JOINT STAFF REPORT
CONCERNING COMMERCIAL SEASONS FOR SPRING CHINOOK, STEELHEAD, STURGEON, SHAD, SMELT, AND OTHER SPECIES AND MISCELLANEOUS REGULATIONS FOR 2003

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CONTENTS

Page

LIST OF TABLES

LIST OF TABLES

LIST OF FIGURES

JOINT STAFF REPORT CONCERNING COMMERCIAL SEASONS FOR SPRING CHINOOK, STEELHEAD, STURGEON, SHAD, SMELT, AND OTHER SPECIES AND MISCELLANEOUS REGULATIONS FOR 2003

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 2003 management will begin at 10 AM, Thursday February 6, at the Water Resources Education Center located in Vancouver, Washington. The data and recommendations in this report were reviewed by members of the *US vs 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 6, 2003, 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 2003. Non-Indian target sturgeon (January through mid-February) and smelt (January through March) seasons were adopted at the December 18, 2002 Compact hearing and modifications to these seasons may be considered at the February 6, 2003 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 6, 2003 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 comprised the majority of the chinook caught during past winter commercial seasons and March Columbia River sport fisheries. Willamette fish predominate because they exhibit an earlier 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). 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.

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%, with the majority being 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.

2002 Run

The Willamette return of 121,700 spring chinook (including jacks) entering the Columbia River in 2002 was the largest return since 1990 and the third largest run on record, continuing an increasing trend observed since the record low return of 34,800 in 1996 (Table 2). The 2002 return exceeded the recent 10-year average of 54,000 and was 165% of the preseason forecast of 73,800; moreover, it was the first time since 1991 that the Willamette Basin Fish Management Plan (WFMP) objective of 100,000 Willamette River spring chinook entering the Columbia River was achieved (Table 3). As has been the case in recent years, wild fish comprised approximately 10% of the 2002 Willamette spring chinook run.

2002 Sport Fishery

The first full selective fishery in the lower Willamette River mainstem was open for spring chinook angling seven days per week under mark selective regulations (only adipose fin-clipped fish could be retained) with no quota in effect. Hatchery-produced age 3, age 4, and age 5 spring chinook were nearly 100% marked with an adipose fin clip for selective fishery purposes. Only a portion of the age 6 hatchery returns were marked for stock identification purposes; however, age 6 fish comprise only a small proportion of the total run, typically less than five percent.

The lower Willamette sport catch totaled 13,700 spring chinook (10,500 kept and 3,200 released) in 2002. Angler trips in 2002 totaled 89,400 and the catch rate of 6.5 angler days to harvest 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 2002 was much improved over the late 1990's but only a fraction of the record high of 300,000 trips in 1988. Much of this decline in angler interest can be attributed to the expanded fishing opportunity in the mainstem Columbia and the commensurate effort shift. The kept catch of 10,500 was the largest total since 1995 (Table 2).

The upper Willamette mainstem spring chinook sport fishery opened on January 1 with a 7-day per week fishery. The daily catch limit was two fish per day and the release of nonadipose fin-clipped salmon was required for the second 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 1980-1998 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 and 2002 sport catch totals for above Willamette Falls are not currently available because of delays in receiving and processing angler returned catch records.

2002 Escapement

The Willamette Falls escapement of 83,100 spring chinook was the largest escapement on record and was considerably higher than the recent 5-year average of 40,000 fish (Table 2). Since 1970, the number of spring chinook passing Willamette Falls has ranged from 20,600 to 83,100 and averaged 40,500 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. All freshwater fisheries were limited to a 15% impact on wild Willamette spring chinook in accordance with the Willamette spring chinook Fishery Management and Evaluation Plan (FMEP). The FMEP also requires mark selective regulations for all freshwater fisheries impacting wild Willamette spring chinook.

Preliminary returns to Leaburg Dam in the McKenzie River during 2002 totaled 5,968 (4,019 wild) fish as compared to the preseason expectation of 3,200. The total return is the third largest in the database, dating back to 1970, exceeded only by returns of 6,800 in 1988 and 7,000 in 1990. 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 3,433 and averaged 1,500. The preliminary estimate of 4,019 wild spring chinook past Leaburg Dam in 2002 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 2002 was a record high and totaled 5,329, (2,281 unmarked fish that were passed upstream) as compared to the preseason expectation of 2,300. The total number of spring chinook passing 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 1980-2002, excluding 1984. 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 2002 spring chinook count at Willamette Falls of 83,136 fish (82,111 adults) resulted in 32,049 returning to upper Willamette River hatcheries.

With an exceptional return of upriver spring chinook (295,100 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. A total of 663 surplus fish were provided to

Oregon coastal Indian tribes and 1,200 surplus fish from upper Willamette hatcheries were supplied to local food banks. Additionally, surplus spring chinook returning to upper Willamette River hatcheries were either passed upstream or recycled downstream through fisheries.

2003 Forecast

The ODFW staff is projecting a return of 109,800 Willamette spring chinook to the Columbia River mouth in 2003. Age specific returns are expected to total 1,500 3-year olds, 18,400 4-year olds, 89,200 5-year olds, and 600 6-year olds. The 2003 forecast includes adjustments for expected ocean harvest in Canadian and Southeast Alaskan fisheries. The 2003 forecast is an increase over the 2002 preseason forecast of 73,800 and is similar to the 2002 actual return of 121,700 (Table 3). Moreover, this is the third largest forecast on record and includes a record large 5-year old component.

The 2003 return of 109,800 fish is expected to include about 11,000 wild fish (10% of total return) which would be similar to the 2002 return. Based on the current run size prediction, a 15% harvest rate, and average conversion rates; it is estimated that the number of spring chinook passing Leaburg (McKenzie River) and North Fork (Clackamas River) dams in 2003 will total 5,500 and 4,700 unmarked spring chinook, respectively. An escapement of 5,500 fish past Leaburg Dam would be slightly less than the 2002 escapement of 6,000 but would be the fourth largest return on record. An escapement of 4,700 past North Fork Dam would be the second highest on record and slightly less than the record high escapement of 5,300 observed in 2002.

Clackamas River Spring Chinook

The return of spring chinook (including jacks) to the Clackamas River in 2002 totaled 14,400 fish, which is the largest return on record and exceeds the recent 10-year average of 8,100. Wild fish comprised approximately 16% of the 2002 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, and 8,700 in the 1990s. 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 2002 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.

2002 Sport Fishery

The 2002 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. As was the case in the lower Willamette River fishery, only adipose fin-clipped salmon could be retained which also was the first year in which a full selective fishery was in effect in the lower Clackamas River. The 2002 lower Clackamas sport fishery catch totaled 3,732 spring chinook (2,565 kept and 1,167 released) from 18,200 angler trips. The catch total more than doubled the recent 5-year average of 1,500 and the angler trip total was much improved over the recent 5-year average of 13,400. The increased effort level in 2002 reflects the increased opportunity due to mark selective regulations and the record high return to the Clackamas River. The catch rate of 4.9 angler days to catch one Clackamas River spring chinook was improved over the recent 5-year average of 8.0 angler days per fish.

2002 Escapement

The North Fork Dam count of 5,329 spring chinook in 2002 included 2,281 unmarked fish that were passed upstream and 3,048 marked fish that were recycled downstream through fisheries. Additionally, about 50 fish were observed spawning below North Fork Dam in 2002. The 2,281 spring chinook that passed over North Fork Dam exceeded the interim 400-800 adult escapement goal set forth in objective 4 of the Clackamas River spring chinook chapter of the WFMP. A long term escapement goal of 2,900 adults past North Fork Dam is 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, and 2,300 in the 1990s. 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, excluding age 6 fish, were mass marked with an adipose fin-clip was 2002. In 2002, a total of 6,256 fish returned to Clackamas Hatchery; of which 4,004 were sold as surplus, 327 were provided to Oregon coastal Indian tribes, and 254 were donated to a local food bank.

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 2002 Sandy run size of 7,000 is the largest return since 1992, the second largest run on record, and exceeds the recent 5-year average of 4,800. The 2003 Sandy River forecast of 4,800 spring chinook is based on the recent 5-year average and would be less than the 2002 return of 7,000 (Table 5). Returns of wild spring chinook to Marmot Dam in 2002 totalled 2,970 fish with the majority passing the Marmot facility to spawn naturally in the upper Sandy basin and about 200 collected as broodstock for the hatchery program. Wild run size forecasts are not available for Sandy River spring chinook at this time.

2002 Sport Fishery

For the first time ever, 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 and 2002 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 4,300 the projected sport catch for 2002 is 2,700 fish.

Cowlitz River Spring Chinook

The Cowlitz River run is essentially supported by hatchery production and is closely related genetically to runs returning to the Kalama and Lewis rivers. These fish migrate earlier than the 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 River 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, the spring chinook sport fisheries in the Cowlitz, Kalama, and Lewis rivers were managed using selective fishery regulations that required the release of all nonadipose fin-clipped spring chinook.

2002 Run

The adult return of 3,700 spring chinook in 2002 was above the range of low returns observed since 1994. The hatchery escapement of 2,700 adults surpassed the 1,150 fish escapement goal. The natural spawning escapement of 400 adults is similar to the recent 5-year average. The preseason forecast resulted in a sport fishery that produced a total catch of 500 hatchery fish (Table 6).

2003 Forecast

The forecast for the Cowlitz River in 2003 is for a return of 4,900 adult spring chinook of which 78% are expected to be age 4 fish. A return of 4,900 adults would be the largest return since 1993 and would represent the third consecutive year of increasing run sizes. Adult returns had been in a general pattern of decline since 1984 and had stabilized at this low level 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. This forecast suggests that a sport season would be appropriate in 2003.

Kalama River Spring Chinook

Like the Cowlitz River run, the Kalama River run is essentially supported by hatchery production although natural spawner escapement goals have been formulated. As with spring chinook destined for the Cowlitz and Lewis rivers, these fish migrate earlier than the upriver stocks with the majority 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 Kalama River 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, the spring chinook sport fisheries in the Cowlitz, Kalama, and Lewis rivers were managed using selective fishery regulations that required the release of all nonadipose fin-clipped spring chinook.

2002 Run

The adult spring chinook return of 2,800 fish to the Kalama River in 2002 was the largest return since 1993. The hatchery return of 1,350 adults exceeded the hatchery escapement goal of 450. Escapement included more than 1,000 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 900 adults. The preseason forecast resulted in a 7-day per week sport fishery in 2002 with a catch of 500 hatchery fish (Table 6).

2003 Forecast

The forecast for the Kalama River in 2003 is for a return of 3,600 adult spring chinook, which would exceed the actual return in 2002. Age 4 fish are expected to comprise 22% of the 2003 forecast. The 2003 forecast shows continued improvement from the extremely poor return years of 1995-1998 when returns ranged between 400 and 700 adults annually and, if accurate, would represent the largest return since 1983. 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 2003 forecasted return would be adequate to support a full area sport season.

Lewis River Spring Chinook

Like the Cowlitz and Kalama river runs, the Lewis River run is essentially supported by hatchery production and migration timing is similar to that observed in other Washington tributaries. 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 Lewis River 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, the spring chinook sport fisheries in the Cowlitz, Kalama, and Lewis rivers were managed using selective fishery regulations that required the release of all nonadipose fin-clipped spring chinook.

2002 Run

The adult spring chinook return of 2,000 fish to the Lewis River in 2002 was similar to the poor returns observed since 1996. The hatchery return of 800 adults achieved the hatchery escapement goal of 700 adults. Natural spawning escapement was 500 adults. The sport fishery was restricted by area and daily catch limits due to a lower than desired preseason forecast; however, the restrictions were lifted in June after the hatchery escapement goal was achieved. Sport catch totaled 700 hatchery adults in 2002 (Table 6).

2003 Forecast

The forecast for the Lewis River in 2003 is for a return of 2,300 adult spring chinook of which 48% are expected to be age 4 fish. A return of 2,300 would be similar to the 2002 return and continue the trend of poor returns observed since 1996. Adult returns had been in a general state of decline since 1989, which appears to have culminated with the record poor return in 1998. 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.

