



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

**JOINT STAFF REPORT
CONCERNING THE 2002 FALL IN-RIVER COMMERCIAL
HARVEST OF COLUMBIA RIVER FALL CHINOOK SALMON,
SUMMER STEELHEAD, COHO SALMON, CHUM SALMON,
AND STURGEON**

Joint Columbia River Management Staff

*Oregon Department of Fish and Wildlife
Washington Department of Fish and Wildlife*

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JOINT STAFF REPORT CONCERNING THE 2002 IN-RIVER COMMERCIAL HARVEST OF COLUMBIA RIVER FALL CHINOOK SALMON, SUMMER STEELHEAD, COHO SALMON, CHUM SALMON, AND STURGEON

INTRODUCTION

This report describes fall fisheries in the mainstem Columbia River and includes summaries of 2001 fall fisheries, 2002 management guidelines, expected 2002 fall fish runs, and the outlook for 2002 fall fisheries. This report is the third in an annual series produced by the Joint Columbia River Management Staff of the Oregon Department of Fish and Wildlife (ODFW) and Washington Department of Fish and Wildlife (WDFW) prior to each major Columbia River Compact hearing. Information concerning early and late fall mainstem management periods and fall Select Area fisheries are included in this report.

The first Compact hearing of the 2002 fall management period will begin at 10 AM, Friday August 2 at the Water Resources Education Center located at 4600 S. E. Columbia Way, Vancouver, Washington. The purpose of this hearing is to consider non-Indian commercial salmon fishing options for the mainstem Columbia River. The second fall season Compact hearing will begin at 10 AM, Thursday, August 15 at the Oregon Department of Fish and Wildlife headquarters office located at 2501 SW First Avenue, Portland, Oregon. The purpose of this hearing is to review salmon, steelhead, and sturgeon stock status and to consider fishing seasons for the commercial harvest of fall chinook, coho, steelhead, and sturgeon in Compact jurisdiction waters of the Columbia River. Following the hearing, the states will consider Select Area fall salmon seasons in Big Creek, Youngs Bay, Tongue Point, Blind Slough, Deep River, and Steamboat Slough. Additional Compact hearings will be scheduled to address additional treaty Indian and non-Indian commercial seasons and in-season adjustments to ongoing commercial fisheries.

Salmon and summer steelhead returns are forecast prior to the fall season and are updated in-season based on the most current ocean and in-river fishery information plus Columbia River dam counts (Table 1). The data in this report are a consensus of the Technical Advisory Committee (TAC) which completed its review prior to printing. The TAC is comprised of biologists from state and federal fish management agencies and the Columbia River treaty Indian tribes, and functions by agreement of the parties under *U. S. v. Oregon*.

THE COMPACT

The Columbia River Compact is charged by congressional and statutory authority to adopt seasons and rules for Columbia River commercial fisheries (Figure 1). 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 among users. This responsibility has become increasingly demanding in recent years. The Compact can be expected to continue its conservative management strategy when considering fisheries that will impact listed salmon and steelhead.

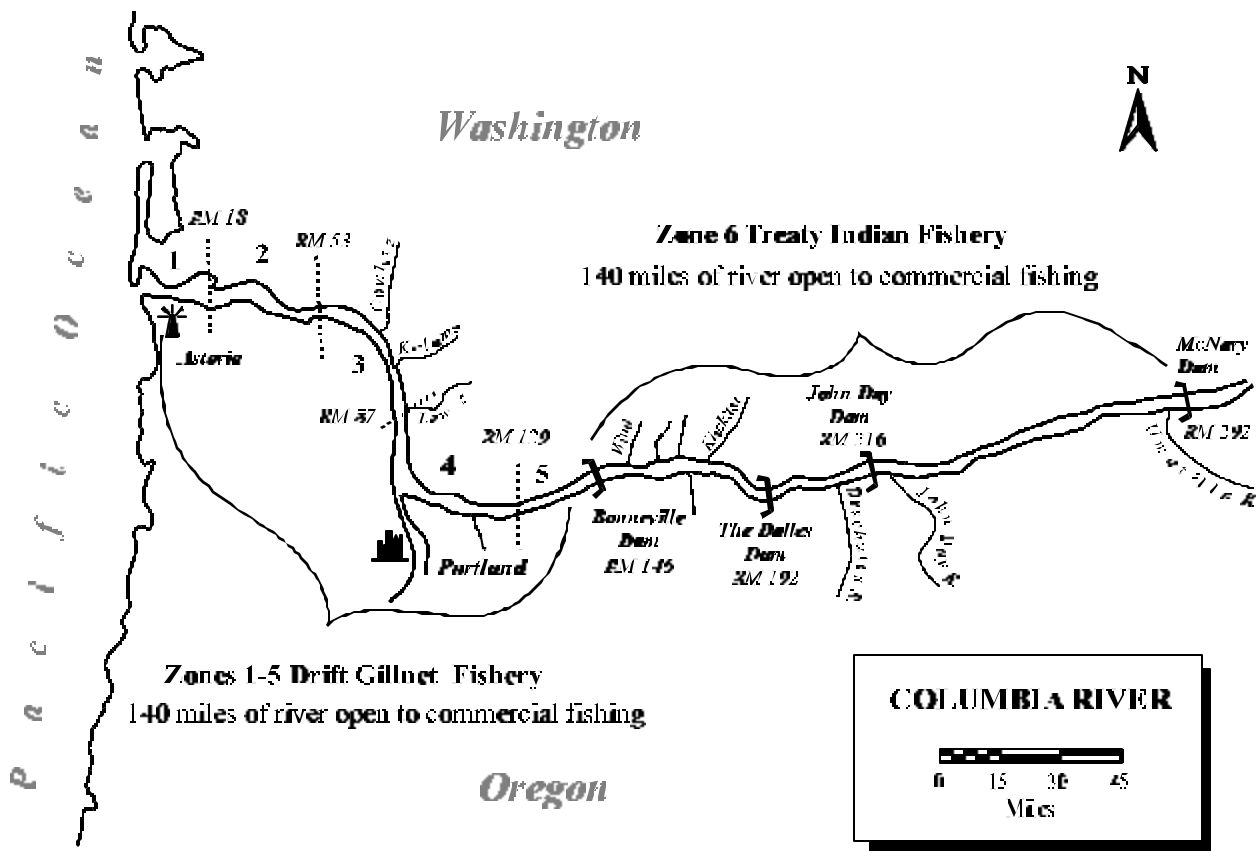


Figure 1. Columbia River Commercial Fishing Zones.

STOCK STATUS

Fall Chinook

Stock Description

Fall chinook generally enter the Columbia River from late July through October with abundance peaking in the lower river from mid-August to mid-September and passage at Bonneville Dam peaking in early September. Columbia River fall chinook are comprised of five major components: Lower River Hatchery (LRH), Lower River Wild (LRW), Bonneville Pool Hatchery (BPH), Upriver Bright (URB), and Mid-Columbia Bright (MCB). The LRH and BPH stocks are referred to as tules and the LRW, URB, and MCB stocks are referred to as brights. Minor run components include Lower River Brights (LRB) and Select Area Brights (SAB).

The URB, BPH, and a portion of MCB chinook are produced above Bonneville Dam, and in aggregate, comprise the upriver run, which is subject to treaty Indian/non-Indian allocation requirements. Most of the URB stocks are wild fish destined for the Hanford Reach section of the Columbia River. Smaller URB components are destined for the Deschutes, Snake, and Yakima rivers. Snake River wild (SRW) fall chinook are a sub-component of the URB stock. The MCBs originated from, and are considered a component of the URB stock. The upriver MCB component (Pool Upriver Brights or PUB stock) is comprised of brights that are reared at Bonneville, Little White Salmon, Irrigon, and Klickitat hatcheries and released in areas between Bonneville and McNary dams. Natural production of brights derived from PUB stock is also believed to occur in the mainstem Columbia River below John Day Dam, and in the Wind, White Salmon, Klickitat, and Umatilla rivers. The BPH stock is produced primarily at Spring Creek

Hatchery in the Bonneville Pool. BPH passage at Bonneville Dam occurs over a shorter time frame than the URB and MCB chinook (Figure 2). Natural production of tules occurs in the Wind, White Salmon, and Klickitat rivers.

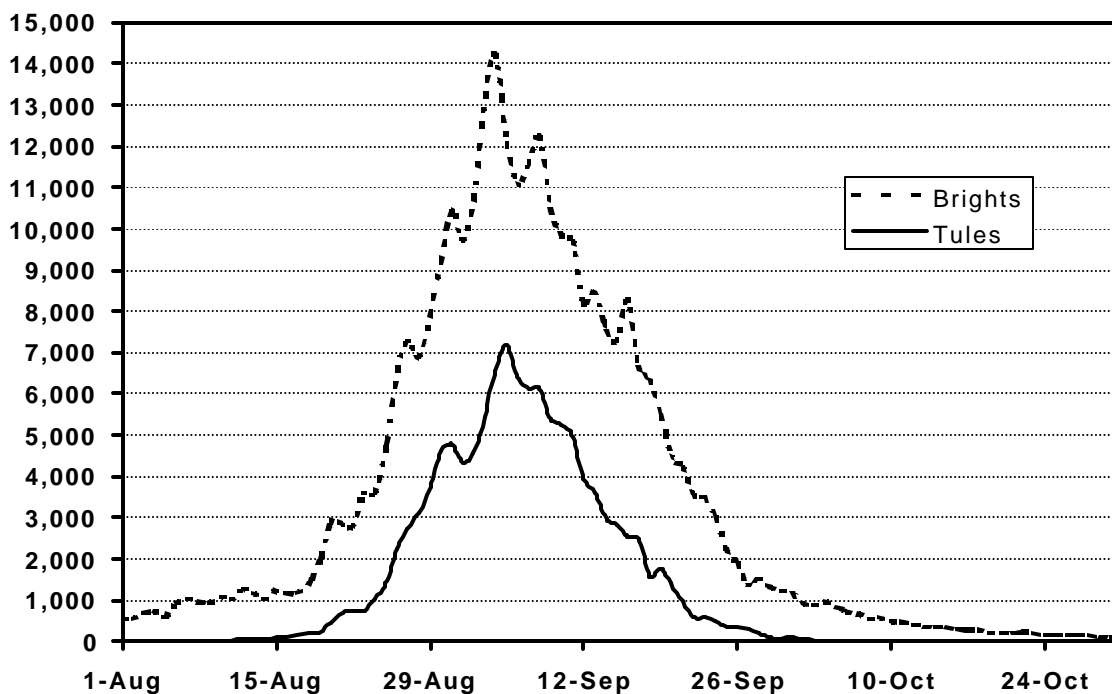


Figure 2. Average Run Timing of Adult Fall Chinook over Bonneville Dam (1991-2000) Applied to the 2002 Forecasts

The lower river run is comprised of LRH, LRW, MCB, LRB, and SAB stocks, which are produced below Bonneville Dam. The LRH stock is currently produced from hatchery facilities (five in Washington and one in Oregon) while the LRW stock is naturally produced primarily in the Lewis River system, with smaller components also present in the Cowlitz and Sandy rivers. The MCB production below Bonneville Dam (Bonneville Upriver Brights, or BUB stock) occurs at Bonneville Hatchery in Oregon. The LRB's are a self-sustaining natural stock that spawns in the mainstem Columbia approximately three miles downstream from Bonneville Dam. The LRB stock is closely related to upriver brights and is thought to have originated from MCB or URB stock. Prior to 1998, LRB's were classified as BUB's, and therefore were considered to be a component of the MCB stock. Beginning in 1998, LRB's were identified as a separate stock. SAB's are a local hatchery stock that originated from the Rogue River fall chinook stock and are currently being reared at Klaskanine Hatchery for release into Youngs Bay.

2001 Returns

The total Columbia River fall chinook adult return of 548,800 adults in 2001 was nearly twice the 1991-1995 average of 274,200 and the recent 5-year average of 280,300 (Table 2). The URB return of 232,600 adults was the largest return since 1989 but well below the record return of 420,600 in 1987 (Table 3). URB's comprised almost half (43%) of the total river mouth return. The 2001 McNary Dam count of 110,517 adults surpassed the management goal of 46,000 and was the largest count since 1988. The Deschutes basin return of 11,500 adults was much improved over 2000 and similar to the recent 5-year average of 11,000. The estimated return of SRW fall chinook to the Columbia River in 2001 is not available at this time because run reconstruction analyses had not been completed at the time this report was written (Table 4).

The BPH return of 125,000 adults was the largest return since 1976 and the sixth largest return on record. Adult returns of BPH included 48,700 fish to Spring Creek Hatchery, which was well above the escapement goal of 7,000 adults. Natural spawning escapement of BPH occurred in the Wind (444), White Salmon (2,077), and Klickitat (332) rivers.

The MCB return to the river mouth in 2001 totalled 75,300 adults, including 33,200 PUB stock and 42,100 BUB stock, and was the largest MCB return since 1989. The 33,200 adult PUB fall chinook return to the Columbia River in 2001 included 4,190 to Little White Salmon Hatchery, which doubled the 2,000 fish escapement goal. Natural escapement of PUB stock included 2,543 in the White Salmon River and 4,098 in the Klickitat River, as compared to the interim escapement goals of 1,300 and 1,000 fish, respectively. The return of BUB stock in 2001 was 42,100 adults to the mouth of the Columbia River. A total of 11,800 BUB's escaped to Bonneville Hatchery, which doubled the 5,750 fish escapement goal. Significant natural escapement of BUBs does not occur.

LRH returns in 2001 totaled 94,300 adults which is the largest return since 1989, including recent years when Mitchell Act reductions were in effect. A total of 43,000 fish returned to Oregon and Washington hatcheries below Bonneville Dam, which greatly exceeded the escapement goal of 14,300. A total of 25,900 fish returned to Washington hatcheries (goal 11,300) and 16,600 returned to Big Creek Hatchery in Oregon (goal 3,000). An additional 27,000 LRH fall chinook spawned in Washington tributaries below Bonneville Dam and interim natural escapement goals in most Washington tributaries were achieved in 2001.

Returns of LRW chinook improved significantly in 2001 with a return of 15,700 adults, which represents the largest LRW return since 1995 and is larger than the recent 10-year average of 12,300. The natural spawning escapement goal of 5,700 fish to the North Fork Lewis River was achieved in 2001.

2002 Forecast

The forecasted total adult return of fall chinook in 2002 of 659,800 adults is an increase from last year's return of 548,000 adults and would be the third largest return since 1948 (Table 1 and Figure 3). The forecasted returns of 273,800 URB adults and 91,800 MCB adults would both greatly exceed the recent 5-year averages of 171,700 URB adults and 51,700 MCB adults. The BPH forecast of 136,000 adults would be the largest return since 1964. The LRW forecast of 18,300 adults would be the largest return since 1991 and would be a six-fold increase from the record low return of 3,300 adults in 1999. The LRH forecast of 133,000 adults would be the largest return since 1988.

Upriver Summer Steelhead

Stock Description

Summer steelhead enter the Columbia River from March through October, with most of the run entering from late June through mid-September. The upriver steelhead run has historically been separated into A and B groups, which pass Bonneville Dam through and after August 25, respectively. Group A steelhead include early-returning Skamania stock which pass Bonneville Dam prior to July and are primarily destined for Bonneville Pool tributaries. Group A steelhead also include non-Skamania stock which pass Bonneville Dam from late June through late August on their way to tributaries throughout the Columbia and the Snake River basins. Group B steelhead return to the Clearwater and Salmon rivers in Idaho and pass Bonneville Dam from late August through October. Group B steelhead are generally larger than Group A steelhead.

Columbia
RIVER

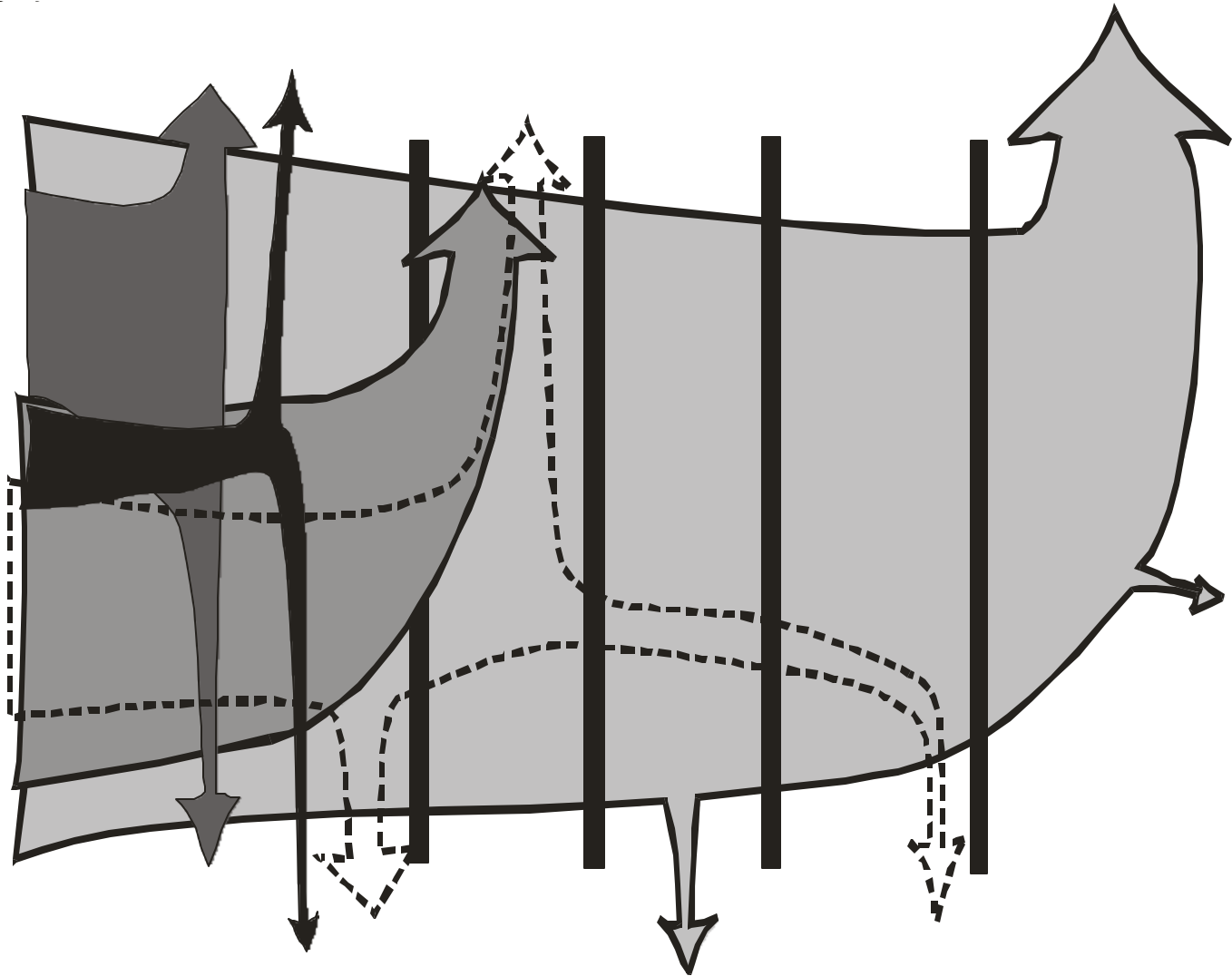


Figure 3. Stock Components of Columbia River Fall Chinook and 2002 Adult Pre-season Forecasts.

