section 7/10 Application submitted to the NMFS on November 3, 2000. The NMFS has provided a Biological Opinion on the Interim Management Agreement. Impacts to listed wild winter steelhead are limited to 2% for all non-Indian fisheries.

<i>Federally-listed Salmon, Steelhead, and Smelt of the Columbia River Basin.</i> ¹			
Species - <i>ESU</i>	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 ²	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</u> ³	Candidate	--	--

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

2. *Includes hatchery fish.*

3. *In 1991, the NMFS decided not to list wild coho of the lower Columbia River (Columbia River and its tributaries below Bonneville Dam, exclusive of the Willamette River) because the remaining small remnant runs are predominately hatchery-maintained and are not a species as defined in the ESA. In 1995, the NMFS combined Columbia River coho with Willapa Bay and Grays Harbor coho into a single evolutionarily significant unit (ESU) and identified it as a candidate species, worthy of further study. In 2000, the NMFS began another status review of lower Columbia River coho.*

Biological Assessments

At the time this report was written the states had submitted Biological Assessments concerning wild winter steelhead, Select Area fisheries, and fisheries above McNary Dam. These assessments asked for modifications to current impacts allocated to all non-Indian fisheries for winter steelhead and impacts allocated to spring and summer chinook in Select Areas and above McNary Dam. Results of NOAA Fisheries decisions regarding these Biological Assessments may modify current impact limits and fishery expectations. In lieu of a decision from NOAA Fisheries, management of 2004 winter/spring fisheries will occur under existing agreements and the Biological Opinion adopted in concurrence with the Interim Management Agreement.

Marbled Murrelet ESA Consultation

There has been no change in the status of marbled murrelet since 1994. The winter, spring, and summer fisheries are still not likely to adversely affect the listed marbled murrelet.

Columbia River Fish Management Plan

The CRFMP expired on December 31, 1998, but was extended through July 31, 1999. The parties to *United States v Oregon* are continuing re-negotiation discussions initiated in 1998. The parties are expected to have a new plan completed by March 31, 2004. Management of fisheries occurring during spring and summer seasons in 2004 could be different than what is currently in place in accordance with a new Columbia River Fish Management Agreement (CRFMA). During the spring management period in 2001 the parties to *US v Oregon* signed the *"Interim Management Agreement for Upriver Spring Chinook, Summer Chinook, and Sockeye"*. Details concerning the interim agreement are included in the "Interim Management Agreement" section of this report. The Interim Management Agreement covers the time period of 2001-2003, except for the sliding scale spring chinook harvest allocation which extends through 2005.

Interim Management Agreement

The Interim Management Agreement covers Columbia River mainstem fisheries for upriver spring chinook, summer chinook, and sockeye during 2001-2003. This agreement provides specific fishery management constraints with respect to upriver spring chinook, summer chinook, and sockeye. The Interim Management Agreement is expected to be in effect until ongoing negotiations regarding the CRFMA are completed. Steelhead harvest was not considered in the Interim Management Agreement but is included in the Section 7/10 Application.

Upriver Spring Chinook

Non-Indian and treaty Indian winter and spring season fisheries will be managed in accordance with Table 1 of the *"Interim Management Agreement for Upriver Spring Chinook, Summer Chinook, and Sockeye"*. Based on preseason forecasts, the spring chinook harvest allocation table allows for non-Indian impacts up to 2% of the upriver spring chinook run and treaty Indian impacts up to 13%.

Table 1 From the Interim Management Agreement For Upriver Spring Chinook, Summer Chinook, and Sockeye.					
Schedule if Snake is =>7.5% of Total Run					States'
Total Columbia River Mouth Run Size	Snake River Run Size	Tribal Proposed Harvest Rate	States' Normal Harvest Rate	Total Harvest Rate	Wild Limited Rate
<25,000	<2,500	5.0%	<0.5%	<5.5%	<0.5%
25,000	2,500	5.0%	0.5%	5.5%	0.5%
30,000	3,000	5.0%	1.0%	6.0%	0.5%
40,000	4,000	6.0%	1.0%	7.0%	0.5%
50,000	5,000	7.0%	1.5%	8.5%	1.0%
75,000	7,500	7.0%	2.0%	9.0%	1.5%
100,000	10,000	8.0%	2.0%	10.0%	
130,000	13,000	9.0%	2.0%	11.0%	
200,000	20,000	10.0%	2.0%	12.0%	
250,000	25,000	11.0%	2.0%	13.0%	
300,000	30,000	12.0%	2.0%	14.0%	
350,000	35,000	13.0%	2.0%	15.0%	
400,000	40,000	14.0%	2.0%	16.0%	
450,000	45,000	15.0%	2.0%	17.0%	

- ^{1.} *If the Snake River wild forecast is less than 7.5% of the total run size the more conservative harvest rate would be used if the upper Columbia wild forecast is less than 1,000, then the total harvest rate would be restricted to 9% or less.*
- ^{2.} *Whenever the wild fish restrict harvest to 9% or less, then non-Indian fisheries would transfer 0.5% harvest rate to treaty fisheries. In no event would non-Indian fisheries go below 0.5% harvest rate.*
- ^{3.} *In the event the total forecast is less than 25,000 or the Snake River forecast is less than 2,500, the states would keep their harvest rate below 0.5% and attempt to keep the harvest rate as close to zero as possible while maintaining minimal fisheries targeting other harvestable species.*

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 spring chinook run. 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.

Summer Chinook

The Interim Management Agreement provides for an interim upriver summer chinook goal of 85,000 adults, as measured at Bonneville Dam. Non-Indian combined commercial and recreational impacts on listed spring/summer chinook will be minimized to the degree possible, but shall not exceed 1% of the summer run to the Columbia River mouth. Fisheries conducted by the Columbia River treaty tribes will be managed such that the harvest rate on upriver summer chinook, which includes the summer component of the listed spring/summer chinook, shall include all treaty fisheries and shall not exceed 5% of the run entering the Columbia River.

Sockeye

The Interim Management Agreement provides for a management goal for upriver sockeye of 65,000 adult sockeye, as measured at Priest Rapids Dam, which under average migration conditions requires 75,000 adult sockeye to pass Bonneville Dam. Combined non-Indian commercial and recreational impacts on listed sockeye will be minimized to the degree possible, but 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:

Upriver Sockeye Run Size	Harvest Rate
<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 then 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 the NOAA Fisheries for consultation under Section 7 of the ESA.

Non-Indian Allocation of Upriver Impacts

The Interim Management Agreement currently provides a sliding scale harvest rate for upriver spring chinook which ranges from 0.5% to 2.0% for non-Indian sport and commercial fisheries. A policy decision concerning the allocation of non-Indian upriver spring chinook impacts between sport and commercial fisheries was determined for 2004 and 2005. Guiding principles and fisheries management objectives were adopted to provide staff with guidance when shaping fisheries preseason and managing fisheries inseason for 2004-2005.

<i>Mainstem Columbia River Spring Chinook Allocation For Non-Indian Fisheries, 2004-2005</i>
Guiding Principles
<ul style="list-style-type: none"> • 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 <i>U.S. v Oregon</i> Management Agreement for upriver spring chinook. • Manage harvest to meet hatchery escapement goals. • Focus sport and commercial fisheries' allocation on harvest of hatchery fish by implementing live capture and release of unmarked spring chinook.
Fisheries Management Objectives
<ul style="list-style-type: none"> • Specific structure of sport 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 and after public discussions. • Provide for in-season 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 in-season information pertaining to catch and run size. • Adjustments to the sport fishery may occur in-season if it is estimated the fishery will not continue through April. In-season adjustments may include such options as days/week and area closures. • Reduce sport mortality rate with a new regulation requiring “any salmon to be released may not be removed from the water”. • Recognize economic benefits of sport and commercial fisheries in the Columbia River. • Provide for sport fisheries throughout the Columbia River downstream of McNary Dam, sport/tribal fisheries in the Snake River and Upper Columbia River, and commercial and sport fisheries in Select Areas.

The process for determining allocation of non-Indian spring chinook impacts between sport and commercial fisheries is nearing completion. This issue was considered at the January 9, 2004 OFWC meeting and the January 17, 2004 WFWC meeting and each Commission provided guidance to their respective staff at these meetings. Based on this guidance staff will propose a multi-year (2004-2005) allocation plan that is scheduled for adoption at the February 5 Compact hearing.

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 spring chinook freshwater impact limits of 20% for 2001 and 15% for 2002 and beyond. The FMEP also addresses impacts associated with sport fisheries occurring in the Willamette River basin and sport and commercial fisheries occurring in the mainstem Columbia River. In addition to the impact limits the FMEP also requires that all wild Willamette spring chinook landed in freshwater fisheries be released. The ODFW will conduct a comprehensive review of this plan after completion of fisheries in 2004 to evaluate whether fisheries and wild populations are performing as expected. Comprehensive reviews will be repeated by the ODFW at 5-year intervals thereafter until such time as wild stocks are recovered or delisted. In accordance with the FMEP, sport and commercial fisheries occurring in 2004 will be managed such that cumulative freshwater impacts from sport and commercial fisheries will not exceed 15% on wild spring chinook destined for the Willamette River. Additionally, all wild Willamette spring chinook landed in 2004 sport and commercial fisheries in the Columbia River basin will be released.

Willamette River Basin Fish Management Plan

WFMP's were originally adopted in 1981, readopted in 1988, and revised in 1992 for the mainstem 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 superceded 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 sport fisheries were adopted by the OFWC.

Most 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 plus determination of the sport/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. Due to the selective nature of live capture fisheries, sport and commercial allocations will be focussed on the abundance of hatchery-produced Willamette spring chinook.

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 allow tributary areas to share in increased fishery benefits created by an increased abundance of hatchery fish.

Hatchery Spring Chinook Escapement Goals at Willamette Falls And the Clackamas River			
Predicted Hatchery Return	Hatchery Fish Escapement		
	Falls	Clackamas	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 sport and commercial allocation of hatchery-produced Willamette spring chinook is shown in the table below. Sport fisheries included in the sport 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 included in the commercial allocation are those occurring in the lower Columbia River. The sport/commercial allocation plan is designed to allow for full sport fisheries in the mainstem Willamette and Clackamas rivers at hatchery run sizes greater than 32,000 fish and allow the commercial share to gradually increase as the forecasted run and allowable catch increases.

