2012 JOINT STAFF REPORT CONCERNING STOCK STATUS AND FISHERIES FOR STURGEON AND SMELT

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

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INTRODUCTION

This report describes sturgeon and smelt fisheries in the mainstem Columbia River and includes summaries of stock status, current management plans and guidelines, and past management actions and strategies. This report is part of an annual series produced by the Joint Columbia River Management Staff of the Oregon Department of Fish & Wildlife (ODFW) and Washington Department of Fish & Wildlife (WDFW). Members of the *U.S. v Oregon* Technical Advisory Committee (TAC) have reviewed this report.

THE COMPACT

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

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

SEASONS CONSIDERED

A three-year Joint State Management Agreement for white sturgeon was adopted for 2011-2013 (2011 Accord). Based on recent guidance from the Commissions and agency Directors, the 2011 Accord is currently being revised to reflect policy guidance for 2012 white sturgeon fisheries and management. This amended Accord will specify how annual harvest levels for white sturgeon downstream of Bonneville Dam will be established for 2012, as well as identifying overall fisheries objectives. The states will consider 2012 white sturgeon fishing seasons at a Compact and Joint State Hearing on January 26, 2012.

As a result of the recent ESA listing of eulachon (Columbia River smelt) the states have closed all eulachon-directed fisheries in the Columbia River.

ENDANGERED SPECIES ACT (ESA)

Salmon and Steelhead

Status reviews occurring since 1991 have resulted in the majority of Columbia Basin salmon and steelhead stocks being listed under the ESA as shown in the table below. The *U.S. v Oregon* TAC has prepared Biological Assessments (BAs) for combined fisheries based on relevant *U.S. v Oregon* management plans and agreements since 1992.

Federally-listed Species Found in Columbia River Fishery Management Areas			
Species – *ESU/DPS*	Current Designation	Listing Date	Effective Date
Chinook			
Snake River Fall	Threatened	April 22, 1992	May 22, 1992
Snake River Spring/Summer	Threatened	April 22, 1992	May 22, 1992
Upper Columbia Spring	Endangered	March 24, 1999	May 24, 1999
Upper Columbia Summer/Fall	Not warranted	--	--
Middle Columbia Spring	Not warranted	--	--
Lower Columbia River Spring/Fall	Threatened	March 24, 1999	May 24, 1999
Upper Willamette Spring	Threatened	March 24, 1999	May 24, 1999
Deschutes River Summer/Fall	Not warranted	--	--
Steelhead			
Snake River Basin	Threatened	August 18, 1997	October 17, 1997
Upper Columbia River[1]	Threatened	August 18, 1997	October 17, 1997
Lower Columbia River	Threatened	March 19, 1998	May 18, 1998
Middle Columbia River	Threatened	March 25, 1999	May 24, 1999
Southwest Washington	Not warranted	--	--
Upper Willamette	Threatened	March 25, 1999	May 24, 1999
Sockeye			
Snake River	Endangered	November 20, 1991	Dec. 20, 1991
Okanogan River	Not warranted	--	--
Lake Wenatchee	Not warranted	--	--
Chum – Columbia River	Threatened	March 25, 1999	May 24, 1999
Coho – Columbia River	Threatened	June 28, 2005	August 26, 2005
Green Sturgeon- Southern DPS	Threatened	April 7, 2006	July 7, 2006
Eulachon - Southern DPS	Threatened	March 18, 2010	May 17, 2010

1. *Status downgraded to threaten per U.S. District Court order in June 2009.*

The current BA concerns Columbia River treaty Indian and non-Indian fisheries, as described in the *"2008-2017 U.S. v Oregon Management Agreement for upriver Chinook, sockeye, steelhead, coho, and white sturgeon*" (2008-2017 MA). The BA was submitted during the spring of 2008, and a Biological Opinion (BO) was subsequently issued by NMFS later that year. The current BO expires December 31, 2017, concurrent with the 2008-2017 MA. Impacts to listed salmonid species from fisheries described in this report are expected to be *de minimus*.

Eulachon Smelt

In March 2010, the National Marine Fisheries Service (NMFS) published a rule (75 FR 13012) to list as threatened under the ESA the southern distinct population segment (DPS) of Pacific eulachon, which became effective May 17, 2010. This DPS encompasses all populations within the states of Washington, Oregon, and California and extends from the Skeena River in British Columbia (inclusive) south to the Mad River in Northern California (inclusive). As a result of this listing, the *U.S. v Oregon* TAC submitted to NMFS an addendum to the current BA, which covered Columbia River fisheries through 2017. This addendum addressed the incidental take of ESA-listed eulachon in Columbia River fisheries.

Green Sturgeon

In April 2006, the NMFS published a rule (71 FR 17757) to list the Southern DPS of the North American green sturgeon (those spawning in the Sacramento River, California) as threatened on April 7, 2006, which became effective July 6, 2006. Effective November 9, 2009, the Columbia River below River Mile 46 was designated as critical habitat of the Southern DPS (74 FR 52300). The BO covering non-Indian fisheries described in the "2008-2017 *U.S. v Oregon* Management Agreement" also addresses impacts to green sturgeon. Given that (1) the sale of green sturgeon from Columbia River commercial fisheries was prohibited effective July 6, 2006, and (2) the retention of green sturgeon in Columbia River recreational fisheries was prohibited effective January 1, 2007, impacts to green sturgeon from fisheries described in this report are expected to be *de minimus*.

Marbled Murrelet

The threatened status of the marbled murrelet has not changed since initially listed October 1, 1992. On June 12, 2009, the United States Fish and Wildlife Service concluded a five year review of the status of the marbled murrelet and determined that no change in the bird's threatened status was warranted. Fisheries described in this report are not likely to adversely affect this species.

STURGEON MANAGEMENT AND FISHERIES DOWNSTREAM FROM BONNEVILLE DAM

Stock Status

Sturgeon abundance in the lower Columbia River collapsed at the end of the 19th century due to overfishing and remained depressed through the first half of the 20th century. The population began to rebound only after the adoption of management actions aimed at reducing overall harvest and protecting broodstock, particularly the 6-foot maximum size limit regulation enacted in 1950. White sturgeon abundance subsequently increased significantly through the 1990's and supported robust recreational and commercial fisheries. Abundance of sub-adult fish began declining in the mid 2000s, prompting changes in harvest quotas and retention seasons.

Joint state tagging and recovery programs were initiated in 1986 to provide data necessary to estimate the annual abundance of white sturgeon inhabiting the lower Columbia River. Abundance estimates, based on tagging conducted in one year and mark sampling extending into the following year, have been produced since 1987 with the exception of 1994 and 2004 (the estimates are referred to by the year of tagging, although final estimates require recoveries through the following year). Abundance estimates for harvestable size fish [42-60 inches total length (TL) or 38-54 inches fork length (FL)] were generally low during 1988-1992 averaging 55,600 but improved significantly during 1993-1997 when average legal abundance was 169,200 fish. The estimates from 1998 through 2007 were lower (131,400 average) but more stable, ranging between 121,600-140,700 fish (Table 1). The most recent estimates declined steeply, from 131,700 fish in 2007 to an estimate of 66,400 fish in 2010. ODFW initiated an additional survey in 2010 using research setlines during July-August to recover white sturgeon tagged in May and June. This "in-year" approach produced an estimate of 87,000 fish in 2010 and a preliminary estimate of 80,500 for 2011.

Reduced recruitment to the lower end of the legal slot has driven the decline, with abundance of 42-48 inch TL white sturgeon averaging 126,900 fish for 1996-2000, 95,200 fish for 2001-2007, and 59,000 fish for 2008-2010. Conversely, the number of fish between 48 and 60 inches TL increased from an average of 24,000 fish for 1996-2000 to 33,000 fish for 2001-2009. The number of fish in this size class declined in 2010 to a preliminary estimate of 24,300 fish.

An alternative indicator of legal-size abundance, harvest per angler trip in recreational fisheries, remained relatively stable from 1995 through 2007, but declined 24% in 2008 from the previous 13-year average. The decline continued in 2009 and 2010, but at a more modest 10% per year. Harvest per angler trip increased in 2011. Catch per angler trip (CPUE) of sublegal (<42 inches TL) white sturgeon has decreased annually since 2004, following eight years of mostly steady increases. By 2008, CPUE of sublegal-size fish had dropped to half of the 1996-2006 average. This declining trend slowed in 2009, decreasing by 5.2% that year and has since remained stable through 2011.

A new and growing threat to the white sturgeon population has been losses from predation by sea lions, especially losses of broodstock-size fish to Steller sea lions. Observers for the U.S. Army Corps of Engineers (USACE) have reported a steady annual increase in the number of individual Steller sea lions at Bonneville Dam, from zero animals in 2002 to 89 unique animals in 2011.

Predation of broodstock-size fish observed by WDFW and ODFW employees in the vicinity of Beacon Rock peaked during December 2005 through March 2006, with over 50 kills reported. Activity then declined following initiation of a hazing program in March 2006 that successfully moved the Steller sea lions out of the area by early April. Hazing was initiated again in February 2007 and from December 2007 through May 2008 and from February through May in 2009 and 2010; however, these efforts grew steadily less effective each year. Crews were often able to distract individuals from feeding, but were not successful in driving them out of the area (the Columbia River gorge). In 2011, WDFW and ODFW staff expanded the area of observation from Tanner Creek (where USACE observations cease) downstream to Rooster Rock State Park, to document rates of predation in this area. Results of this work combined with USACE observations indicate significant predation of white sturgeon occurs throughout at least the initial 16-mile stretch downstream of Bonneville Dam.

The USACE observer program at Bonneville Dam has documented a steady increase in total predation of all sizes of white sturgeon. Estimated consumption of white sturgeon in this small area increased from an observed take of just one white sturgeon in 2005 to 3,003 fish in 2011. Even though California sea lions are also present in high numbers, most of the observed take is by Steller sea lions, with very few incidences of sturgeon predation attributed to California sea lions. Predation on smaller white sturgeon throughout the river by both Steller and California sea lions also appears to be increasing in frequency based on observations by staff and reports from anglers and commercial fishers. Loss of juvenile fish to predation may be impacting sublegal abundance and recruitment to fisheries. Loss of broodstock fish is contributing to lower population productivity and eventual reduced recruitment to fisheries.

In 2011, ODFW completed the Oregon Lower Columbia River and Oregon Coast White Sturgeon Conservation Plan (WCP) for the lower Columbia River. WDFW staff was integrally involved in development of the WCP with the expectation that the completed plan will be endorsed by WDFW. The Oregon WCP examined factors and threats that are limiting the abundance and productivity of lower Columbia River white sturgeon, and identified critical unknowns and data gaps pursuant to these factors and threats. Population goals and objectives were proposed and strategies and actions will be developed to address the limiting factors and threats. The WCP was adopted by the OFWC in its entirety in August of 2011.

Fishery Management Actions

Sturgeon fishery management focused on the commercial fishery during the early 1900's and expanded to encompass recreational fisheries beginning in 1940. Regulations for recreational and commercial fisheries became increasingly restrictive and complex as the popularity and importance of sturgeon as a target species increased for both fisheries.

Past Management Actions

Sturgeon management actions were initiated in 1899 with the adoption of a 4-foot minimum size limit for commercially-landed sturgeon. During 1899-1908, commercial sale of sturgeon was prohibited and beginning in 1909, commercial sturgeon sales were allowed during salmon seasons only. Between 1940 and 1989, fishery management actions primarily consisted of

modifying catch limits for the recreational fishery and legal size restrictions for recreational and commercial fisheries. Most significant was the adoption of a 6-foot maximum size limit regulation in 1950. The purpose of the maximum size limit restriction was to protect broodstock and aid rebuilding of the Columbia River white sturgeon population. Additionally, commercial sturgeon setline seasons in place during 1975-1983 were discontinued.

Since 1989, lower Columbia River white sturgeon fisheries have been managed for optimum sustained yield (OSY). This management strategy is intended to optimize harvest while allowing for the continued rebuilding of the white sturgeon population. Significant management actions taken during 1985-1996 to restrict catches to sustainable levels included (1) increasing the minimum size limit in recreational fisheries, (2) reducing the maximum size limit in all fisheries, (3) reducing daily and annual catch limits for recreational fisheries, and (4) adopting annual catch guidelines for commercial fisheries.

In 1985, recreational regulations allowed for a daily catch limit of three fish between 36 and 72 inches total length with no annual catch limit. Recreational catch dropped from a peak of 62,400 fish in 1987 to a low of 17,300 fish in 1990, primarily due to angling regulation changes. During the same period, commercial catch also dropped from a peak of 11,600 fish in 1986 to a low of 3,800 fish in 1991, due to reductions in fishing opportunities. The maximum size limit for all white sturgeon fisheries was reduced from 72 inches to 66 inches TL in 1993. In 1996, recreational regulations were further restricted with a daily catch limit of one fish between 42 inches TL (equivalent to current 38 inch FL) and 66 inches TL and a ten fish annual catch limit. The maximum size limit for both fisheries was reduced from 66 inches TL to 60 inches TL (equivalent to current 54 inch FL) in 1997. Tables 6 and 8 summarize annual Columbia River regulations.

These regulation changes culminated in adoption of WFWC policy C-3001 on Lower Columbia Sturgeon Management and in a series of one to three year Joint State Management Agreements (Accords) between Washington and Oregon that have guided Columbia River sturgeon management since 1997.

Past Joint State White Sturgeon Management Agreements

The Accords have contained a variety of fishery regulations including (1) size limits for recreational and commercial fisheries, (2) daily and annual catch limits for recreational anglers (3) gear restrictions for recreational and commercial fisheries, and (4) the allowance of target sturgeon seasons in the commercial fishery. One aspect of most agreements through 2009 was the adoption of a three-year average harvestable number of sturgeon developed to reduce the risk of fishery impacts exceeding what is deemed sustainable. The harvestable number has been allocated 80% for recreational fisheries and 20% for commercial fisheries since implementation of the first Accord in 1997.

The tenets of the Accords also allowed for modifications if new information suggested that a change was warranted. Since adoption of the first sturgeon Accord, additional management actions have been necessary. Abundance did not increase as expected during the first two years of the first Accord, and based on this new information, the annual harvestable number was reduced from 67,300 to 50,000 fish for 1999 fisheries.

In 1996 the agencies adopted a no-angling sanctuary just downstream from Bonneville Dam to protect spawning white sturgeon. A boat-based catch-and-release fishery targeting sturgeon that were over the legal-size limit (oversize) had been intensifying in this area since 1990. Angling for sturgeon from boats was prohibited during May and June within this sanctuary, which extended 4.5 miles downstream to Beacon Rock. In 2000, this closure was extended through mid-July to provide additional protection to the broodstock population.

In December 2002, the WFWC and OFWC (Commissions) established sturgeon management protocol to help guide the development of recreational and commercial fisheries during 2003-2005. Due to the declining trend in abundance, the Commissions adopted a reduction in the annual harvestable number from 50,000 fish to 40,000 fish per year for 2003-2005. This reduction generated a conflict in season-shaping preferences among competing recreational interests for the areas downstream (estuary) and upstream (non-estuary) of the Wauna powerline crossing at river mile (RM) 40. After much debate, the Commissions allotted 60% of the recreational share to the estuary fishery and 40% to the non-estuary fishery.

Beginning in 2003, sturgeon management protocol for commercial fisheries included both mainstem and Select Area commercial fisheries. By 2004, work with the Columbia River Recreational Fisheries Advisory Group (CRRAG) had established that fishery goals tended to differ for those who participated in the estuary fishery compared to those who participated in the non-estuary fishery. For the area above the Wauna powerlines, anglers preferred retention opportunity throughout as much of the year as possible, especially during the spring and fall timeframes. A days-per-week approach was adopted to achieve this, with retention allowed on Thursdays, Fridays, and Saturdays, and catch–and-release allowed on non-retention days. Retention was prohibited during August and September to ensure that the annual harvest guideline lasted through the fall timeframe. For the estuary fishery, anglers preferred retention opportunity seven days per week, and a retention season that lasted at least through July 4. To achieve this, beginning in 2004, the minimum size limit for this area increases in May each year to 45 inches TL (41 inch FL equivalent since 2009) to slow catch rates in the estuary and prolong the retention season. This modification required the annual guideline for the estuary be reduced by 17% (from 19,200 fish to 16,000 fish) to maintain a comparable overall harvest rate. These basic season structures have continued in subsequent Accords.