Select Area Spring Chinook

The spring chinook program in Select Areas began modestly with the Clatsop County Economical Development Council (CEDC) operating limited net pens in Youngs Bay. Beginning in 1995 the Bonneville Power Administration (BPA) funded the Select Areas Fisheries Evaluation (SAFE) Program which resulted in expansion of the spring chinook program in Select Areas. Fish returning to Select Areas originate from transferred hatchery stocks that are acclimated in net pens located in Youngs Bay, Tongue Point, 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 Gray's River Hatchery in Washington. Prior to release, smolts are acclimated for two to four weeks in net pens located in off-channel sites that have good water quality for rearing fish and are conducive for developing known-stock terminal fisheries.

The SAFE spring chinook program began in 1990 with a release of 54,300 smolts into Youngs Bay. During 1990-1993 releases varied from zero to 54,000 and averaged 21,500 before stabilizing at about 450,000 smolts annually during 1995-2002. Releases of smolts into Tongue Point and Blind Slough began in 1996. Since 1996 releases into Blind Slough have ranged between 170,000 and 250,000 smolts annually. During 1996-2000 releases into Tongue Point ranged between 225,000 and 300,000 smolts annually; however, excessive straying resulted in termination of full scale releases in 2001. Releases into Deep River were initiated in 1998 with releases of 56,400 in 1998 and 39,700 in 1999. Smolt releases did not occur in 2000 and totalled 159,600 in 2001 and 95,900 in 2002. During 1994-2002 total spring chinook releases in all Select Areas combined have generally ranged between 900,000 and 1,000,000 smolts annually and beginning with the 2001 releases (1999 brood year) all spring chinook hatchery production in SAFE areas has been mass marked with an adipose fin clip.

2002 Run

Fisheries in Select Areas are adopted with the intent of harvesting 100% of the returning adults. With all smolts being released from net pen sites there is only a limited number of fish that are observed in escapement areas. Landings in the Select Areas in 2002 totalled 11,679 spring chinook of which 6,643 were landed in Youngs Bay, 2,985 were landed in Tongue Point, and 2,051 were landed in Blind Slough. There was no fishing season in Deep River because of limited returns expected in 2002. The total landings of nearly 12,000 spring chinook in all Select Areas combined exceeds the previous record large catches of 6,500 in 2000 and 9,300 in 2001.

2003 Forecast

Smolts released in 2001 would return as age 4 fish and smolts released in 2000 would return as age 5 fish in 2003. Based on total releases of 1.9 million smolts and survival rates of other lower river spring chinook stocks the expected return in 2003 is for 10,000-14,000 adult spring chinook of which 6,000-8,000 are destined for Youngs Bay, 1,500-2,500 for Tongue Point, 1,500-2,500 for Blind Slough, and 800-1,000 for Deep River. A return of 10,000-14,000 spring chinook to Select Areas would be similar to the record large return of 12,000 observed in 2002.

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 includes 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 showed a dramatic improvement with a return of 178,600 and the 2001 return of 416,500 fish was the largest return on record (since 1938).

2002 Run

The preseason prediction for the 2002 upriver spring chinook run was 333,700 adults and the actual run entering the Columbia River was 295,100, the second largest return on record. Based on fish sampled at Bonneville Dam, the 2002 age class components were 252,100 4-year olds, 42,900 5-year olds, and 6,700 jacks. The return of listed Snake River wild spring chinook in 2002 was 60,200 fish, as compared to the preseason forecast of 44,900 fish which was the largest return in the database (since 1979) and greatly exceeded the previous record return of 27,600 in 2001 (Table 8). Wild spring chinook comprised 45% of the total Snake River return. Returns of listed upper Columbia wild spring chinook in 2002 were estimated to be about 6,300 fish which is about half the 2001 return of 12,000 (Table 9). Wild fish comprised 12% of the Upper Columbia stock spring chinook return.

2003 Forecast

The 2003 forecast is for a strong return of 145,400 adult upriver spring chinook to the Columbia River which is projected to include 110,800 4-year olds and 34,600 5-year olds. This would be about half of the 2002 return of 295,100 but over two times greater than the average return during the 1990s. A comparison of predicted and actual upriver adult returns for 1980-2002 is shown in Table 3.

The TAC estimates that the 2003 upriver run will include 72,500 Snake River spring chinook and 13,200 upper Columbia spring chinook. The number of listed Snake River wild fish is estimated to be 25,000, which would be the third largest return in the database (since 1979). The number of listed upper Columbia wild spring chinook is projected to be 1,300 fish, ranking sixth from the bottom in the database, dating back to 1979.

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.

2002 Run

The 2002 return of 129,000 summer chinook to the Columbia River was the largest run since at least 1960 and is 3-½ times the recent 5-year average of 36,500 fish. The Bonneville Dam escapement goal of 80,000-90,000 was achieved for the first time since its adoption in 1969. Since 1973, the summer chinook adult return has been at record low levels, but fairly stable, ranging between 15,000 and 38,700. A selective sport fishery for marked summer chinook was adopted in 2002 during the summer chinook time frame (June-July) and a total of 1,400 summer chinook hatchery adults were harvested below Bonneville Dam. Returns of summer chinook to the upper Columbia River, as measured at Priest Rapids Dam, were 96,300 fish which was the largest count since Priest Rapids Dam was built in 1959

and was four times larger than the recent 5-year average of 24,600 fish (Table 10). The return of Snake River wild summer chinook in 2002 totaled 4,400 fish to the mouth of the Columbia River, which is larger than the 1979-2001 average of 3,700 (Table 11).

2003 Forecast

The projection for the 2003 summer chinook run is for a return of 87,600 adults to the Columbia River, which would be slightly greater than the 2001 return of 76,400 but less than the 2002 return of 129,000. The Snake River wild portion of the 2003 return is expected to comprise about 9% of the total summer chinook return. The 2003 forecast for Snake River wild summer chinook is 7,700 fish which would be 40% greater than the recent 5-year average of 5,500.

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.

2002 Run

The preseason forecast for sockeye in 2002 was for a return of 41,200 fish to the Columbia River, as compared to the actual return of 49,600 fish (Table 12). Stock composition estimates, based on run reconstruction data, for the 2002 return include 35,800 Wenatchee stock, 13,800 Okanogan stock, and 57 Snake River stock. The 2002 return of 49,600 was about half of the returns in 2000 and 2001.

The escapement goal of 65,000 at Priest Rapids Dam was not achieved in 2002 with a count of only 44,500 sockeye. The escapement of Wenatchee stock was 31,900 and the escapement of Okanogan stock past Wells Dam was 10,600. A total of 51 sockeye were counted at Lower Granite Dam in the Snake River, which is the same as the preseason expectation.

2003 Forecast

An estimated 22,100 sockeye are expected to enter the Columbia River in 2003 which would be the sixth smallest run since 1938. The return is expected to be comprised of 11,000 Wenatchee stock, 11,000 Okanogan stock, and 80 Snake River stock.

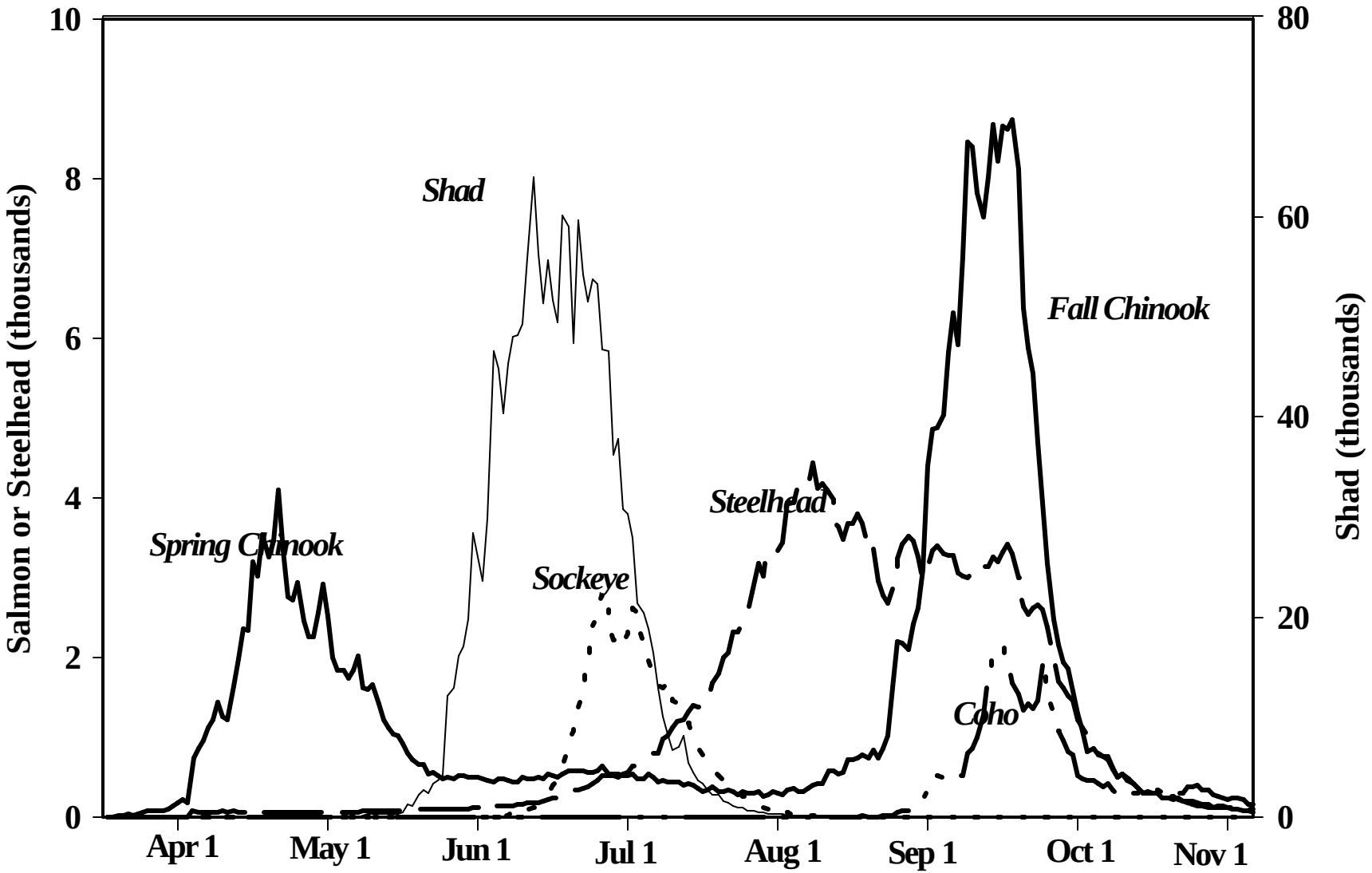

Figure 1. Average Daily Counts of Salmon, Steelhead, and Shad at Bonneville Dam, 1986-2001.

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. Abundance of lower river returns peak 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.

2002-2003 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). Since the 2002-2003 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 2003 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 2002-2003 summer steelhead run was the second largest return during the post Bonneville Dam era (since 1938). Run size estimates and dam counts, based on the date method, through 2002 for lower river, Group A, and Group B summer steelhead are presented in Tables 13-14. The Group A Index steelhead total return was the second largest and the wild return was the third largest observed since sampling began in 1984 and the Group B Index steelhead total and wild returns were the largest observed since 1984 (Table 15). Run size and wild escapement at Lower Granite Dam are included in Table 16; however, the 2002-2003 count at Lower Granite Dam will not be complete until May 31, 2003.

2003-2004 Forecast

Using the index method, the 2003-2004 prediction for upriver summer steelhead at Bonneville Dam of 360,900 fish (279,600 Group A Index, 64,700 Group B Index, and 16,600 Skamania Index) would be the fourth largest return past Bonneville Dam since counting began in 1938. The 1-salt return was predicted using the recent 5-year average. The predicted 2-salt return is based on the 2002 1-salt return and a regression of 2-salt vs. 1-salt returns from the same cohort using 1983-2002 data. Independent estimates were made for Group A Index and Group B Index, and wild and hatchery fish (Table 15). The Group A Index predicted return at Bonneville Dam for the 2003-2004 run year is 279,600, of which 70,600 (25%) are expected to be wild. The total return would be the third largest since 1986 and the wild component would be the third largest since 1987. The Group B Index predicted return at Bonneville Dam for the 2003-2004 run year is 64,700, of which 11,500 (18%) are expected to be wild. The total return would be about half of the record 2002 return, but would still be the third largest return since 1989. The wild component would be the third largest since 1992 (Table 15). No prediction was made for lower river summer steelhead returning in 2003.