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

Lower Columbia River Sturgeon Management

In October 1996, the directors of ODFW and WDFW signed “The Olympia Accord on Columbia River Sturgeon Fishery Management”. Major tenets of the Management Agreement for lower Columbia fisheries guided white sturgeon fishery management decisions during 1997-1999. During the late fall and winter of 1999, the Oregon and Washington Fish and Wildlife Commissions re-evaluated the major tenets of The Olympia Accord, especially the harvestable

number and the sport/commercial allocation. These discussions culminated in February 2000 when the Directors of ODFW and WDFW signed a 3-year Joint State Management Agreement concerning sturgeon management for 2000-2002. A new harvestable number of 50,000, down from 67,300 in the previous Accord, was adopted but other major tenets of the previous Accord remained intact, including the 80% sport:20% commercial catch allocation.

During the fall of 2002 the Oregon and Washington Fish and Wildlife Commissions again re-evaluated the major tenets of the previous Joint State Agreement, especially the harvestable number. Based on declining abundance estimates the Commissions adopted a reduced harvestable number of 40,000 white sturgeon for 2003-2005. Other major tenets of the previous Joint State Agreements remained intact, including the 80% sport:20% commercial catch allocation. The current Joint State Sturgeon Agreement calls for an average annual harvestable number of 40,000 white sturgeon (32,000 sport and 8,000 commercial) which equates to a 3-year total of 120,000 white sturgeon (96,000 sport and 24,000 commercial). The major tenets of this Joint State Agreement are described in "*The Joint Staff Report Concerning Commercial Seasons for Sturgeon and Smelt in 2004*".

2004 WINTER, SPRING, AND SUMMER SEASON RECOMMENDATIONS

Fisheries considered in this report are currently managed in accordance with the "*Interim Management Agreement for Upriver Spring Chinook, Summer Chinook, and Sockeye*". Discussions are ongoing concerning a new CRFMA that is scheduled for completion by March 31, 2004. The new CRFMA will supercede the Interim Management Agreement which may modify current expectations for fisheries occurring during the winter, spring, and summer timeframes. Additionally, the states have submitted Biological Assessments regarding wild winter steelhead impacts and spring and summer chinook impacts from fisheries in Select Areas. Biological Opinions completed by NOAA Fisheries in the future may also affect 2004 fisheries during the winter, spring, and summer timeframes.

A sliding scale harvest matrix is currently in effect for upriver spring chinook. Based on the current matrix and a river mouth run size forecast of 360,700 upriver spring chinook, the total harvest rate on Snake River and Upper Columbia wild spring chinook will be 15% with 2% allocated to non-Indian fisheries and 13% allocated to treaty Indian fisheries. In 2004, non-Indian fisheries will include selective sport and commercial spring chinook fisheries where the release of nonadipose fin-clipped chinook will be required, in accordance with the Willamette River spring chinook FMPEP. Release mortality impacts will be estimated and monitored inseason to ensure that impacts do not exceed 2% of the upriver spring chinook run. Impacts on listed summer chinook are not to exceed 1% in non-Indian fisheries and 5% in treaty Indian fisheries as per the Interim Management Agreement. Impacts to listed sockeye will vary depending on run size which will be updated inseason. Impacts to steelhead in non-Indian fisheries will occur as released mortalities during selective sport and commercial fisheries. Currently impacts to listed wild steelhead are not to exceed 2%; however, at the time this report was written the states had submitted a Biological Assessment to the NOAA Fisheries that would allow for increased impact rates on wild winter steelhead.

Recognizing the complexities of managing a mixed stock fishery, the Compact will have to be cautious and creative in shaping and adopting 2004 seasons that minimize impacts on listed and

depressed runs. Potential main-stem Columbia River commercial fisheries for the 2004 winter, spring, and summer season time frames listed here will be considered at the February 5, 2004 Compact hearing. Ongoing or other potential fisheries will be considered at future Compact hearings and other management forums.

At the time this report was written expectations for 2004 winter, spring, and summer fisheries were based on preseason run size forecasts and impact limits set forth in the Interim Management Agreement. Results of the ongoing CRFMA negotiations and NOAA Fisheries review of the states Biological Assessment regarding wild winter steelhead impacts may modify these expectations.

2004 Non-Indian Fisheries

Commercial Winter Sturgeon Fishery (adopted by the Compact on December 19, 2003)

The currently adopted season consists of five 24-hour fishing periods (6 AM Tuesday to 6 AM Wednesday) in all of Zones 1-5 during the time period of January 13, 2004 through February 11, 2004. Season dates, gear restrictions, and expected catches are included in the Fact Sheet developed by the Joint Staff for the December 19, 2003 Compact hearing. This early target sturgeon fishery provides maximum protection to depressed and listed stocks while allowing commercial fishers to access a portion of the commercial white sturgeon allocation. This fishery is expected to harvest up to 1,800 white sturgeon and less than 50 spring chinook. In past years this fishery has typically continued through mid to late February with catches ranging between 1,500-3,000 white sturgeon.

Commercial Spring Chinook Fisheries (Compact consideration February 5, 2004)

In accordance with the Willamette River spring chinook FMEP, commercial fisheries harvesting spring chinook in the mainstem Columbia River will require the release of all nonadipose fin-clipped spring chinook. Catch expectations and impact limits are set forth in the Interim Management Agreement and the WFMP. At the time this report was written allocation of non-Indian impacts on upriver spring chinook had not been determined. Based on a total run size expectation of 109,400 (96,300 hatchery) Willamette spring chinook the commercial fishery will be allocated a catch of 16,700 Willamette hatchery spring chinook.

Commercial fisheries targeting spring chinook may occur during the mid-February through mid-May timeframe. Restrictive regulations will include: 1) 150-175 fathom net length restriction (depending on use of a steelhead excluder), 2) 45 minute or less soak time (first net mesh in to last net mesh out), and 3) use of recovery box required on all stressed or lethargic salmon or steelhead. Mesh size regulations will also be considered with respect to survival rates of released fish and avoidance of non-target species. Large mesh (8" minimum) size regulations may be considered early in the season to reduce steelhead handle and small mesh (4-1/4" maximum) will be required later in the season to ensure high survival rates of released species. In past fisheries the use of large mesh (12" minimum) steelhead excluder panels on the top portion (5'-10') of the net was voluntary; however, the states are discussing with industry a regulation requiring the use

of excluders in 2004 to minimize handle of wild winter steelhead. Additional efforts to reduce steelhead handle will include shaping of fishery to reduce effort during peak abundance times for wild winter steelhead.

A fishing plan for the winter salmon season will be included in the Fact Sheet developed for the February 5, 2004 Compact hearing. The fishing plan will include expected calendar days on which test fishing and commercial fishing periods are to occur, initial date for test fishing, expected duration and hours of commercial fishing periods, and calendar days on which Compact hearings are expected to occur. Data collected from test fishing operations will be used during the season setting process to maximize catch of Willamette hatchery spring chinook and minimize handle of Snake River wild spring chinook and wild winter steelhead. Specific fishing period times and dates will be considered at future Compact hearings occurring during the winter/spring fishery management period.

***Lower Columbia River Spring Chinook Sport Fishery
(Joint State consideration February 5, 2004)***

In accordance with the Willamette Spring Chinook FMEP sport fisheries harvesting spring chinook in the mainstem Columbia River will require the release of all nonadipose fin-clipped spring chinook. Catch expectations and impact limits are set forth in the Interim Management Agreement and the WFMP. At the time this report was written allocation of non-Indian impacts on upriver spring chinook had not been determined. Oregon and Washington Fish and Wildlife Commissions provided guidance concerning this issue in early January. Final adoption of this allocation agreement is currently scheduled to occur at the February 5, 2004 Compact hearing. Based on a run size expectation of 109,400 (96,300 hatchery) Willamette spring chinook the sport fishery below Willamette Falls will be allocated a catch of 38,900 Willamette hatchery spring chinook.

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, 2004. This fishery will likely extend up to McNary Dam with the duration of the season depending on catch rates, effort levels, and impacts to listed species. In recent years the area between Bonneville Dam and Tower Island (8 miles below the Dalles Dam), excluding the Oregon bank fishery in 2002, has been closed to spring chinook fishing. At the time this report was written the states were considering whether to allow spring chinook angling to occur in this section of the river. Proposed fishery regulations will be included in the Fact Sheet prepared for the February 5, 2004 Joint State meeting.

***Select Area Commercial Fisheries
(Compact and State consideration February 5, 2004)***

Spring chinook fisheries will be proposed for the Blind Slough, Deep River, and Youngs Bay Select Areas and will be described in the Fact Sheet developed for the February 5, 2004 Compact hearing. Both winter and spring seasons will be proposed for Youngs Bay and Blind Slough while only a spring season will be proposed for Deep River. Additionally, a summer season will also be proposed for Youngs Bay. 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 will be completed following a public meeting concerning spring Select Area fisheries that occurred January 28, 2004.

Columbia River Steelhead Sport Fishery
(Adopted season as per permanent regulations)

Dates: May 16 to December 31, below I-5 bridge
June 16 to December 31, above I-5 bridge
Area: Main-stem Columbia River up to Highway 395 bridge at Pasco, WA
Expected catch (through July): 6,000 hatchery steelhead
Expected wild steelhead handle (through July): 3,000 fish (300 mortalities)
Expected summer chinook handle: 1,200 fish (120 mortalities)
Expected sockeye handle: <100 fish (<10 release mortalities)

Based on the preseason run size forecasts the retention of sockeye is not expected to be allowed in Oregon or Washington waters during 2004 but the retention of adipose fin-clipped summer chinook will likely be allowed during a portion of this fishery.

Area 2S Shad Fishery
(Compact consideration February 5, 2004)

For 2004, it is recommended that the Area 2S shad fishery operate using modified gill nets and restricted hours as occurred during 1996-2003. 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 (in effect since 1976). The number of incidental species that will be handled in the proposed 2004 Area 2S shad fishery is expected to be at the low levels observed during 1996-2003 fisheries.

Season: Daily 3 PM-10 PM
May 17-21 (5 days)
May 24-28 (5 days)
June 1-4 (4 days)
June 7-11 (5 days)
June 14-18 (5 days)
June 21-25 (5 days)

Area: True north/south line through Light #50 near Sandy River mouth upstream to boundary near Beacon Rock (in effect since 1976).

Gear: Single-wall, unslackened, floater gill net, 5-3/8 to 6-1/4" mesh, 10-lb breaking strength (in effect since 1976), may not exceed 150 fathoms in length nor 40 meshes in depth (in effect since 1996).