Other changes to recreational fishery regulations enacted during 2004-2005 included reducing the annual limit from ten fish to five fish, requiring anglers to use one single-point barbless hook, and adoption of additional measures designed to protect broodstock white sturgeon. The duration of the fishing prohibition within the spawning sanctuary was extended through July, and the bank fishery was incorporated into the closure. Washington adopted a regulation extending the sanctuary boundary an additional 1.6 miles further downstream to U.S Coast Guard (USCG) Navigation Marker 85. Oregon did not adopt this change, and Washington rescinded the regulation in order to maintain concurrence with Oregon. Instead, the Joint State Agreement was modified to include a "Best Fishing Practices" program that identified angling practices designed to maximize post-release survival rates in the oversize catch-and-release fishery.

The fourth Joint State Accord covered the three-year period from 2006-2008. The major tenets from the prior accord remained intact, including the 40,000 fish annual harvestable number (36,800 fish actual following adjustments to the estuary guidelines), the 80% recreational and 20% commercial allocation, and the 60% estuary and 40% non-estuary recreational sub-

allocation. The white sturgeon spawning sanctuary was increased by moving the boundary 1.6 miles further downstream to USCG Navigation Marker 85 to provide additional broodstock protection. The agreement also called for basic monitoring of marine mammal predation of white sturgeon.

The maximum size limit for green sturgeon in the commercial fishery was lowered from 66 inches TL to 60 inches TL for 2006-2008 to provide additional protection to the species. However, when green sturgeon were ESA-listed as threatened (effective July 6, 2006) the states subsequently prohibited sales (and therefore retention) of green sturgeon from Columbia River commercial fisheries effective July 6, 2006 and retention of green sturgeon in Columbia River recreational fisheries effective January 1, 2007.

The 2006-2008 Joint State Accord for Columbia River sturgeon management was renewed for 2009 to allow for development of the Oregon WCP and refine a strategy for long-term lower Columbia River white sturgeon management. Also in 2009, Oregon and Washington converted from a total length to a fork length measurement standard in all fisheries. The conversions for slot measurements were as follows: 42-inch TL = 38-inch FL; 45-inch TL = 41-inch FL; 48-inch TL = 43-inch FL; 60-inch TL = 54-inch FL.

Due in part to the quickly changing status of the population, the Joint State Accord was again renewed for just one year in 2010. The updated WFWC policy C-3001 called for a reduction in harvest of no less than 45% from the previous level, to address the declines in abundance and uncertainties surrounding the impact of predation. Negotiations between the Directors of the ODFW and WDWF resulted in a 2010 Accord that set the harvestable number at 24,000 fish for 2010; a 40% reduction from the previous guideline. The Director's also agreed to modify the white sturgeon spawning sanctuary to provide additional broodstock protection. In 2010, the river was closed to all angling for sturgeon from USCG Navigation Marker 82 adjacent to the upper end of Skamania Island upstream nine miles to Bonneville Dam. The closure was also extended an additional month; covering May through August. The state of Oregon established a spawning sanctuary in the Willamette River from the I-205 Bridge upstream to Willamette Falls during May 1-August 31 following documentation of successful white sturgeon spawning in this area.

Current Joint State White Sturgeon Management Agreement

A new three-year Accord was adopted by the Commissions in February of 2011 to cover the years 2011-2013. No changes were made to allocations among fisheries or areas, and broodstock sanctuaries remain as adopted in 2010. Several significant modifications over prior agreements were made for the current Accord. Among these, harvest guidelines during the period are to be established as a 22.5% annual harvest rate **or** a cap of 17,000 total harvested fish, whichever is lower. This harvest level is to be derived annually from projected abundance in the coming year, based on in-year stock assessment abundance estimates. Concurrently, the past practice of using three-year average guidelines was discontinued, meaning that remaining balances on annual guidelines could not be carried over to subsequent year's fisheries.

Based on recent guidance from the Commissions and Directors, the 2011-2013 Accord is currently being revised to reflect policy guidance for 2012 white sturgeon fisheries and

management. This amended Accord will specify how annual harvest levels for white sturgeon downstream of Bonneville Dam will be established for 2012, as well as identifying overall fisheries objectives.

Adjustments for Harvest outside the Mainstem Columbia River

Harvest guidelines and allocations identified in the Joint State management agreements pertain specifically to harvest in the mainstem Columbia River (and Select Areas) downstream of Bonneville Dam. However, white sturgeon from the lower Columbia River migrate into, and are harvested in, various Columbia River tributaries and coastal estuaries. Harvest outside the Columbia is generally low, averaging 2.6% based on 1996-2007 tag recovery data but can be higher as observed in 1996 when tag recoveries from outside the Columbia River increased to 5.3%. During that year, harvest of white sturgeon along the coast correspondingly peaked at a level more than double the average harvest for the previous decade. This phenomenon was recognized as a concern, so the Columbia River harvest guideline identified in the original 1997-1999 Joint State Management Agreement was adopted with the contingency that it could change with a substantial increase in harvest outside the Columbia system. To assure that future harvest guidelines and allocations remained equitable, the Oregon and Washington Fish and Wildlife commissions adopted policy in the 2000-2002 and subsequent Joint State agreements, calling for management of sturgeon harvest outside the mainstem Columbia River to be consistent with Columbia River conservation and management needs.

The 2000 Willapa Bay Fishery Management Framework (plan) was developed to address the Joint State agreement policy. The Willapa Framework incorporated white sturgeon harvest guidelines for commercial and recreational fisheries based on the historic relationship between Willapa Bay and Columbia River harvest levels. The Willapa Bay guideline was adjusted by the same (20%) reduction made to the Columbia River guideline in 2003, resulting in a 1,769 fish guideline. Since adoption of the plan, non-Indian commercial harvest in Willapa Bay has declined; however, treaty harvest in Grays Harbor and tributaries has generally increased. Collectively, the combined harvest has remained fairly consistent since 1997. The Willapa guideline was adjusted downward 40% in 2010 and by 29% in 2011 to keep in step with the reductions adopted for the Columbia River.

Since 2004, there has been a significant shift in the winter and early spring recreational sturgeon harvest from the mainstem Columbia into the Willamette River. This shift may be due to warmer (2-5°F higher) winter water temperatures in the Willamette and generally poor eulachon returns to the Columbia over the last several years that appear to be attracting more fish (and recreational fishers) to the Willamette River during January-May. Because of this increasing trend, staff re-calculated harvest estimates (and adjusted guidelines) for the Willamette recreational fishery to account for harvest in excess of the 1986-1996 baseline level (or adjusted baseline in more recent years). These estimates for the Willamette River have been added to the above Wauna fishery to more accurately reflect the total recreational harvest for this river section.

Based on information available from the ODFW creel survey and angler punch card data, adjustments (increases) have been made since 2003 (Table 3). Prior to 2009, the Willamette River creel program has been directed at estimating harvest of spring Chinook salmon. Accordingly, the program has typically only operated from March through June of each year. In

order to derive full-year catch estimates, including timeframes not included during creel surveys, staff used adjusted catch record card estimates. Catch estimates from catch record cards for the time period in which creel surveys were conducted were compared with catch estimates from creel surveys to derive a ratio of creel and catch record derived catches. This ratio was then applied to catch record card harvest estimates for time periods outside the creel survey period.

In 2009, the Willamette creel program was expanded to include the January-February timeframe, but catches in the remainder of the open season were still generated by the catch card/creel survey ratio method. Since 2010, the creel survey has been conducted during all timeframes in which retention was allowed, and no expansions for non-sampled periods are necessary. Based the above methods, annual white sturgeon harvest in the Willamette River averaged 1,531 fish (range 989-2,206) during 1986-1996, 1,871 fish (range 1,263-2,811) during 1997-2003, and 5,180 fish (range 2,327-9,148) during 2004-2010. Some values in Table 3 have been altered since prior Joint Staff Reports as a result of updated catch record card harvest estimates for some years.

Sturgeon Fisheries

Reduced salmon fishing opportunities during the mid-1970s through the late 1990s greatly increased the popularity and importance of sturgeon for both commercial and recreational fisheries. The healthy white sturgeon population allowed the commercial industry to develop stable fisheries in a time when commercial salmon fishing opportunities had been drastically reduced. A similar lack of stable recreational salmon fisheries and recognition of white sturgeon as a sport fish resulted in increased popularity of sturgeon angling since the mid-1980s. In recent years, reduced white sturgeon catch guidelines have impacted the stability of all Columbia River sturgeon fisheries.

Past Commercial Sturgeon Fisheries

Since the late 19th century, commercial catch of sturgeon remained very low until the mid-1940s. Through 1968, annual landings only exceeded 5,000 fish occasionally. Since 1969, landings exceeded 5,000 fish annually except in 1991, 2010, and 2011. Catches peaked in the late 1970s and early 1980s with annual landings ranging from 9,400 to 22,800 fish. During the 1990s, catches ranged from a low of 3,800 fish in 1991 to a high of 13,900 fish in 1998 (Tables 4 and 10). Since 1997, commercial sturgeon fisheries have been managed to remain within catch guidelines while maximizing economic benefit and achieving conservation objectives for other species. Annual plans for distribution of the commercial harvest allocation are developed with input from the Columbia River Commercial Fisheries Advisory Group (CRCAG), to provide stable commercial fishing opportunities throughout the year while maintaining optimum market value. Weekly landing limits have remained a valuable tool in maintaining consistent commercial fisheries since first adopted in 2002. The retention of green sturgeon has been prohibited in recreational fisheries since July 2006. Season summaries are described in Table 6.

2011 Commercial Fishery

Commercial fisheries in 2011 were managed based on a 3,400 fish allocation (Tables 4 and 5). Fishery protocols were developed based on input from the CRCAG and adopted by the Compact. Catch expectations included 400 fish each during the winter sturgeon, winter salmon, and summer salmon seasons, 1,300 for August, 700 for late fall, and 200 for Select Area fisheries.

As in recent years, any unused allocation from winter/spring mainstem fisheries could shift to the summer season. Fishing periods and landings for 2011 are reported in Table 7.

Commercial fisheries in 2011 were initiated with a winter target sturgeon season consisting of four 24-hour fishing periods between January 18 and February 9 in Zones 1-5. Gear regulations included a 9-inch minimum mesh size restriction to target sturgeon and minimize the handle of spring Chinook and winter steelhead. A landing limit of ten fish per vessel per week was in effect for all fishing periods. Poor weather conditions and low effort limited catch, with only 50 white sturgeon landed.

The commercial winter/spring Chinook salmon fishery consisted of four fishing periods (ranging from 4-14 hours each) occurring on March 29, April 6, May 12-13, and May 18-19. The open fishing area was all of Zones 1-5 for the April 6 period, and was restricted to the area from the Columbia River mouth upstream to Kelly Point in the remaining periods. Gear was limited to tangle nets (4 ¼-inch maximum mesh size) for the first two periods and large-mesh (8-9¾ inch) during the last two periods. Sales of sturgeon were allowed with no weekly landing limit during the first two periods and a five-fish weekly landing limit in effect for the last two periods. Sturgeon landings were modest and less than half (125 fish) of the 400 fish guideline were harvested.

The commercial summer Chinook gill net fishery consisted of two eight-hour fishing periods on June 16-17 and June 22-23. The fishery was restricted to the use of 8-inch minimum mesh size. The weekly white sturgeon landing limit was five per vessel per week for both periods. Considering the limited catch in winter fisheries, the summer white sturgeon commercial guideline was increased to 700 fish. A total of 503 white sturgeon were landed.

As in past years, the majority of the commercial sturgeon allocation was set aside for fall fisheries. Considering balances of fish from earlier fisheries, the August commercial white sturgeon guideline was increased to 1,800 fish in-season. The early-August fishery consisted of one nine-hour fishing period (August 4-5) in Zones 1-5. The weekly white sturgeon landing limit was ten fish per vessel, and gear was restricted to 9-inch minimum mesh size. The late-August season consisted of seven nine-hour fishing periods in Zones 4-5 during August 16-31. The weekly sturgeon landing limit was three fish per vessel throughout the season and gear was restricted to a 9-inch minimum mesh size. Late fall fisheries included ten individual fishing periods occurring from September 18 through October 20. Weekly white sturgeon landing limits during the late fall season ranged from two to seven fish per vessel. A total of 2,431 white sturgeon were landed during the fall seasons.

Select Area winter-spring commercial fisheries were initiated with a landing limit of two white sturgeon per vessel per week. White sturgeon retention was prohibited effective June 27 to maintain landings near the 200 fish quota. Retention of white sturgeon was not allowed in Select Area fisheries during the fall season. Select Area fisheries harvested 196 fish or 98% of the annual guideline.

Preliminary 2011 white sturgeon landings in all commercial fisheries (Tables 4, 5, 7 and 10) total 3,305 fish with 94% landed in mainstem fisheries and 6% landed in Select Area fisheries. Total catch represented 97% of the 2011 commercial guideline of 3,400 white sturgeon.

Past Recreational Sturgeon Fisheries

The states managed recreational fisheries for white sturgeon for average annual harvest guidelines of 54,000 fish during 1997-1998, 40,000 fish during 1999-2002, 32,000 fish during 2003-2009, and 19,200 fish during 2010. The recreational harvest guideline for white sturgeon below Bonneville Dam has been allocated 60% to the estuary fishery and 40% to the fishery above Wauna since 2003. During the early 2000's, the recreational sturgeon fishery in the Willamette River experienced unprecedented growth above the baseline period of 1986-1996, when the average annual harvest was about 1,500 sturgeon. Since most of the Willamette catch information was derived from punch cards, it took several years for managers to become aware of the magnitude of the increase in the Willamette River sturgeon catch, but ultimately resulted in adjusting the harvest for the recreational fishery above Wauna during 2003-2009.

Sturgeon fisheries in 2010 were managed under a one-year agreement finalized in February 2010, which established a recreational harvest guideline of 19,200 white sturgeon, of which 7,700 (40%) were allocated to the fishery above Wauna and 9,600 were allocated to the estuary (adjusted from 11,500 to reflect the increase in the minimum size limit during the summer retention season). The allocation of 7,700 fish to the area above Wauna included 2,865 fish for the Willamette River, leaving a balance of 4,835 for the Columbia River above Wauna (Tables 2 and 3). The states set the three-day per week retention season (Thursday-Saturday) during January 1-July 31 and October 1-December 31 for the fishery above Wauna, excluding the Willamette River and Multnomah Channel, which were managed separately from the mainstem Columbia by the state of Oregon in 2010. The states closed the area near Rooster Rock State Park at Sand Island slough effective April 29-July 31 to curtail high catch rates in the area in an attempt to maintain the season structure through the remainder of the year and address enforcement concerns. The states continued the seven-day per week fishery for the estuary during January 1-April 30 under permanent rules and adopted a summer retention season during May 22-June 26 (Table 8). The minimum size limit in the estuary fishery was raised from 38 inches to 41 inches FL during May 22-June 26. The retention season in the estuary was subsequently extended from May 22-July 11 and July 15-August 1.

The total recreational catch estimate for the mainstem Columbia River below Bonneville Dam in 2010 was 11,322 white sturgeon from 92,104 angler trips, which was the lowest catch since 1972. An additional 2,794 white sturgeon in excess of background levels were estimated to be harvested from the Willamette River, for a combined total of 14,116 fish or 82% of the 17,300 fish guideline for 2010 (Tables 2, 3 and 5).

