



## **Briefing Paper**

### **Joint Washington/Oregon Fish and Wildlife Commission Meeting**

### **December 11, 2008**

#### **Background**

##### Spring Chinook

Columbia River spring Chinook are comprised of lower river stocks returning to Washington tributaries below Bonneville Dam and the Willamette River and Select Areas in Oregon, and upriver stocks destined for areas above Bonneville Dam. Two components of the wild upriver run are listed under the Endangered Species Act (ESA), Snake River spring/summer Chinook and Upper Columbia spring Chinook, and two lower river components are listed as well: Upper Willamette spring Chinook and Lower Columbia Chinook.

Prior to the late 1970s, non-Treaty spring Chinook fisheries in the mainstem Columbia River occurred from February through May (except for an escapement closure during mid-March through late April) and harvested spring Chinook destined for every sub-basin. Non-Treaty fisheries for upriver spring Chinook in the main-stem Columbia River were closed from 1978-2000 because of poor returns. Consequently, fishing during this period targeted Willamette spring Chinook and was restricted to February and March.

With the advent of mass-marked hatchery fish, mark-selective fishing techniques, and agreements with the *U.S. v Oregon* parties, additional selective fishing opportunities became available beginning in 2001. The states were able to implement mark-selective sport and commercial fisheries that allowed for very small catch-and-release incidental mortality (i.e. the level of unintended fisheries-related mortality) on the ESA-listed stocks while providing opportunity to harvest abundant hatchery fish. These fisheries have operated under strict limits on the allowable level of incidental-mortality of ESA-listed salmon, and have generally been limited to 2% of the run. Both sport and commercial fisheries use mark-selective fishing techniques that require the release of all spring Chinook with an adipose fin intact.

The *U.S. v Oregon* parties have signed an agreement relative to harvest and production of upriver-bound salmon and steelhead stocks, covering the time frame of 2008-2017. A sliding scale harvest rate is in place for upriver spring Chinook that provides limited opportunities at the smallest run sizes and increased opportunities at larger run sizes (Table 1). This sliding scale harvest rate schedule provides a sound basis for recovery objectives encompassed in the Biological Opinion, and provides for non-Indian and treaty Indian fisheries to harvest abundant

hatchery fish, while providing protection to ESA-listed stocks. The maximum allowable harvest rate for wild upriver spring Chinook in non-Indian fisheries ranges from 0.5% to 2.7% depending on run size. Run sizes and fishery information can be found in Tables 1-9.

### Summer Chinook

The upper Columbia summer Chinook run consists of hatchery and natural origin fish destined for areas above Priest Rapids Dam. These Chinook are not listed under the ESA and the population is considered healthy. For management purposes, any Chinook passing Bonneville Dam during June 16 through July 31 is considered to be an upper Columbia summer Chinook. Daily passage over Bonneville Dam is typically stable with no significant peak. Passage is typically 50% complete around July 1.

Conservation guidelines are included under the *U.S. v Oregon* Management Agreement, which provides for a biologically-based spawning escapement goal for natural and hatchery stocks combined, and a sharing plan for the available harvest between treaty Indian and non-treaty fishers. The escapement goal of 29,000 fish to the Columbia River provides for sufficient escapement to meet natural and hatchery goals above Priest Rapids Dam. Hatchery production uses an integrated broodstock management strategy, meaning that hatchery production originates from both wild and hatchery-origin fish (which are 100% ad-clipped). Broodstock collection and natural spawning escapement goals have been exceeded annually since 1999. Run sizes and fishery information can be found in Tables 10-13.

### White Sturgeon

White sturgeon abundance in the lower Columbia River collapsed at the end of the 19th century due to over fishing. The population began to rebound after 1950 when maximum size limits were adopted to protect broodstock size white sturgeon. Since 1950, the population has increased significantly. The current lower Columbia River white sturgeon population is considered healthy, although recent declines in the catch rates of sub-legal fish and observations of pinniped predation throughout the lower river have raised some concerns about recent trends.