Expected catch: Up to 45,000 shad
Expected summer chinook handle: <25 fish (5 mortalities)
Expected sockeye handle: <5 fish (zero mortalities)
Expected steelhead handle: <25 fish (10 mortalities)
Expected wild steelhead handle: up to five fish (two mortalities)

Summary of Recommended 2004 Non-Indian Salmonid Fisheries

At the time this report was written managers of the lower Columbia River non-Indian fisheries intended to manage 2004 winter, spring, and summer season fisheries consistent with the impacts outlined in the *"Interim Management Agreement for Upriver Spring Chinook, Summer Chinook, and Sockeye"*. Decisions regarding the CRFMA and state Biological Assessments concerning wild steelhead impacts and spring and summer chinook impacts in Select Area and above McNary Dam may supercede the current agreement for the winter, spring management periods and the states will modify fisheries management accordingly. Currently it is expected that harvest related mortalities in non-Indian fisheries, collectively, will not exceed 2% of the upriver spring chinook return and 1% of the upriver summer chinook. Based on the preseason run size expectation, no commercial sockeye fisheries are proposed and retention of sockeye during the steelhead sport fishery is not expected to be allowed by either state in 2004. Adoption of commercial fisheries harvesting sockeye or retention of sockeye during sport fisheries may be considered depending on inseason run size updates. Non-Indian commercial fisheries will be managed through time, area, and gear restrictions to continue to limit impacts to steelhead. Non-Indian sport fisheries will continue with wild steelhead release regulations throughout the basin. Currently, non-retention steelhead mortalities in all non-Indian mainstem fisheries are expected to continue to be less than 2% of the wild stock winter steelhead population; however, the states' request to re-evaluate wild winter steelhead impacts is being reviewed by NOAA Fisheries.

2004 Treaty Indian Fisheries

Spring and summer chinook harvest has occurred primarily in the C&S fisheries except in years of high abundance, such as in the past four years. Additionally, a few spring chinook are incidentally harvested in the winter season gillnet fishery and very 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. The tribes would monitor and provide accounting for any commercial salmon fishery as well as any proposed experimental shad fishery, if it occurs.

2004 Treaty Winter Commercial Fisheries (Adopted by the Compact on December 19, 2003)

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 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 2004 winter gillnet fishery is scheduled to be open in all of Zone 6 from noon February 1 to noon March 21. Between 1993 and 2000, most of the winter gillnet harvest has been sturgeon with catches averaging 2,019 sturgeon, 960 steelhead, and 10 chinook. In 2001, the winter season gillnet fishery harvested 1,975 sturgeon, 85 chinook, and 185 steelhead. In 2002, the winter season gillnet harvested 1,372 sturgeon, 45 chinook, and 78

steelhead. In 2003, the winter season gillnet fishery harvested 1,339 sturgeon, 857 chinook, and 788 steelhead. The majority of the steelhead catch may be ESA-listed kelt and holdover summer steelhead with a small portion ESA-listed fresh actively migrating steelhead. The 2004 winter season fisheries are expected to have similar catches and effort as in recent years.

2004 Treaty Indian Spring Season Fisheries

The treaty tribes have not yet determined the structure of their 2004 spring chinook fisheries. The parties to *U.S. v. Oregon* are working on a new long term management plan which if completed may allow some changes from previous years. The tribes anticipate that no more than 1,000 steelhead will be caught in spring fisheries. The majority of the catch would be 2004 Skamania stock hatchery returns with some holdovers and kelts from the 2003 summer steelhead run.

2004 Treaty Indian Summer Season Fisheries

The treaty tribes have not yet determined the structure of their 2004 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 platform fishery.

The 1999-2003 average harvest rate on summer chinook for the treaty Indian fisheries is 1.8% (range 0.9% to 3.8%) which corresponds to an average catch of 1,660 fish. The average harvest rate of sockeye during the 1999-2003 period for treaty Indian fisheries was 4.2%, including platform, permit, and commercial fisheries. The average catch of steelhead, during the years 1996-2000, in summer platform and permit gillnet fisheries was 3,146 summer steelhead and in 2001 the summer season steelhead catch was 8,220 based on an all time record return of summer steelhead. Summer steelhead catch totaled 4,967 in 2002 and 4,455 in 2003.

2004 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 1. Results of the experimental fisheries in 1994-1996 suggest that trapnet and dipnet harvest methods will encounter very few salmonids. This information suggests that less than 20 chinook will be handled by the gear, and zero will be killed. 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 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 dipnets or trapnets. 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.

ANCHOVY AND HERRING FISHERY

The anchovy and herring fishery primarily provides bait to the local recreational salmon and sturgeon fisheries. The anchovy and herring season is open year round seaward of the Megler-Astoria Bridge, with seines of a mesh size not less than ½-inch and not over 1,400 feet in length. All other species must be released. The Joint Staff recommends no changes for the 2004 bait 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 is not recommending any changes to miscellaneous regulations at this time.

The Sturgeon Management Task Force (SMTF) met in January 20 to discuss Zone 6 sturgeon management for 2004 and agreed to a management plan for 2004 sturgeon fisheries in the Zone 6 management area. Results of the SMTF meetings will be presented at the February 5, 2004 Compact hearing.

Oregon Department of Fish and Wildlife
Washington Department of Fish and Wildlife
February 2, 2004

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Table 1. Estimates of the Spring Chinook Stock Composition (in Thousands) in Lower Columbia Fisheries, 1985-2003.

Year	Willamette River ¹		Other Lower River ²		Upriver		Total ³ Catch
	No.	%	No.	%	No.	%	
<u>Winter Commercial Season (Feb-Mar) ⁴</u>							
1985	10.0	79	1.5	12	1.1	9	12.7
1986	7.3	81	0.6	7	1.1	12	9.0
1987	8.5	76	1.7	15	1.0	9	11.2
1988	11.3	62	1.9	10	5.1	28	18.3
1989	10.9	78	1.5	11	1.5	11	13.9
1990	15.5	85	0.7	4	2.1	11	18.3
1991	11.2	89	0.5	4	0.9	7	12.6
1992	3.9	76	1.0	19	0.2	5	5.1
1993	0.8	55	0.4	29	0.2	16	1.5
1994	0.1	54	0.4	23	0.4	23	1.9
1995	--	--	--	--	--	--	0.0
1996	0.1	89	<0.1	6	<0.1	5	0.1
1997	0.1	91	0.0	0	<0.1	9	0.1
1998	<0.1	100	0.0	0	0.0	0	<0.1
1999	<0.1	81	<0.1	6	<0.1	13	<0.1
2000	0.4	76	<0.1	7	0.1	17	0.5
2001	2.8	51	1.1	20	1.6	29	5.4
2002	5.4	37	0.8	5	8.3	58	14.4
2003	0.8	25	0.2	7	2.1	68	3.0
<u>Main-Stem Sport Fishery (Feb-Mar)</u>							
1985	1.0	72	0.1	7	0.3	21	1.4
1986	1.4	74	0.2	10	0.3	16	1.9
1987	1.9	68	0.5	18	0.4	14	2.8
1988	2.9	63	0.3	7	1.4	30	4.6
1989	0.9	75	0.2	17	0.1	8	1.2
1990	6.8	75	0.3	3	2.0	22	9.1
1991	3.5	62	0.6	11	1.5	27	5.6
1992	3.1	59	1.0	19	1.2	22	5.3
1993	0.3	56	0.2	29	0.1	15	0.6
1994	1.0	67	0.3	17	0.2	16	1.5
1995	--	--	--	--	--	--	0.0
1996	0.0	--	0.0	--	0.0	--	0.0
1997	0.0	--	0.0	--	0.0	--	0.0
1998	<0.1	85	<0.1	15	0.0	0	0.1
1999	0.0	--	0.0	--	0.0	--	0.0
2000	0.2	62	<0.1	11	0.1	27	0.3
2001	0.8	18	0.1	2	3.7	80	4.6
2002	0.6	27	0.1	3	1.4	70	2.1
2003	1.1	19	0.2	3	4.5	78	5.8
<u>Main-Stem Sport Fishery (April)</u>							
1986	1.7	45	1.1	29	1.0	26	3.8
1989	1.1	61	0.3	17	0.4	22	1.8
1990 ⁵	2.0	63	<0.1	1	1.1	36	3.2
1993	0.6	49	0.3	26	0.3	25	1.2
1994	0.3	55	0.1	14	0.2	31	0.5
2001	2.8	13	0.4	2	17.9	85	21.1
2002 ⁶	4.5	24	0.5	3	13.5	73	18.4
2003 ⁶	5.9	53	0.9	8	4.3	39	11.1

¹. Includes only spring chinook destined for the Willamette River. Willamette stock spring chinook are released at other locations in the Columbia River Basin below Bonneville Dam.

2. *Includes spring chinook destined for the Cowlitz, Kalama, Lewis, and Sandy rivers plus Select Area sites in Youngs Bay (since 1992), Tongue Point (since 1998), Blind Slough (since 1998), and Deep River (since 2001).*
3. *Individual catch columns may not add up to total catch because of rounding errors. Percentages calculated using unrounded numbers. Includes kept catch only. Only adipose fin-clipped chinook could be retained in sport fisheries effective in 2001 and mainstem commercial fisheries in 2002.*
4. *Does not include 700 and 400 spring chinook catch from late January-early February 1986 and 1987 sturgeon seasons. Includes tangle net landings of spring chinook beginning in 2002.*
5. *Includes the April 5-15 terminal fishery at the mouth of Multnomah Channel.*
6. *Includes catch during May 5-15 in 2002 and May 1-15 in 2003.*

Table 2. Components (in Thousands) of the Minimum Willamette River Spring Chinook Run and Percentage Caught in Lower Willamette Sport Fishery, 1970-2003.