2011 Recreational Sturgeon Fishery

At the December 17, 2010 Joint State hearing, the states adopted temporary rules for 2011 recreational fisheries based on the assumptions of a 30% reduction in harvest from 2010 levels, the performance of recent fisheries, and input from the CRRAG. The states adopted a three-day (Thursday-Saturday) per week fishery for the Columbia River upstream of Wauna powerlines and a seven-day per week fishery for the estuary fishery effective January 1 until further notice. In addition, the states closed the area at Sand Island slough near Rooster Rock to all angling effective January 1-April 30 for enforcement and conservation reasons. The WFWC and OFWC met on January 7 and February 4, respectively, and approved guidelines for 2011-2013 white sturgeon fishery management on the lower Columbia. The agreement established a 2011

recreational harvest guideline of 13,600 white sturgeon, of which 6,800 were allocated to the recreational fishery below Wauna powerlines (adjusted from 8,160 to reflect the increase in the minimum size limit to 41 inches FL during the summer retention season), 3,410 were allocated to the recreational fishery above Wauna, and 2,030 were allocated to the recreational fishery in the Willamette River. Although the agreement was not finalized by the agencies' directors until February 28, 2011, the states adopted rules for the remainder of the 2011 recreational fishery at the February 8 Joint State hearing.

Above Wauna (non-Estuary)

The Columbia River above the Wauna power lines (RM 40) including all adjacent Washington tributaries was initially open to the retention of sturgeon three days per week (Thursday-Saturday) during January 1-July 31 and October 8-December 31. Sturgeon retention was prohibited four days per week (Sunday-Wednesday) during January 1-July 31 and October 1-December 31 and everyday during August 1-September 30. Catch-and-release angling was allowed during all retention closures, except in the area of Sand Island Slough during January 1-April 30 and in the spawning sanctuary between Marker 82 and Bonneville Dam during May 1-August 31.

The 2011 recreational fishery above Wauna started slowly with only 180 sturgeon landed from 4,490 angler trips through the end of March. Similar to the start of the 2004-2010 seasons, cold water temperatures and a poor eulachon return contributed to the very low catch rates, and anglers concentrated their efforts in the Willamette River or above Bonneville Dam where catch rates were much higher. Catch rates in the Columbia River remained low during April, May, and June when anglers caught 278 sturgeon from 7,697 trips, likely in part due to high flows, which averaged almost 400 kcfs during that time. During July flows dropped, and anglers made 4,619 trips and caught 326 sturgeon, which brought the cumulative catch for the fishery above Wauna to 784 sturgeon, or 23% of the guideline when the fishery closed to retention. With 77% of the guideline remaining, the states met on September 15 and moved the start of the fall retention season up to October 1, which added three more retention days (Table 8). When the fishery reopened in October, angler effort and catch rates were the highest of the year, particularly for bank and boat anglers in the Gorge. The total catch for October was 1,938 white sturgeon from 17,498 angler trips. During November and December, the projected catch and effort totals are 200 white sturgeon kept from 3,800 angler trips. The total catch for the 2011 fishery above Wauna is projected to be 2,922 white sturgeon from 39,054 angler trips, or 86% of the guideline (Table 2).

Below Wauna (Estuary)

Initial regulations allowed sturgeon retention every day during January 1-April 30, May 14-June 26, and July 1-4. Sturgeon retention was prohibited in the estuary during May 1-13, June 27-30, and July 5-December 31. Catch-and-release angling was allowed during all retention closures.

The recreational sturgeon season below Wauna began slowly with no catch through the end of April from 123 angler trips. Effort was moderate when the estuary fishery reopened on Saturday May 14, and catch rates were below expectations averaging 0.10 fish/angler for the month. The final catch for the estuary during May was 200 white sturgeon from 2,084 angler trips.

Angler effort increased over the course of June to a peak count of 222 private and 16 charter boats on Saturday June 25; however, total effort for the month remained about half that observed in 2010 and the lowest since 1992. Catch rates also remained low at 0.17 fish/angler during June compared to 0.42, 0.27, 0.28, and 0.14 fish/angler in June of 2007, 2008, 2009 and 2010, respectively. With the estuary fishery tracking well below expectations, the states met on June 23 and extended the originally adopted closure date from June 26 to July 31 with weekly checkpoints (Table 8). Sturgeon catch during June totaled 1,781 fish from 10,663 angler trips, which was the lowest catch for June since 1990.

Catch rates in the estuary improved during July as flows in the Columbia finally began to drop, and effort rose steadily to a peak count of 352 private boats on Saturday July 30. The total catch for July was 4,136 white sturgeon from 13,539 angler trips, or 0.31 fish per angler trip. The cumulative catch through July 31 was 6,117 white sturgeon, which left a balance of 683 fish on the guideline (Table 2), however, no additional extensions were proposed. The total catch for the 2011 estuary fishery of 6,117 white sturgeon was 90% of the guideline and the lowest catch since 1981. The estimated handle of green sturgeon in the estuary during 2011 was six fish kept (as a result of misidentification) and 253 fish released.

Summary of 2011 Recreational Harvest

The total recreational catch estimate for the mainstem Columbia River below Bonneville Dam in 2011 is 9,039 white sturgeon from 67,000 angler trips, which is the lowest catch since 1972 and the lowest angler trip total since 1977 (Tables 2 and 5). The 2011 recreational catch is projected to be 36% (3,300 fish) in the 3-4 foot TL size class and 63% (5,700 fish) in the 4-5 foot TL size class compared to the 2006-2010 average of 46% and 54%, respectively (Table 9).

2012 Non-Indian Sturgeon Fisheries Expectations

In January 2012 both commissions agreed to reduce the annual allowable harvest rate of white sturgeon from the 2011 level of 22.5%. After negotiations, the agency's directors agreed to a harvest rate of 16% for 2012. Based on the 2012 abundance forecast of 65,000 legal-size fish, a total of 10,400 (9,600 with estuary length adjustment) white sturgeon will be available for harvest in recreational and commercial fisheries downstream of Bonneville Dam. Sharing of harvestable fish remains unchanged between sport (80%) and commercial (20%) fisheries. Although the standard 60/40 split between below/above Wauna remains in place, the 2012 agreement calls for some flexibility in the portion of catch assigned to the lower Willamette River. This flexibility may be necessary to meet Oregon's goal of four retention days on the Willamette River currently scheduled for February 17, 18, 24, and 25. An estimated 1,800 to 2,000 fish are needed to meet that goal. These modifications for 2012 will be addressed in an amendment to the 2011-2013 Accord.

Permanent rules for white sturgeon recreational fisheries effective January 1, 2012 allow retention 7-days per week for the area below Wauna and 3-days per week (Thursday, Fridays, and Saturdays) for the mainstem Columbia River (and associated WA tributaries) from Wauna upstream to Bonneville Dam. Actual seasons for 2012 (based on available harvest guidelines) and other sturgeon fishery regulations will be considered at the January 26, 2012 Compact/Joint State hearing. As part of the proposed regulations, staff will propose the continuation of the angling closure in Sand Island slough near Rooster Rock.

STURGEON MANAGEMENT AND FISHERIES UPSTREAM FROM BONNEVILLE DAM

Stock Status

The healthy white sturgeon population in the lower Columbia River historically ranged into areas above the current location of Bonneville Dam; however, with the construction of Bonneville Dam in 1938, the population became segregated and fish residing upstream could no longer migrate freely between freshwater and marine environments. The population became further segregated with the completion of McNary Dam in 1953, The Dalles Dam in 1957, and John Day Dam in 1968, resulting in functionally separate populations in Bonneville, The Dalles, John Day, and McNary pools. Inaccessibility to the marine environment and habitat alterations, primarily due to hydroelectric development, has rendered these populations less productive than those residing below Bonneville Dam.

Abundance of white sturgeon populations in each of the three Zone 6 reservoirs (between Bonneville and McNary dams) is estimated every three years to monitor the effects of hydro-system operations and fishery management strategies. Mark-recapture population estimates are derived using directed sampling with gill nets and setlines. Significant harvest reductions were enacted beginning in 1988 and populations in all three reservoirs increased as a result of reduced catch and other mitigation efforts. The most recent assessments estimated the abundance of 33-66 inch FL (three- to six-foot equivalent TL) sturgeon to be 33,800 in John Day Reservoir (2010), 80,900 in The Dalles Reservoir (2008), and 117,600 in Bonneville Reservoir (2009); Table 11).

Fishery Management Actions

The Sturgeon Management Task Force (SMTF) consists of representatives from Oregon, Washington, and the Columbia River treaty Indian tribes (Nez Perce, Umatilla, Warm Springs, and Yakama). The SMTF was formed in 1987 in response to concerns over increasing catches (non-Indian recreational and treaty Indian commercial and subsistence) and declining white sturgeon abundance in the Zone 6 area. The purpose of the SMTF is to review the status of sturgeon and provide harvest management recommendations for fisheries occurring in the Zone 6 management area. Treaty sturgeon fisheries do not currently occur upstream of McNary Dam, so this area is not considered in SMTF harvest sharing agreements.

The current harvest allocation is approximately 40 percent recreational and 60 percent treaty for Zone 6, although reservoir-specific guidelines are shaped to meet fishery demands. The recreational and treaty Indian fisheries are allowed an equal share of the Bonneville Pool catch, while the treaty Indian fishery is allowed a greater share of the catch in The Dalles and John Day pools. Treaty Indian fishers may continue to take sturgeon for subsistence purposes after commercial seasons have been completed, and this catch is not included in the commercial catch guidelines. Subsistence catch is estimated through a monitoring program conducted by the tribes, and has averaged 335 sturgeon annually since 2002 (Table 12).

Sturgeon Fisheries

Sturgeon fisheries in Zone 6 consist of treaty-Indian commercial and subsistence fisheries and non-Indian recreational fisheries. Non-Indian fishing is restricted to hook-and-line recreational fishing only, while treaty Indian commercial fishing is conducted with three types of gear: hook-and-line, setlines, and gillnets.

Each year, the Columbia River Compact and the tribes set specific seasons for commercial gillnet fisheries (Table 13). Under permanent regulations, treaty setline fisheries are open in all three Zone 6 reservoirs during January 1-31. Setline seasons target sturgeon, while gillnet seasons usually target steelhead; however, in recent years the winter gillnet season has shifted to a target sturgeon season due to poor prices for steelhead. Treaty Indian subsistence sturgeon seasons are open the entire year, as were recreational seasons prior to 1994. Since 1994, the sturgeon recreational fishery and treaty Indian commercial fisheries have been managed under reservoir-specific quotas. Catch-and-release recreational fishing is allowed once recreational quotas are reached (Table 14).

Fisheries occurring in Zone 6 are managed in accordance with catch guidelines set forth by the SMTF (Table 15). Due at least in part to intensive fishery management, abundances of legal-sized fish in the Zone 6 pools have increased since the early-to-mid 2000s. In some pools, this increase has been dramatic. These trends have allowed for recent increases in harvest guidelines in most areas.

2011 Treaty Indian Fisheries

The treaty Indian winter setline fishery harvested 68 sturgeon from Bonneville Pool which represented approximately 3% of the 2,000 fish commercial guideline for this pool. Two fish were also harvested in The Dalles Pool. The balance of the Zone 6 treaty harvest guideline was caught during the winter gillnet fishery, the summer salmon gillnet fishery (short sales period), and summer and fall setline fisheries (Table 15 and 16).

The treaty Indian winter gillnet season commercial fishery was open from February 1- March 21 in The Dalles Pool and John Day Pools, and February 1-4, and then from February 7-March 21 in the Bonneville Pool. These seasons resulted in landings of 1,590 sturgeon in Bonneville Pool, 328 sturgeon in The Dalles Pool, and 881 sturgeon in John Day Pool which were 79.5%, 32.8% and 88.1% respectively, of the guidelines. With the rest of the harvest occurring in a summer gillnet opening and summer and fall setline seasons, the total tribal commercial catch for 2011 was 3,901 sturgeon, or 97.5% of the combined Zone 6 treaty guideline (Table 16).

Treaty Indian subsistence sturgeon fishing is open year-round, with sanctuary closures around dams and tributaries. The subsistence fishery catch in 2011 is estimated to be 652 fish, or 217% of the 2002-2010 average of 300 white sturgeon (Table 12). Legal sized sturgeon in 2011 included sturgeon from 43 to 54 inches FL in The Dalles and John Day pools and from 38 to 54 inches FL in the Bonneville Pool.

2011 Non-Indian Recreational Fisheries

Recreational retention seasons for each Zone 6 pool began January 1 and remained open until catch guidelines were reached. Retention of fish was closed after February 18 in Bonneville Pool because the states had projected that the guideline would be reached by that date. However,

catches slowed, and approximately 375 fish remained available after the closure. As a result, two additional weekend fisheries in Bonneville Pool were opened on June 30-July 2 and July 7-8. Retention was allowed through July 29 in The Dalles Pool and through April 9 in the John Day Pool (Table 14) with preliminary catches of 224 and 532 fish, respectively. The preliminary total catch for Bonneville Pool was 2,341. The combined Zone 6 recreational catch of 3,097 was 111% of the combined recreational guideline of 2,800 white sturgeon (Table 15).

Due to normal delays in angler catch record card reporting, a 2011 recreational harvest estimate for McNary Pool/Reach and the lower Snake River is not available. During 2001-2010, when the retention season in this area was open year-round, white sturgeon harvest in this river section averaged 312 fish annually. In 2010 the states modified the above McNary sturgeon retention fishery to February 1 through July 31 based on concern about increasing harvest levels in recent years.

2012 Zone 6 Sturgeon Fisheries Expectations

The SMTF is expected to meet in early February 2012 to review 2011 harvest, the 2011 stock assessment in The Dalles Pool, and to discuss management options for 2012, including catch guidelines.

As per permanent regulations, the treaty Indian commercial setline season is scheduled for January 1-31, 2012. The treaty Indian winter season commercial gillnet fishery will begin on February 1. The winter gillnet fishery harvests primarily sturgeon and steelhead.

As per permanent regulations, Zone 6 recreational seasons began January 1, 2012 and continue until guidelines are met. Angler catches and effort in Bonneville Pool during the winter of 2011 were substantially higher than normal, likely due at least in part to a lack of sturgeon retention opportunities during the winter in areas downstream of Bonneville Dam, including the Willamette River, which did not open to retention until mid-February of 2011. Catch and effort during early January 2012 were both high, similar to 2011. Therefore, the end date for this fishery will be considered at the January 26, 2012 Joint State hearing. The states did hold a public meeting in The Dalles during December 2011 to consider options for implementation in 2013 that might help extend the fishery later in the year.

SMELT MANAGEMENT AND FISHERIES

Stock Status

Eulachon (also known as Pacific or Columbia River smelt) return annually to the Columbia River to spawn in the mainstem and several of its tributaries downstream of Bonneville Dam. The fish typically enter the Columbia River in early to mid-January, though a small 'pilot' run often occurs in December. Eulachon return to fresh water at age three, four, and five. Peak tributary abundance is usually in February, with variable abundance through March, and an occasional late showing during April.

Spawning can occur in the lower Columbia River Basin soon after freshwater entry. Eulachon spawn in both the mainstem and some lower river tributaries. Eulachon typically spawn annually in the Cowlitz River, with inconsistent runs and spawning events occurring in the Grays, Elochoman, Lewis, Kalama, and Sandy rivers. Eulachon are broadcast spawners, preferring areas with a coarse sandy bottom. Females produce 20,000 to 60,000 eggs and the adults die following spawning. The adhesive eggs settle to the bottom and incubate for about 30-40 days, depending on water temperature. Young eulachon larvae are about four mm in length and drift with the current to sea.

Recent mixed-stock analysis of the British Columbia eulachon catch has shown that eulachon stocks belong to three distinct, geographically separated genetic groups. Stocks returning to the Columbia and Fraser rivers tend to mix in southern coastal waters, and compose one of these distinct genetic groups. Effective May 17 2010, Columbia River eulachon were federally-listed as threatened under the ESA.

Adult Returns

Although commercial landings are not applicable for developing annual population estimates because they are influenced by consumer demand, season structure, and environmental conditions, they do provide a useful measure of the relative annual run strength (Table 17 and 18). The smelt fishery can be traced back to the late 1800's. Commercial landings from 1938-1992 were in the millions of pounds annually. In 1993, eulachon strayed into many Washington coastal streams and bays due to cold Columbia River water temperature, and only 500,000 pounds were landed in the Columbia River and tributaries. Landings in 1994 were only 43,000 pounds, and beginning in 1995, fishery restrictions were enacted. In 2002 and 2003 commercial harvest increased, but decreased again in 2004 and 2005. A precipitous drop occurred in the 2005 Canadian Department of Fisheries and Oceans' (CDFO) New Westminster eulachon test fishery. In 2006 the northern British Columbia (BC) stock (e.g. Skeena River), and central BC stock (e.g. Bella Coola River) groups collapsed, along with the southern stocks (Fraser River and Columbia River). During the winters of 2007-2009, landings slightly improved while catch per unit effort (CPUE) slightly dropped. This suggests that production for all components (Age 3-5) of the 2012 run remains weak. Both the landing numbers and CPUE dropped off significantly in 2010. In 2011 Oregon and Washington waters were closed to the harvest of eulachon, so no landing or CPUE information was available (Tables 17 and 18); however, there was anecdotal evidence (general observations by the public backed by juvenile production estimates) of a stronger adult presence in 2011 than in 2010.