Group A and B steelhead cannot be distinguished based on run timing above Bonneville Dam where groups mix as fish seek temporary refuge in cooler tributaries. Steelhead counts at dams above Bonneville surge as mainstem water temperature declines in the fall. Counts peak at John Day, McNary, and the Snake River dams in September and October. During years of above average September-October flows and lower temperatures, steelhead move readily past lower Snake River dams during the fall counting period (June-December) and fewer fish are delayed until the spring count period (March-May). Snake River steelhead experience higher Bonneville to Lower Granite Dam survival rates in run years with lower spring count percentages.

In 1999, the TAC completed a review of steelhead assessment methods for Bonneville Dam and Zone 6 fisheries. While the bi-modal run timing distribution at Bonneville Dam has not been as distinct in recent years as it was historically, upon review of passage data the TAC determined that smaller steelhead are still earlier timed at Bonneville Dam and larger steelhead are still later timed. During 1989-1999, an average of 78% of steelhead less than 78 cm fork length crossed Bonneville Dam prior to August 26 and 75% of steelhead greater than or equal to 78 cm fork length crossed Bonneville Dam after August 25. Although about 85% of steelhead found in certain Idaho streams are large (≥ 78 cm), the data are insufficient to make any definitive conclusions regarding the proportion of late-timed larger steelhead crossing Bonneville Dam that are destined for Idaho streams. The TAC concluded that separation using a 78 cm fork length criteria can be used as an index of Group A and Group B steelhead stock components; therefore, the TAC adopted a revised method of estimating fishery impacts to Group A and Group B steelhead using sampling data from Bonneville Dam (July 1-October 31) and fisheries data to estimate impacts for Group B (≥ 78 cm) and Group A (< 78 cm) index steelhead groups. Steelhead passing Bonneville Dam prior to July 1 classified as Skamania index steelhead and steelhead passing Bonneville Dam after June 30 are classified into Group A and Group B index steelhead based on the aforementioned length criteria (Figure 4).

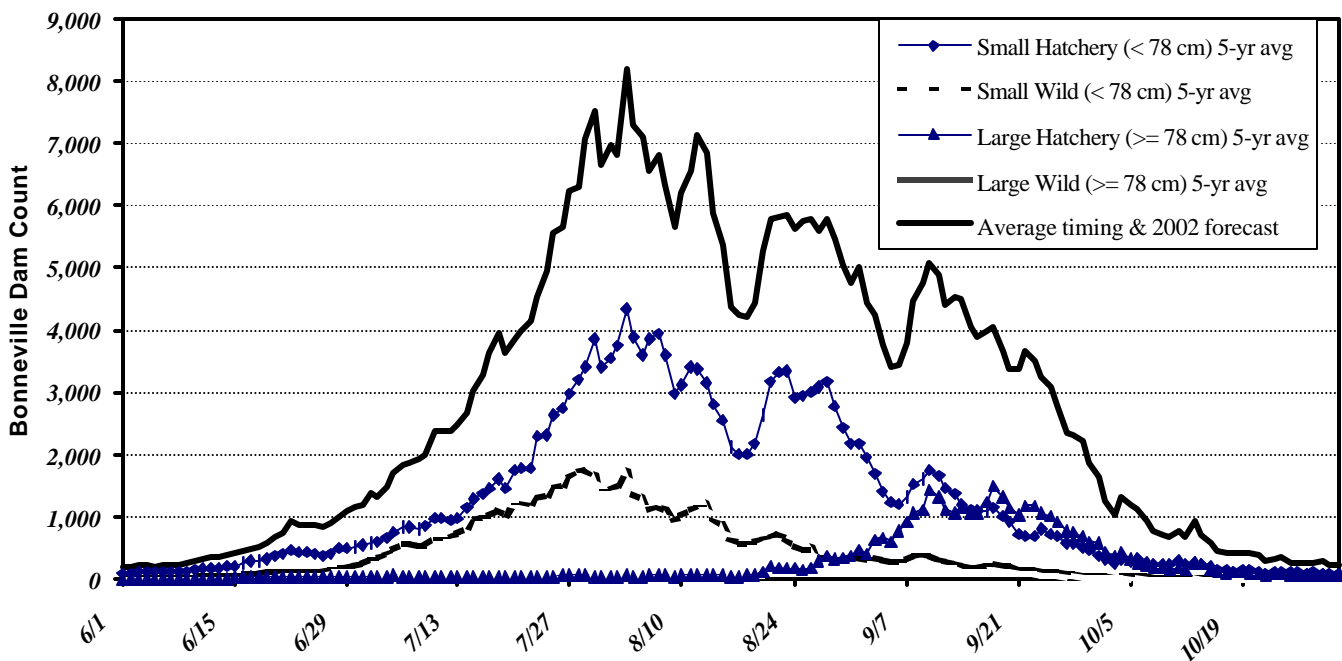


Figure 4. Average of Run Timing of Summer Steelhead over Bonneville Dam (1997-2001) Applied to the 2002 Forecast.

Steelhead are subject to sport fisheries throughout the basin and treaty Indian fisheries in Zone 6. In all current sport fisheries only fin-clipped hatchery fish may be retained. Above Bonneville Dam, and in the tributaries, summer steelhead are caught in sport fisheries during the year of entry, and in the winter and spring of the following calendar year. Treaty Indian catch occurs throughout the year in platform and gillnet fisheries but most of the catch occurs in the fall gillnet season concurrent with landings of fall chinook. In recent years the tribes have reduced catch of wild steelhead during fall treaty Indian gillnet fisheries. Commercial harvest of steelhead by non-Indians has been prohibited since 1975 and time, area, and gear restrictions limit handling and mortality of steelhead by the non-Indian gillnet fishery to < 1% of the run.

2001 Returns

The 2001 upriver summer steelhead return of 630,200 past Bonneville Dam was the largest return on record and doubled the recent 5-year average of 310,300. Group A index steelhead total (515,100) and wild (137,200) returns in 2001 were the largest in the database, which dates back to 1984. The percent wild (27%) in the Group A index steelhead return was the third highest since 1989 and represented the fourth consecutive year in which the percent wild exceeded 25% (Table 5). The Group B index steelhead total (86,400) return in 2001 was the largest since 1984 and the wild (12,000) return was the second largest since 1989. The wild return of 12,000 more than tripled the 1993-1999 average of 3,800 and was similar to the 1984-1989 average of 13,500. The percent wild in the Group B index return was 14% which is similar to the recent 5-year average of 16%. During 2001 Bonneville passage occurring prior to August 26 included 72% 1-ocean fish and 28% 2-ocean fish and passage occurring after August 25 included 46% 1-ocean fish and 51% 2-ocean fish.

The Lower Granite Dam count for the 2001 run was 259,100 fish, which included 38,800 wild steelhead, about 15% of the total count. The Lower Granite Dam combined hatchery and wild steelhead passage was comprised of 226,000 (87%) Group A index fish and 33,200 (13%) Group B index fish and the wild passage was comprised of 35,800 (92%) Group A index fish and 3,100 (8%) Group B index fish. Wild fish represented 16% of the total Group A index return and 9% of the total Group B index return.

2002 Forecast

The 2002 forecast for the summer steelhead return to Bonneville Dam is 447,800 which would be smaller than the record large return of 630,200 in 2001 but would still be the second largest return on record (Table 1). Run components based on the revised index method include 17,400 Skamania index fish, 369,700 Group A index fish, and 60,600 Group B index fish as compared to the recent 5-year averages of 14,800, 250,200, and 45,300, respectively. The wild fish forecast includes 105,000 Group A index fish (28% of the Group A return) and 21,600 Group B index fish (36% of the Group B return). The Skamania index steelhead forecast of 17,400 was exceeded with an actual count of 25,000.

Coho

Stock Description

Columbia River coho return primarily to Oregon and Washington hatcheries downstream from Bonneville Dam with some hatchery production destined for above Bonneville Dam. In recent years approximately one-third of the releases have occurred above Bonneville Dam. Since 1970 adult coho returns to the Columbia River have ranged from a low of 74,000 in 1995 to a high of 1,527,800 in 1986 (Table 6). The Columbia River coho return includes both early and late

segments with commercial fisheries prior to mid-September landing primarily early stock, fisheries during mid-September through early October landing a mixture of early and late stock, and fisheries occurring after early October landing primarily late stock.

Early stock coho enter the Columbia River from mid-August to early October with peak entry occurring in early September. Almost all early stock coho remain along the Oregon and southern Washington coasts and most migrate southward from the Columbia River. Since 1970, adult returns of Columbia River early stock coho have ranged from a low of 43,400 in 1983 (*El Niño* year) to a high of 730,800 in 1986 (Table 7). In 2001, releases of early coho above Bonneville Dam comprised 34% of the total.

Late stock coho enter the Columbia River from mid-September through December with peak entry occurring in mid-October. Hatchery production has expanded since 1975 and is primarily from Washington hatcheries below Bonneville Dam. In 2001, releases of late stock coho above Bonneville Dam comprised 38% of the total. The majority of late stock coho migrate northward from the Columbia River and reside along the Washington coast and Vancouver Island. Since 1970, Columbia River returns of late stock coho have ranged from a low of 16,800 in 1995 to a high of 796,900 in 1986 (Table 8).

Historic natural coho production areas in Washington included the Grays, Elokomín, Cowlitz, Toutle, Kalama, Lewis, and Washougal watersheds. Stream surveys conducted in Washington from 1945-1979 in the Toutle and lower Cowlitz River tributaries showed a steady decline of naturally spawning coho. Significant natural spawning still occurs in the lower Cowlitz system but is almost entirely composed of Cowlitz Hatchery fish. Surveys of 37 Washington streams below Bonneville Dam in 1991 suggested that natural spawning continues but production is low. Surveys of the majority of Washington tributaries below Bonneville Dam were performed again in 1998. Results of the 1998 surveys indicated that natural spawning occurs at low levels over a wide variety of areas; however, the bulk of the spawners (>90%) appear to be hatchery fish.

In Oregon, Columbia River tributaries that were historic natural coho production areas include the Lewis and Clark, Youngs, Klaskanine, Clatskanie, Clackamas, and Sandy rivers plus Big, Gnat, Beaver, Milton, and Scappoose creeks. Annual spawning fish survey counts conducted in Oregon lower Columbia River tributaries from December through February since 1949 suggested that wild coho may have been extirpated from Oregon's lower Columbia tributaries, excluding the Clackamas and Sandy rivers. Intensive surveys conducted during 1990-1992 and recent counts of 0.0-0.4 fish per mile during 1993-1999 supported this conclusion; however, increased numbers of coho were observed in lower Columbia River tributaries during 2000 and 2001, which suggests that some remnant populations may still be intact in the lower Columbia River Basin (Table 9). Counts of 8.8 fish per mile in 2000 and 1.4 fish per mile in 2001 were well above the 1990's average of 0.2 fish per mile but well below the 1949-1970 average of 25.1 fish per mile. The Clackamas and Sandy rivers still contain significant natural populations of coho. Since 1978, natural coho returns to the Sandy and Clackamas rivers have varied widely with very low returns observed during 1996-1999. Natural coho returns to the Clackamas and Sandy rivers increased significantly in 2000 and 2001. Passage of 1,388 adults over Marmot Dam in 2001 was well above the historic (1960-1969) average of 800 adults annually. In 2001 coho adult return past North Fork Dam on the Clackamas River totaled 5,515 which is the largest escapement on record (since 1957). The 2001 North Fork Dam coho count was comprised of 3,127 early stock adults which is the largest escapement on record (since 1965) and 2,388 late stock adults which is the fifth largest escapement on record (since 1957).

The naturally produced Clackamas coho run is destined for areas above North Fork Dam, and includes an early segment that originated from hatchery plants in 1960-1972 and a late segment that recolonized the upper river after 1939 when the Faraday Dam fish ladder was built. Coho

presently pass North Fork Dam in a bimodal pattern with peaks in September and January, although only a unimodal pattern was apparent before 1960 with a peak during November and December. Early and late run Clackamas coho pass through the lower Columbia River during September and November-December, respectively. Coded-wire tag (CWT) studies on the 1985-1987 broods indicated that late stock Clackamas coho contributed only 0-0.2% of 1988-1990 late fall commercial landings, with all landings occurring after mid-October. The Sandy River coho population passing Marmot Dam is primarily a wild population supplemented with some hatchery plants of adults and juveniles during 1961-1973 and 1979-1990. This run passes through the lower Columbia River primarily in September and passes Marmot Dam from early September through November with the peak in October. Historic passage at Marmot Dam occurred from late September through December.

Historical natural coho production areas above Bonneville Dam include the Spokane, Yakima, Wenatchee, Entiat, Methow, and Snake rivers. The majority of coho presently passing Bonneville Dam are returns from Columbia River Fish Management Plan (CRFMP)-mandated hatchery releases of lower river coho stocks in the Yakima, Umatilla, Little White Salmon, Klickitat, and Clearwater rivers. In the past, these releases have primarily been for the purpose of harvest augmentation, but the parties are also increasing efforts to restore naturally producing coho to appropriate habitats above Bonneville Dam (most recently the Snake and Methow rivers). Counts of coho destined for areas above Bonneville Dam have represented an increasing percentage of the total return in response to increased releases above Bonneville Dam. Since 1998 passage over Bonneville Dam has exceeded 40,000 adults with counts ranging between 40,700 and 85,700 during 1998-2001. A record large count of 259,500 adult coho past Bonneville Dam more than doubled the previous record of 108,600 in 1986 (Table 6).

2001 Returns

The 2001 Columbia River coho return of 1,078,600 adults was the second largest return since 1991, and was exceeded by only the record return of 1.5 million adults in 1986 (Table 6). Both early and late stock returns were the third and fourth largest returns on record, respectively, and continue the trend of increasing run sizes since the record or near record low returns in 1995 (Tables 7 and 8). Overall, early and late coho aggregate and individual hatchery escapement goals were achieved in 2001.

2002 Forecast

The projected 2002 Columbia River mouth return, following expected ocean fisheries, is 171,600 adults, which includes 112,700 early stock and 58,900 late stock (Table 1). A total return of 171,600 would be the smallest return since 1998 but would exceed the average of 131,000 observed during the poor return years of 1993-1998. The early stock and late stock forecasts are larger than the 1993-1998 averages of 95,000 and 36,000, respectively. Approximately 27,600 coho are expected to pass above Bonneville Dam after ocean and lower river fisheries. Hatchery escapement goals of 18,600 early stock and 11,900 late stock are expected to be achieved after all mainstem and tributary fisheries have occurred and some early and late stock coho are expected to be available for harvest in 2002.

Chum

Naturally produced chum salmon return to small tributaries of the lower Columbia River, primarily in Washington and the mainstem Columbia River just below Bonneville Dam. Limited hatchery releases also contribute to returns, which have fluctuated at low levels since the mid-1960's. Washington tributaries have been surveyed annually since 1950 and the mainstem

Columbia River has been surveyed annually since 1998. Beginning in 2000, more intensive surveys were conducted and survey areas were expanded to include non-index streams in Washington and all Oregon tributaries entering the Columbia River downstream of Bonneville Dam. Significant numbers of chum salmon were observed in non-index Washington tributaries; however, very few chum have been observed in Oregon tributaries. Chum returns, as indexed by counts of fish per mile, during 2001 in Washington index areas were the largest since 1951 and similar to the average counts of 700 fish per mile observed during 1950-1954 (Table 9). Chum are caught incidentally in the late fall non-Indian commercial fishery with landings typically beginning in mid-October and peaking about November 1. During 2001, chum landings totaled 127 which included 126 in late fall mainstem fisheries and one in fall Select Area fisheries (Table 14).

Sturgeon

Both white and green sturgeon are present in the lower Columbia River. Green sturgeon originate primarily from the Klamath, Sacramento, and Rogue rivers and use the Columbia River estuary extensively during summer and early fall. Columbia River white sturgeon originate from spawning areas near Bonneville Dam and range seasonally up and down the lower Columbia River. Columbia River white sturgeon are also known to use near shore ocean waters along the Oregon and Washington coasts and contribute to populations in other coastal bays and estuaries. Columbia River sturgeon fisheries are designed primarily for white sturgeon. Green sturgeon are seldom caught by sport anglers but have contributed significant commercial catches in some years.

The current white sturgeon population is considered to be healthy with more than 1 million fish exceeding 2' in length. In general, indicators of sublegal (<42 inches) and oversize (>60 inches) abundance are good at this time. Population estimates produced during 1995-1998 indicate that the number of 42"-60" sturgeon in the population were not increasing at the rate the abundance models predicted. These results suggest the current combined sport and commercial annual harvest rates may be exceeding levels considered to be adequate for broodstock recruitment needs; however, population estimates for the 1999 and 2000 tag groups need to be completed to verify that this trend is continuing. There is evidence that the 1996 and 1997 harvestable population estimates were negatively impacted by emigration of white sturgeon from the lower Columbia River and tag recoveries from outside the Columbia River basin indicated that this emigration began in 1996. Recent tag recovery data indicate that emigrated sturgeon have been continually returning to the Columbia River since 1997.

Isolated white sturgeon populations also occur in reservoirs upstream of Bonneville Dam. Abundance varies among populations and is limited primarily by lack of quality spawning habitat in each reservoir. The sturgeon populations in three Zone 6 reservoirs are evaluated every three to five years to monitor the effects of hydro-system mitigation activities, which include quota management based on an optimum sustainable yield (OSY) harvest management strategy. Pool specific abundances of sturgeon 3-6 feet in total length are estimated using mark-recapture methodology, which results in abundance estimates of 48,600 in Bonneville (1999), 46,800 in The Dalles (1997), and 23,400 in John Day (1996) reservoirs. The projected 3-6 foot abundances in 2002, based on observed growth and mortality rates, are 59,300, 57,700 and 26,700 for Bonneville, The Dalles, and John Day pools, respectively.

MANAGEMENT GUIDELINES

Endangered Species Act

Status reviews occurring since 1991 have resulted in the majority of Columbia Basin salmon and steelhead stocks being listed under the ESA (Table 10). In order to facilitate consultations with the National Marine Fisheries Service (NMFS) for past mainstem treaty Indian and non-Indian fisheries, the *U. S. v. Oregon* TAC has prepared biological assessments for combined fisheries based on relevant *U. S. v. Oregon* management plans and agreements. The TAC completed Biological Assessments (BAs) of impacts to all ESA-listed salmonid stocks (including steelhead) for all mainstem Columbia River fisheries since January 1992 and for Snake River basin fisheries since January 1993. In 2002 a combined Indian and non-Indian Biological Assessment concerning fall fisheries has been submitted to the NMFS but a Biological Opinion had not been received at the time this report was written.