Year	Minimum Run Entering Columbia R. ¹	Mainstem Columbia River Catch		Run Entering Willamette R.	Lower Willamette R. Sport Catch		Willamette Falls Count	Run Entering Clackamas R.
		Comm. ²	Sport ³		Number ⁴	% of Run		
1970-1974 Average	71.6	10.1	2.6	58.9	18.2	31	38.3	2.1
1975-1979 Average	56.6	5.4	1.6	49.5	15.1	32	31.1	3.0
1980	43.3	0.3	0.6	42.4	7.0 ⁵	17 ⁵	27.0	8.2
1981	56.3	4.8	2.9	48.6	10.5	22	30.1	7.7
1982	78.0	3.6	1.9	72.5	18.9	26	46.2	6.9
1983	62.2	5.3	1.8	55.1	13.8	25	30.6	9.8
1984	84.2	8.2	1.5	74.5	19.4	26	43.4	10.9
1980-1984 Average	64.8	4.4	1.7	58.6	13.9	23	35.5	8.7
1985	68.1	10.0	1.0	57.1	15.5	27	34.5	6.2
1986 ⁶	73.6	8.0	3.1	62.5	15.0	24	39.2	7.4
1987 ⁶	93.6	8.8	1.9	82.9	18.9	23	54.8	8.4
1988	118.1	11.3	2.9	103.9	24.6	24	70.4	8.6
1989	114.9	10.9	2.0	102.0	24.2	24	69.2	7.9
1985-1989 Average	93.7	9.8	2.2	81.7	19.6	24	53.6	7.7
1990	130.6	15.5	8.8	106.3	23.0	22	71.3	11.1
1991	109.9	11.2	3.5	95.2	30.5	32	52.5	11.6
1992	75.0	3.9	3.1	68.0	13.5	20	42.0	11.4
1993	65.9	0.8	1.1	63.9	20.7	32	32.0	10.5
1994	49.6	1.0	1.3	47.2	11.5	24	26.1	7.4
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	9	54.0	10.8
2002	121.7	7.4	5.2	109.1	10.8	9	83.1	14.4
2003	126.6	1.8	7.2	117.6	13.5	11	87.7	15.4

1. Includes small numbers of observed or estimated losses below Willamette Falls each year.
2. 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).
3. Includes spring chinook destined for the Willamette River landed in Columbia River boat and/or bank fisheries.
4. Lower Willamette sport fishery managed for quotas of 6,000 in 1996, 1,900 in 1997, 2,000 in 1998, 4,600 in 1999, and 7,850 in 2000. 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 hook and release mortalities beginning in 2000.
5. Early closure on April 28 reduced catch and harvest rate.
6. Includes 700 and 400 spring chinook catch from late January-early February 1986 and 1987 sturgeon seasons.

Table 3. Predicted and Actual Spring Chinook Runs (in Thousands) Entering the Columbia River, 1980-2003 and 2004 Projections.

Year	Willamette River (All Age Classes)			Cowlitz, Kalama, & Lewis Rivers Combined (Adults)			Upriver (Age 4 & 5 Adults)		
	Preseason Forecast	Actual Return	% of Predicted	Preseason Forecast	Actual Return	% of Predicted	Preseason Forecast	Actual Return	% of Predicted
1980	42.5	43.3	102	--	--	--	25.6	<52.6	206
1981	52.0	56.3	108	--	--	--	64.9	<63.6	99
1982	65.0	78.0	120	--	--	--	48.7	71.1	146
1983	72.0	62.2	86	--	--	--	51.8	55.9	108
1984	65.0	84.2	130	--	--	--	44.2	47.1	107
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 ¹	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 ²	59.2	96
1992	106.0	75.0	71	26.6 ³	18.4 ³	69	71.4	89.8	126
1993	70.0	65.9	94	21.3 ³	19.0 ³	89	76.2	111.0	146
1994	75.0	49.6	66	12.3 ³	7.4 ³	60	49.0	20.8	42
1995	49.0	42.6	87	4.6	6.6	144	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 ¹	54.2	117	3.9	4.4	113	24.6	38.7	157
2000	59.9	57.5	96	6.0	5.3	88	134.0	178.6	133
2001	61.0	80.3	132	4.8	5.6	117	364.6	416.5	114
2002	73.8	121.7	165	6.7	8.5	127	333.7	295.1	88
2003 ⁴	109.8	126.6	115	10.8	22.7	210	145.4	208.9	144
2004	109.4	--	--	27.3	--	--	360.7	--	--

1. *New upriver predictor developed by Joint Staff and approved by TAC.*
2. *New upriver predictor refined by Joint Staff and approved by TAC.*
3. *Excludes Willamette stock released in Lewis River.*
4. *Actual returns are preliminary.*

Table 4. Willamette Falls Spring Chinook Escapement, Upper Willamette Sport Catch, Number Returning to Hatcheries, Surplus Sales, and Tribal Use, 1980-2003.

Year	Willamette Falls Count ¹	U. Willamette Sport Catch		U. Will. Hatchery Return		Clackamas Hatchery Return	Surplus Sales		Received by Columbia River Tribes ²
		Number	% of Will. Falls Count	Number	% of Will. Falls Count		U. Will. Hatcheries	Clackamas Hatchery	
1980	26,973	1,954	7	8,302	31	1,024	0	0	--
1981	30,057	2,241	7	9,198	31	1,065	6,614	0	--
1982	46,195	3,687	8	13,780	30	573	3,114	0	--
1983	30,589	1,877	6	10,372	34	1,923	2,186	0	--
1984	43,452	3,123	7	15,433	36	2,521	6,570	751	--
1985	34,533	2,510	7	10,785	31	944	119	101	--
1986	39,155	2,708	7	12,591	32	776	5,509	64	--
1987	54,832	6,442	12	16,517	30	1,005	7,175	282	--
1988	70,451	8,536	12	22,534	32	1,253	8,040	209	3,700
1989	69,180	9,375	14	27,349	40	865	12,704	103	2,520
1990	71,273	10,856	15	29,692	42	1,847	13,958	371	1,425
1991	52,516	8,323	16	20,685	39	2,776	4,681	1,201	2,992
1992	42,004	7,424	18	15,743	37	4,535	4,350	3,294	2,206
1993	31,966	8,161	26	14,636	46	4,635	1,676	2,577	1,386
1994	26,102	4,273	16	9,795	38	3,675	461	746	3,193 ³
1995	20,592	3,380	16	8,757	43	3,112	688	400	1,504 ⁴
1996	21,605	5,041	23	10,056	47	3,044	0	0	4,386 ⁵
1997	26,885	4,022	15	14,752	55	2,670	255	179	539
1998	34,461	6,125	18	16,414	48	4,530	960	859	7,590
1999	40,410	6,367	16	18,725	46	4,562	0	551	7,689
2000	39,073	5,721	15	16,158	41	4,296	0	1,847	0
2001	53,973	NA	--	20,256	38	6,155	0	3,711	0
2002	83,136	NA	--	32,049	39	6,256	0	4,004	0
2003	87,749	NA	--	25,528	29	3,532	NA	NA	0

1. Includes jacks.

2. Given toward the tribes' minimum ceremonial and subsistence entitlement per the Columbia River Fish Management Plan.

3. Columbia treaty tribes at Willamette Falls also harvested 759 chinook and 396 marked summer steelhead May 9-28 and July 5, 1994.

4. Columbia treaty tribes at Willamette Falls also harvested 29 chinook June 12-17 and 112 summer steelhead in mid-July, 1995.

5. Columbia treaty tribes at Willamette Falls also harvested 12 chinook June 1, 1996.

<i>Table 5. Minimum Adult Spring Chinook Run (in Thousands) Entering Other Lower River Tributaries, 1980-2003.¹</i>					
Year	Cowlitz River	Kalama River	Lewis River	Sandy River	Total
1980	23.7	2.5	2.3	1.8	30.3
1981	27.9	3.3	3.0	2.8	37.0
1982	19.3	8.4	3.9	1.4	33.0
1983	21.4	4.9	3.7	1.8	31.8
1984	21.3	1.8	6.4	2.3	32.8
1980-1984 Average	22.7	4.2	3.9	2.0	32.8
1985	9.9	0.3	4.1	1.4	15.7
1986	7.3	1.1	8.3	1.3	18.0
1987	18.0	2.4	16.5	2.4	39.3
1988	12.3	1.9	10.6	2.9	27.7
1989	8.3	2.0	12.0	2.0	24.3
1985-1989 Average	11.2	1.5	10.3	2.0	25.0
1990	7.6	2.0	9.3	3.5	22.4
1991	8.9	2.6	8.3	3.7	23.5
1992	10.4	2.4	5.6 ²	9.2	27.6
1993	9.5	2.9	6.6 ²	6.4	25.4
1994	3.1	1.3	3.0 ²	3.5	10.9
1990-1994 Average	7.9	2.2	6.6	5.3	22.0
1995	2.2	0.7	3.7	2.5	9.1
1996	1.8	0.6	1.7	4.1	8.2
1997	1.9	0.5	2.2	5.2	9.9
1998	1.1	0.4	1.6	4.2	7.3
1999	1.6	1.0	1.8	3.3	7.6
1995-1999 Average	1.7	0.6	2.2	3.9	8.4
2000	1.7	1.4	2.2	3.8	9.1
2001	1.7	1.7	2.2	5.6	11.2
2002	3.7	2.8	2.9	7.0	15.5
2003 ³	13.4	5.1	4.2	6.4	29.1

^{1.} Run includes hatchery returns or dam counts, sport catch estimates, and except for the Sandy River, estimates of natural spawning populations.

^{2.} Excludes Willamette stock released in Lewis River.

^{3.} Preliminary

Table 6. Adult Spring Chinook Sport Catch and Run Size (in Thousands), and Harvest Rates for the Cowlitz, Kalama, and Lewis Rivers, 1980-2003.

Year	Cowlitz River			Kalama River			Lewis River			Total		
	Sport Catch	Run Size	Harvest Rate (%)	Sport Catch	Run Size	Harvest Rate (%)	Sport Catch	Run Size	Harvest Rate (%)	Sport Catch	Run Size	Harvest Rate (%)
1980	7.7	23.7	32	0.3	2.5	14	1.2	2.3	52	9.2	28.5	32
1981	5.4	27.9	19	0.9	3.3	29	1.9	3.0	65	8.2	34.2	24
1982	6.9	19.3	36	2.2	8.4	26	2.4	3.9	62	11.5	31.6	36
1983	8.0	21.4	37	2.1	4.9	43	2.8	3.7	77	12.9	30.0	43
1984	7.5	21.3	35	0.9	1.8	48	4.4	6.4	69	12.8	29.5	43
1980-1984 Average	7.1	22.7	32	1.3	4.2	32	2.5	3.9	65	10.9	30.8	36
1985	2.9	9.9	29	0.2	0.3	72	3.2	4.1	78	6.3	14.3	44
1986	2.1	7.3	29	0.4	1.1	41	5.9	8.3	72	8.4	16.7	50
1987	4.2	18.0	24	0.9	2.4	38	9.5	16.5	57	14.6	36.9	40
1988	3.1	12.3	25	0.5	1.9	28	5.0	10.6	47	8.6	24.8	35
1989	2.1	8.3	25	0.7	2.0	36	7.7	12.0	64	10.5	22.3	47
1985-1989 Average	2.9	11.2	26	0.5	1.5	43	6.3	10.3	64	9.7	23.0	43
1990	2.6	7.6	35	0.9	2.0	45	7.1	9.3	77	10.6	18.9	56
1991	3.4	8.9	38	1.4	2.6	54	6.2	8.3	74	11.0	19.8	56
1992	2.1	10.4	21	0.7	2.4	31	4.4	6.1	73	7.2	18.8	38
1993	2.9	9.5	31	1.5	2.9	51	6.1	8.2	74	10.5	20.6	51
1994	1.1	3.1	34	0.2	1.3	18	1.9	3.1	61	3.2	7.5	43
1990-1994 Average	2.4	7.9	32	0.9	2.3	40	5.1	7.0	72	8.5	17.1	49
1995 ¹	0.2	2.2	7	<0.1	0.7	1	2.4	3.7	65	2.5	6.6	38
1996 ¹	<0.1	1.8	1	0.2	0.6	31	0.3	1.7	20	0.5	4.1	12
1997 ¹	0.1	1.9	8	0.1	0.5	3	0.8	2.2	36	1.0	4.6	21
1998 ¹	0.0	1.1	0	0.0	0.4	0	0.2	1.6	14	0.2	3.1	6
1999 ¹	0.5	2.1	24	<0.1	1.0	1	0.7	1.8	40	1.2	4.9	24
1995-1999 Average	0.2	1.7	9	<0.1	0.6	7	0.9	2.2	35	1.0	4.6	19
2000 ¹	0.5	2.2	23	0.4	1.4	29	1.3	2.5	52	2.2	6.1	36
2001 ¹	0.2	1.7	12	0.4	1.7	24	1.9	3.7	51	2.5	7.1	35
2002	0.5	4.1	12	0.5	2.9	17	0.7	2.9	24	1.7	9.9	17
2003	0.4	13.4	3	1.3	5.1	25	1.0	4.2	24	2.7	22.7	12