Juvenile Production

Beginning in the early 1990's, a more direct measure of brood-year strength was developed based on the density of emigrating eulachon larvae averaged across stations and depths at selected index sites located below spawning areas in the mainstem Columbia River and key lower tributaries (Table 19). Beginning in 2003, multiple collections throughout the outmigration season were conducted at the mainstem Columbia River (Price Island and Clifton Channel) site, which provide the data necessary to identify the peak timing and duration of the outmigration from the bulk of the production area. While the larval densities improved slightly during 2007-2009 (brood years corresponding with Age 5, 4, and 3 returns during 2012), they are still quite low. Downstream of the mainstem Price Island/Clifton Channel larval index site, WDFW has monitored larval densities in the Grays River. Larval densities at this site are highly variable; however the 2008 larval density was nearly twice as high as any of the seven previous years sampled (Table 19). High larval production has not always corresponded to large adult returns, and poor ocean conditions during any part of the marine life-stage may negate favorable spawning and outmigration conditions (implied by high larval densities). For example, 2004-2008 adult returns were poor, despite good 2000-2003 larval production. Larval density values at the mainstem Columbia River index sites in 2011 were the highest since 2003 (Figure 1 and Table 19).

Ocean Survival

All Oregon/Washington/British Columbia stock groups have remained depressed since the 2006 coast-wide collapse, suggesting that protracted poor ocean conditions were prevalent along the whole West Coast of North America. Scientists have developed various indices of oceanic environmental conditions. Of these, the Pacific Decadal Oscillation (PDO) Index and the Southern Oscillation Index (SOI) are useful in estimating how well smelt survive their ocean-phase.

The PDO is an index based on North Pacific sea surface temperature and pressure that correlates with changes in northeast Pacific marine ecosystem productivity. Warm PDO eras have coincided with enhanced coastal ocean biological productivity in Alaska and inhibited productivity off the west coast of the contiguous United States, while cold PDO eras have coincided with the opposite pattern. Pacific climate changes observed from late 1998 through early 2002 were favorable in the coastal waters where eulachon migrate. These conditions likely improved larvae-spawner survival rates especially during the first year of ocean residency. The increased eulachon returns to the Columbia River during 2001-2003 support this hypothesis; however, this relationship did not hold true during 2004-2008. Consistent warm (poor) PDOs between late 2002 and late 2004 probably had greater negative impacts on ocean survival than anticipated. While October-December PDO indices were cool, the annual average PDO indices for 2004-2006 were warm. Starting in 2007, the PDO index shifted; and has remained cool (favorable) through 2011.

Recent trends in eulachon abundance also follow the SOI, which describes El Niño and La Niña events. Generally speaking, El Niño events are unfavorable for ocean phase eulachon, while La Niña events are cooler and therefore more favorable. In 1977, the index changed from a regular oscillation of El Niño and La Niña anomalies to fairly persistent El Niño conditions continuing through 1988. Eulachon returns were variable during this time. The period of 1990-1998 was

dominated by extreme and persistent El Niño conditions, and during this time eulachon returns declined precipitously. Eulachon returns to the Columbia River remained at record low levels during 1993-2000. Beginning in 1998, La Niña conditions developed, and eulachon returns began increasing in 2001, in response to improved ocean rearing conditions. The sharp decline (1993-2000) and subsequent increase (2001-2003) in spawner abundance follow the onset of persistent El Niño and La Niña conditions by about three to four years, which is the dominant life cycle of eulachon. Unfavorable El Niño conditions returned in early 2001 and persisted through early 2007. In 2007 and 2008 a favorable, but weak, La Niña condition developed. A weak El Niño condition developed briefly during the latter half of 2009 and the first half of 2010 before returning to La Niña condition which has persisted into 2011.

Run strength predictions for the upcoming year are complicated by the variability in the ocean indices in the three years prior. Anytime eulachon experience poor ocean conditions their survival is negatively impacted. Periods of good ocean conditions do not necessarily make up for the negative survival impact during periods of bad ocean conditions.

A more direct measure of ocean survival can be obtained from marine harvest data. Columbia River smelt are caught in the spring shrimp fisheries off the West Coast of Vancouver Island (WCVI); therefore bycatch and test fishery information gathered by the CDFO during their annual spring shrimp surveys can be used as an indicator of Columbia River returns (Table 20). Estimates of smelt bycatch biomass in the WCVI shrimp fisheries show that the biomass during 2005-2008 was a degree of magnitude less than those for 2000-2004. Biomass hit a deep low point during 2006 and 2007, improved in 2008 and 2009, but declined slightly during the 2010 and 2011 seasons. In 2010 the older Age 2+ component showed improvement, but the Age 1+ component was nearly non-existent. In 2011 the Age 1+ component shows improvement, but the Age 2+ component has declined.

2012 Outlook

The Joint Staff looks at various indicators of abundance. Positive abundance indicators for 2012 include: (1) modest improvements in adult eulachon returns during 2008 (landings and CPUE), (2) a moderate increase in the level of Age 1+ bycatch of eulachon during 2008-2009, and a slight increase of Age 2+ bycatch during 2009-2010 in the Canadian ocean shrimp fisheries, (3) favorable ocean conditions during most of the ocean-phase for BY 2007-2009 fish starting in 2007 and continuing through 2011, and (4) anecdotal accounts of an increase in the numbers of older age class smelt bycatch in U.S. ocean shrimp fisheries in 2011. Negative abundance indices for 2012 include: (1) low mainstem Columbia River larval densities during the winters of 2007 through 2009, (2) a slight decline in estimates from the Fraser River along with decreasing adult smelt biomass tonnage in the 2010 and 2011 Canadian ocean shrimp fisheries, (3) warm ocean conditions during the end of 2009 and beginning of 2010, and (4) weak adult landings and CPUE brood years 2007 through 2009. Taking a weighted average of the positive and negative indicators for each age component of the run, the 2012 run forecast is favorable (possible better than the past couple of years but still weaker than the brief rebound years of 2001-2003).

Prior to 1997, the Joint State's smelt management and stock assessment activities had included commercial landings accounting, onboard monitoring of commercial fisheries, sampling of catch for biological data and age structure, and indexing larval production. A monitoring program was initiated in 1997 that focused primarily on the lower Columbia River commercial fishery. Data

gathered during catch sampling and some fishery monitoring included daily landings, CPUE, length, weight, sex, and allowed for analysis of trends in catch by time and area, run timing, and sex and age composition. Otoliths were collected annually from 1987-1999 with aging data providing a better understanding of the population dynamics of Columbia River smelt and possible development of parent/recruit relationships. These data work in conjunction to provide managers with tools to monitor annual abundance and stock status.

Joint State Eulachon Management Plan

Beginning in 1999, the Washington and Oregon Departments of Fish and Wildlife began work on a Joint State Eulachon Management Plan to guide all aspects of eulachon management for future years. During 1999, WDFW and ODFW developed an interim Eulachon Management Plan to guide fishery management decisions in 2000, because a draft plan had not been completed prior to adoption of recreational and commercial fishing seasons for that year.

In 2001 the WDFW, with input from ODFW, finalized the Washington and Oregon Eulachon Management Plan (WOEMP). The plan contains recommended policies concerning smelt fishery management, which are considered 'wise-use' management precepts consistent with an ecosystem approach in making resource decisions. The ecological importance of eulachon is underscored in much of the body of research in the Northeast Pacific ecosystem, and should be a fundamental consideration when making fishery management decisions affecting the health of this resource.

Policy Recommendations for Eulachon Conservation and Fishery Management from the Washington and Oregon Eulachon Management Plan

Conservation Policy

- ✓ Maintain healthy populations of eulachon while assuring the integrity of the ecosystem and habitat upon which they depend.
- ✓ Management actions will consider the role of eulachon in both the marine and freshwater ecosystems and the need to maintain sufficient populations of eulachon for proper ecosystem functioning.
- ✓ A precautionary approach to resource management shall be utilized.
- ✓ Consider the best scientific information available and strive to improve the information base for eulachon.

Fishery Management Recommendations

- ✓ Maintain commercial and recreational fishing opportunity in the lower Columbia River, to include opportunities in both mainstem and tributaries for both fleets.

The management plan includes recommendations concerning fisheries occurring in the mainstem Columbia River and its tributaries below Bonneville Dam. Fishery recommendations have been separated into three separate levels, depending on run size expectations based on (1) parental run strength as indexed by fishery landings, (2) juvenile production as indicated by larval sampling, and (3) estimates of ocean productivity. Columbia River smelt fishing seasons were regulated in accordance with the WOEMP from 2001 through March 2010 prior to closure of all Columbia River smelt fisheries.

Smelt Fisheries

Smelt fisheries historically occurred in the mainstem Columbia River and several tributaries, primarily the Cowlitz River. Mainstem fisheries consisted primarily of a commercial fishery using gillnets with some commercial fishers using small trawls. Recreational fisheries were also open in the mainstem Columbia River; however there was very little interest in this fishery. Tributary fisheries include recreational and commercial fisheries with the Cowlitz River providing the most consistent fishing opportunities. Both fisheries used dip nets to capture smelt, with most recreational fisheries being bank fisheries and most commercial fisheries occurring by boat. Minimal tribal harvest may occur for ceremonial and subsistence purposes. In most years the Yakama Nation, in coordination with WDFW, harvested smelt from the Cowlitz River.

Past Commercial and Recreational Fisheries

During 1960-1977, commercial smelt fisheries were open year-round 3½ days per week, except for 1965 and 1966 when the season was expanded to 4½ days per week. During 1978-1994, the commercial season was expanded to seven days per week but the season was reduced to the December-March time frame beginning in 1986 to better reflect the run timing of Columbia River eulachon (Table 21). Large trawl gear was also prohibited in 1986. Tributaries in Washington State were closed to commercial fishing during the 1999-2000 seasons. Starting in 2001, some tributary commercial fisheries were reopened and managed according to the WOEMP (Table 22).

As Columbia River eulachon abundance began to decline during the early 1990's, fishery managers recognized the need to restrict fisheries to increase escapement to spawning areas. Lower Columbia River mainstem and tributary commercial fisheries were greatly reduced beginning in 1995 in response to exceptionally poor landings in 1993 and 1994 (Table 23). During 1995 and 1996, commercial fisheries were restricted to fewer fishing days per week, but the season was extended through the end of March. During 1997-2000, commercial fisheries were further restricted to test fisheries with limited days per week and a short season. These test fisheries were intended to allow minimal eulachon catch and collection of biological data to provide fishery managers with data necessary to assess the annual run strength.

The recreational eulachon fishery was a longstanding fishery that occurred in tributaries using dip net gear. Prior to 1997, the recreational fishery in Washington tributaries was open seven days per week the entire year (Table 23). Recreational fisheries in Washington tributaries were closed early during 1997-1999 in response to continuing poor eulachon returns to the Columbia River. Smelt dippers in Washington were allowed 20 pounds per person each day, but beginning in late 1998 the limit has sometimes been ten pounds per person. In Oregon, the daily limit was 25 pounds per person with the season open throughout the year, although the Sandy River is the only Oregon tributary known to have substantial, albeit highly sporadic, eulachon returns. The recreational dip net fishery was very popular especially in the tributaries, drawing thousands of participants. Eulachon are used for human consumption and are also in great demand for sturgeon bait. Annual recreational catch estimates are not available; however, limited past creel census information suggests that the recreational catch equaled commercial landings when eulachon were abundant for a long period of time.

2011 Commercial and Recreational Fisheries

Following the ESA listing of Columbia River eulachon, the states closed all eulachon-directed fisheries (Tables 21 and 22) because it was highly unlikely the NMFS would support fisheries with direct take of eulachon. Under permanent rule, the Columbia River and its tributaries were scheduled to open for commercial smelt fishing effective December 1, 2010, and for recreational smelt fishing effective January 1, 2011. The Compact met on November 23, 2010 and rescinded the commercial fishery. Both states have subsequently enacted permanent rules prohibiting directed harvest of eulachon in recreational and commercial fisheries.

2012 Smelt Fishery Expectations

Both commercial and recreational eulachon directed fisheries are expected to remain closed for 2012. The 2012 run is forecasted to improve over 2011, but is still expected to be at a low level. The states have been working with NMFS to develop and expand research activities to provide better information on adult and juvenile eulachon abundances and distribution. In 2011, these activities included sampling the spatial and temporal distribution of eulachon larvae in coastal stream and Columbia River tributaries, and improving the monitoring of eulachon larvae densities. Discussions about using catch-per-unit-effort (CPUE) data in mainstem Columbia fisheries are ongoing. Thus far, the larval densities trend has shown good correlation with the adult CPUE trend from fisheries (Figure 1).

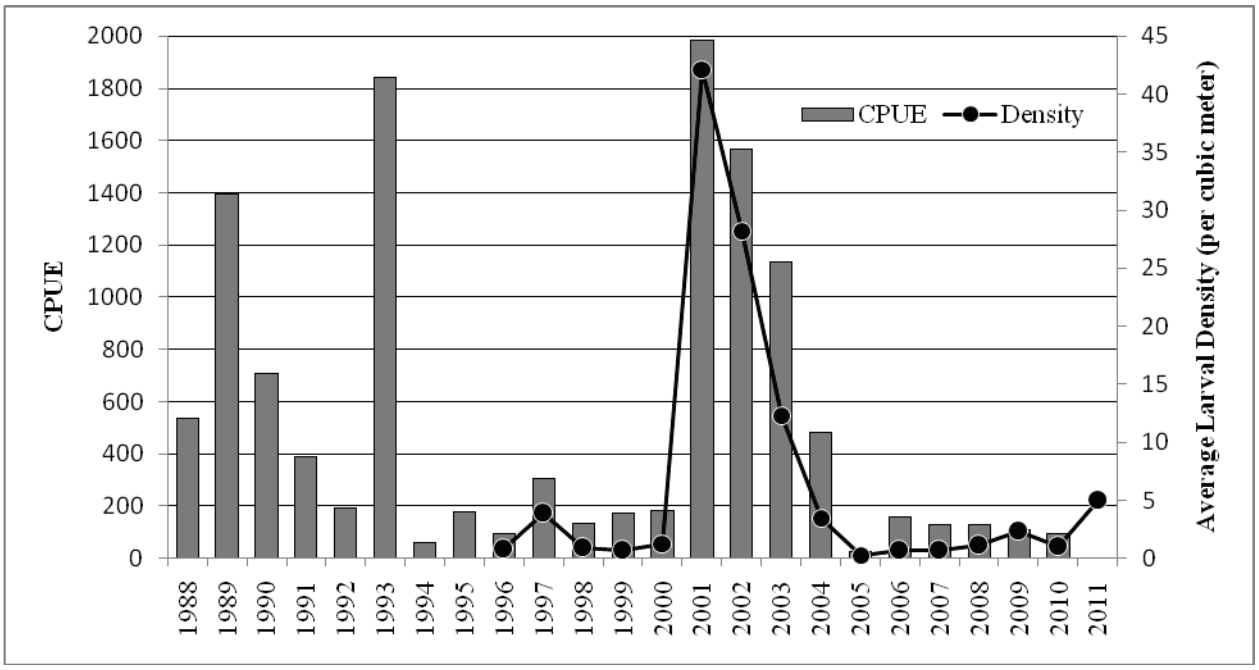

Figure 1. Comparison of CPUE of eulachon in mainstem Columbia River commercial fisheries and larval densities in mainstem Columbia index sites, 1998-2011.

Table 1. Estimated and Projected Abundance of 42-60 Inch Total Length (38-54 Inch Fork Length) White Sturgeon in the Lower Columbia River, 1987-2012.