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 over 4 million in 1990. 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.

2002 Run

The 2002 minimum shad run size was 3,429,200, 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 211,200 fish was about 7% of the minimum estimated shad run size. The 2002 shad run in the Columbia River, at 3.4 million fish, is second only to the record high shad run of 4.0 million fish in 1990 (Table 17).

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 18. 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.

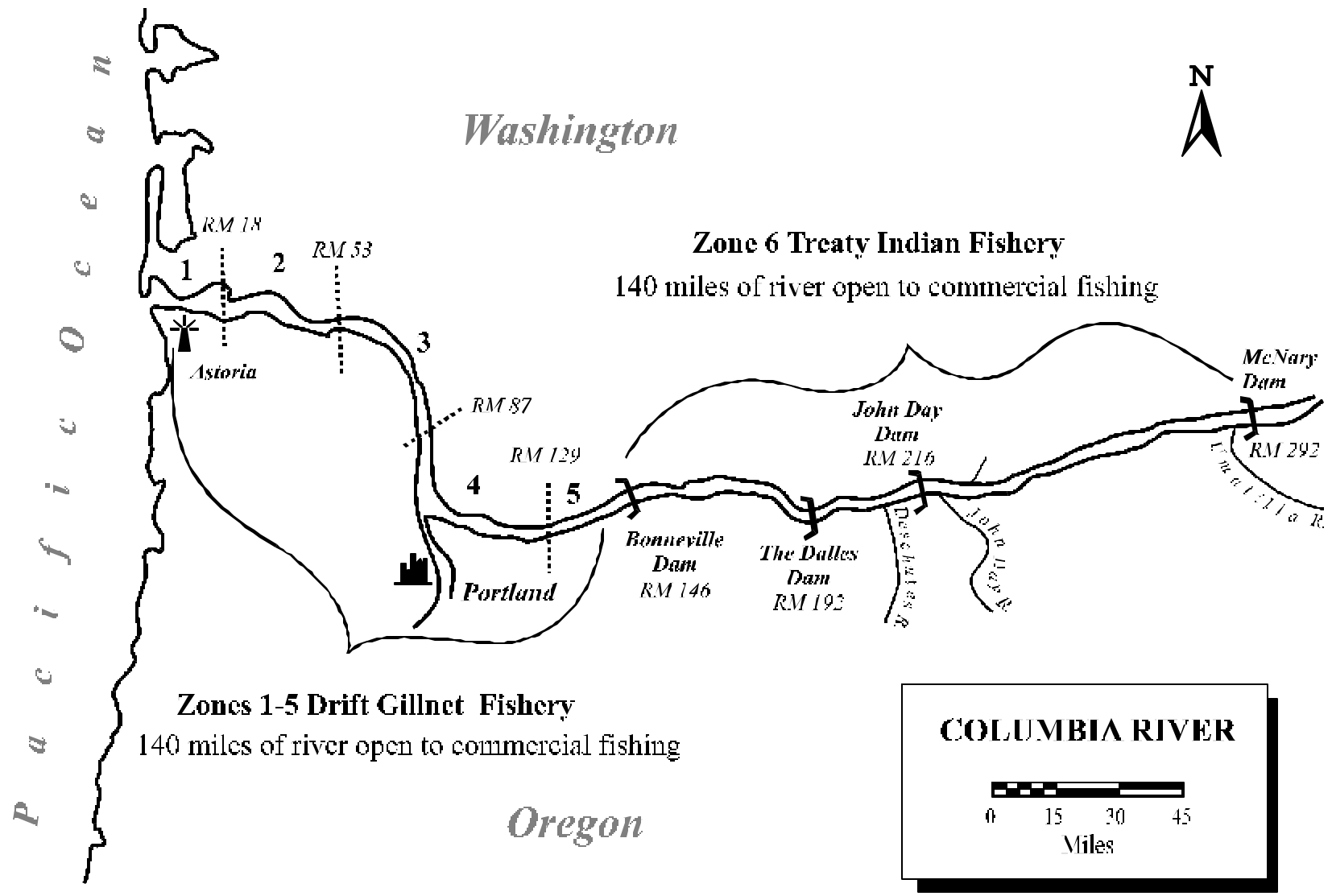

Figure 2. Map of the Columbia River Below McNary Dam Showing Areas Open to Commercial Fishing.

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 two 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 2,500 white sturgeon or 23.1% 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 2003"*.

2002 Lower River Winter Gillnet Season

The major tenets of the 1997-1999 Olympia Accord on sturgeon management included allowing target sturgeon seasons to access the commercial white sturgeon catch allocation, were readopted by the Oregon and Washington Fish and Wildlife Commissions for 2000-2002 fisheries. In accordance with this Joint State Management Agreement on sturgeon management, a 2002 winter target sturgeon season consisting of four consecutive 2-day per week 30-hour fishing periods from noon Mondays to 6 PM Tuesdays and noon Thursdays to 6 PM Fridays during the time period of January 7 through February 1 in all of Zones 1-5 was adopted at the December 12, 2001 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 four weeks were 1,500–2,500 white sturgeon and up to 50 chinook. Catches fell in the middle of the expected range during the 4-week period with 2,022 white sturgeon and 3 spring chinook landed. At the January 31, 2002 Compact hearing three additional 30-hour winter sturgeon fishing periods were adopted as follows: noon Monday February 4 to 6 PM Tuesday February 5, noon Monday February 11 to 6 PM Tuesday February 12, and noon Thursday February 14 to 6 PM Friday February 15. The final lower river winter gillnet season landings totalled 2,710 white sturgeon and 146 spring chinook.

The stock composition for the winter gillnet season was based on VSI and CWT analysis with a total of 60 chinook (41% of the catch) examined for fin marks and CWTs and 50 snouts being collected. The high tag rate was due to the catch being comprised primarily of 5-year old Willamette fish that were mass marked for selective fishery purposes and had coded-wire tags implanted in conjunction with the application of the adipose fin-clip. Based on scale readings, verified with CWTs, the age composition of the catch was 90% age-5, 9% age-4, and 1% age-6 fish. The 2002 winter season catch was estimated to include 128 lower river fish and 18 upriver fish based on VSI and CWT analysis. The lower river spring chinook catch was further estimated to be comprised of 115 fish destined for the Willamette River; 3 fish destined for Select Area sites; and 15 fish destined for the Cowlitz, Kalama, Lewis, or Sandy rivers.

2002 Demonstration Lower River Tangle Net Season

A full fleet live capture commercial fishery using small mesh tangle nets was conducted in the lower Columbia River during 2002. The fishery was adopted in response to the Willamette Spring Chinook FMEP that required the release of wild Willamette spring chinook in all freshwater fisheries. The fishery occurred in all of Zones 1-5, although the majority of the fishery was focussed below the Longview Bridge, and only adipose-fin clipped salmon and sturgeon could be retained. Additional restrictions adopted for this fishery included maximum mesh size of 5-½ inches, maximum net length of 150 fathoms, maximum soak time of 45 minutes, and required use of a recovery box on all lethargic or bleeding fish. 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. For 2002 the Interim Management Agreement allowed for a 15% 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 2002 the harvest sharing matrix allowed a 0.68% 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 2002 the WFMP set forth a commercial catch allocation of 9,700 Willamette hatchery spring chinook (27% of the harvestable number). The fishery was primarily managed to remain within the 0.68% upriver spring chinook impact allocation while providing access to the 9,700 Willamette hatchery spring chinook. Additional ESA impact restrictions included total non-Indian fishery impacts of 2% for wild steelhead ESU's and 15% for the wild Willamette spring chinook ESU.

Based on these management guidelines, the initial portion of the live capture commercial fishery was adopted at the January 31, 2002 Compact hearing and included six 14-hour (5 AM-7 PM) fishing periods on Mondays, Wednesdays, and Fridays during February 25 through March 8. Chinook catch rates during the initial two weeks of the season were less than expected; therefore, five additional 24-hour (6 PM-6 PM) fishing periods were adopted for Sunday-Monday, Tuesday-Wednesday, and Thursday-Friday during March 10-March 20. With adoption of the Interim Management Agreement, the March 10 winter gillnet season ending date required by past years' management agreements and the CRFMP (unless all parties agreed to extend the fishery) was eliminated. Chinook catches improved during these fishing periods but total catches and upriver chinook impacts were still well below preseason allocations; therefore, additional Compact hearings occurred to adopt additional fishing periods in an attempt to complete the commercial fishery prior to the peak sport fishing period in early April. Compact hearings occurred on March 19, March 22, and March 26. The fishery concluded with the following fishing periods: a 48-hour extension of the ongoing 24-hour fishing period from 6 PM Wednesday March 20 to 6 PM Friday March 22; an 18-hour fishing period from 6 PM Sunday March

24 to noon Monday March 25; and a 15-hour fishing period from 6 PM Tuesday March 26 to 9 AM Wednesday March 27.

A total of 28,727 spring chinook were handled during this fishery, of which 14,238 were kept and 14,489 were released. Based on CWT and VSI data the kept spring chinook catch was comprised of 8,237 upriver stock; 5,242 Willamette stock; 473 Cowlitz, Kalama, Lewis, and Sandy stock; and 286 SAFE stock while the released catch was comprised of 12,396 upriver stock; 958 Willamette stock; 28 Cowlitz, Kalama, Lewis, and Sandy stock; and 1,105 SAFE stock. The large number of upriver and SAFE stock spring chinook released in this fishery reflect the fact that not all hatchery fish returning to these areas in 2002 were mass marked with an adipose fin-clip. The impact rate on wild upriver spring chinook was 0.70% which is similar to the guideline of 0.68%. Impacts to wild Willamette spring chinook totalled 0.60%.

Steelhead catch in this fishery greatly exceeded the preseason catch expectations due to the extremely large winter steelhead run in 2002, the timing of the fishery, and the gear employed in the fishery. A total of 20,900 steelhead were handled in this fishery, of which 8,400 were marked and 12,400 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. Analyses regarding the impact rates on listed steelhead ESU's had not been completed at the time this report was written but preliminary analyses indicate that impacts exceeded the 2% limit.

Past Lower Columbia River Spring Chinook Sport Fisheries

Under permanent regulations, the main-stem Columbia River is open to angling for salmonids through March 31 downstream of the I-5 Bridge (RM106) for the purpose of targeting earlier migrating Willamette spring chinook. The area upstream of the I-5 Bridge to the Oregon/Washington border above McNary Dam was closed January 1-July 31 during 1993-2000, and the area below the I-5 Bridge was closed April 1-July 31 during 1995-2000 to protect upriver spring and summer chinook. During 1995-1999, recreational fisheries for spring chinook were all but eliminated to protect a weak return of upriver spring chinook in 1995 and low Willamette spring chinook runs during 1996-1999. During 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 for the main-stem Columbia River sport fishery; however, problems with the issuance of a Biological Opinion from the NMFS resulted in an early (March 16) closure date 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 vs. 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 for a 15% total impact to listed upriver spring chinook. A total of 2% of the impact was allocated to non-Indian fisheries, and managers expected to use about 0.8% of the upriver impact in the lower river recreational fishery. In addition to the record high run size expectation of 364,600 upriver spring chinook, biologists predicted a return of almost 70,000 lower river origin spring chinook, including 61,000

Willamette, 4,800 Cowlitz, Kalama, Lewis (CKL), and 4,000 Sandy spring chinook. The total expected return of 434,000 to the Columbia during 2001 was the largest predicted run size of the post-Bonneville Dam era (since 1938). Approximately 84% of the total spring chinook run was expected to be of hatchery origin, and adipose fin-clipped fish were expected to comprise almost 50% of the total return and approximately 60% of the hatchery fish.