¹. Harvest rates reflect fishery restrictions due to extremely low returns.

Table 7. Minimum Upriver Adult Spring Chinook Run, Catches, and Escapement (in Numbers), 1979-2003.

Year	Minimum Upriver Run	Non-Indian Fisheries Mortality ¹				Bonneville Dam	Treaty Indian Catch			Escapement ⁴		L. Granite Dam
		Comm.	Sport ²	Misc. ³	Rate (%)	Count ⁴	Comm. ⁵	C&S ⁶	Rate (%)	Number	% of Run	Count
1979	48,703	0	0	103	0.2	48,600	489	1,601	4.3	46,510	95.5	6,839
1980	53,207	0	0	107	0.2	53,100	29	1,826	3.5	51,245	96.3	5,460
1981	63,766	611	207	121	1.5	62,827	1,595	1,803	5.3	59,429	93.2	13,115
1982	71,252	508	559	174	1.7	70,011	3,308	2,000	7.4	64,703	90.8	12,367
1983	57,826	2,225	548	155	5.1	54,898	31	2,500	4.4	52,367	90.6	9,517
1984	48,658	1,409	285	98	3.7	46,866	75	3,400	7.1	43,391	89.2	6,511
1985	86,498	2,831	364	121	3.8	83,182	111	3,001	3.6	80,070	92.6	25,207
1986	120,627	1,082	1,288	175	2.1	118,082	359	7,074	6.2	110,649	91.7	31,722
1987	100,164	987	395	209	1.6	98,573	279	6,400	6.7	91,894	91.7	28,835
1988	97,237	5,130	1,433	142	6.9	90,532	204	6,800	7.2	83,528	85.9	29,495
1989	83,402	1,508	542	85	2.6	81,267	86	6,640	8.1	74,541	89.4	12,955
1990	99,486	2,082	3,112	134	5.4	94,158	4	6,924	7.0	87,230	87.7	17,315
1991	59,883	897	1,536	111	4.2	57,339	5	3,864	6.5	53,470	89.3	6,623
1992	89,969	235	1,182	127	1.7	88,425	48	5,700	6.4	82,677	91.9	21,391
1993	111,758	238	407	293	0.8	110,820	0	7,255	6.5	103,565	92.7	21,035
1994	21,075	441	402	63	4.3	20,169	10	1,115	5.3	19,044	90.4	3,120
1995	10,197	0	2	1	0.0	10,194	13	606	6.1	9,575	93.9	1,105
1996	51,530	5	7	25	0.1	51,493	0	2,791	5.4	48,702	94.5	4,207
1997	114,124	9	6	38	0.0	114,071	14	8,264	7.3	105,793	92.7	33,855
1998	38,376	0	7	27	0.1	38,342	1	2,188	5.7	36,153	94.2	9,854
1999	38,700	2	4	25	0.1	38,669	1	1,961	5.1	36,707	94.9	3,296
2000	178,640	88	93	157	0.2	178,302	6	11,250	6.3	167,046	93.5	33,822
2001	416,468	1,579	22,782	833	6.0	391,367	43,715	10,847	13.1	336,805	80.9	171,958
2002	295,111	9,483	17,031	659	9.2	268,813	24,254	8,906	11.2	235,653	79.9	75,025
2003	208,850	2,759	10,882	733	6.9	195,768	9,205	8,950	8.7	177,613	85.0	70,609

- ¹ Through 1979 all fish caught in April and May were considered upriver stocks. From 1980 to 1987 the February-March incidental commercial catch in Zone 1-5 and lower Columbia River sport were calculated on the basis of CWT recoveries. From 1988-1994, incidental commercial catch was based on GSI analysis and since 1988 sport catch was based on VSI analysis. Since 1996 (no season in 1995) incidental commercial catch based on VSI analysis.
- ² Includes mainstem Columbia River fisheries up to McNary Dam.
- ³ Includes fish caught in Select Area spring chinook commercial fisheries; mortalities from Area 2S shad fisheries; and mortalities from Corbett, Woody Island, Select Area, and tangle net test fisheries.
- ⁴ Chinook passing prior to June 16 are considered spring chinook. Dam counts in 1980 and 1981 were not adjusted for fallback; run size and escapements are maximums in those years.
- ⁵ Treaty Indian commercial catches from 1960 to 1968 include a small number of jacks.
- ⁶ Ceremonial and subsistence numbers since 1982 include catch by gillnet, dipnet, and hook and line.

Table 8. Estimated Numbers of Adult Summer Chinook Entering the Columbia River, Mainstem Harvest, and Escapement, 1979-2003.

Year	Upriver Run	Non-Indian Fisheries Mortality				Bonneville Counts	Treaty Indian Catch		Escapement		Dam Counts	
		Comm.	Sport ¹	Misc. ²	Rate (%)		No. ³	%	Number ⁴	% of Run	Priest Rapids	Wells Dam
1979	28,035	0	--	293	1.0	27,742	987	3.5	26,755	95.4	20,321	7,995
1980	26,983	0	--	31	0.1	26,952	1,181	4.4	25,771	95.5	16,000	3,910
1981	22,381	0	--	18	0.1	22,363	1,364	6.1	20,999	93.8	11,600	3,141
1982	20,363	0	--	234	1.1	20,129	1,295	6.4	18,834	92.5	8,800	2,223
1983	18,231	0	--	185	1.0	18,046	297	1.6	17,749	97.4	8,500	2,002
1984	22,464	0	--	43	0.2	22,421	457	2.0	21,964	97.8	16,200	4,768
1985	24,308	0	--	72	0.3	24,236	1,376	5.7	22,860	94.0	15,910	4,018
1986	26,439	0	0	218	0.8	26,221	1,120	4.2	25,101	94.9	16,161	3,787
1987	33,323	0	6	283	0.9	33,033	1,694	5.1	31,339	94.0	14,131	2,790
1988	31,486	0	10	161	0.5	31,315	1,499	4.8	29,816	94.7	13,400	2,411
1989	28,830	0	22	19	0.1	28,789	100	0.3	28,689	99.5	19,659	3,115
1990	25,023	0	9	31	0.2	24,983	111	0.4	24,872	99.4	15,576	3,207
1991	18,919	0	4	18	0.1	18,897	178	0.9	18,719	98.9	14,815	1,774
1992	15,150	0	17	70	0.6	15,063	57	0.4	15,006	99.0	8,523	1,343
1993	22,226	0	21	161	0.8	22,045	369	1.7	21,676	97.5	16,377	3,404
1994	17,711	0	34	46	0.5	17,631	207	1.2	17,424	98.4	14,859	4,613
1995	15,052	0	21	1	0.1	15,030	431	2.9	14,599	97.0	12,162	2,767
1996	16,102	0	37	31	0.4	16,034	494	3.1	15,540	96.5	10,995	2,225
1997	27,977	0	26	12	0.1	27,939	315	1.1	27,624	98.7	13,107	2,424
1998	21,468	0	34	1	0.2	21,433	371	1.7	21,062	98.1	13,387	3,385
1999	26,229	0	58	2	0.2	26,169	433	1.7	25,736	98.1	22,898	7,210
2000	30,651	0	34	1	0.1	30,616	280	0.9	30,336	99.0	22,306	6,447
2001	76,377	0	89	132	0.3	76,156	830	1.1	75,326	98.8	53,170	33,244
2002	129,012	0	1,625	16	1.3	127,436	2,321	1.8	125,115	97.0	96,326	7,585
2003	116,905	0	2,311	65	2.0	114,808	4,437	3.8	110,092	94.2	83,004	46,649

1. "--" indicates data not available. Includes sport fisheries above Bonneville Dam.
2. Includes non-retention mortalities in commercial shad and sockeye fisheries.
3. Includes commercial and C&S catches.
4. Bonneville counts minus Zone 6 catch.

Table 9. Estimated Numbers of Combined Upriver Adult Spring Chinook and Snake River Adult Summer Chinook Runs to the Columbia River, Mainstem Harvest, and Escapement, 1979-2003.