			42-60 TL (38-54 FL)		
	Historic Approach			Setline Approach	
Year	42-48 TL (38-43 FL)	48-60 TL (43-54 FL)	42-60 TL (38-54 FL)	Actual	Projected[1]
1987	75,900	28,100	104,000		
1988	34,400	33,700	68,100		
1989	31,900	16,800	48,700		
1990	25,800	12,000	37,800		
1991	32,500	11,700	44,200		
1992	70,400	8,700	79,100		
1993	115,500	14,200	129,700		
1994[2]	N/A	N/A	N/A		
1995	143,200	59,000	202,200		
1996	137,100	33,500	170,600		
1997	146,600	27,700	174,300		
1998	116,800	23,900	140,700		
1999	116,800	17,700	134,500		
2000	117,300	17,400	134,700		
2001	102,200	25,300	127,500		
2002	87,400	34,200	121,600		
2003	85,000	46,200	131,200		
2004[2]	N/A	N/A	N/A		
2005	106,900	30,000	136,900		
2006	88,100	35,300	123,400		
2007	101,800	29,900	131,700		
2008	69,800	31,400	101,200		
2009	65,000	30,000	95,000		
2010[3]	42,100	24,300	66,400	87,000	
2011[34]	N/A	N/A	N/A	80,500	77,000
2012					65,000

1. *Projected abundance based on the previous year's setline estimate.*
2. *Abundance estimates were not developed in 1994 because insufficient numbers of fish were tagged and in 2004 due to data collection and modeling concerns.*
3. *Estimates for the 2010 historic approach and the 2011 setline approach are preliminary.*
4. *The 2011 estimate using the historic approach will not be available until fall 2012.*

Table 2. Annual Recreational Catches of White Sturgeon in the Lower Columbia River and Comparisons to Catch Guidelines, 1993-2011[1].

	Below Wauna[1]		Above Wauna		Combined	
Year	Catch	Guideline[2]	Catch	Guideline[3]	Catch	Guideline
1993	20,107	N/A	17,780	N/A	37,900	
1994	15,578	N/A	17,893	N/A	33,500	
1995	29,714	N/A	15,423	N/A	45,100	
1996	27,694	N/A	15,068	N/A	42,800	
1997	24,511	N/A	13,646	N/A	38,200	53,840
1998	30,303	N/A	11,293	N/A	41,600	53,840
1999	29,238	N/A	10,561	N/A	39,800	40,000
2000	24,267	N/A	16,238	N/A	40,500	40,000
2001	21,619	N/A	19,597	N/A	41,200	39,500
2002	26,234	N/A	12,045	N/A	38,300	38,300
2003	18,367	19,200	13,565	12,800	31,932	32,000
2004	15,050	16,000	10,519	12,800	25,569	28,800
2005	17,911	17,783	11,891	11,560	29,802	29,343
2006	15,726	16,000	8,545	12,800	24,271	28,800
2007	19,131	16,274	10,675	13,852	29,806	30,126
2008	13,614	13,143	7,959	12,387	21,573	25,530
2009	13,109	15,529	4,599	11,430	17,708	26,959
2010	6,491	9,600	4,831	7,700	11,322	17,300
2011[4]	6,117	6,800	2,908	3,410	9,025	10,210

1. *Recreational catch estimates for 1993-2002 are above and below the western tip of Puget Island.*
2. *The switch to a 45-inch min. (TL) size limit in 2004 required a 17% reduction in the base guideline*
3. *Actual in-season guidelines were different than represented here.*
4. *Preliminary.*

Table 3. Annual Recreational Catches of White Sturgeon in the Lower Willamette River and Comparisons to Catch Guidelines, 2003-2011.

Year	Estimated Annual Catch [1]	Baseline [2]	Catch in Excess of Baseline [3]	Guideline [3]	% of Guideline
2003	1,142	1,225	0	Na	
2004	4,099	1,225	2,874	Na	
2005	2,327	1,225	1,102	Na	
2006	3,348	1,225	2,123	Na	
2007	6,555	1,225	5,330	Na	
2008	9,148	1,225	7,923	Na	
2009	7,346	1,225	6,121	Na	
2010	3,529	735	2,794	2,865	98%
2011[4]	2,690	520	2,170	2,030	107%

1. *Harvest estimates revised November 2011 based on updated punch card and existing creel information.*
2. *Baseline harvest levels for the lower Willamette River were based on average harvest during 1986-1996 (1,225 fish). The lower Willamette River baseline was decreased to 735 fish in 2010 and 520 fish in 2011 consistent with reductions in the overall harvest guideline.*
3. *During 2003-2009, harvest in excess of the baseline was applied to the above Wauna recreational harvest guideline. Beginning in 2010, a separate harvest guideline was established for the lower Willamette River.*
4. *Preliminary.*

Table 4. Commercial Catch of White Sturgeon in the Lower Columbia River by Season, Annual Commercial Catch, and Comparisons to Catch Guidelines, 1993-2011.

	Mainstem							Select Area				
Year	Winter Sturgeon[1]	Winter Salmon	Summer	Early August	Late August	Late Fall	Total	Spring/ Summer	Fall	Total	Grand Total	Guide-line
1993	990			0	0	7,010	8,000	30	20	50	8,050	6,000
1994	2,990			0	0	3,380	6,370	30	0	30	6,400	6,000
1995	0			0	0	5,980	5,980	110	70	180	6,160	8,000
1996	800			0	330	6,580	7,710	580	110	690	8,400	8,000
1997	2,710			1,740	140	7,790	12,380	350	100	450	12,830	13,460
1998	2,680			2,540	90	8,060	13,370	360	170	530	13,900	13,460
1999	1,780			2,770	60	4,180	8,790	520	190	710	9,500	10,000
2000	2,260			2,490	300	5,130	10,180	540	160	690	10,870	10,000
2001	3,060			4,720	1,020	0	8,800	490	20	510	9,310	9,100
2002	2,720			1,340	380	4,200	8,640	650	330	980	9,620	9,800
2003 [2]	1,490	27		2,170	410	3,430	7,527	250	170	420	7,947	8,000
2004 [2]	1,696	174	9	1,550	917	3,219	7,565	184	117	301	7,866	8,000
2005 [2]	473	70	1,369	1,129	965	3,793	7,799	279	74	353	8,152	8,200
2006 [2]	288	1,651	544	1,548	363	3,492	7,886	317	109	426	8,312	8,000
2007 [2]	1,424	47	414	2,646	91	2,734	7,356	257	148	405	7,761	7,850
2008 [2]	869	17	523	2,706	103	3,170	7,388	337	134	471	7,859	7,927
2009 [2]	1,697	21	624	2,213	756	2,001	7,312	311	114	425	7,737	8,000
2010 [2]	518	28	289	1,578	297	1,348	4,058	211	116	327	4,385	4,800
2011 [2]	50	125	503	896	355	1,180	3,109	196	0	196	3,305	3,400

1. *Prior to 2003, values reflect all winter fisheries.*
2. *Preliminary.*

Table 5. Summary of Combined Recreational and Commercial White Sturgeon Harvest in the Lower Columbia River, 1997-2011.

	Recreational		Commercial		Combined	
Year	Harvest	Guideline [1]	Harvest	Guideline	Harvest	Guideline [1]
1997	38,157	53,840	12,830	13,460	50,987	67,300
1998	41,596	53,840	13,900	13,460	55,496	67,300
1999	39,799	40,000	9,500	10,000	49,299	50,000
2000	40,505	40,000	10,870	10,000	51,375	50,000
2001	41,216	40,000	9,310	9,100	50,526	49,100
2002	38,279	38,500	9,620	9,700	47,899	48,200
2003	31,932 [2]	32,000	7,947	8,000	39,879 [2]	40,000
2004	28,443 [2]	28,800	7,866	8,000	36,309 [2]	36,800
2005	30,904 [2]	29,343	8,152	8,200	39,056 [2]	37,543
2006	26,394 [2]	28,800	8,312	8,000	34,706 [2]	36,800
2007	35,136 [2]	30,126	7,761	7,850	42,897 [2]	37,976
2008	29,496 [2]	25,530	7,859	7,927	37,355 [2]	33,457
2009	23,829 [2]	26,959	7,737	8,000	31,566 [2]	34,959
2010	14,116 [2]	17,300	4,385	4,800	18,501 [2]	22,100
2011[3]	11,195 [2]	12,240	3,305	3,400	14,500 [2]	15,640

[1] *Actual guidelines used in-season may have been different than shown here.*
[2] *Includes estimated Willamette River recreational harvest in excess of the adjusted 1986-1996 baseline harvest.*
[3] *Preliminary.*

Table 6. Summary of Mainstem Commercial Seasons and Sturgeon Regulations in the Lower Columbia River, 1997-2011.
Winter
1997-2002: Two 30-hour fishing periods per week from the 2nd week of January through mid-February (Zones 1-5).
2003: Three 30-hour fishing periods (one per week) followed by one 12-hour period. January only (Zones 1-5).
2004: Five 24-hour fishing periods from mid-January through mid-February (Zones 1-5).
2005: Seven 24-hour fishing periods from January through late February (Zones 1-5).
2006: Ten fishing periods from January-February (Zones 1-5). Seven were 24 hours and three were 12 hours.
2007: Nine fishing periods from January-February. Seven were 24 hours and two were 18 hours (Zones 1-5).
2008: Eleven fishing periods from January - February. Six were 24 hours and five were 18 hours. Three openers were restricted to portions of Zones 4-5 and the remainder occurred in Zones 1-5.
2009: Eight fishing periods from January – February (Zones 1-5). Six were 24 hours and 2 were 18 hours. Landing limit of 12 during the last 4 periods.
2010: Five 24-h fishing periods during January-February (Zones 1-5) with a 15 fish landing limit in effect. Sturgeon catch also occurs in spring Chinook fisheries. Annual protocol adopted for the Winter/Spring season typically includes 200 sturgeon be set aside for Chinook-directed fisheries. Catches of sturgeon in these fisheries is typically low; therefore, weekly landing limits for sturgeon are generally not utilized in winter/spring salmon-directed fisheries.
2011: Four 24-hour fishing periods took place in late-January to early-February (Zones 1-5) with a 10 white sturgeon/vessel/week landing limit in effect. Some sturgeon harvest also occurs during the spring Chinook fishery. Protocol adopted for the winter/spring timeframe was 800 total (400 for set aside for winter sturgeon, and 400 for winter/spring salmon). Catches of sturgeon in winter/spring salmon directed fisheries is typically low; therefore, weekly landing limits for sturgeon are generally not utilized.
Summer
2004: Two 12-hour fishing periods during late June and early July targeting sockeye and summer Chinook.
2005: Six 10-hour fishing periods during late June through late July targeting summer Chinook.
2006: Three 10-hour and ten 12-hour fishing periods from late June through July 31 targeting summer Chinook. Retention of green sturgeon in commercial fisheries was prohibited effective July 6, 2006.
2007: Two 10-hour fishing periods in late June and early July targeting summer Chinook. Weekly limit 5 white sturgeon per vessel.
2008: Three 10-hour fishing periods in late June and early July targeting summer Chinook. A 6-hour target sockeye fishery also occurred in Area 2S on June 30, 2008. Weekly limit 5 white sturgeon per vessel.
2009: One 12-hour fishing period on June 18 and two 10-hour fishing periods on June 24 and 30 targeting summer Chinook. Weekly limit 5 white sturgeon per vessel.
2010: Two 10-hour fishing periods on June 17 and 22 targeting summer Chinook. Weekly limit of 3 white sturgeon per vessel.
2011: Two 8-hour fishing periods, one on June 16-17 and another on June 22 -23. The weekly limit was 5 white sturgeon per vessel.
Early August
1998-2001: One 12-hour fishing period below Longview Bridge targeting sturgeon during the first week of August.
2002: Three fishing periods with a five white sturgeon per vessel per day limit. Possession and sales prohibited during the final two fishing periods. 2003-2005: Four 12-hour Chinook fishing periods each year in Zones 1-5. 2006: Six fishing periods in all or portions of Zones 1-5. Weekly landing limits ranged from five to seven white sturgeon per vessel.

Table 6. Summary of Mainstem Commercial Seasons and Sturgeon Regulations in the Lower Columbia River, 1997-2011, continued.
2007: Three early August periods of 12 hours each in Zones 1-5. Weekly landing limits = 12 white sturgeon per vessel.
2008: Five fishing periods (four in Zones 1-5 and one in Zones 2-5). Weekly landing limits = 10 white sturgeon per vessel per week.
2009: Three 12-hour fishing periods (two in Zones 1-5 and one in Zones 2-5).
2010: Four 12-hour fishing periods (three in Zones 1-5 and one in Zones 2-5).
2011: One 9-hour fishing period in Zones 1-5 with a weekly landing limit of 10 white sturgeon per vessel.
Late August
1997-2003: Target Chinook seasons in Area 2S or expanded Area 2S during late August.
2004-2005: Four fishing periods during mid to late-August with varying area and possession limit restrictions.
2006: One fishing period in Zones 3-5 and one in Zones 4-5 (upstream of the I-205 Bridge),with a weekly landing limit of seven white sturgeon.
2007: One 11-hour fishery in Zones 4-5 with a three white sturgeon per vessel weekly landing limit.
2008: Two fishing periods in Zones 4-5, with a weekly landing limit of three white sturgeon.
2009: Two 10-hour fishing periods in Zones 3-5 (upstream of Kalama River) with a weekly landing limit of nine white sturgeon and one 10-hour period in Zone 5 only with a weekly landing limit of three white sturgeon.
2010: One 10-hour and two 9-hour fishing periods in Zones 4-5, with a weekly landing limit of four white sturgeon.
2011: Seven 9-hour fishing periods in Zones 4-5 with weekly landing limits of 10 white sturgeon per vessel.
Late Fall
Fisheries occur during mid-September through the end of October and include both salmon- and sturgeon-directed fisheries. Salmon seasons vary depending on run sizes and available impacts for listed species. Target Chinook and/or coho fisheries occur throughout the late fall timeframe while target sturgeon seasons most often occur during October, if sturgeon remain available on the quota.
1997-2000: Target fall sturgeon seasons occurred.
2001: Sturgeon sales prohibited in late-fall due to high landings earlier in the year.
2002: A five white sturgeon per day per vessel possession and sales limit was in effect for nearly the entire late fall season except for the final 3-day fishing period when sturgeon possession and sales were prohibited.
2003: Sturgeon possession and sales limits ranged from three to nine per vessel per week.
2004: Sturgeon possession and sales limit of five white sturgeon per vessel per week was in place for most of the late fall period, but was increased to ten fish during the final three fishing periods.
2005: Sturgeon possession and sales limits ranged from three to 15 fish per vessel.
2006: White sturgeon possession and sales limits were maintained at eight white sturgeon per week per vessel when retention was allowed.
2007: White sturgeon possession and sales limits ranged from 7-12 white sturgeon per vessel through October 5 after which white sturgeon sales in the mainstem were prohibited.
2008: Most fishing periods occurred in Zones 4-5, however, some fishing did occur in all or portions of Zones 1-3. Sturgeon sales were allowed in all periods, with weekly landing limits of 10 fish per vessel through October 3, followed by three fish landing limits thereafter.
2009: Most fishing periods occurred in Zones 4-5, however, some fishing did occur in all or portions of Zones 1-3. Sturgeon sales were allowed through October 23, with weekly landing limits ranging from 5-8 fish per vessel. Sales were prohibited after October 23. 2010: Eleven fishing periods during September 22-October 22 with weekly landing limits of 5-8 fish per vessel. 2011: Ten fishing periods during September 18 – October 20 with weekly landing limits of 2 -7 white sturgeon per vessel.

Table 7. 2011 Fishing Periods, Gear, and Sturgeon Catch for Columbia River Non-Indian Commercial Seasons.