During the 1980's, coincident with reductions in salmon harvest opportunity, sport sturgeon effort continued to increase and total harvest (sport and commercial) of white sturgeon increased significantly compared to harvest in the 1970's and drove the legal-sized population down to levels of concern. Oregon and Washington responded with several regulation changes to control harvest.

Joint state tagging and recovery programs were initiated in 1985 to estimate annual abundance, which have been used as a base for harvest management decisions ever since. Since 1989, fisheries have been managed for optimum sustainable yield (OSY), which is intended to optimize harvest while allowing sufficient escapement through the legal size slot to maintain population growth. Management measures employed to achieve OSY built the sturgeon legal-sized population back to healthy levels by 1995.

In 1996, the Oregon and Washington fish and wildlife commissions adopted a three-year management accord for 1997-1999. The accord specified sturgeon management objectives for

the states, including total allowable harvest and allocation between sport and commercial fisheries. Specifically, it was intended to:

1. Increase the population consistent with OSY.
2. Provide year-round recreational fishing opportunity.
3. Provide a viable commercial fishery.
4. Stabilize harvest of sturgeon outside of the Columbia River.
5. Conservatively manage green sturgeon

Since 1999, three more accords have been put in place to guide the management of white and green sturgeon. The last of these, approved by the Oregon and Washington fish and wildlife commissions in 2005, expires at the end of 2008. Abundance and fishery information can be found in Tables 14-16 and Figure 1.

## **Discussion**

### Spring Chinook

Until 2002, non-treaty commercial and recreational fisheries objectives for upriver spring Chinook in the mainstem Columbia River were set annually by the Columbia River Compact and in Joint State hearings, although *U.S. v Oregon* agreements limited seasons for sport and commercial fisheries which resulted in relatively balanced impacts to upriver spring Chinook. Beginning in 2002, a series of policies have provided guidance on allocation of the ESA limits to sport and commercial fisheries. Three, two-year policies were in place from 2002-2007. A one-year policy was adopted for 2008. The actual allocation of preseason impacts to sport and commercial fisheries has also changed very little ranging from 57% sport/43% commercial to 67% sport/33% commercial. The 2008 preseason allocation was 61% sport and 39% commercial.

To date, commercial and recreational fisheries have been managed with the intent of providing each fishery an opportunity to achieve some reasonable outcome within the constraints imposed by ESA. In general, robust fisheries have been implemented, even though annual variation in fishing effort, catch rates, run timing, and run sizes has required in-season adjustments.

Over the past three months, the Columbia River Fish Working Group (CRFWG) consisting of six members of the Oregon and Washington fish and wildlife commissions, agency staff, and advisors from the recreational, commercial, and conservation communities developed a near-term strategy for managing recreational and commercial fisheries over the next five years. This group discussed and considered several strategies for spring Chinook fisheries. Deliberations were informed by analyses of the relative differences in fisheries performance under different fisheries options as they relate to a goal of providing reasonable access to harvestable fish consistent with the conservation needs of the stocks.

What emerged from Phase One of this process was a consensus for the near-term management of Columbia River spring Chinook fisheries. They also reached consensus on a framework for the long-term management of these fisheries. The details of the agreement are in Attachment 1.

### Summer Chinook

The previous policy guidance for summer Chinook, which expires December 31, 2008, includes

an allocation of 50% each for recreational and commercial fisheries downstream from Priest Rapids Dam. Recreational harvest above Priest Rapids Dam was excluded from the allocation policy. The Commission had not provided guidance on allocation of the non-treaty share until 2006, for several reasons:

- Harvest opportunities were non-existent until 2000.
- Prior to 2004, the only harvest opportunity was recreational fisheries above Priest Rapids Dam.
- The non-treaty share below Priest Rapids Dam was not defined until late spring in 2005.

The CRFWG has focused their attention on spring Chinook issues, and has recommended that the current summer Chinook allocation be continued from 2009-2013. It is expected that the CRFWG will discuss summer Chinook fisheries in more detail during Phase Two of the process beginning in 2009.

### White Sturgeon

Mark-recapture data indicates the abundance of legal-sized white sturgeon in the lower Columbia River has remained stable since 1998; however, the objective of increasing the abundance of the legal-sized population is not being met. Catch rate data from the recreational fishery indicates the relative abundance of over-size fish remains fairly steady, but shows a declining trend for sub-legal fish since 2005. This declining trend and continued observations of pinniped predation throughout the lower river have raised some concern about the long-term stability of the population.