The primary management objective for the 2001 sport fishery was to reinstate the fishery in the lower Columbia River below Bonneville Dam through the month of April, which was historically the most important area and time frame for this fishery. 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 for the first time since 1977. State bag limits and other permanent rules remained unchanged with the exception that anglers were also allowed to keep adipose fin-clipped steelhead and shad during the fishery. 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).

2002 Lower Columbia River Spring Chinook Sport Fishery

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 (73,800 Willamette, 6,700 CKL, and 4,300 Sandy fish) for a total of 418,000 spring chinook which was the second highest predicted spring chinook return 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. For 2002, the harvest sharing matrix allowed a 1.02% upriver impact to the recreational fishery which was a 27.5% increase over the 2001 allowable impact rate of 0.80%.

Sport angling regulations for the 2002 fishery were adopted at a Joint State hearing following the January 31 Compact hearing. Preseason meetings were held with sport fishers and sport fishing industry representatives during December and January to get feedback from the 2001 fishery and help shape the 2002 fishery. Two primary considerations resulting from these meetings were the desire to extend the season into May for as long as possible when the weather is nicer and to maintain fairness with respect to sharing between recreational fishers above and below

Bonneville Dam. 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 tributary fisheries in the reservoir and harvest sharing considerations with treaty Indians for fish destined to Bonneville Pool tributaries. On April 3, 2002 the states also opened the area of the Bonneville Pool from Tower Island upstream to The Dalles Dam to increase opportunity in the upriver area above the tributary fisheries. As per the non-Indian impact sharing agreement the fishery would be closed if upriver impacts were projected to reach 1.02%; however, fairness to upriver fisheries would be considered when adopting closed times and areas. 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 retention of adipose fin-clipped steelhead and shad was allowed for the duration of the fishery also.

The 2002 lower Columbia River recreational spring chinook fishery began in typical fashion with low effort and catch during February when abundance of spring chinook in the lower Columbia River is low. The total catch for February was 24 adult spring chinook (18 kept and six released) and 166 winter steelhead (72 kept and 94 released) from 5,147 angler trips. Angler interest increased during March, but catch rates were still only fair by the end of the month. The total catch for March was 3,735 adult spring chinook (2,036 kept and 1,699 released) and 432 winter steelhead (341 kept and 91 released) from 35,629 angler trips. Low, cool river flows in the Columbia and the extension of the commercial fishery through March 27 were the primary reasons for the lower than expected success during March. About 22% of the March spring chinook catch (445 kept and 370 released) occurred above the I-5 Bridge from 5,347 angler trips (15% of the total effort).

Catch rates during the early part of April continued to be somewhat disappointing considering the increasing angler participation, expectations for a large run, and fairly good water conditions. The overall catch rates for the first half of April were slightly less than half of the catch rates observed during the same time period in 2001. Peak effort occurred on the weekend of April 13-14, when over 1,700 boats and 1,200 bank anglers were counted from the airplane compared to counts of 3,200 boats and 2,700 bank anglers during the peak of the 2001 fishery (April 14). Water conditions worsened on both the Columbia and Willamette rivers during April 14-21 when both rivers rose and cooled in response to heavy rain and snowmelt, and water clarity dropped causing angler catch rates to plummet. In addition to the low catch rates, passage of adult spring chinook at Bonneville Dam was less than expected based on the recent 10-year average run timing.

On Monday April 22, the TAC met and downgraded the run size expectations for upriver spring chinook to 250,000 based on the passage of adults at Bonneville Dam. The decrease in the predicted run size coincided with improving water conditions and a dramatic increase in angler catch rates during April 22-27. Fishery managers met on April 23 and decided to leave the recreational fishery open through at least Sunday April 27, but were concerned that the fishery may exceed impact guidelines to upriver spring chinook under the reduced run size expectation. On April 25 the TAC met again and downgraded the run to 238,000, prompting managers to close the lower Columbia River recreational fishery effective midnight Sunday, April 28. The

estimated catch during April 1-28 was 24,274 spring chinook (14,428 kept and 9,846 released) and 1,282 steelhead (1,105 kept and 177 released) from 107,906 angler trips. The area above the I-5 Bridge provided approximately 38% of the catch from approximately 28% of the total effort.

Counts of spring chinook at Bonneville Dam increased dramatically during April 25-27 with about 44,700 adults passing the Dam during the three-day period. At the April 30th meeting the TAC upgraded the run size estimate to 293,000 which resulted in adequate impacts remaining to allow the states to reopen the recreational fishery below Bonneville Dam for four more days during May 5-8. Excellent adult passage at Bonneville Dam continued with almost 46,500 spring chinook counted during the two-day period of April 30-May 1. When the sport fishery reopened on May 5, catches were good but effort was considerably lower than it had been during the end of April. Additionally on May 6, the TAC met and upgraded the run size to 309,000, which allowed the states to extend the fishery through the original closure date of May 15. During May 5-15, anglers caught 6,409 spring chinook (3,982 kept and 2,427 released) and 496 steelhead (464 kept and 32 released) from 26,370 trips. Approximately 44% of the catch was made above the I-5 Bridge from approximately 33% of the effort. The total catch during February 1-May 15, 2002 was 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 of 175,052 angler trips.

At the January 31, 2002 Joint State hearing the states opened the mainstem Columbia River above The Dalles Dam beginning March 16. The lower fishing boundary was subsequently moved downstream to Tower Island effective April 13. No additional inseason management changes were necessary for the open area of the Columbia River from Bonneville Dam upstream to the Oregon-Washington border; therefore, the fishery continued uninterrupted through May 15. 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.

Samplers from the Oregon and Washington Departments of Fish and Wildlife interviewed 30,778 salmon anglers below Bonneville Dam during February 1-May 15, 2002 and sampled 3,916 adult spring chinook (19.1% of the total kept catch). A total of 3,676 adult fish (18.0% of the total catch) were sampled for CWT's with 1,028 snouts being recovered. Based on VSI and CWT analysis it was estimated that upriver spring chinook comprised 73% of the total kept spring chinook catch. Samplers above Bonneville Dam mark sampled 178 adult spring chinook (15.5% of the kept catch) all of which were upriver spring chinook.

2002 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. This fishery is directed specifically toward the harvest of hatchery summer steelhead; however, beginning in 2001 the states allowed the retention of chinook jacks (≤24") and sockeye salmon during the same time frame. During 2002, only Oregon anglers were allowed to retain sockeye salmon and only for a portion of the season. The Oregon sport sockeye season was closed effective June 25 when it was determined the 2002 sockeye return was less than the 75,000 fish management goal.

On June 25, 2002, the TAC upgraded the summer chinook run size expectation from the preseason forecast of 77,000 to 140,000 and the states opened the summer chinook fishery below Bonneville Dam on June 28, 2002 for the first time since 1973. The high mark rate of summer chinook hatchery fish observed at the Bonneville Dam trap allowed the states to adopt selective fishery regulations that required anglers to release nonadipose fin-clipped chinook. This measure allowed a limited harvest of hatchery summer chinook while maintaining the impact to ESA-listed summer chinook at less than 1%. On July 9, 2002 the states opened the fishery from Bonneville Dam upstream to the Oregon/Washington border for the retention of adipose fin-clipped summer chinook.

For 2002, the main-stem sport catch below Bonneville Dam during May 16 through July 31 totaled 3,435 adult summer chinook (1,352 adipose fin-clipped fish kept, 945 nonadipose fin-clipped fish released, and 1,138 adult fish released prior to the June 28 summer chinook opener) and 10,904 steelhead (7,875 kept and 3,029 released) from 59,900 angler trips. An additional 145 chinook jacks and 13 sockeye were also kept in this fishery and 47 sockeye were released. The estimated release mortality from the main-stem summer steelhead fishery during May 16-July 31, 2001 totaled 303 wild summer steelhead, 208 summer chinook, and 5 sockeye. The fishery above Bonneville Dam was small with fewer than 100 summer chinook caught from 1,000 angler trips.

Spring Chinook Fisheries Above McNary Dam

Selective sport fisheries occurred in the Snake River below Lower Granite Dam, in concurrent Washington/Idaho waters above Lower Granite Dam, and in the mainstem Columbia River near Ringold Hatchery. A total of 4,500 angler trips occurred near Little Goose Dam and produced a total catch of 1,217 spring chinook of which 866 were kept and 351 released. The sport fishery above Lower Granite Dam produced a harvest of 100 spring chinook and the sport fishery near Ringold Hatchery produced catches of 200 spring chinook. 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 58 spring chinook.

Past Select Area Fisheries

Test fishing operations 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 the results from test fisheries in Select Areas have typically been corroborated by ensuing commercial fisheries.

Spring chinook commercial fisheries in Select Areas were initiated with 9-day fishing seasons in Youngs Bay during 1992-1994. Fisheries remained at low levels and were limited to Youngs Bay only through 1996 with landings of less than 1,000 spring chinook annually. Landings in the Youngs Bay commercial fishery have increased steadily from 800 spring chinook landed in 1997 to 5,600 spring chinook landed in 2001. Initially 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 on 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 whose abundance peak during that time.

Commercial fisheries in Blind Slough were initiated in 1998 with a 9-day spring season that resulted in a catch of 60 spring chinook. Since 1998 annual landings have steadily grown with a catch of 2,000 in 2001. The initial winter season occurred in Blind Slough in 2000 with only spring seasons occurring prior to 2000. As with Youngs Bay these early winter seasons targeted on early returning 5-year old spring chinook that were available prior to when a significant number of non-local stocks were present. No summer seasons have been adopted in Blind Slough. The area fished was initially limited to Blind Sough but as returns increased the area was expanded beginning in 1999 to include the waters of Knappa Slough from the mouth of Blind Slough to the east end of Minaker Island. The expanded area was adopted to increase catch and decrease congestion during peak fishing periods.

Commercial fisheries in Tongue Point were initiated in 1998 with a 9-day spring season that resulted in a catch of 30 spring chinook. As was the case in Blind Slough, Tongue Point landings have steadily increased with a catch of 1,600 spring chinook in 2001. 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 the 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 as of yet. Releases to date have been experimental releases that supported only limited test fisheries on returning adults. The first full fleet commercial fishery is expected to occur in Deep River in 2003.

Select Area fishing sites have been open for sport fishing since the inception of the SAFE project. Sport fisheries typically develop more slowly than do commercial fisheries, as has been the case in Select Areas. Due to high turbidity, sport fishing in Youngs Bay is typically limited; however, in 1998 it was estimated that 55 spring chinook were landed in Youngs Bay. Other than 1998, sport catch of spring chinook in Youngs Bay has been less than 15 fish. To date sport catches in Tongue Point have been minor to non-existent. Blind Slough shows good potential for developing a strong sport fishery. Effort and catch has increased significantly during the last two years. A limited creel program conducted in 2000 produced a catch estimate of 121 chinook from 615 angler trips. Effort and catch in 2001 exceeded that observed in 2000. However, with the mainstem Columbia River open for spring chinook angling, sport sampling efforts focussed on the mainstem fishery; therefore, no catch and effort estimates are available for 2001. Catch and effort in the Blind Slough/Knappa Slough Select Area are included in mainstem catch and effort estimates.

2002 Youngs Bay Winter/Spring/Summer Gillnet Season

A winter commercial fishery in Youngs Bay to target the early arriving 5-year old component of the spring chinook return was adopted for the fifth consecutive year. This fishery occurs prior to the time when significant numbers of non-local chinook stocks are present. The winter fishery consisted of three

54-hour periods as follows: noon February 20 to 6 PM February 22; noon February 27 to 6 PM March 1; and noon March 6 to 6 PM March 8. An 8-inch minimum mesh size restriction was enacted to target the larger 5-year old chinook while minimizing the handle of steelhead. A total of 199 chinook and 3 white sturgeon were landed during the winter fishery.