Season	Fishing Period	Hours	Zones	Mesh	STG Limit[1]	Deliveries	WSTG
Winter Sturgeon	6 PM Jan. 18 – 6 PM Jan. 19	24	1-5	9-9¾"	10	7	21
	6 PM Jan. 25 – 6 PM Jan. 26	24	1-5	9-9¾"	10	7	8
	6 PM Feb. 1 – 6 PM Feb. 2	24	1-5	9-9¾"	10	10	3
	6 PM Feb. 8 – 6 PM Feb. 9	24	1-5	9-9¾"	10	31	18
	Winter Season Totals (and average deliveries)					**14**	**50**
Spring Salmon	7:30 PM – 11:30 PM Mar. 29	4	1-4 [2]	≤4¼"	No limit	154	4
	11 AM – 5 PM Apr. 6	6	1-5	≤4¼"	No limit	148	3
	3 PM May 12 – 5 AM May 13	14	1-4 [2]	8-9¾"	No limit	108	59
	5 PM May 18 – 5 AM May 19	12	1-4 [2]	8-9¾"	No limit	69	59
	Spring Season Totals (and average deliveries)					**120**	**125**
Summer	9 PM June 16 – 5 AM June 17	8	1-5	8-9¾"	5	126	286
	9 PM June 22 – 5 AM June 23	8	1-5	8-9¾"	5	109	217
	Summer Season Totals (and average deliveries)					**118**	**503**
August	9 PM Aug. 4 – 6 AM Aug. 5	9	1-5	9-9¾"	10	159	896
	9 PM Aug. 16 – 6 AM Aug. 17	9	4-5	9-9¾"	3	67	26
	9 PM Aug. 18 – 6 AM Aug. 19	9	4-5	9-9¾"	3	80	20
	9 PM Aug. 21 – 6 AM Aug. 22	9	4-5	9-9¾"	3	126	84
	9 PM Aug. 23 – 6 AM Aug. 24	9	4-5	9-9¾"	3	124	72
	9 PM Aug. 25 – 6 AM Aug. 26	9	4-5	9-9¾"	3	104	41
	9 PM Aug. 28 – 6 AM Aug. 29	9	4-5	9-9¾"	3	119	74
	9 PM Aug. 30 – 6 AM Aug. 31	9	4-5	9-9¾"	3	115	38
	August Season Totals (and average deliveries)					**112**	**1,251**
Late Fall	9 PM Sep.18 - 6 AM Sep. 19	9	1-5	8-9¾"	7	172	339
	8 PM Sep.19 - 6 AM Sep. 20	10	4-5	8-9¾"	7	106	91
	8 PM Sep.20 - 6 AM Sep. 21	10	4-5	8-9¾"	7	94	80
	8 PM Sep.28 - 6 AM Sep. 29	10	1-5	8-9¾"	7	115	405
	9 PM Oct. 5 - 7 AM Oct. 6	10	1-5	8-9¾"	4	83	185
	6 AM - 6 PM Oct 13	12	1-3	≤6"	2	82	13
	7 PM Oct. 13 - 7 AM Oct. 14	12	4-5	8-9¾"	2	14	17
	7 PM Oct. 18 - 7 AM Oct. 19	12	4-5	8-9¾"	2	9	10
	6 AM - 8 PM Oct. 19	14	1-3	≤6"	2	49	30
	7 PM Oct. 19 - 7 AM Oct. 20	12	4-5	8-9¾"	2	7	10
	Late-Fall Season Totals (and average deliveries)					**73**	**1,180**

1. *White sturgeon possession and sales limit (per vessel per week). The retention of green sturgeon has been prohibited since July 6, 2006.*
2. *Zones 1-4, upstream to Kelley Point.*

Table 8. History of Sturgeon Regulations for the Lower Columbia River Recreational Fishery.				
Year	Daily Bag Limit	Annual Bag Limit	Size Restrictions	Other Regulations
Pre-1940	None	None	None	None
1940	Only 3 < 4'	"	"	"
1942	Five, (3 < 4' and 2 ≥ 4')	"	"	"
1950	" "	"	30" min.-72" max.	"
1951	3 Fish	"	"	"
1957	"	"	"	Cannot remove head or tail in the field.
1958	"	"	36" min.-72" max.	
1986	2 Fish	OR-30	"	OR--required sturgeon tag: WA--no gaffing.
1989	"	OR-30, WA-15	40" min.-72" max.	WA--required sturgeon tag. New minimum size limit effective April 1.
1990	"	15	"	Single-point barbless hooks required. OR--no gaffing.
1991	"1 and 1" slot limit	"	"	Daily limit changed to one fish 40-<48" and one fish 48-72".
1992	"	"	"	WA--60" max. length effective April 16, 1992-April 15, 1993. WA--Beacon Rock to Bonneville Dam sturgeon spawning sanctuary (boat and bank) April 16-June 15, 1992.
1994	"	10	42" min.-66" max.	Daily limit changed to one fish 42-<48" and one fish 48-66".
1995	"	"	"	LCR closed to retention September 1-December 31.
1996	1 Fish	"	"	One 42-66" fish daily bag limit effective April 1. Closed to boat angling from Beacon Rock to Bonneville Dam May 1-June 30.
1997	"	"	42" min.-60" max.	80% allocation of 67,300 annual harvest guideline to sport fishery (53,840).
1999	"	"	"	Harvest guideline adjusted to 50,000 in-season (40,000 sport). U.S. Army Corps implements Bonneville Boat Restricted Zone from Robins Is. to Hamilton Is. boat ramp.
2000	"	"	"	Retention disallowed below Wauna powerlines April 1-30. Beacon Rock-Bonneville boat angling closure extended through 7/15. Annual limit 10 fish even if licensed in both states.
2001	"	"	"	LCR closed to retention August 1-September 30.
2002	"	"	"	LCR closed to retention on Sundays and Mondays during March 3-May 13 and seven days per week during July 25-November 22.
2003	"	"	"	32,000 annual harvest guideline split 40% above Wauna and 60% below Wauna. Retention allowed above Wauna January 1-March 23 and July 1-October 31 and below Wauna January 1-June 27.
2004	"	5	42" min.-60" max. 45" min. below Wauna during May 15-July 3	28,800 annual harvest guideline split 12,800 above Wauna and 16,000 below Wauna. Retention allowed above Wauna January 1-31, then three days per week (Thur.-Sat.) during February 1-July 31 and October 1-December 31. Retention allowed below Wauna January 1-April 30 under permanent rules, then May 15-July 3 with a 45" minimum size limit. Closed to boat and bank angling from Beacon Rock to Bonneville Dam May 1-July 31. Annual limit reduced to five sturgeon.

Table 8. History of Sturgeon Regulations for the Lower Columbia River Recreational Fishery, continued				
2005	"	"	42" min.-60" max. 45" min. below Wauna during May 14-July 10- and July 15-August 15	29,343 annual harvest guideline split 11,560 above Wauna and 17,783 below Wauna. Retention allowed above Wauna three days per week (Thur.-Sat.) January 1-July 31 and October 1-December 31. Retention allowed below Wauna January 1-April 30 under permanent rules, then May 14-July 10 and July 15-August 15 with a 45" minimum size limit.
2006	"	"	42" min.-60" max. 45" min. below Wauna during May 13-July 4	28,800 annual harvest guideline split 12,800 above Wauna and 16,000 below Wauna. Retention allowed above Wauna three days per week (Thur.-Sat.) during January 1-July 31 and October 1-December 31. Retention allowed below Wauna January 1-April 30 under permanent rules, then May 13-July 4 with a 45" minimum size limit. Closed to boat and bank angling from Navigation Marker 85 to Bonneville Dam May 1-July 31.
2007	"	"	42" min.-60" max. 45" min. below Wauna during May 12-July 4	30,126 harvest guideline split 13,852 above Wauna and 16,274 below Wauna. Retention allowed above Wauna three days per week (Thur.-Sat.) January 1-31 and four days per week (Thur-Sun.) February 1-July 31 and seven days per week August 18-December 31. Sturgeon retention allowed below Wauna January 1-April 30 under permanent rules then May 12-July 4 with a 45" minimum size limit. Retention of green sturgeon prohibited.
2008	"	"	42" min.-60" max. 45" min. below Wauna during May 10-July 26	25,530 harvest guideline split 12,387 above Wauna and 13,143 below Wauna. Retention allowed above Wauna four days per week (Thur-Sun.) January 1-December 31. Sturgeon retention allowed below Wauna January 1-April 30 under permanent rules then May 10-June 24, July 10-12, July 17-19, and July 26 with a 45" minimum size limit.
2009	"	"	38" min. FL - 54" max. FL 41" min. FL below Wauna May 9-July 25.	Fork length measurement. 26,959 harvest guideline split 11,430 above Wauna and 15,529 below Wauna. Retention allowed above Wauna three days per week (Thur.-Sat.) January 1-July 31 and October 1-December 31. Retention allowed below Wauna January 1-April 30 under permanent rules, then May 9-June 28, July 2-5, 10-12, 17-19 and 24-26 with a 41" minimum size (FL) limit.
2010	"	"	38" min. FL - 54" max. FL 41" min. FL below Wauna May 22-August 1.	17,300 annual harvest guideline split 7,700 above Wauna (including a sub-allocation for the Willamette River of 2,865) and 9,600 for the estuary. Retention allowed above Wauna three days per week (Thur.-Sat.) January 1-July 31 and October 1-December 31, except closed inside Sand Island (near Rooster Rock) April 29-July 31. Closed to all sturgeon angling during May 1-August 31 from Skamania Island upstream to Bonneville Dam. Retention allowed below Wauna January 1-April 30 under permanent rules, then May 22-July 11 and July 15-August 1 with a 41" minimum size (FL) limit.
2011	"	"	38" min. FL - 54" max. FL 41" min. FL below Wauna May 14-July 31.	12,240 annual harvest guideline split 5,440 above Wauna (including a sub-allocation for the Willamette River of 2,030) and 6,800 for the estuary. Retention allowed above Wauna three days per week (Thur.-Sat.) January 1-July 31 and October 1-December 31, except closed inside Sand Island (near Rooster Rock) January 1-April 30. Retention allowed below Wauna January 1-April 30 under permanent rules, then May 14-July 31 with a 41" minimum size (FL) limit.

Table 9. Estimated Catch of White Sturgeon (in 1000's) in 1-Foot Legal (Total) Length Groups in Mainstem Lower Columbia River Commercial and Recreational Fisheries, 1977-2011 [1]

	Recreational Fisheries [2]							Commercial Fisheries [3]				
	3-4 Ft		4-5 Ft		5-6 Ft			4-5 Ft		5-6 Ft		
Year	No.	%	No.	%	No.	%	Total	No.	%	No.	%	Total
1977-79 Ave	22.2	76	5.4	18	1.6	5	29.2	12.5	94	0.8	6	13.3
1980	21.3	79	4.1	15	1.6	6	27.0	9.1	97	0.3	3	9.4
1981	21.3	78	4.5	17	1.4	5	27.2	14.2	95	0.7	5	14.9
1982	19.7	78	4.3	17	1.1	4	25.1	10.8	93	0.8	7	11.6
1983	26.2	73	7.2	20	2.6	7	36.0	11.2	90	1.2	10	12.4
1984	34.2	81	6.5	15	1.2	3	42.0	16.1	92	1.4	8	17.5
1980-84 Ave	24.5	78	5.3	15	1.6	5	31.5	12.3	93	0.9	7	13.2
1985	37.0	84	5.3	12	1.5	3	43.8	7.6	90	0.8	10	8.4
1986	42.3	85	6.0	12	1.5	3	49.8	10.4	90	1.1	9	11.6
1987	55.0	88	5.9	9	1.6	3	62.4	8.8	91	0.8	8	9.7
1988	37.5	87	4.2	9	1.5	3	43.1	6.2	91	0.6	9	6.8
1989	20.8	82	3.5	14	1.0	4	25.4	4.5	90	0.5	10	5.0
1985-89 Ave	38.5	86	5.0	11	1.4	3	44.9	7.5	90	0.8	10	8.3
1990	14.0	81	2.5	14	0.7	4	17.3	4.6	87	0.6	11	5.3
1991	19.6	86	2.2	10	0.8	4	22.7	3.4	89	0.3	8	3.8
1992	34.9	87	4.2	10	1.0	3	40.1	6.0	97	0.2	3	6.2
1993	33.4	88	3.9	10	0.6	2	37.9	7.9	98	0.2	2	8.1
1994	25.9	77	7.0	21	0.6	2	33.5	6.3	98	0.1	2	6.4
1990-94 Ave	25.6	84	4.0	13	0.7	2	30.3	5.6	93	0.3	5	6.0
1995	35.9	80	8.9	20	0.3	1	45.1	6.1	98	0.1	2	6.2
1996	30.7	72	11.4	27	0.6	1	42.8	8.3	99	0.1	1	8.4
1997	29.0	76	9.1	24	<0.1	<1	38.2	12.8	100	0.0	0	12.8
1998	32.1	77	9.4	23	0.1	<1	41.6	13.9	100	0.0	0	13.9
1999	31.9	80	7.9	20	<0.1	<1	39.8	9.5	100	0.0	0	9.5
1995-99 Ave	31.9	77	9.3	22	0.2	<1	41.5	10.1	99	<0.	<1	10.2
2000	33.3	82	7.2	18	<0.1	<1	40.5	10.9	100	0.0	0	10.9
2001	31.4	76	9.8	24	<0.1	<1	41.2	9.3	100	0.0	0	9.3
2002	29.9	78	8.4	22	<0.1	<1	38.3	9.8	100	0.0	0	9.8
2003[4]	21.0	65	10.9	35	<0.1	<1	31.9	8.0	100	0.0	0	8.0
2004[4]	13.6	53	12.0	47	<0.1	<1	25.6	7.9	100	0.0	0	7.9
2000-04 Ave	25.8	71	9.7	29	<0.1	<1	35.5	9.2	100	0.0	0	9.2
2005[4]	17.2	58	12.6	42	0.1	<1	29.8	8.2	100	0.0	0	8.2
2006[4]	13.9	57	10.4	43	<0.1	<1	24.3	8.3	100	0.0	0	8.3
2007[4]	16.6	56	13.1	44	<0.1	<1	29.8	7.8	100	0.0	0	7.8
2008[4]	10.7	49	10.9	50	<0.1	<1	21.6	7.9	100	0.0	0	7.9
2009[4,5]	5.8	33	11.9	67	<0.1	<1	17.7	7.7	100	0.0	0	7.7
2005-09Ave	12.8	52	11.9	48	<0.1	<1	24.6	8.0	100	0.0	0	8.0
2010[4,5]	4.3	38	6.9	61	<0.1	<1	11.3	4.4	100	0.0	0	4.4
2011[5,6]	3.3	36	5.7	63	<0.1	<1	9.0	3.3	100	0.0	0	3.3

1. *Individual columns may not add up to total column due to rounding errors. Recreational harvest in the Willamette River is not included.*
2. *White sturgeon legal size limits were 36"-72" during 1977-1988, 40"-72" during 1989-1993, 42"-66" during 1994-1996, and 42"-60" thereafter.*
3. *White sturgeon legal size limits were 48"-72" during 1977-92, 48"-66" during 1993-96, and 48"-60" thereafter.*
4. *Commercial data is preliminary.*
5. *Converted from current regulation fork length measurements to total length equivalent measurements.*
6. *Preliminary data.*

Table 10. Recreational and Commercial Sturgeon Catch (in 1,000's) and White Sturgeon Catch Sharing Percentages in the Lower Columbia River, 1977-2011.