The State of Oregon listed wild coho destined for Oregon tributaries of the lower Columbia River as an endangered species under Oregon state law in July 1999. The ODFW recently completed a management plan for state-listed wild coho. The management plan includes separate abundance based harvest matrices for ocean and freshwater fisheries and was adopted at the July 20, 2001 OFWC meeting. The harvest matrices set separate maximum allowable fishery mortality rates for ocean and freshwater fisheries based on parental escapement relative to full seeding and the marine survival as indexed by the return rate of jacks per hatchery smolts released. For 2002, the combined ocean and freshwater fishery mortality rate should not exceed 14% of the pre-fishery ocean abundance and the freshwater fishing mortality rate should not exceed 5% of the run entering the Columbia River. Fisheries will be managed to limit impacts to state-listed coho through the use of area closures or mesh size restrictions as described on page 32 in the "Late September Commercial Fisheries" section of this document.

2002 Columbia River Salmon Management Guidelines

The CRFMP expired on July 31, 1999. A Management Agreement for upper Columbia River fall chinook, steelhead, and coho has been reached by all parties for fall fisheries occurring in 2002. The following guidelines will be in place for the 2002 fall fishery management period.

- ✓ Allowable SRW fall chinook impacts in combined non-Indian and treaty Indian mainstem fisheries below the confluence of the Snake River for 2002 result in a 30% reduction from base period harvest rates. The corresponding impact rate is 31.29% of the aggregate URB run.
- ✓ The freshwater URB impact rate of 31.29% will be allocated 23.04% for treaty Indian fisheries and 8.25% for non-Indian fisheries.
- ✓ Treaty Indian fall fisheries will be managed to limit impacts on wild Group B index steelhead to no greater than 15%. All non-Indian fisheries outside the Snake River basin will be managed for an upriver wild steelhead impact rate to not exceed 2% on wild Group B index steelhead.
- ✓ Upriver fall chinook escapement goals include 7,000 adult fall chinook (4,000 females) to Spring Creek Hatchery and 43,500 adult fall chinook (natural and hatchery included) for spawning escapement above McNary Dam.
- ✓ Ocean and lower river fisheries will be managed to provide for Bonneville Dam escapement of at least 50% of the upriver coho salmon return.

- ✓ Non-Indian fisheries will be managed for an impact rate of less than 5% for Columbia River chum salmon.
- ✓ Combined ocean and freshwater fisheries will be managed to limit impacts on wild coho destined for Oregon tributaries to no more than 14% based on the 2002 Incidental Take Permit issued by the OFWC.

2002 Non-Indian Columbia River Fall Fishery Chinook Allocation Agreement

This agreement was negotiated through the North of Falcon negotiation process and addresses the allocation of chinook catch and URB impacts between non-Indian recreational and commercial users during the fall of 2002.

- ✓ This agreement is limited by the non-Indian allocation of URB fall chinook impacts of 8.25% as per the 2002 *U. S. v. Oregon* Fall Management Agreement. Non-Indian catch estimates are based on pre-season abundance forecasts referenced in Model Run "2002 MR-6" (page 59).
- ✓ URB fall chinook impacts in fisheries downstream of the Snake River are allocated pre-season at 4.36% to the sport fishery and 3.89% to the commercial fishery. The Columbia River Compact will use this URB impact allocation as guidance for making in-season management decisions concerning the Columbia River sport and commercial fisheries. Actual URB impacts in the fisheries may differ from pre-season estimates based on actual fishery catches, stock composition, and run-size updates. The *U. S. v. Oregon* TAC will update the URB run-size beginning in mid-September.
- ✓ The Buoy 10 sport fishery is modeled at 90% of the chinook catch estimated for a full fishery to the end of the year (with a two fish daily limit) which is expected to deliver enough chinook to continue the fishery through Labor Day. URB impacts with this fishery are projected to be 1.70%; or 39% of the total sport impacts of 4.36%.
- ✓ The mainstem sport fishery below McNary Dam is modeled at 95% of the chinook catch estimated for a full fishery to the end of the year (with a two fish daily limit), which is expected to provide enough chinook to continue the fishery through September, unless the mid-September URB run size and fishery updates indicate this fishery cannot continue past mid-September. URB impacts associated with this fishery are 2.66%; or 61% of the total sport impacts of 4.36%. For 2003 fall fishery discussions, the mainstem sport fishery will begin at 100%.
- ✓ Expectations for the commercial fishery include:
 - An early August salmon fishery up to four nights during the first week of August with potential for fishing during the early part of the second week of August in Zones 2 and 3 only. During the first week of August, the open area will include Zone 1 upstream to Longview Bridge and an 8-inch minimum mesh restriction. Projected catch is 16,800 salmon. Chinook/URB impacts not used in this fishery will transfer to August Zone 4-5 fishery.
 - Late August Zone 4-5 fishery during the last two week of August. Fishing is expected to occur 2-3 nights per each week with breaks in between fishing days. This fishery will not occur past August 29. Mesh size is 9-inch minimum. Chinook/URB impacts not used in this fishery will transfer to September fisheries. Expected catch is 8,300 chinook plus any transfers from the early August commercial fishery.

- Late fall fishery to begin the week of September 15. Fishery to occur in as much of Zones 1-5 as possible and will target coho or chinook as determined by remaining impacts and inseason run strength. The late September chinook harvest will be determined by the mid-September URB run size update and the actual URB impacts remaining that can be used by the commercial fishery.
 - No sturgeon retention will be allowed in the August fisheries. Directed sturgeon fishing may occur during September or October to meet commercial allocation.
- ✓ Expected total catch of fall chinook in the mainstem Columbia River downstream of the Snake River and in lower Columbia River tributaries is 85,400 of which 45,300 (53%) are expected to be harvested by the sport fishery and 40,100 (47%) by the commercial fishery. These catch estimates are based on pre-season abundance forecasts and fishery impacts. Actual harvest sharing will be influenced by stock specific fall chinook abundances and relative harvest rates by each respective fishery.

Lower Columbia River Sturgeon Allocation

Sturgeon fisheries between the Columbia River mouth and Bonneville Dam during 2000-2002 are guided by a management plan signed by the ODFW and WDFW Directors in March 2000. Major tenets of the "Joint State Agreement on Sturgeon Fishery Management" include:

- ✓ Management for optimum sustained yield of white sturgeon.
- ✓ Absent significant update, annual harvestable number is 50,000.
- ✓ Harvestable number may be adjusted if there is a significant population update resulting from new biological information, new analytical/theoretical approach, or a substantial change in harvest impacts outside of the Columbia system.
- ✓ Allocate white sturgeon harvestable number 20% commercial (10,000) and 80% sport (40,000).
- ✓ Sport and commercial seasons will be modified as necessary to ensure that average catch during the three-year period (2000-2002) does not exceed fishery specific harvestable number.
- ✓ Commercial target seasons allowed as necessary to access allocation and maximize economic benefit consistent with conservation objectives for other species.
- ✓ Green sturgeon may be taken during white sturgeon commercial seasons but green sturgeon-only commercial seasons are not allowed (green sturgeon catch rate not to exceed historical rates).
- ✓ Commercial size limits are 48"-60" for white sturgeon and 48"-66" for green sturgeon.
- ✓ Recreational size limit for white and green sturgeon is 42"-60" with one fish daily limit, ten fish annual (per calendar year) limit, and barbless hooks required.

The Joint State Agreement on sturgeon fishery management allows for changes based on new biological information and based on the trend in recent population updates overages from 2000 fisheries were applied to 2001 catch guidelines. Both commercial and sport fisheries exceeded the reduced catch guidelines in effect for 2001. Overages accrued in 2000 and 2001 will be applied to the 2002 harvest guidelines because 2002 represents the final year of the three-year Joint State Agreement. At the December 12, 2001 hearing, the Compact considered modifications to white sturgeon catch guidelines and adopted the following protocol for determining white sturgeon catch guidelines for 2002.

- ✓ Overages during 2002 and 2001 will be applied to currently adopted 2002 catch guidelines.
- ✓ Sport and commercial fisheries will be managed to less than the maximum catch guideline for 2002 as a management buffer. Reduction will be 1,500 for sport and 500 for commercial.
- ✓ Based on current catch estimates 2002 sport fisheries will be managed for a catch of 36,500 with catches not to exceed 38,500 and commercial fisheries will be managed for a catch of 9,200 with catches not to exceed 9,700.
- ✓ 2002 catch guidelines may be further modified as 2001 catches are updated.

The most recent update indicates that the commercial fishery white sturgeon catches in commercial fisheries during 2001 totaled 9,300, as compared to the 9,400 estimated previously, which results in a new commercial catch guideline of 9,300 not to exceed 9,800. The 2001 sport catch estimate has not changed and modifications to current sport fishery regulations will be considered in August or September when catch estimates through July have been completed.

Catch of white sturgeon in Select Areas is included in the annual commercial allocation (10,000 white sturgeon) of the harvestable number (50,000 white sturgeon). Past management practices regarding white sturgeon catch in Select Areas have varied and were developed in consultation with participants of Select Area commercial fisheries. Prior to 1997 no catch limit restrictions were in place. Beginning in 1997, white sturgeon catch in Select Areas was limited to 5% of the commercial white sturgeon allocation and this limit was subsequently increased to 10% for 1998 and 1999. Sales of sturgeon were allowed in the Youngs Bay fisheries only prior to 1998, and in all Select Area fisheries thereafter. On April 12, 2000 commercial fishing industry leaders met to discuss the harvest of white sturgeon in Select Areas as it relates to the commercial allocation and arrived at the following consensus points:

- 1) Select Area fisheries should be managed as salmon directed fisheries.
- 2) Use of gear (mesh size) restrictions should be adopted to target salmon, not sturgeon. New regulations should be phased in to limit economic impact on participating fishers.
- 3) Enforcement presence is encouraged to ensure compliance with gear restrictions.

In future fisheries mesh size restrictions will be adopted to ensure that Select Area fisheries target salmon, not sturgeon. Based on a June 8, 2000 public meeting with interested participants in Select Area fisheries a 6-inch maximum mesh size was considered appropriate for coho-directed fisheries and a 7-inch to 8-inch maximum mesh size was considered appropriate for chinook directed fisheries.

Zone 6 Sturgeon Allocation

Sturgeon catch guidelines and sport/treaty commercial allocations have been reviewed annually since 1987 by the Sturgeon Management Task Force (SMTF), which is comprised of representatives from state fish management agencies and the Columbia River treaty Indian tribes. Guidelines are based on desired harvest rates and current stock assessments. In March of 1997, the SMTF agreed to pool-specific management with catch guidelines, based on OSY, that are designed to allow for survival of adequate numbers of juvenile sturgeon through existing fisheries to increase harvestable and broodstock numbers. Current sturgeon size limits are 48-60" in all treaty Indian fisheries, 48-60" in sport fisheries in The Dalles and John Day reservoirs, and 42-60" in the Bonneville Reservoir sport fishery.

Sturgeon catch guidelines increased in 1997 and 1998 as updated stock assessments indicated that these sturgeon populations were rebuilding under the catch restrictions implemented by the SMTF (Table 11). For 2001 management the SMTF agreed to use catch guidelines that were in

place during 1998-2000, except for a slight modification to the guideline for The Dalles Pool. The SMTF agreed to use the midpoint of the ranges used during 1998-2000 as the management guidelines for sport and treaty Indian commercial fisheries occurring in The Dalles Pool during 2001. In 2002 new catch guidelines were adopted for the John Day Pool while guidelines from The Dalles and Bonneville pools remained unchanged from 2001. The new catch guidelines were based on the recent population assessment for the John Day Pool and limit catches to 335 white sturgeon for treaty Indian fisheries and 165 white sturgeon for sport fisheries.

Allocation is approximately 50:50 between sport and tribal fisheries, although reservoir-specific guidelines are shaped to meet fishery demands. For instance, the sport fishery is allowed a greater share of the Bonneville Reservoir catch while the treaty Indian fishery is allowed a greater share of the catch in The Dalles and John Day reservoirs. Treaty Indian fishers may continue to take sturgeon for subsistence purposes after commercial seasons have been completed. Subsistence catch is estimated through a monitoring program conducted by the Yakama Indian Nation (YIN) and annually averages less than 300 sturgeon. Subsistence catch is not included in the aforementioned catch guidelines. Sport anglers may continue to fish for sturgeon and release them unharmed when catch guidelines are reached and retention is prohibited.

REVIEW OF MAINSTEM FISHERIES

Past Seasons

Traditional commercial fisheries below Bonneville Dam occurred during "early fall" (August to mid-September) targeting on chinook and "late fall" (mid-September to mid-November) targeting on coho (Figure 5). Coho typically outnumbered chinook in the late fall season catch and in some years by a wide margin; however, chinook landings could be significant during the mid-September time frame. Incidental landings of steelhead occurred in both early and late fall seasons until commercial sale of this species was banned in 1975.

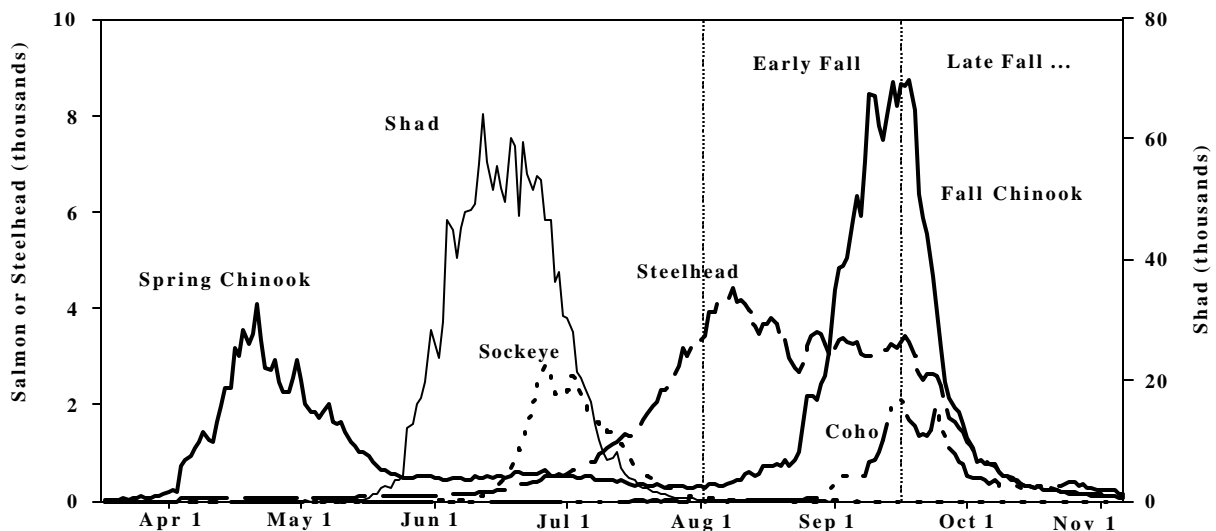


Figure 5. Average Daily Counts of Salmon and Shad at Bonneville Dam, 1986-2001.

In recent years commercial fisheries below Bonneville Dam during the fall fishing period have been reduced in response to the decreasing abundances of target species and ESA listing decisions. Mesh size restrictions are frequently imposed on both the early fall and late fall segments of the non-Indian commercial fishery to reduce the incidental catch of non-target species. Commercial fisheries are also frequently restricted to zones or daylight only time periods to concentrate on target stocks or avoid non-target stocks. Early fall fisheries have typically occurred during the last half of August, primarily in Zones 4-5 (upstream of the Sandy River mouth or the I-205 Bridge) near Bonneville Dam. These fisheries target on chinook with some sturgeon and a few coho also landed. Late fall seasons have typically occurred from mid to late September through the end of October. The majority of the seasons target coho in the lower river below the mouth of the Lewis River. Some target chinook seasons also occur during mid to late September in Zones 4-5 (upstream of the I-205 Bridge). During several years in the 1990's extremely low coho abundance curtailed nearly all commercial opportunities during the fall fishing period.

With the reduction in non-Indian commercial salmon fishing opportunities in recent years, and the adoption of Joint State Sturgeon Management Agreements, target sturgeon fisheries have become an important part of fall fishing strategies. Sturgeon sales are typically allowed during salmon seasons unless the catch guideline has been reached, as occurred in 2001. In recent years target sturgeon seasons have been adopted to allow the commercial fishery to access the commercial allocation. Since 1997 target sturgeon seasons occurred during the first week of August and the last three weeks of October, except for 2001 when sturgeon retention was prohibited in all commercial fisheries when the catch guideline was reached in late August.

Commercial fishing in off-channel areas (Select Areas) was initiated in 1962 with the adoption of salmon seasons for Youngs Bay. Initially, Youngs Bay seasons were concurrent with the late fall mainstem gillnet season; however, since 1977 the Youngs Bay season has been separated from mainstem seasons and has increased in importance with the involvement of the Clatsop County Economic Development Council's (CEDC) Fisheries Program. The CEDC fisheries project pioneered the successful net-pen acclimation program that is a cornerstone of Select Area fisheries projects.

Recent declines in mainstem fishing opportunities and success of the Youngs Bay fishery prompted the Bonneville Power Administration (BPA) to fund a research project to expand net-pen programs into select off-channel fishing areas. This BPA funding now supports the Select Area Fishery Enhancement (SAFE) Project which has been expanded to include Tongue Point/South Channel and Blind Slough/Knappa Slough on the Oregon shore plus Deep River and Steamboat Slough on the Washington shore. These fisheries target primarily hatchery coho returning to release sites in these areas; however, SAB fall chinook are also released and subsequently caught upon their return to Youngs Bay. Coho fisheries occur in all five Select Areas while chinook fisheries are limited to Youngs Bay only. Select Area fisheries targeting coho are typically initiated in early September and run through the end of October. Limited chinook target fishing seasons typically occur in Youngs Bay one day per week during July and August to target hold-over spring chinook and early returning SAB fall chinook. A target chinook fishery occurs intermittently in Knappa Slough near the mouth of Big Creek when surplus coho or tule fall chinook are expected to return to Big Creek Hatchery.

Treaty Indian commercial seasons above Bonneville Dam traditionally opened during early to mid-August and ended in mid-October. Fall chinook and steelhead dominated the catch, but substantial numbers of white sturgeon and coho could be landed also. In recent years commercial fishing opportunities in the Zone 6 management area have also declined. Recent fisheries have typically occurred during a four or five week period between mid-August and late

September. Fisheries continue to target on chinook but have been modified to reduce impacts on listed wild steelhead. Zoning has also been used at times to increase escapement of some segments of fall chinook runs and mesh size restrictions have sometimes been adopted for the treaty Indian fishery to reduce impacts on listed wild steelhead. Most recently fall fisheries have been closed for white sturgeon because catch guidelines have been achieved prior to August 1.

A mainstem recreational fall chinook fishery exists in much of the Columbia River. In recent years, primary catch areas for fall chinook have been the lower estuary (Buoy 10), the lower river between Astoria and Bonneville Dam, and the Vernita-Hanford Reach area below Priest Rapids Dam. Small recreational fisheries for chinook can also occur at tributary mouths in the Zone 6 management area. Significant numbers of coho are landed in the Buoy 10 fishery below the Astoria-Megler Bridge. Hatchery steelhead fisheries in the mainstem Columbia River occur primarily between Tenasillahe Island and Bonneville Dam with few caught below Tenasillahe Island. Significant steelhead landings can also occur during sport fisheries above Bonneville Dam, especially near tributary mouths.