Year	Combined Upriver Run	Non-Indian Fisheries Mortality ¹				Bonneville Counts ⁴	Zone 6 Treaty Indian				Escapement	
		Comm.	Sport ²	Misc. ³	Rate (%)		Comm Gillnet ⁵	C & S Gillnet ⁶	Platform and Hook + Line	Rate %	Number ⁴	% of Run
1979	108,205	0	0	53,858	49.8	54,347	489	0	1,601	1.9	52,257	48.3
1980	57,199	0	0	122	0.2	57,077	29	0	1,826	3.2	55,222	96.5
1981	67,023	611	207	130	1.4	66,075	1,595	0	1,803	5.1	62,677	93.5
1982	76,938	508	559	291	1.8	75,580	3,308	0	2,000	6.9	70,272	91.3
1983	62,481	2,225	548	248	4.8	59,460	31	0	2,500	4.1	56,929	91.1
1984	52,123	1,409	285	119	3.5	50,310	75	0	3,400	6.7	46,835	89.9
1985	91,722	2,831	364	157	3.7	88,370	111	0	3,024	3.4	85,235	92.9
1986	127,759	1,082	1,288	284	2.1	125,105	359	0	7,078	5.8	117,668	92.1
1987	109,883	987	396	351	1.6	108,149	279	0	6,410	6.1	101,460	92.3
1988	105,326	5,130	1,435	222	6.4	98,539	204	0	6,802	6.7	91,533	86.9
1989	89,493	1,508	547	95	2.4	87,343	86	0	6,640	7.5	80,617	90.1
1990	105,213	2,082	3,115	150	5.1	99,866	4	0	6,924	6.6	92,938	88.3
1991	64,233	897	1,537	120	4.0	61,679	5	0	3,871	6.0	57,803	90.0
1992	95,323	235	1,187	162	1.7	93,739	48	0	5,711	6.0	87,980	92.3
1993	119,203	238	413	373	0.9	118,179	0	0	7,296	6.1	110,883	93.0
1994	23,809	441	409	86	3.9	22,873	10	0	1,151	4.9	21,712	91.2
1995	12,634	0	5	2	0.1	12,627	13	0	620	5.0	11,994	94.9
1996	55,299	5	17	41	0.1	55,236	0	0	2,911	5.3	52,325	94.6
1997	123,824	9	13	44	0.1	123,758	14	0	8,309	6.7	115,435	93.2
1998	43,512	0	14	27	0.1	43,471	1	0	2,224	5.1	41,246	94.8
1999	42,582	2	21	26	0.1	42,533	1	0	1,983	4.7	40,549	95.2
2000	186,141	88	102	177	0.2	185,774	6	1,348	9,973	6.1	174,447	93.7
2001	437,910	1,579	22,807	964	5.8	412,653	85	43,630	10,985	12.5	357,953	81.7
2002	331,303	9,483	17,088	667	8.2	304,940	45	24,209	9,208	10.1	271,478	81.9
2003	242,638	2,759	10,971	765	6.0	229,499	857	8,348	9,090	7.5	211,204	87.0

- ^{1.} Through 1979 all fish caught in April and May were considered upriver stocks. From 1980 to 1987 the February-March incidental commercial catch in Zone 1-5 and lower Columbia River sport were calculated on the basis of CWT recoveries. From 1988-1994, incidental commercial catch was based on GSI analysis and since 1988 sport catch was based on VSI analysis. Since 1996 (no season in 1995) incidental commercial catch based on VSI analysis.
- ^{2.} Includes mainstem Columbia River fisheries up to McNary Dam.
- ^{3.} Includes fish caught in Select Area spring chinook commercial fisheries; mortalities from Area 2S shad fisheries; and mortalities from Corbett, Woody Island, Select Area, and tangle net test fisheries.
- ^{4.} Chinook passing prior to June 16 are considered spring chinook. Dam counts in 1980 and 1981 were not adjusted for fallback; run size and escapements are maximums in those years.
- ^{5.} Treaty Indian commercial catches from 1960 to 1968 include a small number of jacks.
- ^{6.} Ceremonial and subsistence numbers since 1982 include catch by gillnet, dipnet, and hook and line

Table 10. Estimated Numbers of Adult Upper Columbia Summer Chinook Entering the Columbia River, Mainstem Harvest, and Escapement, 1979-2003.

Year	Upriver Run	Non-Indian Fisheries Mortality				Bonneville Counts	Treaty Indian Catch		Escapement		Dam Counts	
		Comm.	Sport ¹	Misc. ²	Rate (%)		No. ³	%	Number ⁴	% of Run	Priest Rapids	Wells Dam
1979	22,142	0	--	147	0.7	21,995	987	4.5	21,008	94.9	20,321	7,995
1980	23,021	0	--	46	0.2	22,975	1,181	5.1	21,794	94.7	16,000	3,910
1981	19,142	0	--	27	0.1	19,115	1,364	7.1	17,751	92.7	11,600	3,141
1982	14,911	0	--	351	2.4	14,560	1,295	8.7	13,265	89.0	8,800	2,223
1983	13,762	0	--	278	2.0	13,484	297	2.2	13,187	95.8	8,500	2,002
1984	19,041	0	--	64	0.3	18,977	457	2.4	18,520	97.3	16,200	4,768
1985	19,156	0	--	108	0.6	19,048	1,353	7.1	17,695	92.4	15,910	4,018
1986	19,525	0	0	327	1.7	19,198	1,116	5.7	18,082	92.6	16,161	3,787
1987	23,888	0	5	425	1.8	23,457	1,684	7.0	21,773	91.1	14,131	2,790
1988	23,557	0	8	241	1.1	23,308	1,497	6.4	21,811	92.6	13,400	2,411
1989	22,759	0	17	29	0.2	22,713	100	0.4	22,613	99.4	19,659	3,115
1990	19,328	0	6	47	0.3	19,275	111	0.6	19,164	99.2	15,576	3,207
1991	14,587	0	3	27	0.2	14,557	171	1.2	14,386	98.6	14,815	1,774
1992	9,866	0	12	105	1.2	9,749	46	0.5	9,703	98.3	8,523	1,343
1993	14,941	0	15	241	1.7	14,686	328	2.2	14,358	96.1	16,377	3,404
1994	15,023	0	27	69	0.6	14,927	171	1.1	14,756	98.2	14,859	4,613
1995	12,617	0	18	2	0.2	12,597	417	3.3	12,180	96.5	12,162	2,767
1996	12,365	0	27	47	0.6	12,291	374	3.0	11,917	96.4	10,995	2,225
1997	18,289	0	19	18	0.2	18,252	270	1.5	17,982	98.3	13,107	2,424
1998	16,332	0	27	1	0.2	16,304	335	2.1	15,969	97.8	13,387	3,385
1999	22,349	0	41	3	0.2	22,305	411	1.8	21,894	98.0	22,898	7,210
2000	23,171	0	25	2	0.1	23,144	209	0.9	22,935	99.0	22,306	6,447
2001	54,937	0	64	3	0.1	54,870	692	1.3	54,178	98.6	53,170	33,244
2002	92,836	0	1,568	24	1.7	91,309	2,019	2.2	89,225	96.1	96,326	7,585
2003	83,084	0	2,276	0	2.7	81,077	4,437	5.3	76,371	91.9	83,004	46,649

1. "--" indicates data not available. Includes sport fisheries above Bonneville Dam.

2. Includes non-retention mortalities in commercial shad and sockeye fisheries.

3. Includes commercial and C&S catches.

4. Bonneville counts minus Zone 6 catch.

Table 11. Columbia River Fisheries and Passage Loss Impacts on the Adult Snake River Wild Spring/Summer Chinook Run and Escapement, 1979-2003.

Year	Snake River Wild Run Size	Non-Indian Fisheries Mortality ¹		Treaty Indian Catch ²		Fisheries Total ³		Bonn.-L. Gr. Passage Loss		Snake River Escapement ⁴	
		No.	%	No.	%	No.	%	No.	% ⁵	No.	% ⁵
1979	13,655	58	0.4	523	3.8	581	4.3	7,364	56.3	5,707	43.7
1980	17,953	30	0.2	582	3.2	612	3.4	10,939	63.1	6,394	36.9
1981	18,488	252	1.4	937	5.1	1,189	6.4	5,804	33.6	11,486	66.4
1982	25,164	438	1.7	1,736	6.9	2,174	8.6	11,831	51.5	11,153	48.5
1983	19,238	929	4.8	779	4.0	1,708	8.9	7,559	43.1	9,970	56.9
1984	13,034	450	3.5	869	6.7	1,319	10.1	3,947	33.7	7,765	66.3
1985	14,404	523	3.6	492	3.4	1,015	7.0	2,612	19.5	10,773	80.5
1986	17,736	363	2.0	1,032	5.8	1,395	7.8	5,597	34.3	10,739	65.7
1987	14,938	232	1.6	909	6.1	1,141	7.6	3,595	26.1	10,198	73.9
1988	17,633	1,132	6.4	1,173	6.7	2,305	13.1	4,108	26.8	11,217	73.2
1989	11,468	273	2.4	862	7.5	1,135	9.9	4,752	46.0	5,579	54.0
1990	12,833	647	5.0	845	6.6	1,492	11.6	3,133	27.6	8,203	72.4
1991	10,603	418	3.9	640	6.0	1,058	10.0	4,113	43.1	5,429	56.9
1992	16,747	272	1.6	1,012	6.0	1,284	7.7	3,844	24.9	11,612	75.1
1993	12,670	105	0.8	776	6.1	881	7.0	1,006	8.5	10,781	91.5
1994	2,749	109	4.0	134	4.9	243	8.8	810	32.3	1,697	67.7
1995	2,767	2	<0.1	139	5.0	141	5.1	1,519	57.8	1,107	42.2
1996	7,637	9	0.1	402	5.3	411	5.4	3,807	52.7	3,419	47.3
1997	21,414	11	<0.1	1,439	6.7	1,450	6.8	8,196	41.1	11,767	58.9
1998	11,971	11	<0.1	612	5.1	623	5.2	4,391	38.7	6,957	61.3
1999	5,513	6	0.1	257	4.7	263	4.8	2,323	44.2	2,927	55.8
2000	7,473	15	0.2	455	6.1	470	6.2	3,669	52.4	3,334	47.6
2001	32,023	556	1.7	4,202	13.1	4,758	14.9	10,304	37.5	17,186	62.5
2002	52,880	979	1.9	5,707	10.8	6,686	12.6	12,026	26.1	34,125	73.9
2003	62,326	1,004	1.6	4,900	7.9	5,904	9.5	17,333	30.8	38,881	69.2

- ¹ Includes incidental mortalities in the mainstem steelhead sport fishery; Corbett and Select Area fisheries; Area 2S shad commercial fisheries; Columbia River sport fisheries and Snake River sport fisheries.
- ² Includes winter season commercial sales and spring C&S catches. Since 1982 C&S catch includes gill net, dip net and hook and line.
- ³ Individual columns may not add up to total column because of rounding.
- ⁴ Includes Lower Granite Dam passage and Tucannon River wild escapement.
- ⁵ Percentage of Zone 6 escapement.

Table 12. Columbia River Fisheries and Passage Loss Impacts on the Adult Upper Columbia Wild Spring Chinook Run and Escapement, 1979-2003.