	White Sturgeon					*Green Sturgeon*		
	Recreational [1]		Commercial [2]		Total	Recreational	Commercial [1]	Total
Year	Catch	%	Catch	%	Catch	Catch	Catch	Catch
1977	25.8	73	9.7	27	35.5	0.0	0.8	0.8
1978	30.4	76	9.8	24	40.2	0.0	1.7	1.7
1979	31.4	61	20.5	39	51.9	0.0	1.2	1.2
1977-79 Ave	29.2	70	13.3	30	42.5	0.0	1.2	1.2
1980	27.0	74	9.4	26	36.4	0.0	1.7	1.7
1981	27.2	65	14.9	35	42.1	0.0	0.2	0.2
1982	25.1	68	11.6	32	36.7	0.0	0.8	0.8
1983	36.0	74	12.4	26	48.4	0.1	0.7	0.8
1984	42.0	71	17.5	29	59.5	0.1	2.7	2.8
1980-84 Ave	31.5	70	13.2	30	44.6	<0.1	1.2	1.3
1985	43.8	84	8.4	16	52.2	0.5	1.6	2.1
1986	49.8	81	11.6	19	61.4	0.4	6.0	6.4
1987	62.4	87	9.7	13	72.1	0.2	4.9	5.1
1988	43.1	86	6.8	14	49.9	0.1	3.3	3.4
1989	25.4	84	5.0	16	30.4	0.1	1.7	1.8
1985-89 Ave	44.9	84	8.3	16	53.2	<0.1	3.5	3.8
1990	17.3	77	5.3	23	22.6	0.1	2.2	2.3
1991	22.7	86	3.8	14	26.5	<0.1	3.2	3.2
1992	40.1	87	6.2	13	46.3	0.1	2.2	2.3
1993	37.9	82	8.1	18	46.0	<0.1	2.2	2.2
1994	33.5	84	6.4	16	39.9	0.1	0.2	0.3
1990-94 Ave	30.3	83	6.0	17	36.3	0.1	2.0	2.1
1995	45.1	88	6.2	12	51.3	<0.1	0.4	0.4
1996	42.8	84	8.4	16	51.2	0.1	0.6	0.7
1997	38.2	75	12.8	25	51.0	<0.1	1.6	1.6
1998	41.6	75	13.9	25	55.5	0.1	0.7	0.8
1999	39.8	80	9.5	20	49.3	0.1	0.8	0.9
1995-99 Ave	41.5	80	10.2	20	51.7	0.1	0.8	0.9
2000	40.5	79	10.9	21	51.4	<0.1	1.2	1.3
2001	41.2	82	9.3	18	50.5	0.1	0.3	0.4
2002	38.3	80	9.6	20	47.9	0.1	0.2	0.2
2003 [3]	32.2	80	8.0	20	40.2	0.1	<0.1	0.1
2004 [3]	28.1	78	7.9	22	35.9	<0.1	0.1	0.1
2000-04 Ave [3]	36.1	80	9.1	20	45.2	<0.1	0.4	0.4
2005 [3]	30.9	79	8.2	21	39.0	0.1	0.1	0.2
2006 [3]	26.4	76	8.3	24	34.7	0.1	<0.1	0.1
2007 [3]	34.4	82	7.8	18	42.2	<0.1	0.0	<0.1
2008 [3]	27.4	78	7.9	22	35.3	0	0	0
2009 [4]	21.9	74	7.7	26	29.6	<0.1	0	<0.1
2005-09 Ave [4]	28.2	78	8.0	22	36.2	<0.1	0	<0.1
2010 [4]	14.1	76	4.4	24	18.5	<0.1	0	<0.1
2011 [4]	11.2	77	3.3	23	14.5	<0.1	0	<0.1

1. Includes Willamette River harvest in excess of the adjusted 1986-1996 baseline.

2. Includes Youngs Bay (1979-present) and other Select Area landings (1998-present).

3. Commercial landings are preliminary.

4. Preliminary data.

Table 11. Annual 33-66 Inch Fork Length Abundance Estimates by Reservoir in the Zone 6, 1976-2011[1].

Year	Bonneville Pool	The Dalles Pool	John Day Pool
1976-1978	5,400	--	--
1987	--	18,900	--
1988	--	6,300	--
1989	17,900	--	--
1990	--	--	2,200
1991	--	--	--
1992	--	--	--
1993	--	--	--
1994	19,800	6,500	--
1995	--	--	--
1996	--	--	24,100
1997	--	46,800	--
1998	--	--	--
1999	45,600	--	--
2000	--	--	--
2001	--	--	14,200
2002	--	20,600	--
2003	34,220	--	--
2004	--	--	12,800
2005	--	12,700	--
2006	42,100	--	--
2007	--	--	26,600
2008	--	80,900	--
2009	117,600	--	--
2010	--	--	33,800
2011	--	Pending	--

Table 12. Treaty Indian Commercial and Subsistence and Non-Indian Recreational Catch of White Sturgeon in Zone 6 of the Columbia River.

	Treaty Indian Commercial			Treaty Indian	Non-Indian
Year	Gill Net	Setline	Total	Subsistence [1]	Recreational
2002	1,502	448	1,950	370	2,625
2003	1,252	186	1,438	325	2,175
2004	1,748	0	1,748	269	1,611
2005	1,644	97	1,741	311	1,106
2006[2]	815	45	860	201	962
2007[3]	1,114	10	1,124	161	1,039
2008	1,588	0	1,588	226	1,134
2009[4]	1,587	31	1,618	219	1,000
2010	2,889	137	3,026	616	1,946
2011[5]	2,799	1,102	3,901	652	3,097

1. *Numbers prior to 2002 are available in previous Winter Joint Staff Reports.*
2. *Setline total includes two sturgeon landed during hook and line fisheries.*
3. *Setline total includes one sturgeon landed during hook and line fisheries.*
4. *Gill net total includes four sturgeon laded during hook and line fisheries.*
5. *Preliminary data..*

Table 13. Treaty Indian Commercial Setline and Gill Net Seasons and White Sturgeon Catch in Zone 6.

Fishery	Dates	Open Pools[1]	Length (days)	Mesh Size Restriction	Catch
		2007			
Setline	January 1-31	All	30 days	--	6
	August 1-August 18	JD	17.5 days	--	4[2]
Winter	February 1-March 21	BO, JD	48.25 days	None	508
"	February 1-March 9	TD	36.25 days	None	606
Spring	Closed season	--	--	--	--
Sockeye	Closed season	--	--	--	--
Fall	Closed season	--	--	--	--
				Total	**1,124**
		2008			
Setline	January 1-31	All	30 days	--	0
Winter	February 1-29	BO	28.5 days	None	777
"	February 1-March 3	TD	31.5 days	None	552
"	February 1-March 10	JD	38.5 days	None	259
Spring	Closed season	--	--	--	--
Sockeye	Closed season	--	--	--	--
Fall	Closed season	--	--	--	--
				Total	**1,588**
		2009[3]			
Setline	January 1-31	All	30 days	--	0
	August 3-15	TD	12.5 days	None	31
Winter	February 2-15 (Mon-Fri)	BO	9 days	None	431[4]
"	February 2-March 6	TD, JD	32.5 days	None	1,156
Spring	Closed season			None	--
Sockeye	Closed season			--	--
Fall	Closed season			--	--
				Total	**1,618**
		2010			
Setline	January 1-31	All	30 days	--	137
Winter	February 1-11	BO	10.25 days	None	1,403
"	February 1-26	JD	25.25 days	None	302
"	February 1-March 3	TD	30.25 days	None	1,184
Spring	Closed season	--	--	--	--
Sockeye	Closed season	--	--	--	--
Fall	Closed season	--	--	--	--
				Total	**3,026**
		2011[3]			
Setline	January 1-31	All	30 days	--	70
	August 1-13	All	12.5 days	--	213
	October 10-26	BO	16.5 days	--	164
	October 10-31	TD, JD	21.5 days	--	390
	November 2-Dec 3	TD	31.5 days	--	86[5]

Table 13. Treaty Indian Commercial Setline and Gill Net Seasons and White Sturgeon Catch in the Zone 6 Management Area, 2007-2011, continued.						
		2011[5]				
Winter	February 1-4, (Tue-Fri)	BO	3.5 days	None		89
	February 1-6	TD, JD	6 days	None		20
	February 7-March 21	All	42.25 days	None		2,690
Summer	June 27-30	All	3.5 days	None		179
					Total	**3,901**

1. BO = Bonneville Pool, TD = The Dalles Pool, JD = John Day Pool.
2. Includes one sturgeon landed during hook-and-line fisheries.
3. Legal-sized management based on fork length of 38-54" BO, and 43-54" TD and JD, was adopted January 29, 2009.
4. Includes four sturgeon landed during hook and line fisheries.
5. Preliminary data.

Table 14. Recreational Fishery Retention Restrictions in the Zone 6 Management Area, 2002-2011. [1,2]			
Year	Bonneville Pool	The Dalles Pool	John Day Pool
2002	August 5-September 27	July 13-December 31	August 24-December 31
2003	July 7-December 31	June 21-December 31	July 28-December 31
2004	June 26-December 31	June 28-December 31	July 12-December 31
2005	June 11-December 31	June 25-December 31	July 11-December 31
2006	July 24-December 31	April 8-December 31	July 1-December 31
2007	July 30-December 31	March 29-December 31	June 11-December 31
2008	July 12-December 31	March 15-December 31	March 26-December 31
2009	June 6-December 31	April 19-December 31	April 13-December 31
2010	February 21-December 31	May 6-December 31	March 1-December 31
2011	February 19-June29, July 3-6 and July 9-December 31	July 30-December 31	April 10- December 31

1. Dates during which restrictions were in effect.
2. Retention restriction dates prior to 2002 are available in the previous Winter Joint Staff Reports.

Table 15. Annual Zone 6 Catch Estimates and Guidelines for Treaty Indian and Recreational Fisheries, 2002-2011. [1]

Year	Bonneville Pool Catch	Bonneville Pool Guideline	The Dalles Pool Catch	The Dalles Pool Guideline	John Day Pool Catch	John Day Pool Guideline
			Commercial Fisheries			
2002	472	1,300	1,152	1,100	326	335
2003	379	1,200	811	900	251	"
2004	464	400	975	"	309	"
2005	550	"	831	"	360	"
2006	153	"	397	550	312	"
2007	285	"	607	"	232	"
2008	744	"	571	"	277	"
2009	431	"	862	1,000	325	"
2010[2]	1,540	1,400	1,184	"	302	"
2011[2]	2,089	2,000	604	"	1,208	1,000
			Recreational Fisheries			
2002	1,560	1,520	878	700	187	165
2003	1,542	1,700	447	400	186	"
2004	852	700	530	"	229	"
2005	596	"	382	"	128	"
2006	727	"	93	100	142	"
2007	682	"	108	"	249	"
2008	841	"	128	"	165	"
2009	638	"	216	300	146	"
2010	1,451	1,400	336	"	159	"
2011[2]	2,341	2,000	224	"	532	500

1. *Numbers prior to 2002 are available in previous Winter Joint Staff Reports.*
2. *Preliminary estimates through October 31, 2011 (a setline season is open November 2-December 3 in The Dalles Pool).*

Table 16. Treaty Indian Season Commercial Landings by Pool and Associated Catch Guidelines, 2011 [1]

Reservoir	January Setline	Winter Gill Net	Summer Gillnet	Summer Setline	Fall Setline	Commercial Total	Guideline
Bonneville	68	1,590	114	153	164	2,089	2,000
The Dalles	2	328	47	60	167	604	1,000
John Day	0	881	18	0	309	1,208	1,000
Total	70	2,799	179	213	640	3,901	4,000

1. *Preliminary through November 2, 2011 (all pools closed to commercial sturgeon harvest except The Dalles Pool.*

Table 17. Columbia River and Tributary Smelt Commercial Landings (in thousands of pounds), 1938-2011.								
Year(s)		Columbia River [1]	Grays River	Cowlitz River	Kalama River	Lewis River	Sandy River	Total
1938-1949	Range	200-1,000	0-59	1-3,000	0-77	0-2,000	0-1,400	1,000-5,700
	Average	610	18	1,400	13	300	300	3,000
1950-1959	Range	400-1,300	0-16	0-2,000	0-44	0-900	0-500	1,300-2,600
	Average	800	3	700	11	200	100	1,800
1960-1969	Range	100-800	0-53	1,000	0-0	0-82	0-0	800-1,500
	Average	700	10	600	0	8	0	1,100
1970-1979	Range	900	0-6	100	0-300	0-900	0-800	500-3,200
	Average	300	1	1,400	4	100	100	2,000
1980-1989	Range	53-500	0-35	100-3,700	0-8	0-2,700	0-300	500-3,800
	Average	200	4	2,500	1	600	59	2,400
1990		6.4	0.0	2,756.2	0.0	21.6	0.0	2,784.2
1991		5.8	0.0	2,944.6	0.0	0.0	0.0	2,950.4
1992		0.8	0.0	3,673.0	0.0	0.0	0.0	3,673.8
1993		33.2	0.0	413.9	66.8	0.0	0.0	513.9
1994		0.2	0.0	43.2	0.0	0.0	0.0	43.4
1995		7.7	0.0	431.4	0.9	0.0	0.0	440.0
1996		7.1	0.0	2.0	0.0	0.0	0.0	9.1
1997		37.1	0.0	21.5	0.0	0.0	0.0	58.6
1998		11.9	0.0	0.2	0.0	0.0	0.0	12.1
1999		20.9	0.0	0.0	0.0	0.0	0.0	20.9
2000		31.0	0.0	0.0	0.0	0.0	0.0	31.0
2001		158.8	0.0	154.3	0.0	0.0	0.0	313.1
2002		58.0	0.0	169.6	0.0	493.6	0.0	721.2
2003		66.9	0.0	464.4	0.0	529.1	23.0	1,083.4
2004		15.4	0.0	216.2	0.0	0.0	0.0	231.7
2005		0.1	0.0	0.1	0.0	0.0	0.0	0.2
2006		13.1	0.0	0.0	0.0	0.0	0.0	13.1
2007		7.1	0.0	1.2	0.0	0.0	0.0	8.3
2008		11.4	0.0	5.9	0.0	0.0	0.0	17.3
2009		5.6	0.0	12.1	0.0	0.0	0.0	17.7
2010		3.6	0.0	0.0	0.0	0.0	0.0	3.6
2011[2]		0.0	0.0	0.0	0.0	0.0	0.0	0.0

1 Season totals may contain landings from previous December.

2 Commercial fisheries were closed effective December 1, 2010, due to ESA status.

Table 18. Weekly and Total Smelt CPUE's and Smelt Catch in Columbia River Commercial Fisheries, 1988-2010.[1]

	CPUE's by Statistical Week								Season Totals	
Year	1	2	3	4	5	6	7	8	CPUE	Catch[2]
1988	0	0	125	702	78	214	0	0	535	14,500
1989	0	0	0	101	0	0	0	0	1,396	58,600
1990	0	409	445	1,650	0	0	0	0	709	6,400
1991	0	0	86	113	0	107	685	0	389	5,800
1992	0	0	0	0	0	232	290	0	192	2,300
1993	0	0	0	0	18	0	224	2,136	1,841	29,500
1994	0	53	0	0	0	0	0	0	59	235
1995	150	59	8	48	550	157	265	31	180	7,600
1996	50	46	41	151	124	0	445	59	95	7,100
1997	0	22	79	94	168	216	672	214	304	37,100
1998	0	0	40	223	94	30	17	0	134	11,800
1999	0	25	21	123	146	183	297	110	172	20,800
2000	151	37	206	63	371	123	330	241	182	26,142
2001	0	0	0	0	0	520	1,604	2,322	1,984	158,719
2002	27	371	733	3,925	1,433	1,041	164	0	1,567	57,985
2003	64	497	1,260	0	445	590	778	4,350	1,133	66,875
2004	0	0	0	0	100	845	261	26	482	15,431
2005	0	0	0	0	25	28	0	0	27	108
2006	0	132	113	144	172	194	209	14	156	13,099
2007	53	285	37	33	0	0	0	209	128	8,072
2008	17	65	134	17	0	63	210	58	129	11,381
2009	0	91	2,931	1,158	250	5	323	399	110	5,157
2010[3]	0	42	19	195	47	22	7	3	94	3,624

1. CPUE = pounds per delivery. These statistical weeks typically represent the first eight calendar weeks of the year (about January 1 through February 15).