2001 Fall Season Summary

- ✓ Fall seasons and catches are summarized in Tables 12 - 17.
- ✓ The fall chinook run was the largest since 1988 and the coho return was the largest since 1986. The wild Group A index steelhead return was the largest on record (since 1984) and the wild Group B index steelhead return was the largest since 1992.
- ✓ All fisheries were constrained to remain within Management Agreement and ESA limitations. Post-season impacts totaled 20.90% for URB fall chinook (31.29% guideline) and 13.0% for wild Group B index steelhead (17.0% guideline).
- ✓ Actual Oregon wild coho fishery impacts of 12.8% for early stock, 8.7% for late stock, and 11.2% for early and late stocks combined were all within the 15% limit identified in the 2001 state ESA Incidental Take Permit issued by the OFWC.
- ✓ Treaty Indian fisheries landed 111,700 chinook and the 110,500 chinook passing McNary Dam exceeded the escapement goal of 43,500.
- ✓ Lower river mainstem commercial fisheries focused on coho and harvestable chinook stocks while minimizing impacts on ESA-listed species.
- ✓ Lower Columbia River mainstem fall commercial fisheries landed an estimated 219,500 coho and 21,500 chinook.
- ✓ Select area fall landings totaled 3,100 chinook, 33,700 coho, 21 white sturgeon, 4 green sturgeon, and 1 chum.
- ✓ The Buoy 10 sport fishery was closed to the retention of chinook from August 30-September 14 (16 days) due to ESA constraints.
- ✓ The lower Columbia River sport fishery remained open during August 1-December 31 with a two fish salmon/steelhead bag limit in effect throughout.
- ✓ White sturgeon catches totaled 9,300 in the non-Indian commercial fishery and 41,200 white sturgeon in the lower Columbia River sport fishery as compared to their respective catch guidelines of 9,100 and 39,500 that were in effect for 2001.
- ✓ Sturgeon retention was prohibited from August 22 through the remainder of the year in non-Indian commercial fisheries and during August and September in the lower river sport fishery.

- ✓ A total of 15 Compact hearings were held between the dates of August 7 and November 21 to make commercial fishery management decisions. Joint State action was taken at two Compact hearings and one additional Joint State hearing was held to consider modifications to sport fishing seasons.

Zone 6 Fisheries

During the fall, fisheries in the mainstem Columbia River between Bonneville and McNary dams include treaty Indian commercial and ceremonial and subsistence (C&S) fisheries, recreational sturgeon fisheries, and limited fall chinook and steelhead sport fisheries focussing around tributary mouths. All fisheries occurring in this section of the Columbia River are managed in accordance with predetermined harvest impact rates or catch guidelines. Landings during 2001 fall seasons are summarized in Table 14.

Treaty Indian Commercial Fishery

The treaty Indian commercial fishery in the fall of 2001 was managed to target on healthier URB and BPH fall chinook stocks while allowing some harvest of hatchery summer steelhead and limiting impacts on listed SRW fall chinook and Group B index summer steelhead. The set gillnet salmon fishery consisted of four fishing periods: three 4 ½ day fishing periods followed by one 2 ½ day fishing period (Table 12). The set gillnet fishery began with excellent chinook catches through the first three fishing periods, especially during the second and third weeks when a total of 76,500 chinook were landed during the two 4 ½ day fishing periods. (Table 14). On September 10, run sizes were updated by the TAC. The projected URB run size was upgraded to 190,100, the Group B wild index run size remained unchanged at 8,900 and the Group A wild index run was upgraded to 132,700. The URB run size was upgraded twice more on September 12 and September 17 to 205,300 and 232,800, respectively. The Group B wild index run size was upgraded to 9,500 on September 12, 11,400 on September 17, and 12,800 on September 24. Wild Group B index harvest rates remained within ESA guidelines, therefore; the tribes did not have to institute the 8-inch minimum mesh size restriction that had been used in the past fisheries to limit handle of Group B wild index summer steelhead. Based on an expected average return of BPH fall chinook the large sanctuary around Spring Creek Hatchery was originally adopted. The BPH return was upgraded to 109,000 on September 10; therefore, the large sanctuary was reduced to a small sanctuary effective September 11 (Table 17). All other standard dam and river mouth sanctuaries were in effect and all of Zone 6 was open throughout the duration of the fall salmon season, as occurs in most years. Aerial counts of nets being fished indicated that effort was down somewhat from previous years with total net counts ranging between 334 and 452.

The 2001 fall salmon season consisted of 18 fishing days occurring between August 28 and September 29 and resulted in catches of 111,700 chinook, 29,200 steelhead, and 5,400 coho of which 35% (38,600 fish) of the chinook and 49% (14,300 fish) of the steelhead were taken home or sold to the public (Table 15). The 18-day season was similar in length to the last five years but far less than in the late 1980's when season lengths ranged from 35-46 days. The chinook catch of 111,700 represents a large improvement over the recent 5 and 10-year averages of 60,400 and 49,700, respectively and was slightly less than the strong return years of 1986-1989 when catches averaged 128,700 annually (Table 18).

The catch of 111,700 chinook during fall fisheries represented a 14.97% impact on URB fall chinook which was less than the 23.04% set forth in the 2001 fall Management Agreement. Additionally, the treaty Indian catch of 111,700 fall chinook represented 30.4% of the harvestable surplus, which was less than the 50% goal. The tribes were unable to catch 50% of

the harvestable surplus for the following reasons: 1) the 2001 Management Agreement allocated 8.25% of the allowable 31.29% SRW impacts to the non-Indian fisheries, 2) TAC was unable to update the URB and wild Group B index steelhead run sizes prior to September 10, and 3) impacts to ESA-listed steelhead impacts constrained fisheries during the inseason management period.

The total catch of 29,200 summer steelhead in all treaty Indian fisheries included 5,500 Group A wild index steelhead and 1,400 Group B wild index steelhead. The 2001 total catch exceeded the recent 5-year average of 17,350 but far less than the strong return years of 1984-1989 when catches averaged 63,900 steelhead annually (Table 18). Stock specific impact rates were 4.0% on wild Group A index steelhead and 11.4% on wild Group B index steelhead (Tables 19 and 26). The 11.4% impact rate on wild Group B steelhead was less than the ESA impact limit of 15%.

Sturgeon Fisheries

Treaty Indian fisheries had reached the catch guidelines for The Dalles Pool prior to initiation of the fall fishing period (Table 20). Although the catch guidelines for the Bonneville and John Day pools had not been reached the tribes chose not to allow sales of sturgeon during fall commercial salmon fisheries. Instead, retention of sturgeon was allowed for subsistence purposes and in commercial sturgeon fisheries adopted after completion of fall salmon fisheries. After completion of winter/spring fisheries an estimated 403 and 753 white sturgeon remained on the Bonneville and John Day Pool catch guidelines, respectively; therefore, sturgeon setline and sturgeon set gillnet seasons were adopted in Bonneville and John Day pools following the completion of the fall salmon fishing seasons. The setline fishery began 6 am October 1 and continued through 6 pm December 31 in Bonneville and John Day pools. Commercial sturgeon set gillnet seasons were also adopted with the Bonneville Pool being open for 14 days between November 14 and November 30 and the John Day Pool being open for 22 days between November 14 and December 7. Landings during October through December totalled 372 white sturgeon for Bonneville Pool, of which 143 were landed in the set gillnet fishery, and 289 for John Day Pool, of which 225 were landed in the set gillnet fishery. White sturgeon commercial landings in treaty Indian fisheries totaled 3,000 fish in 2001 (Table 20).

Prior to the initiation of the fall management period (August 1) the sport catch guideline in The Dalles Pool had been reached and sturgeon retention had been disallowed by state action effective April 9. Shortly into the fall management period the sport catch guideline for Bonneville Pool was also reached and sturgeon retention was disallowed in Bonneville Pool effective August 13. Sturgeon retention was allowed the entire year in the John Day Pool. The recreational fishery in the John Day Pool was very slow with a total catch of 300 white sturgeon in 2001 (Table 20).

Lower River Commercial Fisheries

Commercial fisheries in the mainstem Columbia River below Bonneville Dam are generally divided into early fall (August through mid-September) fisheries focussing on fall chinook and white sturgeon and late fall (late September through early November) fisheries focussing primarily on hatchery coho and white sturgeon. Select Area commercial fisheries occur in off-channel mainstem areas, or bays and sloughs at tributary mouths, and focus on fish returning from net-pen releases in these areas. The Select Area fisheries generally occur from early September through October and focus primarily on coho with chinook landed in some fisheries. All non-Indian fisheries are managed in accordance with predetermined harvest impact rates or catch guidelines; however, Select Area fishery impacts on listed fish are negligible and the

adopted seasons are seldom modified in-season. Landings during 2001 fall seasons are summarized in Table 14.

Early Fall Mainstem Fisheries

The lower river commercial fishery during the early fall of 2001 was managed to harvest sturgeon and chinook. The early fall season consisted of a 12-hour target sturgeon fishery the night of August 5 below Longview Bridge (Zones 1-3), an 8-hour target chinook fishery the night of August 8 below Tongue Point/Rocky Point line (Zone 1), and five 10-hour periods of target chinook fishing above the I-205 Bridge (Zones 4-5) between August 20 and August 25 (Tables 12 and 21). Retention of sturgeon was prohibited during the one-night Zone 1 target salmon fishery and during the last three nights of the Zones 4-5 target salmon fishery. Landings in these fisheries totaled 4,700 white sturgeon, 300 green sturgeon, and 1,300 chinook in the Zones 1-3 sturgeon target fishery; 700 chinook in the Zone 1 chinook target fishery; and 4,600 chinook and 1,000 white sturgeon in the Zones 4-5 target chinook fishery (Table 14). The total catch of 6,600 chinook during early fall fisheries was 58% of the preseason expectation of 11,400 while white sturgeon landings of 5,700 during the early fall fishing period greatly exceeded the preseason expectations of about 3,500 fish (Table 22). The large white sturgeon catch in both the Zones 1-3 August sturgeon fishery and the Zones 4-5 salmon fishery resulted in sturgeon retention prohibited effective 8 PM August 22 through the remainder of the 2001 fall fishing period. A season length of 7 fishing days is improved over recent years; however, effort in the Zones 4-5 fishery was less than in past years which reduced daily landings thereby increasing fishing opportunity in the form of open days. Season lengths averaged six days annually during the stronger run years of 1986-1990 and 11 days annually during the more heavily fished time period of 1970-1975. The 6,600 chinook landed during early fall seasons was the third largest total since 1989 but was well below 1970-1975 when total chinook landings ranged between 51,700-142,100 and averaged 95,600.

Late Fall Mainstem Fisheries

The lower Columbia River commercial fishery operating during the late fall fishing time frame of 2001 was managed to harvest primarily coho and fall chinook while minimizing impacts on listed species (Table 12). The late fall fishery began on September 17 with four days of target coho fishing below Longview Bridge (Zones 1-3) and three nights of target chinook fishing above I-205 Bridge (Zones 4-5). Fishing regulations for Zones 1-3 included daylight hours of 7 AM-7 PM and a 6-inch maximum mesh size restriction to target coho salmon while fishing regulations for Zones 4-5 included nighttime hours of 8 PM-6 AM or 7 PM-7 AM and an 8-inch minimum mesh size restriction to target fall chinook salmon. On September 17 the TAC upgraded fall chinook run sizes and additional impacts became available for both treaty and non-Indian fisheries; therefore, the 6-inch minimum mesh size was eliminated for Zones 1-3 effective September 20 to allow fishers to target either coho or fall chinook salmon. Landings totaled 56,200 coho and 7,600 chinook during the first week of the season. The season continued with two weeks of fishing below the Kalama River during September 24-28 and below the upper end of Bachelor Island during October 1-5 plus above the I-205 Bridge during September 24-October 4 (Table 23). Lower river fisheries consisted of four continuous days per week with only the 9- $\frac{3}{4}$ " maximum mesh size restriction in effect while upriver fisheries consisted of three nightly periods per week with an 8-inch minimum mesh size restriction in effect. Landings totalled 65,500 coho and 4,400 chinook for these two weeks. The fall fishing period continued with three 4-day fishing weeks open in all of Zones 1-5 with only the 9- $\frac{3}{4}$ " maximum mesh size restriction in effect and resulted in landings of 88,200 coho and 2,100 chinook. The late fall fishing period concluded with a 2- $\frac{1}{2}$ day fishing period. Catches in the final fishing period totalled 8,900 coho and 100 chinook (Table 14).

Fall fisheries were managed to minimize impacts on federally-listed chinook, chum, and steelhead plus state-listed wild coho destined for Oregon tributaries. Management actions taken during late fall fisheries to minimize the interception of wild coho and chum salmon destined for lower Columbia River tributaries included area closures. To limit the handle of early wild coho destined for the Clackamas and Sandy rivers the following area closures were adopted: 1) during September 17-21 the area between the Longview Bridge and the I-205 Bridge was closed, 2) during September 24-28 the area between the mouth of the Kalama River and the I-205 Bridge was closed, and 3) during October 1-5 the area between upper Bachelor Island and the I-205 Bridge was closed. To minimize the interception of late Clackamas wild coho and lower Columbia River chum, the area downstream from Harrington Point at the upper end of Grays Bay across to Settler Point near the lower end of Svensen Island was closed during the final fishing period (October 29-31) of the late fall fishing season (Table 23). Additional regulations adopted to limit impacts to chum salmon included a 6-inch maximum mesh size restriction and a prohibition on the sale of chum salmon in all non-Indian commercial fisheries effective 7 AM Monday October 29 in mainstem fisheries and noon October 28 in Select Area fisheries.

The 2001 late fall mainstem fisheries consisted of a total of 33 days occurring between September 17 and October 31 and resulted in catches of 218,800 coho, 14,900 chinook, and 126 chum (Table 24). The season length of 33 days for late fall fisheries was the most since 1989 but still less than the strong return years of 1985-1989 when season length averaged 39 days annually. Coho catches of 218,800 fish are the highest since 1991 but only 24% of the record high catch of nearly one million fish in 1986. Poor price to fishers for coho limited overall coho fishing effort and landings in 2002 fall fisheries. Chinook catches during late fall seasons exceeded 10,000 fish for the first time since 1993 as compared to 1970-1993 when catch exceeded 10,000 fish in 21 of the 24 years and peaked in 1987 with a catch of nearly 300,000 fish. In 2001, 126 chum were landed during late fall seasons which exceeded 100 fish for only the second time in the last nine years and was well below the 1970-1989 average of 1,060. Due to the sturgeon catch guideline being reached during the early fall fishing period no sturgeon were landed in the mainstem fisheries occurring during the late fall fishing period in 2001 (Table 25).

Select Area Fisheries

Select Area fisheries occurring during the fall time frame of 2001 were managed to harvest primarily hatchery or net-pen reared coho with some chinook catch occurring, primarily in Youngs Bay. Select Area fisheries are managed to have minimal impacts on listed species and have occurred in Youngs Bay since 1962; Tongue Point/South Channel, Blind Slough/Knappa Slough, and Deep River since 1996; and Steamboat Slough since 2000. In response to the poor price for coho fishers refused to fish in Select Areas prior to mid-September which resulted in coho catches in all Select Area fisheries in 2001 being well below preseason expectations. Additionally, significant opportunity in mainstem fisheries may have also limited participation in Select Area fisheries. Large catches of white sturgeon during mainstem fisheries in August resulted in the white sturgeon catch guideline being reached prior to initiation of most Select Area fall fisheries. Retention of sturgeon was prohibited in all Select Area fisheries except for the first four 30-hour fishing periods in Youngs Bay. Catch totals for the five Select Area fisheries during the fall of 2001 were 3,100 chinook, 33,700 coho, one chum, 21 white sturgeon, and four green sturgeon (Table 14).

As has been the pattern in recent years, the Youngs Bay Select Area fishery began with weekly fishing periods through Labor Day followed by continuous fishing through the end of October (Table 13). A total of four 30-hour fishing periods during August were intended to harvest net-pen produced SAB fall chinook and early returning coho without jeopardizing SAB fall chinook

broodstock needs at Klaskanine Hatchery. An additional 12-hour daylight (7AM-7PM) fishing period was adopted for August 30 in an effort to allow some early opportunity to harvest the expected large coho return to Youngs Bay. The 57 consecutive days of fishing from September 4 through October 31 were intended to harvest late returning SAB fall chinook and 100% of the surplus hatchery origin coho whose abundance peaks in mid-September. The upper fishing boundary was moved downstream from the confluence of Youngs and Klaskanine rivers to Battle Creek Slough for the purpose of increasing escapement of SAB fall chinook to Klaskanine Hatchery. The 62-day fishing season resulted in a catch of about 2,000 chinook, 25,500 coho, 21 white sturgeon, three green sturgeon, and one chum (Table 14). The chinook catch doubled the pre-season expectation of 1,000 chinook while the coho catch was well below the preseason expectation of 175,000 coho, which assumed a full fishery effort.

As has been the case since 1999, the Tongue Point/South Channel fishery initially included the Tongue Point fishing area only and was subsequently expanded to include the South Channel fishing area also. The fishing area was limited to the Tongue Point area only during the first seven nightly fishing periods for the purpose of minimizing catch of nonlocal fall chinook whose abundance peaks in the lower river in early September. Expansion of the fishery into the South Channel area was adopted in an effort to catch 100% of the net-pen produced coho. The fishery was initiated with three nightly fishing periods during September 4-7 and continued with four nightly periods per week during the last half of September and all of October (Table 13). Beginning in October the nightly fishing hours were expanded from 12 to 14 as the days grew shorter in an effort to catch 100% of the net-pen reared coho. The 33-night season, which began on September 4 and was concluded on October 31, resulted in landings of 100 chinook, 2,000 coho, and one green sturgeon (Table 14). The coho catch was well below the preseason expectations of 21,000, which assumed a full fishery effort. Landings from the Tongue Point/South Channel area are included in mainstem landings when the mainstem is open.

The structure of the Blind Slough/Knappa Slough fishery was similar to that used in the Tongue Point/South Channel fishery. As with the Tongue Point/South Channel fishery, the open fishing area was initially restricted in the Blind Slough fishing area during the first six fishing periods and expanded to include Knappa Slough thereafter, as has been the case since 1999 (Table 13). These fishing area restrictions were intended to minimize impact on Big Creek tule fall chinook while harvesting 100% of the net-pen produced coho. When it became apparent that tule fall chinook returns to Big Creek Hatchery would exceed broodstock needs the adopted season was modified by expanding the open area to include the Knappa Slough area during the first six fishing periods (September 4-13), which resulted in the Knappa Slough area being open during the entire fall fishing period. The expanded area would allow for additional harvest of the fall chinook destined for Big Creek Hatchery and net-pen reared coho destined for Blind Slough. The fishing periods were again increased in length in October in response to shorter days in an effort to catch 100% of the net-pen produced coho. The 33-night season, which began on September 4 and concluded on October 31, resulted in landings of 800 chinook, and 3,800 coho (Table 14). The coho catch was well below the pre-season expectation of 18,000, as was the tule chinook catch, which assumed a full fishery effort.

The structure of the Deep River fishery was similar to that used in the Tongue Point/South Channel area; however, there was no expansion of the area for this fishery because past efforts to increase fishing area didn't result in significant catches of net-pen produced coho and did increase impacts on nonlocal and listed stocks. The fishery consisted of two nightly periods during the first week of September, four nightly fishing periods during the second week of September, and five nightly periods per week thereafter (Table 13). Again the October periods were lengthened in response to shorter days. The 40-night season, which began on September 4 and concluded on October 31 resulted in landings of about 150 chinook and 2,400 coho (Table

14). The coho catch was well below the pre-season expectation of 36,000, which assumed a full fishery effort.