Year	Upper Columbia Wild Run Size	Non-Indian Fisheries Mortality ¹		Treaty Indian Catch		Fisheries Total ²		Bonn. - McN Passage Loss		Priest Rapids Dam Escapement	
		No.	%	No.	%	No.	%	No.	% ³	No.	% ³
1979	8,702	40	0.5	333	3.8	373	4.3	4,610	55.3	3,719	44.7
1980	8,206	17	0.2	266	3.2	283	3.4	4,336	54.7	3,586	45.3
1981	9,831	139	1.4	498	5.1	637	6.5	2,499	27.2	6,695	72.8
1982	7,514	133	1.8	518	6.9	651	8.7	3,150	45.9	3,714	54.1
1983	8,431	408	4.8	342	4.1	750	8.9	2,524	32.9	5,158	67.1
1984	7,159	249	3.5	477	6.7	726	10.1	1,427	22.2	5,006	77.8
1985	10,895	398	3.6	372	3.4	770	7.1	788	7.8	9,336	92.2
1986	8,069	168	2.1	470	6.2	679	8.2	1,715	24.4	5,716	75.6
1987	7,345	116	1.6	447	6.7	601	8.2	1,408	19.7	5,374	80.3
1988	5,387	347	6.9	358	7.2	775	14.1	803	17.9	3,878	82.1
1989	6,433	155	2.5	484	8.1	668	10.6	2,063	33.8	3,732	66.2
1990	5,549	282	5.3	365	7.0	710	12.3	894	20.9	4,007	79.1
1991	2,474	98	4.2	149	6.5	284	10.7	490	26.9	1,736	73.1
1992	4,897	81	1.7	296	6.4	391	8.1	540	10.7	3,980	89.3
1993	5,146	44	0.8	315	6.5	374	7.3	109	1.5	4,678	98.5
1994	1,679	66	4.3	82	5.3	140	9.7	376	11.4	1,155	88.6
1995	284	0	0.0	14	6.1	15	6.1	113	34.0	157	66.0
1996	293	0	<0.1	15	5.4	18	5.5	105	44.6	173	55.4
1997	1,057	1	0.0	71	7.3	82	7.3	330	37.1	655	62.9
1998	391	0	<0.1	20	5.7	25	5.8	87	28.9	284	71.1
1999	619	1	0.1	29	5.1	35	5.1	139	29.3	451	70.7
2000	2,929	6	0.2	178	6.3	105	6.5	646	20.1	2,098	79.9
2001	9,892	154	1.4	1,308	13.1	1,730	14.6	512	15.6	8,047	84.4
2002	5,492	107	2.1	598	11.2	840	13.3	796	18.1	4,037	81.9
2003	2,609	40	1.5	206	7.9	246	9.4	523	22.1	1,846	77.9

- ¹. Includes incidental mortalities in the mainstem steelhead sport fishery; Corbett and Select Area fisheries; Area 2S shad commercial fisheries; Columbia River sport fisheries and Snake River sport fisheries.
- ². Individual columns may not add up to total columns because of rounding.
- ³. Percentage of Zone 6 escapement.

Table 13. Estimated Number of Sockeye Entering the Columbia River, Mainstem Harvest, and Escapement, 1980-2003.

Year	Return to Columbia River Mouth ¹	Non-Indian Fisheries Mortality	Bonn. Dam Count	<u>Treaty Indian Catch</u> Comm. C & S		<u>Dam Counts</u>		Snake River Sockeye			
						Priest Rapids ²	Snake River ³	At River Mouth	Non-Indian Impacts	Treaty Indian Impacts	Lower Granite Esc. ⁴
1980	58,886	4	58,882	14	622	52,055	36	41	0	0	96
1981	56,037	0	56,037	7	1,500	51,460	142	154	0	0	218
1982	50,319	100	50,219	130	645	40,461	174	215	0	1	211
1983	100,628	83	100,545	1,849	1,500	89,808	216	241	0	4	122
1984	161,886	9,345	152,541	22,485	2,131	114,757	105	148	9	21	47
1985	200,747	32,213	166,340	49,393	576	118,541	24	41	7	10	35
1986	59,963	1,840	58,123	4,272	2,400	43,084	20	28	2	2	15
1987	145,546	28,553	116,993	39,460	100	76,578	13	25	5	7	29
1988	99,779	17,632	79,714	30,990	0	51,135	22	43	8	13	23
1989	47,477	36	41,884	38	2,100	45,299	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	77,737	2	2	0	0	1
1993	84,273	64	80,178	7	5,013	79,172	17	18	0	0	12
1994	12,679	1	12,678	0	472	11,800	3	3	0	0	2
1995	9,178	1	8,773	0	445	8,727	5	5	0	0	4
1996	30,280	25	30,255	0	1,414	27,981	4	4	0	0	0
1997	46,939	12	46,927	0	2,046	42,729	2	2	0	0	2
1998	13,220	2	13,218	0	425	10,015	3	4	0	0	3
1999	17,878	1	17,877	0	704	15,282	16	19	0	0	16
2000	93,754	363	93,391	145	2,765	83,587	400	447	2	1	400
2001	116,623	1,690	114,933	5,580	1,720	103,528	45	51	1	3	45
2002	49,629	19	49,610	0	2,500	44,530	51	57	0	3	51
2003	39,375	0	39,375	10	1,080	36,287	14	28	0	1	14

1. Upriver run is larger of (Bonn. Count + Zones 1-5 harvest) or (Priest Rapids Dam count + Snake River count + Zones 1-6 harvest).
2. Counts have been adjusted from the actual 24-hour counts to 16-hour counts in 1992-1998 to maintain a consistent database.
3. Ice Harbor 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.
4. Prior to 1992, Lower Granite Dam counts may include kokanee. Beginning in 1992, video counts at LWG were used to identify true sockeye.

Table 14. Minimum Numbers (in Thousands) of Lower River Summer Steelhead Entering the Columbia River, 1969-2003.

Year	Lower Columbia Sport Catch (May-June) ¹	Tributary Dam Counts ²	Hatchery Returns ³	Tributary Sport Catch ⁴		Minimum Run
				OR	WA	
1969	0	0.0	3.6	--	14.7	18.3
1970	0.0	0.1	4.6	--	13.8	18.5
1971	0.0	2.3	4.4	--	17.3	24.0
1972	0.0	0.9	5.6	--	25.8	32.3
1973	0.0	1.8	2.7	--	24.6	29.1
1974	0.0	5.7	3.9	--	14.5	24.1
1975	0.0	5.2	4.2	0.5	11.4	21.3
1976	0.0	5.4	3.2	0.5	16.3	25.4
1977	0.7	12.7	6.8	1.2	21.7	43.1
1978	1.2	20.2	5.7	2.1	21.5	50.7
1979	0.6	13.9	4.0	2.1	12.2	32.8
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	1.2	6.3	25.8
2000	1.6	13.1	9.6	(1.3)	(10.2)	(35.8)
2001	2.0	28.4	16.4	(1.3)	(8.5)	(56.6)
2002	4.4	39.0	33.8	(1.3)	(7.2)	(85.7)
2003	(2.7)	(17.5)	(23.0)	(1.3)	(7.4)	(51.9)

1. Beginning in 1977, May-June lower Columbia recreational catch determined to be mostly lower river stock.
2. Willamette Falls (Willamette R.), North Fork Dam (Clackamas R.), and Marmot Dam (Sandy R.).
3. Skamania, Lewis River, and Cowlitz hatcheries and beginning in 1998 Kalama River hatcheries.
4. From Oregon and Washington catch record estimates, Washington catches prior to 1975 not corrected for non-response bias.
() Indicates preliminary.

Table 15. Minimum Numbers (in Thousands) of Group A and Group B Summer Steelhead Entering the Columbia River, 1969-2003.

Year	Lower Columbia Catch				Bonneville Dam Counts ³		Minimum Run		Total
	Sport ¹		Commercial ²		Group A	Group B	Group A	Group B	
	Group A	Group B	Group A	Group B					
1969	9.3	2.0	11.4	9.9	103.1	36.2	123.8	48.1	171.9
1970	7.8	1.6	5.0	11.1	77.9	35.1	90.7	47.8	138.5
1971	9.1	1.7	6.7	13.9	140.6	52.5	156.4	68.1	224.5
1972	12.1	3.3	12.8	12.1	106.7	78.5	131.6	93.9	225.5
1973	6.7	1.8	6.3	16.4	99.2	57.5	112.2	75.7	187.9
1974	4.0	1.5	1.2	2.8	112.2	23.1	117.4	27.4	144.8
1975	0.0	0.0	--	--	70.5	13.6	70.5	13.6	84.1
1976	0.0	0.0	--	--	91.1	31.3	91.1	31.3	122.4
1977	2.2	1.5	--	--	112.5	79.2	114.7	80.7	195.4
1978	1.5	0.0	--	--	62.4	39.9	63.9	39.9	103.8
1979	1.2	0.0	--	--	78.1	34.2	79.3	34.2	113.5
1980	2.0	0.0	--	--	83.9	43.7	85.9	43.7	129.6
1981	2.7	0.5	--	--	120.7	37.2	123.4	37.7	161.1
1982	2.6	0.0	--	--	101.9	54.3	104.5	54.3	158.8
1983	2.8	0.1	--	--	148.4	69.2	151.2	69.3	220.5
1984	4.3	1.1	--	--	188.8	125.7	193.1	126.8	319.9
1985	4.1	2.0	--	--	250.7	91.6	254.8	93.6	348.4
1986	6.0	2.0	--	--	276.4	99.9	282.4	101.9	384.3
1987	3.4	1.5	--	--	222.8	78.3	226.2	79.8	306.0
1988	5.8	1.9	--	--	188.9	88.3	194.7	90.2	284.9
1989	4.7	1.7	--	--	170.8	115.6	175.5	117.3	292.8
1990	2.7	1.3	--	--	94.1	87.4	96.8	88.7	185.5
1991	3.2	2.8	--	--	149.9	123.3	153.1	126.1	279.2
1992	6.4	3.8	--	--	174.6	139.3	181.0	143.1	324.1
1993	3.8	4.7	--	--	99.2	88.1	103.0	92.8	195.8
1994	2.3	1.7	--	--	82.4	78.4	84.7	80.1	164.8
1995	4.7	2.1	--	--	123.3	78.2	128.0	80.3	208.3
1996	4.0	1.1	--	--	135.8	68.2	139.8	69.3	209.1
1997	4.6	0.6	--	--	174.8	82.0	179.4	82.6	262.0
1998	1.7	2.0	--	--	83.8	100.6	85.5	102.6	188.1
1999	3.8	2.1	--	--	137.9	67.8	141.6	69.9	211.5
2000	6.3	1.9	--	--	184.3	89.9	190.6	91.8	282.4
2001	7.8	1.7	--	--	434.0	196.2	441.8	197.9	639.7
2002	6.7	0.8	--	--	284.3	193.7	291.0	194.5	485.5
2003 ⁴	6.0	0.9	--	--	227.0	130.2	233.0	131.1	364.1

1. Sport catch based on timing of the catch Group A--May 1-Aug 15 (1969-1976) and July 1-Aug 15 beginning in 1977; Group B--Aug 16-Oct 31. Includes catches from estuary recreational (Buoy 10) fishery beginning in 1992.