2. Season total catch may include catch during the previous December.

3. Commercial fisheries were closed effective December 1 ,2010, due to ESA status.

Table 19. Results of Larval Sampling Program in the Lower Columbia River Basin, 1994-2011. [1]							
	Catch (Larvae per cubic meter) [2]						
Year	Mainstem Columbia	Cowlitz River	Grays River	Elochoman River	Kalama River	Lewis River	Sandy River
1994	N/S	0.7	N/S	N/S	N/S	N/S	N/S
1995	N/S	19.7	N/S	N/S	32.4	N/S	N/S
1996	0.8	1.2	N/S	N/S	0.2	N/S	N/S
1997	3.9	0.7	N/S	1.5	0.3	0.0	N/S
1998	0.9	0.5	2.8	22.1	0.3	0.0	0.1
1999	0.7	0.2	0.6	0.8	0.4	0.0	0.1
2000	1.3	41.6	25.7	3.5	0.1	0.2	0.1
2001	42.1	192.0	24.4	0.0	5.5	17.6	N/S
2002	28.2	283.0	N/S	N/S	0.5	0.6	N/S
2003	12.3	1.4	N/S	24.5	N/S	36.2	0.1
2004	3.5	0.9	20.4	N/S	N/S	N/S	N/S
2005	0.3	N/A	0.6	N/S	N/S	N/S	N/S
2006	0.7	0.1	0.0	N/S	N/S	N/S	N/S
2007	0.7	2.8	N/S	N/S	N/S	0.3	N/S
2008	1.1	6.2	44.0	3.3	N/S	<0.1	N/S
2009	2.3	0.1	0.2	N/S	N/S	0.5	N/S
2010	1.0	4.2	178.9	N/S	N/S	0.9	N/S
2011	6.1	29.1	0.2	2.0	0.4	<0.1	N/C

1. *Inter-annual comparisons of abundance are tentative as sampling has not been systematic from year to year. Mainstem Columbia R. data since 2003 includes multiple collections at Price Island and Clifton Channel sites.*
2. *N/S = not sampled.*
3. *N/C = larval density not calculated, but some larvae collected.*

Table 20. Age Composition of Eulachon Bycatch in the West Vancouver Island Shrimp Fishery, 1999-2011.								
	No. of Age 1	Columbia River Return Year			No. of Age 2[1]	Columbia River Return Year		
Ocean Year	Smelt (millions)	Age 3	Age 4	Age 5	Smelt (millions)	Age 3	Age 4	Age 5
1999	11.8	2001	2002	2003	21.2	2000	2001	2002
2000	208.9	2002	2003	2004	27.8	2001	2002	2003
2001	102.6	2003	2004	2005	219.2	2002	2003	2004
2002	311.7	2004	2005	2006	458.8	2003	2004	2005
2003	215.6	2005	2006	2007	270.7	2004	2005	2006
2004[2]	143.8	2006	2007	2008	133.4	2005	2006	2007
2005[2]	3.4	2007	2008	2009	63.1	2006	2007	2008
2006[3]	26.2	2008	2009	2010	17.4	2007	2008	2009
2007[3]	5.1	2009	2010	2011	24.9	2008	2009	2010
2008[3]	19.8	2010	2011	**2012**	46.1	2009	2010	2011
2009[3]	116.9	2011	**2012**	2013	95.7	2010	2011	**2012**
2010[3]	5.4	**2012**	2013	2014	102.9	2011	**2012**	2013
2011[3]	24.8	2013	2014	2015	63.7	**2012**	2013	2014

1. *The Age 2 estimate may also include some Age 3 fish.*
2. *The estimates of number of fish by age are not official Canadian Department of Fisheries and Ocean values.*
3. *The detailed length data was not provided by Canadian Department of Fisheries and Ocean; this data is based on crude interpretation of 2006-2010 WCVI Eulachon Length Frequency graphs available at: http://www.pac.dfo-mpo.gc.ca/sci/herring/herspawn/pages/ocean1_e.htm*

Table 21. Mainstem Columbia River Commercial Smelt Seasons, 1960-2010.				
Year	Season	Fishery Level[1]	Weekly Period	Days Open
1960-1964	Jan. 1 – Dec. 31	--	12 PM Sat – 12 AM Wed	~255
1965-1966	Jan. 1 – Dec. 31	--	12 AM Sat – 12 AM Thu	~307
1967-1977	Jan. 1 – Dec. 31	--	12 PM Sat – 12 AM Wed	~255
1978-1984	Jan. 1 – Dec. 31	--	7 days/week	365
1985	Jan. 1 – Dec. 31	--	7 d/wk (upstream of Cowlitz R. 2/22-3/1)	365
1986-1994	Dec. 1 – Mar. 31	--	7 days/week	121
1994/1995	Dec. 7 – Jan. 7	--	7 days/week	38
	Jan. 7 – Mar. 31	--	8 PM Sat – 8 AM Wed	48
1995/1996	Dec. 1 – Feb. 2	--	7 days/week	64
	Feb. 3 – Mar. 31	--	Noon Mon – 6 PM Fri	32
1996/1997	Dec. 1 – Jan. 27	--	7 days/week	58
	Jan. 30 – Feb. 21	--	6 AM Thu – 6 PM Fri	8
1997/1998	Dec. 1 – Dec. 31	--	7 days/week	31
	Jan. 2 – Feb. 13	--	6 AM – 6 PM Mon & Fri	13
1998/1999	Dec. 1 - Dec. 23	--	7 days/week	23
	Dec. 30 - Feb. 10[2]	--	7 AM - 7 PM Wed	7
1999/2000	Dec 1 - Dec 26	--	7 days/week	26
	Dec. 29 Feb. 23	--	7 AM - 7 PM Wed	9
2000/2001	Dec 1 - Dec 31	--[3]	7 days/week	31
	Jan. 3 - Mar. 7	One	3 AM - 9 PM Wed	10
	Mar. 12 - Mar. 31	Two (3/06)	3 AM - 9 PM Mon & Wed	6
2001/2002	Dec. 1 - Dec. 31	--[3]	7 days/week	31
	Jan. 2 - Jan. 31	Two	3 AM - 9 PM Sun & Wed	9
	Feb. 1 - Mar. 31	Two (1/31)	3 AM - 9 PM Sun, Wed & Fri	26
2002/2003	Dec. 1 - Dec. 31	--[3]	7 days/week	31
	Jan. 1- Mar. 31	Three	3 AM - 9 PM Sun, Tues, Thurs, & Fri	51
2003/2004	Dec. 1- Dec. 31	--[3]	7 days/week	31
	Jan. 1 - Mar. 21	Three	3 AM – 9PM Sun, Tues, Thurs, & Fri	34
	Mar. 22- Mar. 31	Two (3/18)	3 AM – 9 PM Fri, & Sun	2
2004/2005	Dec. 1 - Dec. 31	--[3]	7 days/week	31
	Jan. 1- Feb. 23	Two	3 AM - 9 PM Mon, & Thurs	15
	Feb. 24 – Mar. 31	One (2/23)	3 AM – 9 PM Thurs	6
2005/2006	Dec. 1 – Dec. 31	--[3]	7 days/week	31
	Jan. 1 – Mar. 2	One	7 AM - 4 PM Mon, & Thurs	20
	Mar. 7	One (3/08)	7 AM - 4 PM Mon	1
	Mar. 13 – Mar. 31	One (3/08)	7 AM - 4 PM Mon, & Thurs	6
2006/2007	Dec. 1 - Dec. 31	--[3]	7 days/week	31
	Jan. 1 - Mar. 31	One	7 AM - 4 PM Mon, & Thurs	20
	Mar. 11	One (3/05)	7 AM - 4 PM Sun	1
	Mar. 15- Mar. 31	One (3/05)	7 AM - 4 PM Mon, & Thurs	5
2007/2008	Dec. 1 - Dec. 31	--[3]	7 days/week	31
	Jan. 1 - Mar. 31	One	7 AM - 4 PM Mon, & Thurs	26
2008/2009	Dec. 1 - Dec. 31	--[3]	7 days/week	31
	Jan. 1 - Mar. 31	One	7 AM - 2 PM Mon, & Thurs	26
2009/2010[4]	Dec. 1 - Dec. 31	--[3]	7 days/week	31
	Jan. 1 - Mar. 31	One	7 AM - 2 PM Mon, & Thurs	25

1. *Fishery levels are described in the Joint State Eulachon Management Plan.*
2. *Also, a second reduced test fishery (1-3 boats with state observers onboard) occurred on January 31, February 7, and February 18, 1999 during daylight hours.*
3. *Under permanent rules (prior to December 2010), December 1-31 was open 7 days/week, 24 hours.*
4. *Commercial fisheries were permanently closed effective December 1, 2010, due to ESA listing.*

Table 22. Washington and Oregon Tributary Commercial Smelt Seasons, 2000-2010.[1]				
Year	Cowlitz River[2]	Kalama River[3]	Lewis River[4]	Oregon Rivers[5]
2000	Closed	Closed	Closed	24-hours, Everyday
2001	1/02-3/28: 3 PM Tue – 3 AM Wed	Closed	Closed	24-hours, Everyday
2002	1/02-1/31: 6 PM Sun – 6 AM Mon, and 6 PM Wed – 6 AM Thu 2/01-2//25: 6 PM Sun – 6 AM Mon, and 6 PM Tue – 6 AM Wed, and Wed – 6 AM Thu 2/26-3/31: 6 PM Sun – 6 AM Mon, and 6 PM Tue – 6 AM Wed, and Wed – 6 AM Thu, and 6 PM Thu – 6 AM Fri	2/05-2/25: 6 PM Sun – 6 AM Mon, and 6 PM Tue – 6 AM Wed, and Wed – 6 AM Thu 2/26-3/31: 6 PM Sun – 6 AM Mon, and 6 PM Tue – 6 AM Wed, and Wed – 6 AM Thu, and 6 PM Thu – 6 AM Fri	2/05-3/31: 6 PM Sun – 6 AM Mon, and 6 PM Tue – 6 AM Wed, and Wed – 6 AM Thu 2/26-3/31: 6 PM Sun – 6 AM Mon, and 6 PM Tue – 6 AM Wed, and Wed – 6 AM Thu, and 6 PM Thu – 6 AM Fri	24-hours, Everyday
2003	1/01-3/31: 6 PM Sun – 6 AM Mon, and 6 PM Tue – 6 AM Wed, and 6 PM Wed – 6 AM Thu	1/01-3/31: 6 PM Sun – 6 AM Mon, and 6 PM Tue – 6 AM Wed, and 6 PM Wed – 6 AM Thu	1/01-3/31: 6 PM Sun – 6 AM Mon, and 6 PM Tue – 6 AM Wed, and 6 PM Wed – 6 AM Thu	24-hours, Everyday
2004	1/01-3/17: 6 PM Sun – 6 PM Tue and 6PM Wed- 6 PM Fri Effective 6 PM Thu 3/18-3/31: 6 PM Sun – 6 AM Mon and 6 PM Wed – 6 AM Thur	1/01-3/17: 6 PM Sun – 6 PM Tue and 6PM Wed- 6 PM Fri Effective 6 PM Thu 3/18-3/31: 6 PM Sun – 6 AM Mon and 6 PM Wed – 6 AM Thu	1/01-3/17: 6 PM Sun – 6 PM Tue and 6PM Wed- 6 PM Fri Effective 6 PM Thu 3/18-3/31: 6 PM Sun – 6 AM Mon and 6 PM Wed – 6 AM Thu	24-hours, Everyday
2005	1/01-2/22: 6 PM Sun – 6 AM Mon and 6 PM Wed- 6 AM Thu 2/23-3/31: 6 PM Wed- 6 AM Thu	Closed	1/01-2/22 6 PM Sun – 6 AM Mon and 6 PM Wed- 6 AM Thu 2/23-3/31: 6 PM Wed- 6 AM Thu	24-hours, Everyday
2006	1/01-3/31: 6 PM - 11:59 PM, Sun and Wed	Closed	Closed	24-hours, Everyday
2007	1/01-3/31: 6 PM - 11:59 PM, Sun and Wed			24-hours, Everyday
2009	1/01-3/31 6AM – 10:PM, Saturdays:	Closed	Closed	24-hours, Everyday
2010 [7]	2/07-2/2/ 7 PM – 10 PM Sun and Wed	Closed	Closed	24-hours, Everyday

1. *The table contains the emergency regulations that modify the seasons during the January 1 – March 31 period. Washington tributaries not mentioned above were closed by emergency regulation during this period.*
2. *Area restricted to downstream of Peterson's Eddy (approximately River Mile [RM]8.0).*
3. *Area restricted to downstream of Modrow Bridge (RM 2.9).*
4. *Area restricted to the mainstem and north fork downstream from the overhead powerlines near Eagle Island (approximately RM 11.5).*
5. *Oregon tributaries (e.g., Sandy River) are open 24 hours per day, 7-days/week, all year.*
6. *All tributary commercial fisheries are restricted to dip net gear.*
7. *Tributary commercial fisheries were permanently closed effective December 2010 due to ESA listing.*

Table 23. Lower Columbia River Basin Recreational Smelt Seasons, 1998-2010.	
1998	Columbia River and Oregon tributaries open seven days per week the entire year. Washington tributaries closed effective February 2.
1999	Columbia River and Oregon tributaries open seven days per week the entire year. Washington tributaries were open on Wednesdays and Saturdays from January 2, 1999 through February 13, 1999.
2000	The Oregon portion of the Columbia River and Oregon tributaries open 7 days per week the entire year. The Cowlitz River was open on Fridays and Saturdays from December 31, 1999 through February 26, 2000. The Washington portion of the Columbia River and all other Washington tributaries were closed the entire year.
2001	The Oregon portion of the Columbia River and Oregon tributaries open seven days per week the entire year and the Washington portion of the Columbia River was open 7 days per week during February 24-March 31, 2001. The Cowlitz River was open on Saturdays during January 6- March 6, 2001. All Washington tributaries, including the Cowlitz River, were open on Saturdays, Sundays, and Wednesdays during March 7-18, 2001 and Saturdays, Sundays, Mondays, and Wednesdays during March 19-31, 2001.
2002	The Columbia River and Oregon tributaries open 7 days per week the entire year. Washington tributaries open Saturdays, Sundays, and Wednesday from 6 AM to 10 PM during January 1-February 25, 2002. Washington tributaries open 7 days per week from 6 AM to 10 PM during February 26-March 31, 2002.
2003	The Columbia River and Oregon tributaries open 7 days per week the entire year. Washington tributaries open 7 days per week from 6 AM to 10 PM during January 1-March 31, 2003.
2004	The Oregon portion of the Columbia River and Oregon tributaries open seven days per week the entire year (25-lbs. daily limit), and the Washington portion of the Columbia River was open 7 days per week during January 1- March 31, 2004 (20-lbs. daily limit). Washington tributaries were open 7 days per week from 6 AM to 10 PM during January 1 – March 19, 2004, and on Wednesdays and Saturdays from 6 AM to 10 PM during March 19-31, 2004 (20-lbs. daily limit).
2005	The Oregon portion of the Columbia River and Oregon tributaries open seven days per week the entire year (25-lbs. daily limit), and the Washington portion of the Columbia River was open 7 days per week during January 1- March 31, 2005 (25-lbs. daily limit). Washington tributaries (Grays River, Cowlitz River, Kalama River, and Lewis River) were open on Tuesdays and Saturdays from 6 AM to 10 PM during January 1 – February 23, 2005 (10-lbs. daily limit), and in the Cowlitz River only, on Saturdays from 6 AM to 10 PM during February 26 – March 31, 2005 (10-lbs. daily limit).
2006-2007	The Oregon portion of the Columbia River and Oregon tributaries open seven days per week the entire year (25-lbs. daily limit), and the Washington portion of the Columbia River was open 7 days per week during January 1- March 31 (25-lbs. daily limit). Washington tributaries were closed with the exception of the Cowlitz River, which was open on Saturdays only, from 6 AM to 10 PM, during January 1 – March 31 (10-lbs. daily limit).
2007-2009	The Oregon portion of the Columbia River and Oregon tributaries open seven days per week the entire year (25-lbs. daily limit), and the Washington portion of the Columbia River was open 7 days per week during January 1- March 31 (25-lbs. daily limit). Washington tributaries were closed with the exception of the Cowlitz River, which was open on Saturdays only, from 6 AM to 10 PM, during January 1 – March 31 (10-lbs. daily limit).
2009-2010[1]	The Oregon portion of the Columbia River and Oregon tributaries open seven days per week the entire year (10-lbs. daily limit), and the Washington portion of the Columbia River was open 7 days per week during January 1-March 31 (10-lbs. daily limit). Washington tributaries were closed with the exception of the Cowlitz River, which was open on Saturdays only from 7 AM to 3 PM, during February (10-lbs. daily limit).

1. Recreational fisheries were permanently closed effective December 2010 due to ESA listing