A slowly progressing Youngs Bay spring chinook gillnet fishery designed to maximize the harvest of local stocks while minimizing impacts on non-local stocks began in mid-April with a 54-hour fishing period from noon April 17 to 6 PM April 19. The opener was followed by an increasing progression of fishing days as follows: noon April 24 to 6 PM April 26 (2 days); noon April 30 to 6 PM May 3 (3 days); noon May 6 to 6 PM May 10 (4 days); noon May 13 to 6 PM May 17 (4 days); noon May 20 to 6 PM May 24 (4 days); noon May 27 to 6 PM May 31 (4 days); noon June 3 to 6 PM June 7 (4 days); and noon June 10 to 6 PM June 13 (3 days). An 8-inch maximum mesh size restriction was also adopted to target chinook instead of sturgeon. The Youngs Bay spring fishery landed 5,750 chinook and 128 white sturgeon during the season.

To provide harvest opportunity on early returning SAB stock fall chinook and any remaining local spring chinook, a summer gillnet season was set in Youngs Bay during June 19-August 1, 2002. The 2002 summer season opened for two days from noon June 19 through 6 PM June 21 and continued with six more fishing periods as follows: noon June 26 to 6 PM June 28 (2 days); noon July 3 to 6 PM July 4 (1 day); noon July 10 to 6 PM July 11 (1 day); noon July 17 to 6 PM July 18 (1 day); noon July 24 to 6 PM July 25 (1 day); and noon July 31 to 6 PM August 1 (1 day). An 8-inch maximum mesh size restriction was also adopted to target chinook instead of sturgeon. The Youngs Bay summer fishery landed 694 chinook and 103 white sturgeon during the season.

The combined Youngs Bay winter/spring/summer fishery stock composition was based on VSI and CWT analysis with a total of 3,084 chinook (46% of the combined catch) examined for fin marks and CWTs and 647 snouts being collected. Based on scale readings, verified with CWTs, the age composition of the catch was 2% age-3, 63% age-4, 35% age-5, and <1% age-6 fish. The 2002 combined catch was estimated to include 4,049 spring chinook and 509 fall chinook (SABs) destined for Select Area sites; 356 spring and 48 summer chinook destined for locations above Bonneville Dam; 1,386 spring chinook destined for the Willamette River; 137 spring chinook destined for the Sandy River; 128 spring chinook destined for the Cowlitz, Kalama, or Lewis rivers; and 30 spring chinook destined for the Umpqua River.

2002 Tongue Point/South Channel Spring Gillnet Season

In 2002, Tongue Point winter fishing opportunity was provided in conjunction with the mainstem winter fishery, not as a separately adopted season; however, a 15-night Tongue Point/South Channel spring gillnet season which consisted of 10-hour fishing periods from 7 PM to 5 AM during April 18-19, April 25-26, April 30-May 1, May 2-3, May 7-8, May 9-10, May 14-15, May 16-17, May 21-22, May 23-24, May 28-29, May 30-31, June 4-5, June 6-7, and June 11-12 was adopted at the January 31, 2002 Compact hearing. Inclusion of the South Channel area maximizes harvest opportunity of locally released stocks and the 8-inch maximum mesh size restriction targets chinook and limits sturgeon catch.

The 2002 Tongue Point/South Channel spring gillnet fishery landed 2,985 chinook and 352 white sturgeon during the season. Stock composition was based on VSI and CWT analysis with a total of 1,286 chinook (43% of the catch) examined for fin marks and CWTs and 248 snouts being collected. Based on scale readings, verified with CWTs, the age composition of the catch was <1% age-3, 71% age-4, 28% age-5, and <1% age-6 fish. The 2002 Tongue Point/South Channel catch was estimated to include 2,249 spring chinook destined for Select Area sites; 173 spring and 7 summer chinook destined for locations above Bonneville Dam; 378 spring chinook destined for the Willamette River; 149 spring chinook destined for the Sandy River; 20 spring chinook destined for the Cowlitz, Kalama, or Lewis rivers; and 9 spring chinook destined for the Umpqua River.

2002 Blind Slough/Knappa Slough Winter/Spring Gillnet Season

Fashioned after the successful experimental winter seasons that occurred in Blind Slough in 2000 and 2001, a winter gillnet season was set for the Blind Slough area only with an 8-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 18 to 7 AM February 19, 7 PM February 25 to 7 AM February 26, and 7 PM March 4 to 7 AM March 5. A total of 18 spring chinook and zero sturgeon were landed during the season.

During the spring fishery, the fishing area was expanded to include Knappa Slough to maximize the harvest opportunity of locally released stocks. An 8-inch maximum mesh size restriction was also in place to target chinook and limit sturgeon catch. The 18-night Blind Slough/Knappa Slough spring gillnet season was open for 12-hour fishing periods from 7 PM to 7 AM during April 18-19, April 25-26, April 30-May 1, May 2-3, May 7-8, May 9-10, May 14-15, May 16-17, May 21-22, May 23-24, May 28-29, May 30-31, June 4-5, June 6-7, and June 11-12. Landings for the 2002 Blind Slough/Knappa Slough spring gillnet fishery included 2,033 chinook and 48 white sturgeon.

The combined Blind Slough/Knappa Slough winter and spring fishery stock composition was based on VSI and CWT analysis with a total of 1,581 chinook (77% of the combined catch) examined for fin marks and CWTs and 586 snouts being collected. Based on scale readings, verified with CWTs, the age composition of the catch was 71% age-4, 28% age-5, and <1% age-6 fish. The 2002 Blind Slough/Knappa Slough catch was estimated to include 1,811 spring chinook destined for Select Area sites; 33 spring chinook destined for locations above Bonneville Dam; 178 spring chinook destined for the Willamette River; 5 spring chinook destined for the Sandy River; and 24 spring chinook destined for the Cowlitz, Kalama, or Lewis rivers.

2002 Area 2S Shad Gillnet Season

The Compact adopted a 29-day commercial shad season for Area 2S in 2002 which included all weekdays (except Memorial Day) from May 20 to June 28 with the following modified 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 2002 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 2-3 boats participating during the 2002 season. A total of 36,170 shad (97,658 pounds) were landed in the Area 2S fishery; with a salmonid handle of 63 summer chinook, 23 summer steelhead, and 5 sockeye (Table 17). Immediate and delayed salmonid mortalities were estimated to be 16 adult summer chinook, 11 summer steelhead, and 1 sockeye. No monitoring occurred during the 2002 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 2002.

2002 Commercial Shad Miscellaneous

In 2002, shad were allowed to be sold during the non-Indian tangle net demonstration fishery using gillnets of 5½" mesh size or smaller; however, the fishery occurred early in the spring (February 25 through March 27) and resulted in no shad being landed.

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. However, over the last several years the number of interested participants actively fishing the area had dropped off and only one fisher participated in this fishery during 1996-1997 and no fishers participated during 1998-2000. Due to lack of interest no Camas-Washougal Reef shad fishery has been adopted since 2000 (Table 17).

2002 Impacts to ESA Listed Stocks

Impacts to listed upriver spring chinook in non-Indian Columbia River fisheries were limited to 2.0% in 2002. The management intent was for fisheries below McNary Dam to be limited to a 1.7% impact rate with 0.3% impact allocated to fisheries above McNary Dam. Fisheries below McNary Dam included the mainstem sport and commercial fisheries plus Select Area fisheries. Impacts in non-Indian fisheries below McNary Dam totaled 1.84% on listed upriver spring chinook. Impacts to Snake River wild spring chinook in the Snake River fisheries totaled 0.06%. Impacts to Upper Columbia wild spring chinook above McNary Dam totaled 0.24%. Impacts for all non-Indian fisheries totaled 1.9% on Snake River wild spring chinook and 2.1% on Upper Columbia wild spring chinook, as compared to the guideline of 2%.

Impacts to Snake River wild summer chinook totaled 0.3% in 2002 compared to the guideline of 1%. The majority of the impacts occurred as catch and release mortalities in the mainstem sport fishery, which was allowed to retain adipose fin-clipped summer chinook beginning in late June, about midway through the summer chinook return. Total impacts to Snake River sockeye are estimated to be zero in 2002, compared to the allowable impact rate of 1%. Very few sockeye were harvested or handled in 2002 due to the closed season and the poor return of sockeye to the Columbia River.

Impacts to wild steelhead by ESU have not been estimated at this time, but are being reviewed by the TAC. A large number of steelhead were handled during the mainstem spring chinook tangle net fishery during March and impacts to wild steelhead are primarily to the winter-run component. Other impacts

to wild steelhead occurred in the mainstem steelhead sport fishery during the summer and will primarily affect the Mid-Columbia, Upper Columbia, and Snake River ESU's. The TAC will provide a report summarizing steelhead impacts associated with the tangle net fishery.

Treaty Indian Fisheries

2002 Treaty Indian Winter Commercial Season

The 2002 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 John Day Pool fishery closed on March 15 when the harvest guideline was projected to be reached. The 2002 winter gillnet season commercial catches were less than those observed during 2001 with a total catch of 78 steelhead, 1,365 white sturgeon, 71 walleye, and 45 spring chinook (Table 19). The winter season steelhead catch has declined in recent years, due to fishers targeting sturgeon.

2002 Winter Commercial Landings

		White Sturgeon			
Pool	Steelhead	Setline	Gillnet	Walleye	Chinook
Bonneville	78	1	183	27	39
The Dalles	0	2	875	7	6
John Day	0	4	307	37	0
Total	**78**	**7**	**1,365**	**71**	**45**

2002 Treaty Indian Mainstem Spring Chinook Fisheries

Tribal intent for 2002 spring chinook fisheries was to remain within impact rates allowed by the Interim Management Agreement. The preseason planning for the 2002 treaty mainstem harvest was 40,044 spring chinook (12% of the 333,700 forecasted run), 3,885 summer chinook (5.0% of 77,700 forecasted run), and 2,060 sockeye (5.0% of 41,200 forecasted run).

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 five weekly openings from April 17 to May 18. 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 6,737 spring chinook (2.3% of 295,100 upriver run). The commercial fishery landed 24,209 spring chinook (8.2% of 295,100 upriver run). Additionally, 45 spring chinook were caught during the winter commercial fishery. The estimated catches for the hook-and-line and dipnet C&S fisheries were 2,169 spring chinook (0.7% of 295,100 upriver run) and 870 summer chinook. There were 1,451 summer chinook harvested in permit gillnet fisheries (1.1% of 129,000 upriver run). During 2002 spring chinook harvest totaled 33,160 and summer chinook harvest was 2,321.

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 295,100 which resulted in an allowed harvest rate of 11%. Winter and spring fisheries harvested 11.2% of the upriver spring chinook return of 295,100 (Table 7). The TAC estimates that 6,760 Snake River wild spring chinook, or 11.2% of the estimated return of 60,233, were taken during spring fisheries (Table 8). The summer chinook catch of 2,321 was 1.8% of the actual 2002 summer chinook return of 129,000 as compared to the allowed harvest rate of 5% (Table 10). The TAC estimates that 81 fish, or 1.8% of the return of 4,433, were Snake River wild summer chinook (Table 11).

There were 2,500 sockeye caught in platform and hook-and-line C&S fisheries and 64 sockeye caught in permit gillnet fisheries. The overall catch of 2,567 was 5.2% of the return of 49,600 as compared to the allowed harvest rate of 5%. The TAC estimated that three of the sockeye caught were Snake River sockeye (Table 12).

Steelhead harvest during spring and summer fisheries was less than in 2001 with tribal fishers harvesting 489 steelhead during winter and spring fisheries and 4,967 steelhead during the summer fisheries. Most of the 5,456 total were Group A summer steelhead. These fish were not sampled to determine a hatchery to wild ratio; therefore, the proportion wild sampled at Bonneville Dam in 2002 is the best estimate available. Wild Group A summer steelhead comprised 30.0% of the steelhead return at Bonneville from April 3 through July 28. Applying this proportion to the catch of 5,456 results in an estimate of 1,641 wild Group A summer steelhead in 2002 spring and summer fisheries or 1.8% of the 87,300 wild Group A run passing Bonneville Dam in 2002.

2002 Ceremonial and Subsistence Entitlement

The Interim Management Agreement as well as the expired CRFMP identified a minimum C&S annual entitlement to the Columbia River treaty tribes of 10,000 spring and summer chinook, or fish of equivalent quality. After spring and summer C&S platform and permit gillnet fisheries are accounted for, the balance of the entitlement is to be provided to the tribes by the states of Oregon and Washington. Due to the large upriver spring chinook return the full entitlement was achieved in 2002 without using surplus fish from ODFW or WDFW.