The season structure for the Steamboat Slough fishery was similar to the Deep River fishery with some difference in open days of the week. As was the case in Deep River there was no expansion outside the initial boundaries adopted for the Steamboat Slough area. Expansion of the Steamboat Slough area is not feasible because areas surrounding Steamboat Slough are part of the mainstem Columbia River and would likely have excessive impacts on nonlocal stocks or listed species. As with other Select Areas this fishery began with three periods per week during the first week of September and four fishing periods per week thereafter (Table 13). The 33-night season, which began on September 4 and completed on October 31, resulted in landings of less than 50 coho (Table 14). The pre-season catch expectation was 17,000 fish, which assumed a full fishery effort. The lack of catch may be attributed to poor coho prices, mainstem fishing opportunities available in 2001, coho not holding in fishing area for long enough time to allow for significant harvest, and catches being included in mainstem landings.

Lower River Recreational Fisheries

Recreational fisheries below Bonneville Dam can be segregated into two distinct fisheries. The Buoy 10 estuary fishery catches fall chinook and coho in the area from Buoy 10 upstream to a line between Tongue Point on the Oregon shore and Rocky Point on the Washington shore. The lower Columbia River mainstem sport fishery catches salmon, steelhead, shad, and sturgeon in the area from the Tongue Point/Rocky Point line upstream to Bonneville Dam. Prior to 1999 the two fisheries were separated by the Astoria-Megler Bridge. Both fisheries are intensively managed to ensure that impact limits on listed species are not exceeded. Sport fisheries for coho and steelhead are limited to adipose fin-clipped hatchery fish only with regulations in effect that required all non-adipose fin-clipped coho and steelhead to be released immediately unharmed. Oregon tributary seasons generally close November 1 after the majority of the early stock hatchery coho have entered the hatchery.

Buoy 10 Sport Fishery

The Buoy 10 fishery was initially scheduled to be open for fall chinook and coho during August 1 through December 31 with a two fish daily bag limit, of which only one could be a chinook. In anticipation of a large return of adipose fin-clipped hatchery coho, the bag limit was liberalized effective August 16 to a three fish, of which only one could be a chinook. Chinook catches began slowly, but like previous years catch rates improved steadily as the month of August progressed. Based on trends in angler effort and chinook catch per unit effort it appeared chinook catches would exceed preseason total catch and URB impact expectations by August 30; therefore, the states took emergency action to prohibit chinook retention in the Buoy 10 fishery effective August 30. Concurrent with the August 30 chinook retention restriction date the states increased the daily salmon bag limit to four fish (of which only two could be steelhead), which essentially resulted in a four hatchery coho daily bag limit through December 31. The chinook retention restriction encompassed the area from Buoy 10 upstream to the Tongue Point-Rocky Point line. Subsequent to that emergency action, TAC upgraded the fall chinook run sizes which increased the URB impact limit and the states rescinded the Buoy 10 chinook retention restriction effective September 15. The 2001 Buoy 10 fishery produced 125,800 angler trips with catches of 12,700 chinook and 132,000 adipose fin-clipped coho (Table 14). The coho catch was similar to the preseason expectation of 151,200 while the chinook catch exceeded the preseason expectation of 7,900.

The large coho return in 2001 resulted in the largest Buoy 10 coho catch since 1991. Coho catch rates of 1.04 coho/rod in 2001 were the best since 1991 but below catch rates of 1.28 coho/rod in 1991 and 1984 and 1.33 coho/rod in 1986. Buoy 10 chinook catches were large again in 2001 and resulted in the adoption of a chinook retention restriction for a portion of the fishery, as has been the case for the last several years. The 2001 catch of 12,700 fall chinook in Buoy 10 was the largest since 1997 and represents the fifth consecutive year in which chinook catch has exceeded 9,000 chinook. Buoy 10 chinook catches peaked in 1987 and 1988 with catches of 42,100 and 30,800 respectively.

Lower Columbia Mainstem Sport Fishery

The lower Columbia River sport fishery was also scheduled to be open during August 1 through December 31. Pre-season expectations were for a catch of 7,400 chinook. As with Buoy 10, the lower Columbia River sport fishery was heavily monitored with frequent in-season catch updates. As was the case in 2000, no emergency action was warranted for this fishery. The 2001 mainstem sport fishery below Bonneville Dam produced 97,253 angler trips with a catch of 8,700 adult chinook, 3,000 adipose fin-clipped adult coho, and 12,100 adipose fin-clipped summer steelhead (Table 14).

2001 Fishery Impacts

As has been the case in recent years, 2001 was another season where fishery management under ESA restrictions required increased in-season monitoring and fishery modifications. Impacts to URB fall chinook were limited through the use of time restrictions in the treaty Indian fishery; time, area, and gear restrictions in the non-Indian commercial fishery; and time, area, and chinook retention restrictions in the non-Indian sport fishery. The inability to update the run size prior to mid-September limited management flexibility in shaping fisheries around impacts on listed SRW fall chinook and managers ability to take advantage of increased run size estimates that occurred on September 10-17. Gear and chinook retention restrictions were eliminated in non-Indian fisheries and an additional fishing period was adopted in the treaty Indian fishery based on inseason run size updates; however, chinook catches remained well below totals allowed under ESA-associated URB impact limits. Fishery catches and impacts to listed species for 2001 fall fisheries are summarized in the 2001 Columbia River fishery model run "2001 Actual" (see page 58).

Harvest impacts on URB fall chinook were 20.90% as compared with the ESA guideline of 31.29% (Table 26). URB fall chinook impacts totaled 5.94% in non-Indian fisheries and 14.97% in treaty Indian fisheries. Fishery specific catch estimates for SRW fall chinook are unavailable because the SRW run reconstruction analyses had not been completed at the time this report was written.

Impacts on Group B wild index steelhead were limited by the ESA to no more than 15.0% for treaty Indian fisheries and no more than 2.0% for non-Indian fisheries. Treaty fishery impacts occur as fish kept in commercial and C&S fisheries while non-Indian fishery impacts occur as catch and release mortalities in sport and commercial fisheries. Time and gear restrictions were used in treaty Indian fisheries to limit impacts on listed steelhead. Impact rates on wild group B index steelhead were estimated to be 11.4% for treaty Indian fisheries and 1.5% for non-Indian fisheries and totaled 13.0% for all fisheries combined.

Wild coho destined for Oregon shore tributaries of the Columbia River are listed as endangered under the Oregon State ESA and impacts on these fish were to be limited to no more than 15.0% for all fisheries, including ocean fisheries. Fisheries were managed with time and area

constraints plus gear restrictions, to limit impacts on listed coho by commercial fisheries and only adipose fin-clipped coho could be retained in sport fisheries. Combined ocean and freshwater fisheries impacts were estimated to be 12.8% on early stock coho, 8.7% on late stock coho and 11.2% on both stocks combined. Columbia River fisheries accounted for impact rates of 6.6% on early stock, 2.5% on late stock, and 5.0% overall.

2002 FALL SEASON FISHERY EXPECTATIONS

Non-Indian Fisheries

Specific recommendations for fall commercial seasons to harvest sturgeon, chinook, and coho will be presented at Compact hearings occurring through the fall management period. Goals for fall fisheries are:

- Limit impacts to SRW fall chinook as necessary while maximizing use of URB fall chinook impacts to prosecute non-Indian fisheries.
- Limit impacts on wild coho destined for tributaries of the lower Columbia River by adoption of time, area, and gear restrictions similar to those adopted during 1999 - 2001.
- Target surplus hatchery coho for maximum economic benefit to commercial fisheries.
- Attempt to harvest the balance of the commercial white sturgeon allocation by the end of October and provide maximum economic benefit for the commercial fishing industry.
- Set fishery checkpoints to allow for in-season adjustments to adopted seasons.

Based on pre-season run size forecasts, a fishing schedule was developed for sport and commercial fisheries through the North of Falcon management process. As the fall management period continues run size updates will occur which could alter pre-season planned fisheries. Run sizes are typically not updated prior to mid-September; therefore, fisheries occurring prior to mid-September will be managed conservatively to allow for flexibility in shaping fishing opportunities during the mid-September through October time frame. Stock composition, and estimated URB impacts, for all fisheries will be modified in-season as catch estimates and CWT data become available. These data may alter URB impacts from pre-season expectations, which could subsequently result in modifications to other planned fisheries. The following section of this report generally describes fishery expectations for the 2002 fall management period. Fishery catch expectations and impacts to listed species for this fishing schedule are summarized in the 2002 Columbia River Fishery Model Run for "2002 MR-6" (see page 59).

Early August Commercial Fisheries

Preseason fishing plans include target chinook fisheries in the lower river, below Longview Bridge, during the week of August 5-9. Depending on landings and associated URB impacts the fishery is expected to occur for up to four nights and may extend into the second week of August with additional area restrictions in effect. All fishing periods would include an 8-inch minimum mesh size restriction. Sturgeon retention would not be allowed during these fishing periods to allow adequate numbers of white sturgeon to be available for fisheries planned to occur during the late fall fishing period (beginning in mid-September). Based on pre-season run size forecasts and North of Falcon negotiations the catch expectation for this time period is approximately 16,800 chinook. Catch of other salmon species, such as coho, are expected to be low due to timing of the fishery and the 8-inch minimum mesh size restriction.

Late August Commercial Fisheries

Pre-season fishing plans include target fall chinook fishing above the I-205 Bridge during the mid to late August time frame. Joint Staff recommendations will include two or three nighttime fishing periods per week with breaks in between fishing periods. The fishery will not continue past August 29 and a 9-inch minimum mesh size restriction is expected to be in effect. As with the early August fisheries, sturgeon retention will not be allowed in this fishery. Based on pre-season run sizes and North of Falcon negotiations the catch expectation for these fisheries is approximately 8,300 chinook. Catch of other species, such as coho, is typically very low in this fishery.

Late September Commercial Fisheries

Preseason plans are to initiate late fall fisheries as early as September 15 and to target coho or chinook depending on inseason run size updates and remaining impacts. The management goal will be to allow fisheries to occur in as much of the area below Bonneville Dam (Zones 1-5) as possible while maintaining adequate protection for listed species. In order to protect wild coho destined for Oregon tributaries of the lower Columbia River, primarily the Clackamas and Sandy rivers, area closures or mesh size restrictions will be required in the area between the Longview and I-205 bridges during the first week (September 16-20), between the mouth of the Kalama River and the I-205 Bridge during the second week (September 23-27), and between the upper end of Bachelor Island and the I-205 Bridge during the third week (September 30-October 4). Coho target fisheries are typically restricted to a 6-inch maximum mesh size restriction while late fall chinook fisheries are typically restricted to an 8-inch minimum mesh size restriction. In 2002 late September fisheries may have only the 9-³/₄" maximum mesh size restriction in effect to allow fishers to target on either coho or fall chinook. Based on pre-season run sizes and North of Falcon negotiations the catch expectation for fisheries during the last half of September is approximately 8,500 adult chinook. Based on the low run size forecast, coho catches are expected to be small with a pre-season catch estimate of approximately 10,000 fish.

October Commercial Fisheries

Pre-season fishing plans include primarily coho test fisheries with some sturgeon fishing opportunity also. Coho fisheries will begin with a 6-inch maximum mesh restriction but will expand to include the entire lower river fishing area (Zones 1-5) in the second week of October (October 7-11) when most state-listed coho have moved into tributaries. Depending on URB impacts remaining the 6-inch maximum mesh size restriction may be lifted. Past sturgeon fishing periods have occurred during daylight hours on Mondays in all of Zones 1-5 and in some years have excluded nets with mesh sizes between 6-inch and 9-inch to allow participating fishers to target either coho or sturgeon. As has been the case in recent years, the Joint Staff expects to recommend fisheries that will result in the 9,300 white sturgeon catch limit being reached near the end of October. Sturgeon fishing periods typically begin the second Monday in October; however, in 2002 the initial sturgeon fishing period may have to be delayed to provide access to sturgeon in late October. Based on pre-season run sizes and North of Falcon negotiations the catch expectation for all October fisheries is 2,100 adult chinook. Coho catches are expected to be small with a preseason catch estimate of approximately 10,000 fish. Sturgeon catch will depend on catches in previous fisheries but it is expected that fewer than 3,000 white sturgeon will be available for harvest during October fisheries.

Youngs Bay Select Area Fisheries

Fisheries this fall in Youngs Bay are expected to follow a similar pattern as past years with daily fisheries occurring in August to harvest net-pen produced SAB fall chinook and early returning coho. After Labor Day (September 2) through the end of October it is expected that 7-day-per-week fishing would occur to harvest 100% of the net-pen produced coho. An 8-inch maximum mesh size restriction would be appropriate for fisheries prior to Labor Day with consideration given to a 6-inch maximum mesh size after Labor Day. The upper fishing boundary should be moved downstream from the confluence of the Klaskanine and Youngs rivers to Battle Creek Slough for the purpose of increasing SAB fall chinook escapement to Klaskanine Hatchery. Based on pre-season run size estimates approximately 13,000 coho are expected to be available for harvest in 2002. Chinook catches will likely range between 1,500 and 2,000 fish.

Other Select Area Fisheries

Other Select Area sites include Tongue Point, Blind Slough, Deep River, and Steamboat Slough fishing sites. Fisheries in these areas are target coho fisheries that are expected to open the week following Labor Day. Recent fisheries have included 1) four to five nightly fishing periods extending through the end of October, 2) nightly fishing periods expanding from 12 hours in September and early October to 14 hours for the remainder of October, and 3) 6-inch maximum mesh size restriction beginning in 2001. Past Big Creek fisheries have targeted surplus fall chinook destined for Big Creek Hatchery which is expected to occur in 2002. For 2002 the Big Creek fishery will likely focus on surplus fall chinook rather than coho. Based on pre-season run size forecasts it is estimated that approximately 11,000 coho will be available for harvest in the four other Select Area fishing sites (Tongue Point, Blind Slough, Deep River, and Steamboat Slough) and up to 20,000 chinook are projected to be available for harvest in the Big Creek fishery.

Buoy 10 Sport Fisheries

The Buoy 10 sport fishery is scheduled to open August 1 with a two salmon per day daily catch limit in effect. The fishery will be restricted to adipose fin-clipped coho and chinook retention may be prohibited if URB impacts exceed pre-season expectations. Based on preseason run sizes and catch estimates it is expected that chinook retention will be allowed through Labor Day but could be prohibited shortly thereafter. Adipose fin-clipped coho retention will likely be allowed throughout the duration of this fishery (August 1 through December 31). Based on pre-season run size forecasts and North of Falcon negotiations the chinook catch expectation for this fishery is 21,200 chinook. Coho catch is expected to be small with approximately 20,000 adipose fin-clipped fish retained in 2002.

Mainstem Sport Fisheries

The mainstem sport fishery upstream of the Tongue Point/Rocky Point line is scheduled to be open August 1 through December 31 with a two salmon daily catch limit. Coho retention will be restricted to adipose fin-clipped coho only downstream of Bonneville Dam. Based on preseason run sizes and catch estimates it is expected that chinook retention will be allowed through the end of September but could be prohibited sometime in October. Based on pre-season run size forecasts and North of Falcon negotiations, the chinook catch expectation for this fishery is 14,900 chinook. Coho catch is typically low in this fishery and will probably not exceed 1,000 adipose fin-clipped fish retained in 2002.

Treaty Indian Commercial Fisheries

In recent years treaty Indian fisheries have typically occurred from late August through late September. Fishery restrictions may include mesh size restrictions to better target fall chinook or area restrictions if necessary to reduce impacts on specific stocks. Sturgeon sales are generally not allowed during fall fisheries because catch guidelines have been achieved in one or more pool. Fall fisheries typically consist of three to five day weekly fishery periods that often occur later in the week to support sale of fish to the general public. The Columbia River treaty tribes may propose initial commercial fishing periods for the 2002 fall season at the August 15 Compact hearing.

Oregon Dept of Fish and Wildlife
Washington Department of Fish and Wildlife
July 18, 2002

Table 1. Summary of 2001 Actual and Current 2002 Forecasts of Adult Salmon and Steelhead Returns to the Columbia River.			
Species, stock	2001 Return¹	2002 Forecast¹	Comments
Fall chinook	548,800	659,800	Third largest since 1948
Upriver bright (URB)	232,600	273,800	Largest since 1988
Snake River wild (SRW)	NA	NA	
Mid-Columbia bright (MCB)	75,300	91,800	Largest since 1989
Bonneville upriver bright (BUB)	42,100	45,700	
Pool upriver bright (PUB)	33,200	46,100	
Lower river bright (LRB)	1,000	1,900	Formerly a component of the BUB stock
Bonneville pool hatchery (BPH)	125,000	136,000	Largest since 1976
Lower river hatchery (LRH)	94,300	133,000	Largest since 1988
Lower river wild (LRW)	15,700	18,300	Largest since 1991
Select area bright (SAB)	4,900	5,000	Larger than recent 5-year average
Upriver summer steelhead	630,200	447,800	Second largest on record
Skamania index (May 1 - June 30)	28,700	17,400	Includes only fish prior to July 1
A-run index (length <78cm)	515,100	369,700	Includes only fish after June 30
B-run index (length ≥78cm)	86,400	60,600	Includes only fish after June 30
Coho	1,078,600	171,600	
Early stock	672,700	112,700	Smallest since 1997
Late stock	405,900	58,900	Smallest since 1998

^{1.} Columbia River mouth return, except summer steelhead is Bonneville Dam return.

Table 2. Predicted and Actual Returns of Columbia River Adult Fall Chinook, 1991-2001, and 2002 Forecasts (Thousands).

Stock	Year	Pre-season Forecast	Actual Return	Percent of Forecast
Lower River Hatchery	1991-1995	72.4	55.6	77
	1996	48.4	75.5	156
	1997	68.7	57.4	84
	1998	22.5	45.3	201
	1999	38.2	40.0	105
	2000	26.4	27.0	102
	2001	30.5	94.3	309
	2002	133.0		
Lower River Wild	1991-1995	13.2	14.8	112
	1996	8.1	14.6	180
	1997	7.2	12.3	171
	1998	7.0	7.3	104
	1999	2.5	3.3	132
	2000	2.7	10.2	378
	2001	18.5	15.7	85
	2002	18.3		
Bonneville Pool Hatchery	1991-1995	34.5	30.2	88
	1996	35.4	33.1	94
	1997	25.7	27.4	107
	1998	14.2	20.2	142
	1999	61.0	50.2	82
	2000	26.9	20.5	76
	2001	61.9	125.0	202
	2002	136.0		
Upriver Bright	1991-1995	91.5	105.3	115
	1996	94.2	143.2	152
	1997	158.0	161.7	102
	1998	141.8	142.3	100
	1999	102.1	166.1	163
	2000	208.2	155.7	75
	2001	132.7	232.6	175
	2002	273.8		
Mid-Columbia Bright ¹	1991-1995	35.6	32.4	91
	1996	43.2	59.7	138
	1997	61.9	58.9	95
	1998	44.9	36.8	82
	1999	27.7	50.6	181
	2000	61.6	36.9	60
	2001	42.9	75.3	169
	2002	91.8		
Columbia River Total ²	1991-1995	274.2	238.1	88
	1996	229.3	326.1	142
	1997	321.5	317.7	99
	1998	230.4	251.9	109
	1999	231.5	310.2	134
	2000	325.8	250.3	77
	2001	292.3	548.8	188
	2002	659.8		

^{1.} Does not include Lower River Brights (LRB).