2. Commercial catch of steelhead by non-Indians (1969-1974) was based on timing of the catch: Group A--spring through first two fishing weeks of August; Group B--remainder of August through October. Sale of steelhead by non-Indians prohibited since 1975.

3. Dam counts based on date method: Group A--April 1-August 25; Group B--August 26-October 31.

4. Preliminary.

Table 16. Skamania Index, Group A Index, and Group B Index Returns of Summer Steelhead to Bonneville Dam During 1984-2003 and 2004 Projections.

Year	Skamania Index			Group A Index (<78 cm)			Group B Index (>78cm)		
	Number Wild	Number Hatchery	Total	Number Wild	Number Hatchery	Total	Number Wild	Number Hatchery	Total
1984	2,500	18,300	20,800	52,400	143,300	195,700	13,800	84,200	98,000
1985	3,700	16,300	20,000	51,900	229,600	281,500	13,000	27,900	40,900
1986	5,500	19,300	24,800	56,600	230,900	287,500	10,000	54,000	64,000
1987	7,400	10,400	17,800	106,700	131,600	238,300	14,000	31,000	45,000
1988	4,200	18,200	22,400	64,300	108,800	173,100	17,700	63,900	81,600
1989	3,800	11,900	15,700	57,500	135,600	193,100	12,400	65,200	77,600
1990	3,700	15,000	18,700	27,100	88,500	115,600	8,800	38,400	47,200
1991	1,200	9,700	10,900	60,300	173,800	234,100	6,200	22,100	28,300
1992	2,900	12,000	14,900	44,300	197,200	241,500	12,700	44,700	57,400
1993	1,300	13,100	14,400	28,600	108,100	136,700	4,400	31,800	36,200
1994	1,400	10,900	12,300	21,200	99,800	121,000	5,200	22,300	27,500
1995	1,100	7,100	8,200	26,000	154,000	180,000	1,800	11,400	13,200
1996	1,300	9,500	10,800	25,700	148,600	174,300	3,900	14,900	18,800
1997	900	11,000	11,900	30,900	177,400	208,300	3,900	32,700	36,600
1998	1,600	7,800	9,400	34,800	99,900	134,700	3,400	36,800	40,200
1999	1,300	5,900	7,200	56,600	119,800	119,800	3,700	18,400	22,100
2000	5,700	10,900	16,600	63,600	153,100	216,700	8,400	32,500	40,900
2001	7,900	20,800	28,700	137,200	377,900	515,100	12,100	74,300	86,400
2002	9,700	15,300	25,000	87,300	235,800	323,100	32,300	97,600	129,900
2003 ¹	1,800	12,400	14,200	66,400	238,100	304,500	6,500	32,000	38,500
2004 ²	5,500	12,800	18,300	82,400	224,200	306,600	12,700	50,500	63,200

1. Preliminary.

2. Projected.

Table 17. Steelhead Counts by Run Year at Lower Granite Dam with Wild Steelhead Estimates and Goals, 1984-2003.

Run Year	Run Year Totals	Wild ¹		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
2001-2003	222,200	43,100	19	144

¹. 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.

Table 18. Commercial Landings of Shad in Area 2S and Washougal Reef Fisheries and Minimum Shad Run Size (in Thousands) 1977-2003.

Year	Area 2S		Washougal Reef		Total Zone 1-5 Commercial Catch ²	Run Size	% of Run Landed
	Days	Catch ¹	Days	Catch ¹			
1977	12	42.4	39	--	61.9	929.4	7
1978	19	101.7	28	--	113.6	1,369.8	8
1979	14	117.4	28	-	120.3	1,548.7	8
1980	19	21.9	32	--	23.2	1,223.8	2
1981	19	15.5	32	--	21.8	1,159.9	2
1982	19	72.5	29	--	75.0	1,133.4	7
1983	19	84.9	29	--	85.0	2,082.6	4
1984	14	14.4	24	--	18.1	1,336.1	1
1985	15	33.7	20	--	35.4	1,455.0	2
1986	19	80.5	24	7.6	88.2	1,474.9	6
1987	21	103.2	26	4.1	108.7	1,417.8	8
1988	19	97.4	24	8.9	108.4	2,156.1	5
1989	19	36.2	28	15.4	51.6	3,105.3	2
1990	19	161.8	29	6.0	167.8	4,011.6	4
1991	19	38.8	29	4.9	43.7	2,362.7	2
1992	17	130.2	22	11.1	141.3	3,070.3	5
1993	16	139.2	21	5.3	144.7	2,671.3	5
1994	15	46.9	30	10.8	57.7	1,996.2	3
1995	22	54.4 ³	29	6.7	61.1	2,159.5	3
1996	24	60.1	29	1.0	61.1	2,905.8	2
1997	24	20.3	30	4.6	24.9	2,748.1	1
1998	24	24.4	31	0.0	24.5	2,304.9	1
1999	24	39.7	31	0.0	39.7	1,880.5	2
2000	29	30.4	34	0.0	30.5	1,699.4	2
2001	29	17.0	--	--	26.2 ⁴	2,888.4	1
2002	29	37.1	--	--	37.1	3,429.2	1
2003 ⁵	29	79.2	--	--	79.2	4,790.1	2

1. Washougal Reef landings included in Area 2S landings until 1986. No season set during 2001-2002.
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. Catch statistics preliminary.

Table 19. Season Dates, Gear Restrictions, and Commercial Landings During Non-Indian Winter (January-March) Mainstem Seasons, 1970-2003.

Year	Season	Fishing Days	Mesh Size	Commercial Landings ¹	
				Chinook	White Sturgeon
1970-1974 Average		13	7-1/4" min.	14,400	1,500
Range	Feb 19-Mar 10	9-15		12,500-17,200	800-3,400
1975-1979 Average		8	8" min.	7,900	2,100
Range	Feb 26-Mar 11	5-11		4,700-13,500	1,000-2,700
1980	Feb 27-Feb 28	1	"	400	900
1981	Feb 23-Mar 3	6	"	7,400	3,700
1982	Feb 24-Mar 4	8	"	5,100	1,900
1983	Feb 16-Mar 4	12	"	7,600	1,900
1984	Feb 19-Mar 6	12	"	9,600	3,200
1980-1984 Average		8		6,000	2,300
1985	Feb 18-Mar 7	13	"	12,700	1,400
1986	Jan 27-Feb 14	12	9" min.	700	1,100
	Feb 23-Mar 6	8	8" min.	9,000	1,000
1987	Jan 25-Feb 6	10	9" min.	400	700
	Feb 18-Mar 2	8	8" min.	11,200	1,000
1988	Feb 16-Mar 6	15	"	18,300	1,700
1989	Feb 15-Mar 9	17	"	13,900	500
1985-1989 Average		17		13,200	1,500
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.-9-1/4" max.	1,500	1,000
1994	Feb 15-Mar 9	15	" "	1,900	3,000
1990-1994 Average		13		7,900	1,300
1995	None	0	--	--	--
1996	Feb 18-22	3	8" min.-9-1/4" max.	100	600
1997	Jan 27-Feb 18	7	8-3/4" min.-9-3/4" max.	100	2,700
1998	Jan 12-Feb 13	10	9" min.- 9-3/4" max.	<100	2,700
1999	Jan 11-Feb 26	13	9" min.- 9-3/4" max.	<100	1,800
1995-1999 Average		7		<100	1,600
2000	Jan 10-Feb 11	10	8" min.-9-3/4" max. below Kelley Pt.	<100	500
			9" min.- 9-3/4" max. above Kelley Pt.	0	700
	Feb 13-29	8	8" min.-9-3/4" max. below Kelley Pt.	500	1,100
2001	Jan 8-Feb 9	10	9" min.- 9-3/4" max.	<100	2,600
	Feb 26-Mar 9	6	8" min.-9-3/4" max. below Kelley Pt.	5,400	400
2002	Jan 7-Feb 15	11	9" min.- 9-3/4" max.	100	2,700
	Feb 25-Mar 27	15	5-1/2" max.	14,200	100
2003 ²	Jan 7-28	4	9" min.- 9-3/4" max.	<10	1,490
	Feb 17 and 19	2	8" min.-9-3/4" max.	520	20
	Mar 21	1	4 1/4" max.	2,530	10

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

². Catch statistics are preliminary.

Table 20. Winter Season Commercial Gillnet Landings in the Zone 6 Treaty Indian Fishery, 1977-2003.

Year	Season ¹	Peak Net Count	Numbers of Fish Landed ²			
			Chinook	Steelhead	Sturgeon	Walleye
1977-1981 Average Range	Feb 1-Apr 1 ³	170 87-246	1,400 30-2,800	3,700 2,600-4,900	110 20-220	--
1982-1986 Average Range	Feb 1-Mar 21 ^{4,5}	107 61-180	50 5-100	4,700 3,000-7,800	670 70-1,700	--
1987-1991 Average Range	Feb 1-Mar 21 ^{4,5}	183 124-299	100 0-280 ⁶	6,700 2,100-10,800	2,100 1,300-3,100	500 130-1,030
1992	Feb 1-Mar 21 (49 days)	161 (Mar 9)	47	4,600	625 ⁷	350
1993	Feb 1-Mar 20 (47 days)	78 (Mar 18)	0	2,400	2,000	180
1994	Feb 1-Mar 19 (34 days)	120 (Mar 16)	10	2,100	1,500	190
1995	Feb 1-Mar 18 (33 days)	83 (Mar 16)	13	2,100	1,950	730
1996	Feb 1-Mar 16 (32 days)	--	0	90	480	230
1997	Feb 3-Mar 21 (35 days)	--	14	220	2,600	190
1998	Feb 2-Mar 14 (30 days)	--	1	150	2,800	120
1999	Feb 1-Mar 20 (40 days)	--	1	89	1,700	160
2000	Feb 1-Mar 21 (49 days)	--	31	2	2,251	307
2001	Feb 1-Mar 14 (41 days)	--	160	230	1,961	86
2002	Feb 1-Mar 21 (49 days)	--	45	78	1,529	76
2003 ⁸	Feb 1-Mar 21 (49 days)	--	857	788	1,339	113

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 ending 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. Catch statistics preliminary.