2002 Ceremonial and Subsistence Entitlement Summary		
C&S permit gillnet spring fishery	6,737	spring chinook
Winter gillnet fishery	45	spring chinook
C&S platform spring fishery	2,169	spring chinook
Commercial gillnet fishery	24,209	spring chinook
C&S platform summer fishery	870	summer chinook
C&S permit gillnet fishery	1,451	summer chinook
Total	***35,481***	***Spring and summer chinook***

2002 Shad Fisheries

In 2002, treaty Indian fishers caught a total of 14,259 shad. Harvest from fishing five days between June 10–18 at The Dalles Dam east fish ladder exit totaled 13,937 shad (27,615 pounds) and an additional 322 shad were caught in the platform fishery (fish harvested in the platform fishery could have been sold or retained for personal use). Three chinook were trapped incidentally in the shad fishery and released unharmed.

2003 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 provided a Biological Opinion on the Interim Management Agreement.

Federally-listed Salmon, Steelhead, and Smelt of the Columbia River Basin. [1]			
Species - *ESU*	Designation	Listing Date	Effective Date
Chinook			
Snake River Fall	Threatened	April 22, 1992	May 22, 1992
Snake River Spring/Summer	**Threatened**	**April 22, 1992**	**May 22, 1992**
Upper Columbia Spring	**Endangered**	**March 24, 1999**	**May 24, 1999**
Upper Columbia Summer/Fall	**Not warranted**	--	--
Middle Columbia Spring	**Not warranted**	--	--
Lower Columbia River Spring/Fall	**Threatened**	**March 24, 1999**	**May 24, 1999**
Upper Willamette Spring	**Threatened**	**March 24, 1999**	**May 24, 1999**
Deschutes River Fall	Not warranted	--	--
Steelhead			
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**
Sockeye – Snake River	**Endangered**	**November 20, 1991**	**December 20, 1991**
Chum – Columbia River	Threatened	March 25, 1999	May 24, 1999
Coho – Columbia River [3]	Candidate	--	--
Smelt - Columbia River	**Petition not accepted**	--	--

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.*

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 vs Oregon* are continuing re-negotiation discussions initiated in 1998. During the spring management period in 2001 the parties to *US vs 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. 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".

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 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 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 2002 and 2003. Final policy guidance was provided by both Commissions which endorsed the staff recommendations concerning the non-Indian sport/commercial allocation issue. The following guiding principles and fisheries management objectives were supported with the intention of providing staff with guidance when shaping fisheries preseason and managing fisheries inseason and will be in effect for two years, 2002-2003.

Mainstem Columbia River Spring Chinook Allocation For Non-Indian Fisheries, 2002-2003
Guiding Principles
• Meet conservation requirements for wild spring chinook, including populations listed under the federal Endangered Species Act.
• Manage non-Indian harvest of spring chinook within the provisions of the *U.S. v Oregon* Management Agreement for upriver spring 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.
• Allocate 15 percent of the non-Indian upriver spring chinook impacts to sport and non-treaty Indian fisheries upstream of McNary Dam and to provide for a lower river fisheries management buffer.
Fisheries Management Objectives
• Manage the mainstem Columbia River commercial fishery to attain the commercial allocation of Willamette spring chinook.
• Manage the combined mainstem Columbia River and lower Willamette River sport fisheries to attain the sport fishery allocation of Willamette spring chinook.
• Manage non-Indian upriver spring chinook impacts to provide for equitable sport and commercial hatchery spring chinook harvest opportunity in the mainstem Columbia River downstream of McNary Dam.
• Maximize the economic benefits of spring chinook harvested by the commercial fishery by focusing the majority of the commercial fishing effort early in the spring chinook season in years where there is sufficient Willamette spring chinook abundance. Commercial fishing later in the season would be dependent on remaining commercial upriver spring chinook impact allocation and would be structured to minimize effects on the sport fishery.
• Maximize sport fishing opportunity during late March through April, *and extending into May if possible,*[1] to provide angler opportunity during the period of peak spring chinook abundance. *Recognize associated economic benefits after mid-March* [2]. The number of recreational fishing days in April will depend on the annual abundance of upriver spring chinook, fishing conditions, and the level of effort.
• 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.

1. *Additional language endorsed by WFWC.*
2. *Additional language endorsed by OFWC.*

Based on the aforementioned guiding principles and fishery objectives staff developed a 3 x 3 matrix for the sharing of allowable non-Indian upriver spring chinook impacts between sport and commercial fisheries. The matrix allocates impacts based on upriver and Willamette run sizes in recognition of the fact that as both run sizes change the ability to meet the needs of both fisheries also changes. The following matrix, endorsed by both Commissions, provides a high likelihood of achieving the sport fishery needs under most run sizes and a high to moderate likelihood of meeting the commercial fishery needs under most run sizes. The associated footnotes provide management flexibility necessary for making inseason fishery management decisions.***Sharing of Non-Indian Upriver Spring Chinook Impacts Dependent on Willamette and Upriver Spring Chinook Annual Abundance***

		Willamette Hatchery Fish Run Size		
		< 40,000	40-75,000	>75,000
Upriver Run Size (Impacts)	30-50,000 (0.85%)	Comm - 10% (0.08) Sport - 90% (0.77)	Comm - 30% (0.25) Sport - 70% (0.60)	Comm -25% (0.21) Sport - 75% (0.64)
	50-<75,000 (1.25%)	Comm - 40% (0.50) Sport - 60% (0.75)	Comm - 35% (0.44) Sport - 65% (0.81)	Comm - 30% (0.37) Sport - 70% (0.88)
	>75,000 (1.7%)	Comm - 50% (0.85) Sport - 50% (0.85)	Comm - 40% (0.68) Sport - 60% (1.02)	**Comm - 35% (0.59)** **Sport - 65% (1.11)**

1. *In years when the sport fishery upriver impact allocation will be used prior to May 15, and the commercial fishery does not need their entire upriver impact allocation to attain the Willamette allocation or an equitable catch share, commercial impacts may be transferred to the sport fishery. An assessment of upriver impact needs and Willamette allocation will be conducted after mid-April in conjunction with the upriver run size update.*

2. *In years when the sport fishery does not need their entire upriver spring chinook allocation to continue the fishery through May 15, the remaining sport impacts may be transferred to the commercial fishery for late spring commercial fishing opportunity. The sport fishery impact needs will be updated after mid-April in conjunction with the upriver run size update.*

Based on the matrix above, impacts for 2003 would be allocated 65% to sport fisheries, or 1.11% impact on listed upriver spring chinook, and 35% to commercial fisheries, or a 0.59% impact on listed upriver spring chinook.

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 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 2003 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 2003 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 main-stem Willamette River, the Clackamas River basin, the Molalla and Pudding rivers, the Santiam and Calapooia River basins, the McKenzie River basin, and the Willamette River basin above the mouth of the McKenzie River. On February 27, 1998 the OFWC adopted revisions to spring chinook chapters of the WFMP and on February 19, 1999 the OFWC further revised the fishery matrix regime in the "Mainstem Willamette Spring Chinook" Chapter. Beginning in 2001 freshwater fisheries were managed in accordance with the FMEP, which 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 Fish Escapement		
Hatchery Return	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**

	Allocation of Harvestable Numbers	
Predicted Hatchery Return	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 Joints State Agreements remain intact, including the 80% sport:20% commercial catch allocation. The new 2003 Joint State Sturgeon Agreement will call for an average annual harvestable number of 40,000 white sturgeon (32,000 sport and 8,000 commercial) which will equate 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 2003"*.

2003 WINTER, SPRING, AND SUMMER SEASON RECOMMENDATIONS

Fisheries considered in this report will be managed in accordance with the *"Interim Management Agreement for Upriver Spring Chinook, Summer Chinook, and Sockeye"*. A sliding scale harvest matrix is in effect for upriver spring chinook. Based on the aforementioned matrix and a river mouth run size forecast of 145,400 upriver spring chinook, the total harvest rate on Snake River wild spring chinook will be 11% with 2% allocated to non-Indian fisheries and 9% allocated to treaty Indian fisheries. In 2003, 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 spring chinook FMEP. 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. 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 with impacts to listed wild steelhead not to exceed 2%.

Recognizing the complexities of managing a mixed stock fishery, the Compact will have to be cautious and creative in shaping and adopting 2003 seasons that minimize impacts on listed and depressed runs. Potential main-stem Columbia River commercial fisheries for the 2003 winter, spring, and summer season time frame listed here will be considered at the February 6, 2003 Compact hearing. Ongoing or other potential fisheries will be considered at future Compact hearings and other management forums.

2003 Non-Indian Fisheries

Commercial Winter Sturgeon Fishery
(adopted by the Compact on December 18, 2002)

The currently adopted season consists of six 30-hour fishing periods (noon Tuesday to 6 PM Wednesday) in all of Zones 1-5 during the time period of January 7, 2003 through February 12, 2003. Season dates, gear restrictions, and expected catches are listed in the document titled *"Joint Staff Report Concerning Commercial Seasons for Sturgeon and Smelt in 2003"*. 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 1,500 white sturgeon and 200 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 6, 2003)

In accordance with the Willamette 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. Based on an expected return of 145,400 upriver spring chinook commercial fisheries are allocated 35% of the non-Indian impact limit of 1.7% for fisheries downstream of McNary Dam, which equates to a 0.59% impact rate on listed upriver spring chinook. Based on a total run size expectation

of 109,800 (98,800 hatchery) Willamette spring chinook the commercial fishery will be allocated a catch of 17,500 Willamette hatchery spring chinook.

Commercial fisheries targeting spring chinook will occur during the mid-February through mid-May timeframe. Restrictive regulations will include: 1) 150 fathom net length restriction, 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. Additionally, mesh size regulations will be considered with respect to survival rates of released fish and avoidance of non-target species. Large mesh (8" or 9" minimum) size regulations may be considered early in the season to reduce steelhead handle and small mesh (4-¼" maximum) will be required later in the season to ensure high survival rates of released species. Additional efforts to reduce steelhead handle will include shaping of fishery to reduce effort during peak abundance times for wild winter steelhead and the voluntary use of large mesh (12" minimum) excluder panels on the top portion (5'-10') of the net. The initial winter season proposal will be included in the Fact Sheet developed for the February 6, 2003 Compact hearing. Additional fishing seasons 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 6, 2003)

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. Based on an expected return of 145,400 upriver spring chinook sport fisheries are allocated 65% of the non-Indian impact limit of 1.7% for fisheries downstream of McNary Dam, which equates to a 1.11% impact rate on listed upriver spring chinook. Based on a run size expectation of 109,800 (98,800 hatchery) Willamette spring chinook the sport fishery will be allocated a catch of 40,900 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, 2003. This fishery will likely extend up to the OR/WA border above McNary Dam, excluding the area from Bonneville Dam upstream to Tower Island, and continue through May 15, 2003 depending on catch rates, effort levels, and impacts to listed species. Proposed fishery regulations will be included in the Fact Sheet prepared for the February 6, 2003 Joint State hearing.

Select Area Commercial Fisheries
(Compact and State consideration February 6, 2003)

Spring chinook fisheries will be proposed for the Tongue Point, Blind Slough, Deep River, and Youngs Bay Select Areas and will be described in the "*2003 Spring Select Area Fisheries Fact Sheet"*. Both winter and spring seasons will be proposed for Youngs Bay and Blind Slough while only spring seasons will be proposed for Tongue Point and 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 total non-Indian impacts. Season proposals will be

completed following a public meeting concerning spring Select Area fisheries that is scheduled to occur in January.

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: <50 fish (<5 release mortalities)

Based on the preseason sockeye run size forecast the retention of sockeye is not expected to be allowed in Oregon or Washington waters during 2003. Chinook retention may be allowed in this fishery.

Area 2S Shad Fishery
(Compact consideration February 6, 2003)

For 2003, it is recommended that the Area 2S shad fishery operate using modified gill nets and restricted hours as occurred during 1996-2002. 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 2003 Area 2S shad fishery is expected to be at the low levels observed during 1996-2002 fisheries.