^{2.} Does not include Lower River Bright (LRB) or Select Area Bright (SAB) stocks.

Table 3. Stock Accountability of Fall Chinook Returning to the Columbia River, 1980-2001.

Return Year	Total Return	URB	BPH	MCB ¹	LRH	LRW	SAB
1980	320,000	76,800	97,800	0	105,600	38,800	
1981	278,900	66,600	86,300	4,400	94,900	25,000	
1982	363,100	79,000	120,700	8,800	139,500	13,000	
1983	237,600	86,100	28,900	14,400	88,100	16,800	
1984	309,400	131,400	47,500	11,800	102,400	13,300	
1985	362,800	196,400	33,200	5,700	111,000	13,300	1,600
1986	494,800	281,600	16,600	17,400	154,800	24,500	2,000
1987	871,000	420,700	9,100	57,000	344,100	37,900	2,300
1988	784,700	339,900	12,000	78,000	309,900	41,700	3,200
1989	552,000	261,300	26,800	93,100	130,900	38,600	1,200
1990	312,900	153,600	18,900	59,000	60,000	20,300	1,100
1991	275,500	103,300	52,400	35,400	62,700	19,800	2,000
1992	219,000	81,000	29,500	31,100	62,600	12,500	2,300
1993	214,900	102,900	16,800	27,400	52,300	13,300	2,100
1994	254,000	132,800	18,500	33,700	53,600	12,200	3,200
1995	242,800	106,500	33,800	34,100	46,400	16,000	6,000
1996	330,800	143,200	33,100	59,700	75,500	14,600	4,700
1997	321,500	161,700	27,400	58,900	57,400	12,300	3,800
1998	255,400	142,300	20,200	36,800	45,300	7,300	3,500
1999	309,500	166,100	50,500	50,600	40,000	3,300	2,900
2000	253,300	155,700	20,500	36,900	27,000	10,200	4,900
2001	548,800	232,600	125,000	76,400	94,300	15,700	5,000

¹. Includes lower river brights (LRB).

Table 4. Estimated Columbia River Returns and Lower Granite Dam Escapement of Snake River Wild Fall Chinook Adults, 1986-2001, and Forecast for 2002.

Year	Columbia River Return	Mainstem Harvest	Harvest Rate %	Passage Loss	BON-LGR Conversion Rate %	Lower Granite Escapement
1986	3,440	1,953	56.8	952	32.4	449
1987	2,295	1,309	57.1	554	33.7	253
1988	4,811	3,065	63.7	973	29.3	368
1989	2,527	1,444	57.1	569	36.5	295
1990	665	353	53.1	162	36.4	78
1991	2,261	908	40.2	1,035	23.5	318
1992	1,555	409	26.3	597	47.9	549
1993	1,620	450	27.8	428	63.4	742
1994	1,055	192	18.2	457	47.0	406
1995	1,223	232	19.0	641	35.3	350
1996	1,957	516	26.4	802	44.3	639
1997	2,048	659	32.2	592	57.4	797
1998	864	230	26.6	328	48.3	306
1999	2,739	831	30.34	1,003	47.5	905
2000	1,977	565	28.58	555	60.7	857
2001 ¹	NA	NA	20.90	NA	NA	NA
2002 proj.¹	NA	NA	31.29	NA	NA	NA

^{1.} Estimates for 2001 and projections for 2002 are not available because the run reconstruction analysis had not been completed at the time this report was written.

Table 5. Group A Index and Group B Index Summer Steelhead Returns to Bonneville Dam During 1984-2001 and 2002 Projections.

Year	Group A Index (<78 cm)					Group B Index (≥78 cm)				
	Number Wild	%	Number Hatchery	%	Total	Number Wild	%	Number Hatchery	%	Total
1984	52,500	27	143,200	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	19	38,400	81	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	44,800	78	57,500
1993	28,700	21	108,000	79	136,700	4,400	12	31,800	88	36,200
1994	21,200	18	99,800	82	121,000	5,200	19	22,300	81	27,500
1995	26,000	14	154,000	86	180,000	1,900	14	11,300	86	13,200
1996	25,700	15	148,700	85	174,400	3,900	21	14,900	79	18,800
1997	30,900	15	177,300	85	208,200	3,900	11	32,800	89	36,700
1998	34,800	26	99,900	74	134,700	3,400	9	36,900	91	40,300
1999	56,600	32	119,900	68	176,500	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 ¹	137,200	27	377,900	73	515,100	12,000	14	74,300	86	86,400
2002²	105,000	28	264,700	72	369,700	21,600	36	39,000	64	60,600

^{1.} Preliminary
^{2.} Projected

Table 6. Minimum Numbers (Thousands) of Coho Adults Entering the Columbia River, 1970-2001.

Year	Lower Columbia River							Minimum Run
	Comm. Catch	Sport Catch			Hatchery	Dam	Bonneville	
	Zones 1-5 ¹	Estuary ²	L.Col.R. ³	Tributary	Returns	Counts ⁴	Dam Count	
1970	520.9	--	2.2	21.8	275.4	20.1	54.9	895.3
1971	264.3	--	1.4	16.0	187.7	21.3	53.8	544.5
1972	131.3	--	0.8	9.2	91.3	11.0	34.2	277.8
1973	183.7	--	0.3	7.4	68.2	5.8	25.8	291.2
1974	261.0	--	0.5	12.6	152.8	2.4	31.6	460.9
1975	156.6	--	0.6	10.0	85.4	7.1	32.8	292.5
1976	168.4	--	0.3	10.8	117.3	3.5	36.7	337.0
1977	39.0	--	0.5	5.7	37.1	2.2	9.3	93.8
1978	132.7	--	1.1	8.7	131.8	2.9	30.3	307.5
1979	127.6	--	0.2	12.1	102.6	4.4	29.6	276.5
1980	150.1	--	0.1	11.1	122.2	5.1	13.0	301.6
1981	60.0	--	0.1	7.6	77.9	2.8	21.9	170.3
1982	201.7	18.8	0.1	17.6	154.1	5.0	55.8	453.1
1983	7.1	3.6	0.2	5.1	73.6	2.5	8.4	100.5
1984	201.5	74.3	0.7	14.9	101.7	4.2	16.8	414.2
1985	190.0	25.4	1.1	9.4	94.2	7.5	38.6	366.2
1986	981.0	120.5	4.0	20.7	284.1	8.9	108.6	1,527.8
1987	165.3	47.2	0.9	6.1	66.1	4.2	17.9	307.6
1988	361.5	143.4	0.5	11.8	113.6	6.9	27.1	664.8
1989	387.3	81.9	0.2	15.1	183.3	6.4	27.4	701.6
1990	66.2	18.5	0.3	9.7	87.8	2.0	11.6	196.1
1991	407.5	208.7	1.1	29.3	223.3	5.5	58.9	934.3
1992	54.1	43.1	0.6	8.4	85.1	5.2	14.4	210.9
1993	35.6	20.9	0.6	6.3	39.1	0.8	10.6	113.9
1994	60.7	1.8	0.9	3.4	77.7	4.1	20.3	168.9
1995	21.4	5.0	0.2	2.6	31.5	2.9	10.4	74.0
1996	26.2	4.5	0.8	3.8	62.2	0.6	15.7	113.7
1997	20.5	20.4	0.8	8.5	69.7	2.8	24.1	146.8
1998	23.0	3.2	3.7	7.1	84.6	1.0	46.3	168.9
1999	79.0	9.3	1.3	17.8	111.6	1.0	40.7	260.7
2000	171.0	21.5	1.6	33.2	232.0	6.4	85.7	551.4
2001	253.1	132.0	3.1	41.6	380.7	8.6	259.5	1,078.6

¹ Includes Youngs Bay, Big Creek (1970-present), other Select Area fisheries, and 1980-82 Washington terminal landings. Includes jacks, except beginning in 1987 jacks landed in Youngs Bay and other terminal fisheries are not included in this total.

² Catch from estuary recreational (Buoy 10) fishery. Catch from the estuary fishery prior to 1982 is included in ocean catch totals. Some non-Columbia River fish are caught in the estuary fishery and are included here.

³ Catch from above Astoria-Megler Bridge through 1999 and catch from above Tongue Point/Rocky Point thereafter.

⁴ Willamette Falls on the Willamette River, North Fork Dam on the Clackamas River, and Marmot Dam on the Sandy River.

Table 7. Minimum Numbers (Thousands) of Early Stock Coho Adults Entering the Columbia River, 1970-2001.

Year	Lower Columbia River							Minimum Run
	Comm. Catch	Sport Catch			Hatchery	Dam	Bonneville	
	Zones 1-5 ¹	Estuary ²	L.Col.R. ³	Tributary	Returns	Counts ⁴	Dam Count	
1970	396.5	--	1.7	16.6	226.2	18.6	53.1	712.7
1971	166.2	--	1.1	12.4	158.6	18.7	46.4	403.4
1972	70.3	--	0.7	7.4	81.3	10.4	32.2	202.3
1973	144.3	--	0.2	4.8	49.8	5.4	24.8	229.3
1974	120.1	--	0.4	10.6	123.8	1.6	26.1	282.6
1975	89.1	--	0.4	7.0	69.0	6.4	30.2	202.1
1976	71.2	--	0.2	6.8	71.5	2.5	33.1	185.3
1977	17.2	--	0.4	4.0	23.5	1.4	7.7	54.2
1978	62.4	--	0.8	6.2	98.7	2.4	27.9	198.4
1979	69.2	--	0.2	8.8	78.6	3.1	26.3	186.2
1980	68.8	--	0.1	6.2	76.4	2.0	6.8	160.3
1981	22.0	--	0.2	4.3	50.4	2.4	21.0	100.3
1982	42.6	11.9	0.1	11.6	108.4	3.8	51.0	229.4
1983	4.7	2.3	0.1	2.4	28.3	1.0	4.6	43.4
1984	115.1	46.3	0.5	6.9	54.9	3.8	13.1	240.6
1985	105.8	16.5	0.8	6.3	57.3	6.5	35.2	228.4
1986	356.6	97.6	2.9	9.5	158.6	5.9	99.7	730.8
1987	100.5	28.4	0.7	4.2	32.6	3.4	16.4	186.2
1988	186.7	61.7	0.3	7.0	47.3	6.3	23.0	332.3
1989	78.2	54.7	0.2	7.0	98.0	5.0	19.6	262.7
1990	38.3	12.6	0.3	6.3	40.9	1.7	8.7	108.8
1991	203.2	142.9	0.8	15.1	108.9	4.3	43.2	518.4
1992	19.4	29.1	0.5	4.1	44.5	3.4	8.4	109.4
1993	20.9	16.5	0.5	2.9	22.9	0.7	8.0	72.4
1994	58.3	1.4	0.8	2.2	59.6	3.3	12.6	138.2
1995	21.2	4.9	0.2	1.2	20.4	2.3	7.0	57.2
1996	22.3	3.9	0.8	2.4	44.3	0.6	8.9	82.6
1997	18.1	19.3	0.8	4.8	39.1	2.8	18.1	103.0
1998	22.8	3.0	3.6	5.1	46.8	0.9	34.2	116.4
1999	46.2	6.9	0.9	9.3	59.5	1.0	32.9	145.7
2000	78.9	18.7	1.0	22.8	138.2	5.5	58.9	324.0
2001	101.8	114.9	2.6	21.3	200.5	6.2	225.4	672.7

¹ Includes Youngs Bay, Big Creek (1970-present), other Select Area fisheries, and 1980-82 Washington terminal landings. Includes jacks, except beginning in 1987 jacks landed in Youngs Bay and other terminal fisheries are not included in this total.

² Catch from estuary recreational (Buoy 10) fishery. Catch from the estuary fishery prior to 1982 is included in ocean catch totals. Some non-Columbia River fish are caught in the estuary fishery and are included here.

³ Catch from above Astoria-Megler Bridge through 1999 and catch from above Tongue Point/Rocky Point thereafter.

⁴ Willamette Falls on the Willamette River, North Fork Dam on the Clackamas River, and Marmot Dam on the Sandy River.

Table 8. Minimum Numbers (Thousands) of Late Stock Coho Adults Entering the Columbia River, 1970-2001.

Year	Lower Columbia River							Minimum Run
	Comm. Catch	Sport Catch			Hatchery	Dam	Bonneville	
	Zones 1-5 ¹	Estuary ²	L.Col.R. ³	Tributary	Returns	Counts ⁴	Dam Count	
1970	124.3	--	0.5	5.1	49.3	1.6	1.8	182.6
1971	98.1	--	0.3	3.7	29.0	2.6	7.4	141.1
1972	61.0	--	0.2	1.8	9.9	0.6	2.0	75.5
1973	39.4	--	0.1	2.6	18.4	0.4	1.1	62.0
1974	140.9	--	0.1	2.0	29.0	0.8	5.5	178.3
1975	67.6	--	0.2	2.9	16.4	0.7	2.6	90.4
1976	97.2	--	0.1	4.0	45.8	1.0	3.6	151.7
1977	21.8	--	0.1	1.7	13.6	0.9	1.6	39.7
1978	70.3	--	0.2	2.6	33.1	0.5	2.4	109.1
1979	58.4	--	0.0	3.4	23.9	1.3	3.3	90.3
1980	81.2	--	0.0	5.0	45.8	3.1	6.2	141.3
1981	37.9	--	0.0	3.3	27.5	0.4	1.0	70.1
1982	159.1	7.0	0.0	6.0	45.7	1.1	4.8	223.7
1983	2.4	1.3	<0.1	2.7	45.3	1.5	3.8	57.0
1984	86.4	28.1	0.2	8.0	46.8	0.4	3.6	173.5
1985	84.2	8.9	0.3	3.1	36.9	1.0	3.4	137.8
1986	624.4	22.8	1.1	11.3	125.5	2.9	8.9	796.9
1987	64.8	18.8	0.2	1.8	33.4	0.9	1.5	121.4
1988	174.9	81.7	0.2	4.8	66.3	0.6	4.1	332.6
1989	309.1	27.2	<0.1	8.1	85.3	1.4	7.8	438.9
1990	27.9	5.8	<0.1	3.5	46.9	0.3	2.9	87.4
1991	204.3	65.7	0.3	14.3	114.4	1.3	15.6	415.9
1992	34.7	14.0	<0.1	4.3	40.7	1.8	6.0	101.5
1993	14.8	4.4	0.1	3.4	16.1	0.1	2.6	41.5
1994	2.4	0.4	0.1	1.2	18.1	0.8	7.7	30.7
1995	0.2	0.2	<0.1	1.3	11.1	0.6	3.4	16.8
1996	3.8	0.6	<0.1	1.4	17.9	<0.1	6.8	30.5
1997	2.4	1.0	<0.1	3.7	30.7	<0.1	6.0	43.8
1998	0.2	0.2	0.2	2.0	37.8	0.1	12.1	52.6
1999	43.6	2.2	0.4	8.5	64.4	0.1	7.8	127.0
2000	92.1	2.8	0.6	10.4	93.8	0.9	26.8	227.4
2001	151.3	17.1	0.5	20.3	180.2	2.4	34.1	405.9

^{1.} Includes Youngs Bay, Big Creek (1970-present), other Select Area fisheries, and 1980-82 Washington terminal landings. Includes jacks, except beginning in 1987 jacks landed in Youngs Bay and other terminal fisheries are not included in this total.

^{2.} Catch from estuary recreational (Buoy 10) fishery. Catch from the estuary fishery prior to 1982 is included in ocean catch totals. Some non-Columbia River fish are caught in the estuary fishery and are included here.

^{3.} Catch from above Astoria-Megler Bridge.

^{4.} North Fork Dam on the Clackamas River.

Table 9. Escapement Index Values for Chum in Washington Lower Columbia River Tributaries and for Late Run Coho in Oregon Columbia River Tributaries Downstream of the Willamette River, 1950-2001.

Year	Chum (Washington Tributaries)			Coho (Oregon Tributaries)		
	Miles Surveyed	Fish Observed	Fish/Mile	Miles Surveyed ¹	Fish Observed	Fish/Mile
<i>50's Average</i>	2.2	903	450	9.4	263	28
<i>60's Average</i>	4.9	767	179	6.8	161	24
<i>70's Average</i>	6.0	450	77	9.3	61	7
1980	6.7	276	41	9.3	81	9
1981	4.0	56	14	9.3	16	2
1982	6.1	1,127	185	9.3	17	2
1983	5.8	317	55	9.3	11	1
1984	7.1	499	70	9.3	17	2
1985	7.1	500	70	7.8	3	<1
1986	7.4	1,138	154	9.3	51	5
1987	7.1	1,016	143	9.3	7	1
1988	7.1	1,917	270	9.3	5	1
1989	7.1	367	52	9.3	3	<1
<i>80's Average</i>	6.6	721	105	9.2	21	2
1990	7.1	832	117	9.4	4	<1
1991	7.1	673	95	9.4	3	<1
1992	7.1	3,273	461	9.4	4	<1
1993	7.1	1,411	199	9.3	2	<1
1994	7.1	509	72	9.3	3	<1
1995	7.2	922	128	9.3	2	<1
1996	7.2	1,545	215	9.3	0	0
1997	7.2	1,054	146	9.3	0	0
1998	7.2	1,666	231	9.3	4	<1
1999	7.2	2,096	291	9.3	4	<1
<i>90's Average</i>	7.1	1,321	185	9.3	2	<1
2000	6.1	2,425	398	9.3	82 ²	9
2001	5.8	4,527	781	9.3	13²	1

¹. In 1975 the database was reorganized into 9.3 miles of ten standard index streams that best indicate trends in escapement since 1967. Prior to 1967 the same ten streams were used; however, survey miles and frequency varied. In 1968 two index streams were not surveyed and in 1985 observations in an index survey heavily influenced by hatchery adult introduction was not included.

². May include some adipose fin-clipped coho.

Table 10. Salmon, Steelhead, and Smelt of the Columbia River Basin Considered for Listing Under the Federal ESA.¹			
Species - ESU	Designation	Listing Date	Effective Date
<u>Chinook</u>			
Snake River Fall	Threatened	April 22, 1992	May 22, 1992
Snake River Spring/Summer	Threatened	April 22, 1992	May 22, 1992
Upper Columbia Spring	Endangered	March 24, 1999	May 24, 1999
Upper Columbia Summer/Fall	Not warranted	--	--
Middle Columbia Spring	Not warranted	--	--
Lower Columbia River Spring/Fall	Threatened	March 24, 1999	May 24, 1999
Upper Willamette Spring	Threatened	March 24, 1999	May 24, 1999
Deschutes River Fall	Not warranted	--	--
<u>Steelhead</u>			
Snake River	Threatened	August 18, 1997	October 17, 1997
Upper Columbia River²	Endangered	August 18, 1997	October 17, 1997
Lower Columbia River	Threatened	March 19, 1998	May 18, 1998
Middle Columbia River	Threatened	March 25, 1999	May 24, 1999
Southwest Washington	Not warranted	--	--
Upper Willamette	Threatened	March 25, 1999	May 24, 1999
<u>Sockeye</u> – Snake River	Endangered	November 20, 1991	December 20, 1991
<u>Chum</u> – Columbia River	Threatened	March 25, 1999	May 24, 1999
<u>Coho</u> – Columbia River³	Under review	--	--
<u>Smelt</u> – 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. Lower Columbia River coho destined for Oregon tributaries were listed as an endangered species under Oregon state law in July 1999.

Table 11. Zone 6 Sturgeon Catch Guidelines, 1997-2002.				
Reservoir / Fishery	1997	1998-2000	2001	2002
Bonneville	2,820	2,820	2,820	2,820
Sport	1,520	1,520	1,520	1,520
Treaty Commercial	1,300	1,300	1,300	1,300
The Dalles	600	1,800	1,800	1,800
Sport	200	600-800	700	700
Treaty Commercial	400	1,000-1,200	1,100	1,100
John Day	1,720	1,720	1,720	500
Sport	560	560	560	165
Treaty Commercial	1,160	1,160	1,160	335

Table 12. Fall Lower River and Zone 6 Mainstem Commercial Fishing Seasons, 2001.

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
AUG	5 7pm ■ ■ ■ ■	6 7am ■	7	8 10pm ■ ■ ■	9 6am ■ ■	10	11
	12	13	14	15	16	17	18
	19	20 8pm ● ● ● ●	21 6am 8pm ● ● ● ●	22 6am 8pm ● ● ● ●	23 6am 8pm ● ● ● ●	24 6am 8pm ● ● ● ●	25 6am ● ● ● ●
SEP	26	27	28 6am	29	30	31	1 6pm
	2	3	4 6am	5	6	7	8 6pm
	9	10	11 6am	12	13	14	15 6pm
OCT	16	17 8pm ● ● ● ● 7am 7pm ■ ■ ■ ■	18 6am ● ● ● ● 7am 7pm ■ ■ ■ ■	19 7pm ● ● ● ● 7am 7pm ■ ■ ■ ■	20 7am 7pm ● ● ● ● 7am 7pm ■ ■ ■ ■	21 7am 7pm ● ● ● ●	22
	23	24 7pm ● ● ● ● 7am ■ ■ ■ ■	25 7am 7pm ● ● ● ● 7am 7pm ■ ■ ■ ■	26 7am 7pm ● ● ● ● 7am 7pm ■ ■ ■ ■	27 7am 6am ● ● ● ● 7am 6am ■ ■ ■ ■	28 7am ● ● ● ●	29 6pm
	30	1 7pm ● ● ● ● 7am ■ ■ ■ ■	2 7am 7pm ● ● ● ● 7am 7pm ■ ■ ■ ■	3 7am 7pm ● ● ● ● 7am 7pm ■ ■ ■ ■	4 7am ● ● ● ● 7am ■ ■ ■ ■	5 7am ● ● ● ●	6
NOV	7	8 7am ■ ■ ■ ■	9 7am 7pm ■ ■ ■ ■	10 7am 7pm ■ ■ ■ ■	11 7am 7pm ■ ■ ■ ■	12 7am ■ ■ ■ ■	13
	14	15 7am ■ ■ ■ ■	16 7am 7pm ■ ■ ■ ■	17 7am 7pm ■ ■ ■ ■	18 7am 7pm ■ ■ ■ ■	19 7am ■ ■ ■ ■	20
	21	22 7am ■ ■ ■ ■	23 7am 7pm ■ ■ ■ ■	24 7am 7pm ■ ■ ■ ■	25 7am 7pm ■ ■ ■ ■	26 7am ■ ■ ■ ■	27
NOV	28	29 7am ■ ■ ■ ■	30 7am 7pm ■ ■ ■ ■	31 7pm ■ ■ ■ ■	1	2	3
	November 14 6am	November 20 6pm		November 23 6am	December 7 6pm		
Lower River: ■ ■ ■ ■ Expanded Area 2-S: ● ● ● ● Zone 6: —————							

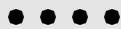
Table 13. Fall Select Area Commercial Fishing Seasons, 2001.

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
AUGUST				1	2	3	4
	5	Noon 6pm 6 7		8	9	10	11
	12	Noon 6pm 13 14		15	16	17	18
	19	Noon 6pm 20 21		22	23	24	25
SEPTEMBER	26	Noon 6pm 27 28		29	7am 7pm 30 31		1
	2		Noon 4	5	6	7	8
	9	10	11	12	13	14	15
	16	17	18	19	20	21	22
	23	24	25	26	27	28	29
	30	1	2	3	4	5	6
	7	8	9	10	11	12	13
	14	15	16	17	18	19	20
OCTOBER	21	22	23	24	25	26	27
	28	29	30	31 6pm			

Youngs Bay



Other Select Areas:



Fisheries open 7 pm - 7 am during September 2-28

Fisheries open 6 pm - 8 am during September 30-October 31

Sunday night openings for Deep River only

Table 14. Salmon, Steelhead, and Sturgeon Catch in 2001 Fall Fisheries.¹							
Fishery	Date	Chinook	Coho	Chum	Summer Steelhead	White Sturgeon	Green Sturgeon
Treaty Indian Fisheries							
Zone 6 Commercial ²	Aug. 28-Sept. 1	28,599	452	0	5,493	--	--
Zone 6 Commercial ²	Sept. 4-8	38,146	988	0	5,401	--	--
Zone 6 Commercial ²	Sept. 11-15	38,388	1,841	0	8,281	--	--
Zone 6 Commercial ²	Sept. 27-29	6,223	538	0	3,274	--	--
Zone 6 Commercial ³	Nov. 14-Dec. 7	--	--	0	--	368	--
Zone 6 Setline	Oct. 1-Dec. 31	--	--	--	--	293	--
Zone 6 C & S	Aug.-Dec.	365	436	0	6,741	--	--
Indian Total		111,721	5,374	0	29,190	661	--
Non-Indian Fisheries							
Zone 1-3 Sturgeon ⁴	Aug. 5-6	1,308	207	0	--	4,721	336
Zone 1 Salmon ⁵	Aug. 8-9	738	68	0	--	--	--
Zones 4-5 ⁶	Aug. 20-25	4,553	388	0	--	1,019	2
Zones 1-3 ^{7,8}	Sept. 17-21	4,542	55,331	0	--	--	--
Zones 4-5 ⁹	Sept. 17-21	3,050	820	0	--	--	--
Zones 4-5 ⁹	Sept. 24-27	1,084	187	0	--	--	--
Zones 1-3 ¹⁰	Sept. 24-28	1,842	25,009	1	--	--	--
Zones 4-5 ⁹	Oct. 1-4	701	123	0	--	--	--
Zones 1-3 ¹¹	Oct. 1-5	812	40,230	1	--	--	--
Zones 1-5 ¹²	Oct. 8-12	852	13,353	6	--	--	--
Zones 1-5 ¹²	Oct. 15-19	867	51,674	24	--	--	--
Zones 1-5 ¹²	Oct. 22-26	351	23,218	91	--	--	--
Zones 2-5 ¹³	Oct. 29-31	67	8,903	3	--	--	--
Subtotal		21,487	219,511	126	--	5,740	338
Youngs Bay ¹⁴	Aug. 6 – Oct. 31	2,040	25,469	1	--	21	3
Tongue Pt./South Ch. ¹⁵	Sept. 4 – Oct. 31	122	2,021	0	--	0	1
Blind & Knappa Sl. ¹⁶	Sept. 4 – Oct. 31	793	3,764	0	--	0	0
Deep River ¹⁶	Sept. 4 – Oct. 31	149	2,407	0	--	0	0
Steamboat Slough ¹⁶	Sept. 4 – Oct. 31	0	26	0	--	0	0
Subtotal		3,104	33,687	1	--	21	4
Buoy 10 Sport ¹⁷	Aug. 1-Dec. 31	12,700	132,000	--	--	--	--
Lower River Sport	Aug. 1-Dec. 31	8,680	3,000	--	12,100	7,278	32
Bonn. Dam to Priest Rapids Dam Sport	Aug. 1-Dec. 31	6,910	1,260	0	NA	--	--
Subtotal		28,290	136,260	0	12,100	7,278	32
Non Indian Total		52,881	389,458	127	12,100	13,039	370
Grand Total		164,536	394,396	127	40,827	13,700	370

- ^{1.} Non-Indian commercial landings, including Select Areas, are based on final post-season Report B landings.
- ^{2.} No minimum mesh restriction. Large Spring Creek sanctuary during first 2 weeks and small Spring Creek sanctuary thereafter. No sturgeon sales allowed.
- ^{3.} Mesh size is 8½ minimum. Bonneville and John Day pools during November 14 -30 and John Day Pool only December 1-7. Only sturgeon sales allowed.
- ^{4.} Mesh size restriction is 9" minimum and 9¾ maximum. Zones 1 -3 upstream to the Longview Bridge. Salmon and sturgeon sales allowed.
- ^{5.} Mesh size restriction is 9" minimum and 9¾ maximum. Zone 1. Only salmon sales allowed.
- ^{6.} Mesh size restriction is 9" minimum and 9¾ maximum. I-205 Bridge upstream to Beacon Rock. Salmon and sturgeon sales allowed through 6 AM August 22 with sturgeon sales prohibited thereafter.

7. *Regulation during September 17-19: mesh size restriction is 6" maximum. Restricted to unslackened floater gillnets. Zones 1-3 downstream of the Longview Bridge. Daylight hours (7 AM-7 PM) only. Only salmon sales allowed.*
8. *Regulation during September 20-21: mesh size restriction is 9 3/4" maximum. Zones 1-3 downstream of the Longview Bridge. Only salmon sales allowed.*
9. *Mesh size restrictions are 8" minimum and 9 3/4" maximum. I-205 Bridge upstream to Beacon Rock. 3 nightly periods (7pm-7am) each week. Only salmon sales allowed.*
10. *Mesh size restriction is 9 3/4" maximum. Zones 1 -3 downstream of the boundary marker located 1 mile below the Kalama River mouth. Only salmon sales allowed.*
11. *Mesh size restriction is 9 3/4" maximum. Zones 1 -4 downstream of the upper end of Bachelor Island. Only salmon sales allowed.*
12. *Mesh size restriction is 9 3/4" maximum. Zones 1 -5. Only salmon sales allowed.*
13. *Mesh size restriction is 6" maximum. Restricted to unslackened floater gill nets. Zones 2-5 upstream from Harrington Point/Settler Point line. Only salmon sales allowed. No sales of chum salmon allowed.*
14. *Mesh size restriction is 8" maximum through August 28 and 6" maximum thereafter. Nets may not exceed 250 fathoms in length. Leadline not to exceed 2 lbs /fathom. Salmon and sturgeon sales allowed through August 28 and sturgeon sales prohibited thereafter. No chum salmon sales allowed during October 28-31.*
15. *Mesh size restriction is 6" maximum. Net lengths may not exceed 250 fathoms in Tongue Point Basin and 100 fathoms in South Channel. Leadline not to exceed 2 lbs /fathom in Tongue Point Basin and no weight restriction on leadline in South Channel. Only salmon sales allowed. No chum salmon sales allowed during October 28-31.*
16. *Mesh size restriction is 6" maximum. Nets may not exceed 100 fathoms in length. No weight restriction on leadline. Only salmon sales allowed. No chum salmon sales allowed during October 28-31.*
17. *Buoy 10 open August 1-December 31. Chinook retention prohibited August 30-September 14.*

Date		Chinook	Steelhead	Coho	Walleye
Aug.	C & S	300	6,400	0	0
Aug. 28-Sep. 1	Ticket	15,640	2,930	475	5
	Other	12,959	2,563	334	6
	Total	28,599	5,493	809	11
Sept. 4-8	Ticket	23,065	3,568	931	1
	Other	15,081	1,833	291	4
	Total	38,146	5,401	1,222	5
Sept. 11-15	Ticket	32,287	6,817	1,839	7
	Other	6,101	1,464	530	0
	Total	38,388	8,281	2,369	7
Sept. 27-29	Ticket	2,086	1,597	484	2
	Other	4,137	1,677	54	0
	Total	6,223	3,274	538	2
Oct-Dec	C & S	65	341	436	0
Totals	Ticket	73,078	14,912	3,729	15
	Other	38,643	14,278	1,645	10
Grand Total		111,721	29,190	5,374	25

1. Ticket catch estimates based on final post-season Report B landings.

	Stock						Total
	LRH	LRW	BPH	URB	MCB ¹	Other ²	
Non-Indian Fisheries ³							
Recreational ⁴	4,845	356	3,159	11,146	7,483	1,590	28,579
Early August Commercial	528	112	673	394	25	161	1,893
Late Aug/Sept Commercial	2,654	985	2,815	6,596	4,186	258	17,494
October Commercial	53	285	88	338	2,812	9	3,585
Select Area Commercial	1,193	0	117	823	0	2,070	4,203
Subtotal	9,273	1,738	6,852	19,297	14,506	4,088	55,754
Treaty Indian Fisheries							
Sales to Licensed Buyers	0	0	33,808	18,520	7,800	110	60,238
C&S and Other non-ticketed catch	0	0	18,528	16,295	8,770	0	43,593
Subtotal	0	0	52,336	34,815	16,570	110	103,831
Total	9,273	1,738	59,188	54,112	31,076	4,198	159,585

¹. Includes lower river bright (LRB) stock.

². Includes Select Area bright (SAB) and out-of-basin stocks.

³. Non-Indian commercial landings, including Select Areas, based on final post-season Report B landings.

⁴. Includes sport catch from mouth to Priest Rapids Dam.

Season	Fall Chinook Catch	Snake R. Wild Fall Chinook		Total Steelhead Catch	Wild Steelhead			
		No.	%		Group A		Group B	
					No.	%	No.	%
Treaty Indian Fisheries	111,721	NA	14.97	29,190	5,509	4.0	1,388	11.4
Non-Indian Fisheries	55,754	NA	5.94	57,400	1,896	1.4	191	1.5
Total	167,475	NA	20.90	86,590	7,405	5.4	1,579	13.0

^{1.} Based on preliminary post-season catch estimates.

Year	Open Area	Spring Creek Sanctuary
1988	All of Zone 6	Small sanctuary Aug 10-27 and Sep 12-24. Large sanctuary Aug 29-Sep 21
1989	"	Small sanctuary Aug 7-26 and Sep 27-29. Large sanctuary Aug 28-Sep 27
1990	All of Zone 6 except closed below Hood River Bridge Sep 10-12	Small sanctuary Aug 8-25 and Sep 24-29. Large sanctuary Aug 27-Sep 22
1991	"	Small sanctuary Aug 12-Sep 10. Reduced to 50' radius Sep 10-Oct 28
1992	All of Zone 6 except Spring Creek Sanctuary Area only open Sep 7-15 and Bonneville Pool closed Sep 17-19	Small sanctuary Aug 10-22. Reduced to 50' radius Sep 2-5. Large sanctuary Sep 23-Oct 12
1993	All of Zone 6 except Bonneville Pool closed Sep 13-18	Small sanctuary August 9-28. Large sanctuary Aug 30-Oct 2.
1994	All of Zone 6	Large sanctuary Aug 29-Sep 10. Reduced to 50' radius Oct 12-15
1995	"	Large sanctuary all season
1996	All of Zone 6 except closed below Hood River Bridge Sep 23-28	Large sanctuary all season
1997	All of Zone 6 except closed below Hood River Bridge Sep 9-13	Large sanctuary Aug 7-Sep 6. Enlarged sanctuary from Light #27 to Light #35, Washington shore to mid-channel, Sep 17-20
1998	All of Zone 6 except closed below Hood River Bridge Sep 8-12	Large sanctuary Sep. 1-12. Enlarged sanctuary from Light #27 to Light #35, Washington shore to mid-channel, September 15-28
1999	All of Zone 6	Small sanctuary all season
2000	"	Large sanctuary all season
2001	"	Large sanctuary Aug 28-Sep 8. Small sanctuary Sep 11-29

Table 19. Number of Adult Chinook, Coho, Steelhead, and Sturgeon Landed During Treaty Indian Fall Seasons (Aug-Nov) Above Bonneville Dam, 1970-2001.

Year	Season ²	Fishing Days ³	Numbers Landed ¹			
			Chinook Adults	Coho	Steelhead ⁴	White Sturgeon ⁵
1970	Aug. 9-Oct. 16	48	34,800	21,300	11,400 (13,200)	200
1971	Aug. 9-Oct. 15	49	50,900	17,100	22,500 (25,700)	600
1972	Aug. 9-Oct. 13	46	39,000	9,600	25,100 (28,800)	500
1973	Aug. 12-Oct. 12	56	57,000	11,400	26,200 (26,800)	400
1974	Aug. 8-Oct. 18	63	51,100	6,900	12,900 (13,200)	400
1975	Aug. 8-Oct 10	54	122,300	6,000	7,000 (7,800)	600
1976	Aug. 8-Oct. 18	60	121,500	4,600	8,800 (11,800)	300
1977	Aug. 25-Sept. 13	19	46,300	1,000	31,300 (36,000)	200
1978	Aug. 25-Oct. 3	27	56,200	4,400	15,800 (19,100)	400
1979	Aug. 25-Sept. 18	18	59,900	4,600	5,900 (8,500)	300
1980	Sept. 2-Sept. 11	5	32,600	300	4,700 (9,600)	200
1981	Sept. 1-Sept. 18	10	48,900	1,800	5,100 (9,400)	100
1982 ⁶	Sept. 1-Nov. 5	14	53,600	4,300	5,100 (8,300)	100
1983	Aug. 31-Oct. 7	15	22,800	200	14,800 (18,300)	200
1984	Aug. 6-Oct. 15	32	50,900	1,600	68,900 (78,200)	700
1985 ⁷	Aug. 23-Sept. 28	29	68,300	5,300	75,600 (91,300)	1,800
1986 ⁸	Aug. 18-Oct. 4	37	102,300	40,300	62,500 (73,200)	4,300
1987 ⁹	Aug. 10-Oct. 15	46	138,600	2,400	65,900 (86,000)	4,400
1988 ¹⁰	Aug. 10-Oct. 1	35	145,700	2,700	59,000 ¹³ (81,800)	2,000
1989 ¹¹	Aug. 7-Sept. 29	36	128,200	8,700	51,400 (65,800)	--
1990 ¹²	Aug. 8-Sept. 29	34	79,300	2,900	29,000 (36,800)	1,700
1991 ¹³	Aug. 12-Oct. 28	20	51,100	12,800	34,900 (46,700)	--
1992	Aug. 10-Oct. 17	32	28,100	1,000	47,900 (59,500)	100
1993	Aug. 9-Oct. 2	26	30,400	1,000	25,300 (33,300)	100
1994 ¹⁴	Aug. 29-Oct. 15	10	33,700	1,300	15,500 (18,800)	500
1995	Aug. 29-Sept. 15	9	41,400	400	20,400 (22,800)	400
1996	Sept. 2-Sept. 28	17	63,200	700	18,600 (23,200)	300
1997	Aug. 27-Sept. 20	16	65,000	600	22,700 (27,800)	<100
1998	Aug. 25-Sept. 25	22	44,700	1,500	12,600 (16,900)	<100
1999	Aug. 31-Oct. 2	22	77,200	2,300	17,350 (20,600)	0
2000	Aug. 30-Sept. 23	17	52,100	6,300	15,500	0
2001¹⁵	Aug. 28-Sept. 29	18	111,700	5,400	29,200	700

1. Includes Spring Creek terminal area fishing since 1975 (1977-83 & 92), sales to the general public and C&S catches beginning in 1994, Klickitat R. dipnet catches during open mainstem seasons, and extended Klickitat River commercial seasons beginning in 1988.