Season: <u>Daily 3 PM-10 PM</u>

May 19-23	(5 days)
May 27-30	(4 days)
June 2-6	(5 days)
June 9-13	(5 days)
June 16-20	(5 days)
June 23-27	(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: <50 fish (12 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 2003 Non-Indian Salmonid Fisheries

Managers of the lower Columbia River non-Indian fisheries have indicated their intentions to manage 2003 winter, spring, and summer season fisheries consistent with the impacts outlined in

the *"Interim Management Agreement for Upriver Spring Chinook, Summer Chinook, and Sockeye"*. 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 2003. 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. Non-retention steelhead mortalities in all non-Indian fisheries are expected to continue to be less than 2% of listed wild stocks and less than 6% of listed hatchery stocks.

2003 Treaty Indian Fisheries

Spring and summer chinook harvest occurs primarily in the C&S fisheries except in years of high abundance, such as 2000, 2001, and 2002. 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.

2003 Treaty Winter Commercial Fisheries
(Adopted by the Compact on December 18, 2002)

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 2003 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. 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 2003 winter season fisheries are expected to have similar catches and effort as in recent years.

2003 Treaty Indian Spring Season Fisheries

The treaty tribes have not yet determined the structure of their 2003 spring chinook fisheries, but the proposed fisheries, combined gillnet and platform spring chinook catch, and associated impacts to listed species will be within the limits set forth in the Interim Management Agreement. The tribes anticipate that no more than 1,000 steelhead will be caught in spring fisheries. The majority of the catch would be 2003 Skamania stock hatchery returns with some holdovers and kelts from the 2002 summer steelhead run.

2003 Treaty Indian Summer Season Fisheries

The tribes intend to manage summer season fisheries consistent with the Interim Management Agreement as well as in a manner generally consistent with the expired CRFMP which allowed for the treaty Indian C&S platform fishery to remain open through the summer season. The Interim Management Agreement also anticipates that the platform fishery would remain open. Summer chinook, sockeye, and steelhead are expected to be caught in the summer platform fishery.

The 1998-2002 average harvest rate on summer chinook for the treaty Indian fisheries is 1.4% (range 0.9% to 1.8%) which corresponds to an average catch of 847 fish. The average harvest rate of sockeye during the 1998-2002 period for treaty Indian fisheries was 4.3%, including platform, permit, and commercial fisheries. During the 1993-2002 period, permit gillnet fisheries occurred only in 1993 and 2002 and commercial fisheries occurred only in 2000 and 2001. The 2002 sockeye harvest rate was 5.2%. 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. In 2002 the catch was 4,967 summer steelhead. The treaty tribes have not yet determined the structure of their 2003 summer fisheries (platform and permit gillnet or potential commercial fisheries), but the proposed fisheries, expected catches, and associated impacts will be within the limits set forth in the Interim Management Agreement.

2003 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 2003 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. Recommendations regarding the use of monofilament gear and the two pound per fathom weight restriction on the leadline were addressed in 2002.

The Sturgeon Management Task Force (SMTF) will meet in January to discuss Zone 6 sturgeon management for 2003 and agree to a management plan for 2003 sturgeon fisheries in the Zone 6 management area. Results of the SMTF meetings are expected to be presented at the February 6, 2003 Compact hearing.

Oregon Department of Fish and Wildlife
Washington Department of Fish and Wildlife
January 23, 2003

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Table 1. Estimates of the Spring Chinook Stock Composition (in Thousands) in Lower Columbia Fisheries, 1985-2002.

	Willamette River [1]		Other Lower River [2]		Upriver		Total [3]
Year	No.	%	No.	%	No.	%	Catch
			Winter Commercial Season (Feb-Mar)				
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
			Main-Stem Sport Fishery (Feb-Mar) [4]				
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
			Main-Stem Sport Fishery (April) [4]				
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	4.5	24	0.5	3	13.5	73	18.4

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. Does not include 700 and 400 spring chinook catch from late January-early February 1986 and 1987 sturgeon seasons. Does include 2002 spring tangle net landings of 14,238 spring chinook.*
4. *Includes kept catch only. Only adipose fin-clipped chinook could be retained in sport fisheries effective in 2001.*
5. *Includes the April 5-15 terminal fishery at the mouth of Multnomah Channel.*

Table 2. Components (in Thousands) of the Minimum Willamette River Spring Chinook Run and Percentage Caught in Lower Willamette Sport Fishery, 1970-2002.

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
1084	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

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 on: April 1-10, 1986 (1,700); April 1-9, 1989 (1,100); April 1-4, 1990 (1,500); April 5-15, 1990 (500); April 1-7, 1993 (600); April 1-3, 1994 (300); April 1-17; and April 25-29, 2001.*
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, 1980-2002 and 2003 Projections.

	Willamette River (All Age Classes)			Cowlitz, Kalama, & Lewis Rivers Combined (Adults)			Upriver (Age 4 & 5 Adults)		
Year	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[4]	61.0	80.3	132	4.8	5.6	117	364.6	416.5	114
2002[4]	73.8	121.7	165	6.7	8.5	127	333.7	295.1	88
2003	**109.8**	--	--	**10.8**	--	--	**145.4**	--	--

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, 1980-2002.

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	--	18,725	46	4,562	0	551	7,689
2000	39,073	5,721	--	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

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.*

Table 5. Minimum[1] Adult Spring Chinook Run (in Thousands) Entering Other Lower River Tributaries, 1980-2002.

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 [3]	1.7	1.7	2.2	5.6	11.2
2002	3.7	2.8	2.0	7.0	15.5

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, 1980-2002.

	Cowlitz River			Kalama River			Lewis River			Total		
Year	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	1.6	31	<0.1	1.0	1	0.7	1.8	40	0.7	4.4	16
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]	0.3	1.7	17	0.4	1.4	29	1.0	2.2	45	1.7	5.3	32
2001 [1]	0.1	1.7	6	0.3	1.7	18	0.7	2.2	32	1.1	5.6	20
2002	0.5	3.7	14	0.5	2.8	18	0.7	2.0	35	1.7	8.5	20

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

Table 7. Minimum Upriver Adult Spring Chinook Run, Catches, and Escapement (in Numbers), 1980-2002.

Year	Minimum Upriver Run	Non-Indian Fisheries Mortality				Bonneville Dam Count [1]	Treaty Indian Catch			Escapement *1*		L. Granite Dam Count
		Comm.	Sport [2]	Misc. [3]	Rate (%)		Comm.	C&S	Rate (%)	Number	% of Run	
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	4,215
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	22,689	833 [4]	6.0	391,367	43,715	10,847	13.1	336,805	80.9	171,958
2002	295,111	9,483	16,156	659	8.9	268,813	214	32,906	11.2	235,693	79.9	75,025

1. *Dam counts in 1980 and 1981 were not adjusted for fallback; run size and escapements are maximums in those years.*
2. *Includes fish taken in April sport fishery extensions in 1986, 1989, 1990, 1993, and 1994 and sport fisheries above Bonneville Dam during 2001 and 2002.*
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. *Includes 484 fish landed in experimental tangle net gear commercial permit fishery.*

Table 8. Columbia River Fisheries and Passage Loss Impacts on the Adult Snake River Wild Spring Chinook Run and Escapement, 1986-2002.

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]
1986	12,984	270	2.1	800	6.2	1,070	8.2	4,343	37.6	7,567	62.4
1987	12,265	191	1.6	818	6.7	1,009	8.2	2,749	24.3	8,504	75.7
1988	14,356	987	6.9	1,034	7.2	2,021	14.1	3,332	27.0	8,999	73.0
1989	6,981	177	2.5	563	8.1	740	10.6	2,851	45.7	3,388	54.3
1986-1989 Averag	11,646	406	3.3	804	7.0	1,210	10.3	3,319	33.7	7,115	66.3
1990	6,084	323	5.3	424	7.0	747	12.3	1,624	30.3	3,710	69.7
1991	5,450	230	4.2	352	6.5	582	10.7	2,404	49.3	2,463	50.7
1992	16,198	272	1.7	1,035	6.4	1,307	8.1	3,343	22.5	11,542	77.5
1993	7,740	62	0.8	502	6.5	564	7.3	992	13.8	6,180	86.2
1994	2,067	90	4.3	110	5.3	200	9.7	354	18.9	1,514	81.1
1990-1994 Averag	7,508	195	3.3	485	6.3	680	9.6	1,743	27.0	5,082	73.0
1995	1,791	1	<0.1	109	6.1	110	6.1	918	54.6	764	45.4
1996	3,897	2	0.1	211	5.4	213	5.5	2,164	58.8	1,519	41.2
1997	4,750	2	<0.1	345	7.3	347	7.3	2,117	48.2	2,286	51.8
1998	9,620	9	0.1	549	5.7	558	5.8	3,889	42.9	5,174	57.1
1999	1,366	1	0.1	69	5.1	70	5.1	699	53.9	597	46.1
1995-1999 Average	4,285	3	0.1	256	5.9	259	6.0	1,957	51.7	2,068	48.3
2000	5,741	11	0.2	362	6.3	373	6.5	2,036	37.9	3,332	62.1
2001	27,579	332	1.4	3,613	13.1	3,945	14.5	5,108	21.7	17,195	78.3
2002	60,233	1,147	1.9	6,760	11.2	7,907	13.1	13,618	26.0	34,488	74.0

1. *Includes incidental mortalities in the mainstem steelhead sport fishery; Corbett and Select Area fisheries; Area 2S shad commercial fisheries; April sport fishery extension during 1986, 1989, 1990, 1993, and 1994; 2001 Snake River sport fishery; and fisheries above Bonneville Dam during 2001 and 2002.*
2. *Includes winter season commercial sales and spring C&S catches.*
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 9. Columbia River Fisheries and Passage Loss Impacts on the Adult Upper Columbia Wild Spring Chinook Run and Escapement, 1985-2002.

	Upper Columbia	Non-Indian Fisheries Mortality [1]		Treaty Indian Catch		Fisheries Total [2]		Bonn. - McN Passage Loss		Priest Rapids Dam Escapement	
Year	Wild Run Size	No.	%	No.	%	No.	%	No.	% [3]	No.	% [3]
1986	8,242	174	2.1	508	6.2	679	8.2	1,844	24.4	5,716	75.6
1987	7,300	116	1.6	487	6.7	601	8.2	1,323	19.7	5,374	80.3
1988	5,504	380	6.9	396	7.2	775	14.1	850	17.9	3,878	82.1
1989	6,303	161	2.5	508	8.1	668	10.6	1,902	33.8	3,732	66.2
1986-1989 Average	6,838	208	3.3	475	7.0	683	10.3	1,480	24.0	4,675	76.0
1990	5,781	310	5.3	403	7.0	710	12.3	1,062	20.9	4,007	79.1
1991	2,660	113	4.2	172	6.5	284	10.7	639	26.9	1,736	73.1
1992	4,852	83	1.7	310	6.4	391	8.1	478	10.7	3,980	89.3
1993	5,127	43	0.8	333	6.5	374	7.3	73	1.5	4,678	98.5
1994	1,444	62	4.3	77	5.3	140	9.7	149	11.4	1,155	88.6
1990-1994 Average	3,973	122	3.3	259	6.3	381	9.6	480	14.3	3,111	85.7
1995	253	0	0.0	15	6.1	15	6.1	81	34.0	157	66.0
1996	330	0	<0.1	18	5.4	18	5.5	139	44.6	173	55.4
1997	1,125	1	0.0	82	7.3	82	7.3	387	37.1	655	62.9
1998	423	0	<0.1	24	5.7	25	5.8	115	28.9	284	71.1
1999	673	1	0.1	34	5.1	35	5.1	187	29.3	451	70.7
1995-1999 Average	561	<1	0.1	35	5.9	35	6.0	182	34.8	344	65.2
2000	1,615	3	0.2	102	6.3	105	6.5	304	20.1	1,207	79.9
2001	11,970	721	1.4	1,568	13.1	1,730	14.6	1,634	15.6	8,047	84.4
2002	6,291	134	2.1	706	11.2	840	13.3	987	18.1	4,037	81.9

1. *Includes incidental mortalities in the mainstem steelhead sport fishery; Corbett and Select Area fisheries; Area 2S shad commercial fisheries; April sport fishery extension during 1986, 1989, 1990, 1993, and 1994; 2001 Snake River sport fishery fishery; and fisheries above Bonneville Dam during 2001 and 2002.*
2. *Individual columns may not add up to total columns because of rounding.*
3. *Percentage of Zone 6 escapement.*

Table 10. Estimated Numbers of Adult Summer Chinook Entering the Columbia River, Mainstem Harvest, and Escapement, 1980-2002.

Year	Upriver Run	Non-Indian Fishery Mortality				Bonneville Counts	Treaty Indian Catch		Escapement		Dam Counts	
		Comm.	Sport [1]	Misc. [2]	Rate (%)		No. [3]	%	Number [4]	% of Run	Priest Rapids	Lower Granite
1980	26,983	0	--	31	0.1	26,952	1,181	4.4	25,771	95.5	16,000	2,688
1981	22,381	0	--	18	0.1	22,363	1,364	6.1	20,999	93.8	11,600	3,306
1982	20,363	0	--	234	1.1	20,129	1,295	6.4	18,834	92.5	8,800	4,210
1983	18,231	0	--	185	1.0	18,046	297	1.6	17,749	97.4	8,500	3,895
1984	22,464	0	--	43	0.2	22,421	457	2.0	21,964	97.8	16,200	5,429
1985	24,308	0	--	72	0.3	24,236	1,376	5.7	22,860	94.0	15,910	5,062
1986	26,439	0	0	218	0.8	26,221	1,120	4.2	25,101	94.9	16,161	6,154
1987	33,323	0	6	283	0.9	33,033	1,694	5.1	31,339	94.0	14,131	5,891
1988	31,486	0	10	161	0.5	31,315	1,499	4.8	29,816	94.7	13,400	6,145
1989	28,830	0	22	19	0.1	28,789	100	0.3	28,689	99.5	19,659	3,169
1990	25,023	0	9	31	0.2	24,983	111	0.4	24,872	99.4	15,576	5,093
1991	18,919	0	4	18	0.1	18,897	178	0.9	18,719	98.9	14,815	3,809
1992	15,150	0	17	70	0.6	15,063	57	0.4	15,006	99.0	8,523	3,014
1993	22,226	0	21	161	0.8	22,045	369	1.7	21,676	97.5	16,377	7,889
1994	17,711	0	34	46	0.5	17,631	207	1.2	17,424	98.4	14,859	795
1995	15,052	0	21	1	0.1	15,030	431	2.9	14,599	97.0	12,162	692
1996	16,102	0	37	31	0.4	16,034	494	3.1	15,540	96.5	10,995	2,607
1997	27,977	0	26	12	0.1	27,939	315	1.1	27,624	98.7	13,107	10,709
1998	21,468	0	34	1	0.2	21,433	371	1.7	21,062	98.1	13,387	4,355
1999	26,229	0	58	2	0.2	26,169	433	1.7	25,736	98.1	22,898	3,260
2000	30,651	0	34	1	0.1	30,616	280	0.9	30,336	99.0	22,306	3,933
2001	76,377	0	89	132	0.3	76,156	830	1.1	75,326	98.8	53,170	19,287 [5]
2002	129,012	0	1,560	16	1.2	127,436	2,321	1.8	125,115	97.0	96,326	22,159

1. *" --" indicates data not available.*
2. *Includes mortalities in commercial shad and sockeye fisheries and the summer steelhead sport fishery.*
3. *Numbers listed for 1980 to present include commercial and C&S fisheries.*
4. *Bonneville counts minus Zone 6 catch.*
5. *Count at Lower Monumental Dam.*

Table 11. Columbia River Fisheries Impact on the Adult Snake River Wild Summer Chinook Run and Escapement, 1986-2002.

Year	Snake River Wild Run Size	Non-Indian Fisheries Mortality [1] No.	%	Treaty Indian Catch [2] No.	%	Fisheries Total [1] No.	%	Bonn.-L. Gr. Passage Loss No.	% [4]	Snake River Escapements [3] No.	% [4]
1986	3,478	29	0.8	147	4.2	176	5.1	618	17.8	2,684	77.1
1987	3,342	29	0.9	170	5.1	199	6.0	1,288	38.5	1,855	55.5
1988	3,286	18	0.5	156	4.8	174	5.3	1,305	39.7	1,807	55.0
1989	3,124	4	0.1	11	0.3	15	0.5	810	25.9	2,299	73.6
1986-1989 Average	3,308	20	0.6	121	3.6	141	4.2	1,005	30.5	2,161	65.3
1990	4,359	7	0.2	19	0.4	26	0.6	991	22.7	3,342	76.7
1991	3,550	4	0.1	33	0.9	38	1.1	546	15.4	2,967	83.6
1992	533	3	0.6	2	0.4	5	0.9	88	16.5	441	82.7
1993	4,169	29	0.7	58	1.4	87	2.1	*0*	*0*	4,082	97.9
1994	246	1	0.5	3	1.2	4	1.6	60	24.4	183	74.4
1990-1994 Average	2,441	9	0.4	23	0.9	32	1.3	207	12.1	2,203	86.7
1995	496	1	0.1	14	2.9	15	3.0	138	27.8	343	69.2
1996	2,717	12	0.4	83	3.1	95	3.5	706	26.0	1,916	70.5
1997	5,533	7	0.1	62	1.1	70	1.3	327	5.9	5,137	92.8
1998	4,166	7	0.2	72	1.7	79	1.9	1,175	28.2	2,913	69.9
1999	2,004	5	0.2	33	1.7	38	1.9	383	19.1	1,584	79.0
1995-1999 Average	2,983	6	0.2	53	2.1	59	2.3	546	21.4	2,379	76.3
2000	4,094	3	0.1	24	0.6	27	.066	0	0	4,067	100
2001	12,566	19	0.2	71	0.6	90	0.72	0	0	12,475	100
2002	4,433	12	0.3	81	1.8	93	2.1	789	18.2	3,552	81.8

1. *Includes mortalities in commercial shad and sockeye fisheries and the summer steelhead sport fishery.*
2. *Includes commercial sockeye and C&S catches.*
3. *Wild fish portion of passage at Lower Granite Dam.*
4. *Percentage of Zone 6 escapement.*

Table 12. Estimated Number of Sockeye Entering the Columbia River, Mainstem Harvest, and Escapement, 1980-2002.

Year	Return to Columbia River Mouth [1]	Non-Indian Fisheries Mortality	Bonn. Dam Count	Treaty Indian Catch		Dam Counts		Snake River Sockeye			
				Comm.	C & S	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

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 13. Minimum Numbers (in Thousands) of Lower River Summer Steelhead Entering the Columbia River, 1969-2002.

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	9.8	1.0	15.1	34.9
1997	1.9	17.5	3.7	1.4	6.0	30.5
1998	1.2	15.3	5.6	1.4	5.0	28.5
1999	1.3	12.4	3.1	1.5	6.3	24.6
2000	1.6	13.1	8.2	(1.4)	(10.2)	(34.5)
2001	2.0	28.4	9.5	(1.3)	(9.7)	(50.9)
2002	(4.4)	(37.9)	(28.0)	(1.4)	(7.4)	(79.1)

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.*
4. *From Oregon and Washington catch record estimates, Washington catches prior to 1975 not corrected for non-response bias.*
5. *( ) Indicates preliminary.*

Table 14. Minimum Numbers (in Thousands) of Group A and Group B Summer Steelhead Entering the Columbia River, 1969-2002

	Lower Columbia Catch								
	Sport [1]		Commercial [2]		Bonneville Dam Counts		Minimum Run		
Year	Group A	Group B	Group A	Group B	Group A	Group B	Group A	Group B	Total
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[3]	6.7	0.8	--	--	284.3	193.7	291.0	194.5	485.5

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. *Preliminary.*

Table 15. Group A Index and Group B Index Returns of Summer Steelhead to Bonneville Dam During 1984-2002 and 2003 Projections.

	Group A Index (<78 cm)					Group B Index (>78cm)				
Year	Number Wild	%	Number Hatchery	%	Total	Number Wild	%	Number Hatchery	%	Total
1984	52,400	27	143,300	73	195,700	13,800	14	84,200	86	98,000
1985	51,900	18	229,600	82	281,500	13,000	32	27,900	68	40,900
1986	56,600	20	230,900	80	287,500	10,000	16	54,000	84	64,000
1987	106,700	45	131,600	55	238,300	14,000	31	31,000	69	45,000
1988	64,300	37	108,800	63	173,100	17,700	22	63,900	78	81,600
1989	57,500	30	135,600	70	193,100	12,400	16	65,200	84	77,600
1990	27,100	23	88,500	77	115,600	8,800	17	38,400	83	47,200
1991	60,300	26	173,800	74	234,100	6,200	22	22,100	78	28,300
1992	44,300	18	197,200	82	241,500	12,700	22	44,700	78	57,400
1993	28,600	21	108,100	79	136,700	4,400	12	31,800	88	36,200
1994	21,200	18	99,800	82	121,000	5,200	20	22,300	80	27,500
1995	26,000	14	154,000	86	180,000	1,800	14	11,400	86	13,200
1996	25,700	15	148,600	85	174,300	3,900	21	14,900	79	18,800
1997	30,900	15	177,400	85	208,300	3,900	11	32,700	89	36,600
1998	34,800	26	99,900	74	134,700	3,400	8	36,800	92	40,200
1999	56,600	32	119,800	68	176,400	3,700	17	18,400	83	22,100
2000	63,600	29	153,100	71	216,700	8,400	21	32,500	79	40,900
2001	137,200	27	377,900	73	515,100	12,100	14	74,300	86	86,400
2002 [1]	87,300	27	235,800	73	323,100	32,300	25	97,600	75	129,900
2003[2]	**70,600**	**25**	**209,000**	**75**	**279,600**	**11,500**	**18**	**53,200**	**82**	**64,700**

1. *Preliminary.*
2. *Projected.*

Table 16. Steelhead Counts by Run Year at Lower Granite Dam with Wild Steelhead Estimates and Goals, 1984-2002.

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 [2]	269,300	49,500	18	165

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.*
2. *Preliminary; unmarked hatchery steelhead may comprise a portion of the wild component.*

Table 17. Commercial Landings of Shad in Area 2S and Washougal Reef Fisheries and Minimum Shad Run Size (in Thousands) 1977-2002.

	Area 2S		Washougal Reef		Total Zone 1-5		% of Run
Year	Days	Catch [1]	Days	Catch [1]	Commercial Catch [2]	Run Size	Landed
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 [3]	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 [5]	29	36.2	--	--	36.2	3,429.2	1

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. *Experimental fishery with three boats.*
4. *Includes shad caught in experimental tangle net permit fishery for spring chinook.*
5. *Catch statistics preliminary.*

Table 18. Season Dates, Gear Restrictions, and Commercial Landings During Non-Indian Winter (January-March) Mainstem Seasons, 1970-2002.

Year	Season	Fishing Days	Mesh Size	Commercial Landings [1] Chinook	Commercial Landings [1] 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-Feb14	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 [2]	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

[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 19. Winter Season Commercial Gillnet Landings in the Zone 6 Treaty Indian Fishery, 1977-2002.						
		Peak Net	Numbers of Fish Landed [2]			
Year	Season [1]	Count	Chinook	Steelhead	Sturgeon	Walleye
1977-1981 Average	Feb 1-Apr 1 [3]	170	1,400	3,700	110	--
Range		87-246	30-2,800	2,600-4,900	20-220	
1982-1986 Average	Feb 1-Mar 21 [4,5]	107	50	4,700	670	--
Range		61-180	5-100	3,000-7,800	70-1,700	
1987-1991 Average	Feb 1-Mar 21 [4,5]	183	100	6,700	2,100	500
Range		124-299	0-280 [6]	2,100-10,800	1,300-3,100	130-1,030
1992	Feb 1-Mar 21 (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 [8]	Feb 1-Mar 14 (41 days)	--	160	230	1,961	86
2002 [8]	Feb 1-Mar 21 (49 days)	--	45	78	1,529	76

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.*