2. Minimum mesh size: 1970-1974 none; 1975 7-1/2"; 1976-1982 8"; 1983 none; 1984 none, except 8" Oct 9-15; 1985 none, except 8" Sep 14-28; 1986 none, except 8" Sep 6-Oct 4; 1987 none; 1988 none, except 8" Aug 17-27 and Sep 18-24 and 8" and 9" test fishery Sep 28-Oct 1; 1989 8" except none Aug 7-12; 1990 8" except none Sep 3-5, Sep 12-15 below Hood River Br., Sep 17-22, and Sep 24-29; 1991-97 none; 1998 8"; 1999 none except 8" Sep 15-18 and Sep 29-Oct 2; 2000 and 2001 none.

3. Mainstem commercial seasons only.

4. *Steelhead run year totals are in parentheses. Sales to licensed buyers during sockeye and fall seasons only through 1984. Sales to licensed buyers, general public and C&S catch, including winter season catches of holdover and fresh run summer steelhead, for calendar year from 1985-present.*
5. *No sturgeon sales allowed in set net fisheries since 1991. Includes landings in set-line fisheries.*
6. *Includes Nov 1-5 coho fishery below Klickitat River.*
7. *Spring Creek sanctuary area open to fishing Aug 23-28 and Aug 29-Sep 3.*
8. *Includes Sep 29-Oct 4 dipnet and experimental gillnet fishery. An additional catch of 1,000 chinook occurred above Priest Rapids Dam. Over half of the coho catch (24,100) occurred in the Klickitat River dipnet fishery.*
9. *An additional catch of 2,200 chinook occurred above Priest Rapids Dam.*
10. *Includes Sep 28-Oct 1 test fishery in John Day Pool. No sturgeon sales allowed after Sep 3. An additional catch of 2,300 chinook and an estimated 300 steelhead occurred above Priest Rapids Dam. Includes 5,500 coho captured in an extended Klickitat River dipnet season.*
11. *No sturgeon sales allowed. An additional catch of 800 chinook occurred above Priest Rapids Dam. Includes 6,100 coho captured in an extended Klickitat River dipnet season.*
12. *An additional 200 chinook catch occurred above Priest Rapids Dam. Includes 1,900 coho captured in an extended Klickitat River dipnet season.*
13. *Includes 5,500 coho captured in an extended Klickitat River dipnet season.*
14. *An additional catch of 570 chinook and 70 steelhead occurred above Priest Rapids Dam. An additional catch of 220 chinook and 80 steelhead occurred above McNary Dam.*
15. *Target sturgeon set gillnet seasons adopted for Zone 61 (Bonneville Pool) during November 14-30 and Zone 63 (John Day Pool) during November 14-December 7.*

Table 20. Wild Steelhead Catch in Treaty Indian Fisheries, 1985-2001.

Year	Group A Index		Group B Index	
	Number	% of wild run ¹	Number ²	% of wild run ¹
1985	10,800	20.7	4,000	31.0
1986	7,800	13.8	2,700	26.7
1987	16,800	15.7	5,200	37.2
1988	11,000	17.1	4,200	23.4
1989	9,000	15.9	4,300	35.0
1990	4,300	16.0	1,900	21.5
1991	8,800	14.6	1,900	30.0
1992	7,200	16.2	3,300	26.3
1993	4,400	15.2	800	19.1
1994	2,200	10.3	1,000	18.6
1995	2,700	10.4	300	18.6
1996	2,300	8.9	1,400	34.8
1997	3,200	10.4	600	14.3
1998	3,100	8.8	500	15.6
1999	4,300	7.6	500	12.6
2000	2,300	3.7	1,000	11.4
2001	5,500	4.0	1,400	11.4

^{1.} Percentage calculated before rounding. Steelhead impacts based on date method through 1998 and fork length index method thereafter.

^{2.} Includes sales to licensed buyers only prior to 1994. Includes sales to the general public and C&S catch beginning in 1994.

Table 21. Sturgeon Catches in Zone 6 Reservoirs above Bonneville Dam, 1991-2001.

	Non-Indian Sport				Treaty Indian Commercial				Sub- sistence
	Bonne- ville	The Dalles	John Day	Total	Bonne- ville	The Dalles	John Day	Total	
1991	2,270	200	150	2,620	1,000	460	40	1,500	NA
1992	1,720	140	150	2,010	1,150	430	20	1,600	210
1993	2,310	160	140	2,610	1,420	580	10	2,010	260
1994	2,220	155	235	2,610	1,175	310	115	1,600	650
1995	1,370	50	90	1,510	1,420	310	310	2,040	1,150
1996	1,360	90	80	1,530	1,000	230	360	1,590	480
1997	1,470	180	480	2,130	1,852	498	1,260	3,610	236
1998	1,625	857	599	3,081	1,462	1,108	1,100	3,670	240
1999	1,236	694	422	2,352	1,280	1,051	760	3,091	244
2000	1,262	809	437	2,508	1,145	1,456	846	3,447	324
2001	1,422	677	300	2,399	1,019	1,258	684	2,961	476

Table 22. Time, Area, and Gear Restrictions in Effect for Non-Indian Mainstem Fisheries Occurring During the Early Fall Fishing Seasons, 1980-2001.

Year	Date(s)	Hours	Area	Mesh Size
1980	Sept 2-3	6pm-6pm	Zone 1	None
1982	Aug 30-31	6pm-6am	Zone 1	8" minimum
1983	Sept 1-2	"	Zone 1	None
1986	July 30 - Aug 1	6pm-6am nightly	Zone 1	9" minimum
	Aug 4-6	"	Zone 1	9" minimum
1987	Aug 9-12	"	Zones 1 and 2	8" minimum
1988	Aug 14-15	6pm-5am	Zone 1 below Astoria-Megler Bridge	8" minimum
	"	6pm-noon	Zones 1-5 above Astoria-Megler Bridge	8" minimum below Longview Bridge and 9" minimum above
1989	Aug 7-11	6pm-6am	Zones 1-5	"
	Aug 13-14	"	Zones 3-5	"
	Aug 14-15	"	Zones 2-5 above Wauna powerlines	"
	Aug, 25, 27-29	6pm-6am nightly	Area 2S	9" minimum
1990	Aug 12-17, Aug 19-24	"	Extended Area 2S above I-205 Bridge	"
1991	Aug 25-29	"	"	"
1992	Sep 8-9	6pm-6am	Zone 1	None
1996	Aug 26-29	8pm-6am nightly	Area 2S	9" minimum
1997	Aug 4-5, Aug 24-25	9pm-3am, 8pm-6am	Zone 1, Area 2S	"
1998	Aug 4-5	5pm-5am	Zones 1-3	"
	Aug 25-26	8am-6am	Area 2S	"
1999	Aug 4-5	7pm-7am	Zones 1-3 below Longview Bridge	"
	Aug 23-24	8pm-6am	Area 2S	"
2000	Aug 3-4	7pm-7am	Zones 1-3 below Longview Bridge	"
2001	Aug 4-5	7pm-7am	Zones 1-3 below Longview Bridge	"
	Aug 8-9	10am-6pm	Zone 1	"
	Aug 20-25	8pm-6am nightly	Extended Area 2S above I-205 Bridge	"

Table 23. Number of Adult Chinook, Chum, Coho, Steelhead, and Sturgeon Landed During Early Fall Mainstem Columbia River Seasons Below Bonneville Dam, 1970-2001.

Year	Season ¹	Fishing Days	Chinook Adults	Coho	Steelhead ²	Sturgeon	
						White	Green
1970	August 9-26	13	142,100	66,600	6,200	2,000	1,000
1971	August 8-25	13	91,900	31,900	9,600	2,900	1,000
1972	August 9-25	12	94,400	18,800	3,800	2,700	900
1973	August 12-24	10	101,200	10,900	6,800	1,800	1,000
1974	August 11-23	10	51,700	20,100	2,600	3,900	2,700
1975	August 10-22	10	92,100	6,600	--	4,900	1,000
1976	August 8-18	7	31,700	2,500	--	8,300	1,400
1977	August 14-23	7	67,000	4,400	--	4,300	600
1978	August 15-21	4	38,900	1,300	--	2,700	1,600
1979	August 14-16	2	28,100	1,800	--	2,300	700
1980	September 2-3	1	58,400	7,000	--	1,700	600
1981	None	0	--	--	--	--	--
1982	August 30-31	0.5	79,200	5,800	--	500	300
1983	September 1-2	0.5	15,400	200	--	1,200	600
1984	None	0	--	--	--	--	--
1985	None	0	--	--	--	--	--
1986	July 30-August 6	4	800	0	--	5,400	5,100
1987	August 9-12	3	11,500	100	--	3,900	3,200
1988	August 14-15	0.5	51,100	300	--	1,700	2,300
1989	August 7-29	13	29,800	100	--	1,800	0
1990	August 12-24	10	6,700	20	--	1,500	0
1991	August 25-29	4	5,400	10	--	500	0
1992	September 8-9	0.5	2,200	400	--	800	1,800
1993	None	0	--	--	--	--	--
1994	None	0	--	--	--	--	--
1995	None	0	--	--	--	--	--
1996	August 26-29	3	4,400	0	--	300	0
1997	August 4 - 25	2	1,300	1	--	2,000	1,500
1998	August 4 - 26	2	1,800	0	--	2,600	700
1999	August 4 - 24	2	1,400	0	--	2,900	500
2000	August 3-23	3	7,400	200	--	2,800	600
2001	August 5-25	7	6,600	660	--	5,700	340

^{1.} Minimum mesh size: 1970-1974 7-1/4"; 1975-1979 8"; 1980-2000 see Table 21.

^{2.} Sale of steelhead by non-Indians prohibited since 1975. Annual handling and mortality limited by time, area, and gear regulations.

Table 24. Closed Fishing Areas During Late Fall Mainstem Non-Indian Fishing Seasons, 1999-2001.

Year	Date(s)	Closed Area
1999	Sept 20-Oct 7	Longview Bridge-Beacon Rock
	Oct 11-22	Longview Bridge-Upper Bachelor Island
	Oct 27-28	Buoy 10 - Harrington Point/Settler Point Line
2000	Sep 19-20	Longview Bridge-Lower Bachelor Island
	Sep 18, Sep 25-Oct 5	Longview Bridge-Beacon Rock
	Oct 9-20	Longview Bridge-Lower Bachelor Island
	Oct 23-27	Upper Cottonwood Island-Lower Bachelor Island
	Oct 30	Buoy 10-Settler Point/Harrington Point line and upper Cottonwood Island-lower Bachelor Island
2001	Sep 17-21	Longview Bridge-I-205 Bridge
	Sep 24-28	Kalama River-I-205 Bridge
	Oct 1-5	Upper Bachelor Island-I-205 Bridge
	Oct 29-31	Buoy 10-Settler Point/Harrington Point line

Table 25. Number of Adult Chinook, Coho, Steelhead, and Sturgeon Landed during Late Fall Mainstem Columbia River and Select Area Seasons (mid-Sep to mid-Nov) below Bonneville Dam, 1970-2001.

Year	Mainstem Season ¹	Mainstem Fishing Days	Chinook		Coho			Sturgeon ⁵		
			Columbia Mainstem	Select Area ²	Columbia Mainstem	Select Area ²	Chum ³	Steelhead ⁴	White	Green
1970	Sep 10-Nov 5	35	93,900	700	432,500	21,700	600	6,200	1,300	100
1971	Sep 12-Nov 3	34	119,600	100	224,400	8,000	500	6,300	1,800	200
1972	Sep 20-Nov 3	27	39,400	900	103,100	9,300	1,300	9,200	1,600	100
1973	Sep 12-Nov 2	32	158,400	300	166,000	6,800	1,400	13,000	2,400	200
1974	Sep 17-Nov 1	29	43,300	100	231,800	9,100	900	1,200	4,800	400
1975	Sep 10-Nov 7	39	72,700	< 100	148,000	2,100	500	--	5,300	300
1976	Sep 7-Nov 12	47	105,400	300	160,700	5,200	1,200	--	8,100	1,200
1977	Sep 8-Oct 27	23	90,400	1,700	33,100	1,600	200	--	2,300	200
1978	Sep 10-Nov 15	37	64,900	500	128,000	3,400	1,500	--	3,900	100
1979	Sep 11-Nov 7	30	65,300	1,600	103,200	22,500	100	--	13,500	500
1980	Sep 28-Oct 16	12	14,600	40,000	114,200	28,900	200	--	3,100	50
1981	Sep 27-Nov 12	25	5,200	24,900	47,400	12,400	1,400	--	6,700	100
1982	Oct 3-Nov 12	27	4,500	6,000	181,600	14,300	1,800	--	4,600	400
1983 ⁶	Oct 4-Oct 13	4	4,800	4,700	3,600	3,600	200	--	4,500	100
1984	Sep 10-Nov 16	35	60,300	3,600	160,900	40,600	1,800	--	9,800	2,700
1985	Sep 16-Nov 15	39	56,400	3,600	138,800	51,200	700	--	4,900	1,500
1986	Sep 12-Nov 14	43	153,000	4,600	925,400	55,600	1,800	--	4,100	800
1987	Sep 13-Nov 12	35	280,900	36,900	150,900	16,900	1,300	--	4,100	1,600
1988	Sep 12-Nov 11	41	242,200	28,800	311,100	51,400	2,500	--	3,100	1,000
1989	Sep 17-Nov 15	36	95,700	6,600	360,700	28,100	1,300	--	2,700	1,700
1990	Sep 18-Oct 31	26	35,300	3,100	47,400	27,600	800	--	3,100	2,200
1991 ⁷	Sep 10-Nov 5	32	33,500	2,100	324,400	82,100	400	--	2,400	3,200
1992	Sep 22-Oct 30	22	14,100	1,500	37,900	19,600	700	--	4,200	400
1993	Sep 20-Oct 20	17	16,700	300	20,600	15,500	40	--	7,100	2,200
1994	Oct 9-Oct 19	4	1,500	100	6,000	57,800	20	--	3,400	200
1995	Oct 9 & Oct 12	2	50	500	200	22,300	0	--	6,000	400
1996 ⁸	Sep 16-Oct 25	17	7,600	5,000	5,600	22,400	20	--	7,200	600
1997 ⁹	Sep 24-Nov 7	23	3,800	4,000	3,800	17,100	39	--	7,800	100
1998 ¹⁰	Oct 7-Nov 6	7	1,000	2,100	300	23,600	11	--	10,900	900
1999 ¹¹	Sep 20-Nov 4	23	4,600	2,100	57,600	23,000	101	--	4,100	300
2000 ¹²	Sep 18-Nov 1	21	3,440	2,300	110,400	58,300	26	--	4,600	600
2001 ¹³	Sep 17-Oct 31	33	14,900	3,100	218,800	33,700	126	--	0	0

1. Mesh restriction of 7" or less and 9" or greater, 1980-1982.
2. Number of Oregon and Washington terminal areas and fishing days vary from year to year, and some early fall fisheries are included. Between 1983 and 1995 only Oregon terminal fisheries occurred. Prior to 1979, landings listed for Youngs Bay are minimal as Youngs Bay salmon could be sold outside of the bay during concurrent mainstem fishing periods.
3. Includes 1970-present Youngs Bay Select Area, 1980-1982 Washington terminal, and 1996-present Big Creek, Tongue Point, Blind Slough, and Deep River Select Area, and 2000-present Steamboat Slough Select Area landings.
4. Sale of steelhead by non-Indians prohibited since 1975. Handling and mortality limited by time, area, and gear regulations.
5. Includes landings from Select Area fall fisheries beginning Sep 24 for 1997.
6. Dates reflect coho season only. Six days of large-mesh sturgeon fishing occurred Oct 18-Nov 3 with sale of chinook allowed.
7. Sep 10 and 17 daylight only coho target fishery. Late fall season opened on Sep 22.
8. Sep 16-20 extended 2S night time fishery. Sep 30-Oct 25 all of Zones 1 -5.
9. Sep 24-Oct 3 Zone 1 -Longview Bridge 6" max. mesh and I-5 Bridge to Zone 5 9" min. mesh; Oct 6 -Nov 7 Zones 1 -5, 8" min. mesh after Oct 26.
10. Oct. 7 -Nov 4 Zones 1 -5, 9" min. mesh.
11. Sep 20 - Oct 28, target coho fisheries with 6" max. mesh; Oct 11, 18, 25, and 27, salmon/sturgeon fisheries with 9 3/4" max.; Oct 5 -7 salmon fishery with 8" min mesh; Nov. 4 daylight target sturgeon fishery with 9" min and 9 3/4" max mesh.
12. Sept. 18-Oct. 30 target coho fisheries w/6" max mesh size; Sept. 19-20 target salmon/sturgeon fishery w/8" min. and 9 3/4" max. mesh restrictions; Oct. 9, 16, and 23 sturgeon/salmon fisheries with 6" max. or 9" min. to 9 3/4" max. mesh; Nov. 1 daylight sturgeon fishery with 9" min. and 9 3/4" max. mesh size.
13. Sept. 17-19 target coho fishery w/6" max mesh size; Sept. 17-Oct. 4 salmon fishery w/8" min and 9 3/4" max mesh size; Sept. 20-Oct. 5 salmon fisheries w/9 3/4" max mesh size; Oct. 8-26 salmon fishery w/9 3/4" max mesh size; Oct. 29-31 target coho w/6" max. mesh.

Table 26. Lower Columbia River White and Green Sturgeon Catches, 1991-2001.

Year	White Sturgeon					Green Sturgeon				
	Sport	Commercial ¹				Sport	Commercial ¹			
		Winter	Early Fall	Late Fall	Total		Winter	Early Fall	Late Fall	Total
1991	22,700	840	530	2,430	3,800	20	4	2	3,180	3,186
1992	40,100	1,210	790	4,240	6,240	75	10	1,750	400	2,160
1993	37,900	1,020	--	7,050	8,070	15	1	--	2,220	2,221
1994	33,500	3,030	--	3,380	6,410	130	1	--	240	241
1995	45,100	110	--	6,040	6,150	20	--	--	390	390
1996	42,800	1,380	330	6,670	8,380	65	1	--	610	610
1997	38,200	3,064	1,971	7,792	12,827	41	2	1,474	138	1,614
1998	41,600	2,675	2,634	8,585	13,894	73	0	743	151	894
1999	39,800	2,303	2,854	4,336	9,493	93	2	508	279	789
2000	40,500	2,795	2,790	4,560	10,145	32	0	568	636	1,204
2001	41,200	3,547	5,719	21	9,287	50	4	336	0	340

^{1.} Includes Youngs Bay and other Select Area fisheries landings.