In July 2008, the Oregon Department of Fish and Wildlife (ODFW) began work on a conservation plan for white sturgeon in the Columbia River downstream from Bonneville Dam. The plan is being developed under the Oregon Native Fish Conservation Policy because this population has “high public interest or economic or other impact on the local community.” The intent is to complete the planning effort in late 2009. In 2008, Washington Department of Fish and Wildlife (WDFW) staff members initiated development of a white sturgeon management plan for Washington waters statewide. These plans will examine the factors and threats that are limiting abundance and productivity of white sturgeon in the lower Columbia River, refine population goals, and develop potential strategies and actions to address these limitations. Preliminary drafts of the plans are due to be completed in 2009.

WDFW and ODFW staff members are recommending that the current three-year sturgeon management agreement between WDFW and ODFW be renewed for one year while both white sturgeon plans are being developed, and the two agencies jointly develop an agreement for long-term sturgeon management.

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

**Table 1. Spring Management Period Harvest Rate Schedule**

Harvest Rate Schedule for Chinook in Spring Management Period					
Total Upriver Spring and Snake River Summer Chinook Run Size <sup>6</sup>	SNAKE RIVER Natural Spring/Summer Chinook Run Size <sup>1</sup>	Treaty Zone 6 Total Harvest Rate <sup>2,5</sup>	Non-Treaty Natural Harvest Rate <sup>3</sup>	Total Natural Harvest Rate <sup>4</sup>	Non-Treaty Natural Limited Harvest Rate <sup>4</sup>
<27,000	<2,700	5.0%	<0.5%	<5.5%	0.5%
27,000	2,700	5.0%	0.5%	5.5%	0.5%
33,000	3,300	5.0%	1.0%	6.0%	0.5%
44,000	4,400	6.0%	1.0%	7.0%	0.5%
55,000	5,500	7.0%	1.5%	8.5%	1.0%
82,000	8,200	7.4%	1.6%	9.0%	1.5%
109,000	10,900	8.3%	1.7%	10.0%	
141,000	14,100	9.1%	1.9%	11.0%	
217,000	21,700	10.0%	2.0%	12.0%	
271,000	27,100	10.8%	2.2%	13.0%	
326,000	32,600	11.7%	2.3%	14.0%	
380,000	38,000	12.5%	2.5%	15.0%	
434,000	43,400	13.4%	2.6%	16.0%	
488,000	48,800	14.3%	2.7%	17.0%	

Footnotes for Table A1.

1. If the Snake River natural spring/summer forecast is less than 10% of the total upriver run size, the allowable mortality rate will be based on the Snake River natural spring/summer Chinook run size. In the event the total forecast is less than 27,000 or the Snake River natural spring/summer forecast is less than 2,700, Oregon and Washington would keep their mortality rate below 0.5% and attempt to keep actual mortalities as close to zero as possible while maintaining minimal fisheries targeting other harvestable runs.

2. Treaty Fisheries include: Zone 6 Ceremonial, subsistence, and commercial fisheries from January 1-June 15. Harvest impacts in the Bonneville Pool tributary fisheries may be included if TAC analysis shows the impacts have increased from the background levels.

3. Non-Treaty Fisheries include: Commercial and recreational fisheries in Zones 1-5 and mainstem recreational fisheries from Bonneville Dam upstream to the Hwy 395 Bridge in the Tri-Cities and commercial and recreation SAFE (Selective Areas Fisheries Evaluation) fisheries from January 1-June 15; Wanapum tribal fisheries, and Snake River mainstem recreational fisheries upstream to the Washington-Idaho border from April through June. Harvest impacts in the Bonneville Pool tributary fisheries may be included if TAC analysis shows the impacts have increased from the background levels.

4. If the Upper Columbia River natural spring Chinook forecast is less than 1,000, then the total allowable mortality for treaty and non-treaty fisheries combined would be restricted to 9% or less. Whenever Upper Columbia River natural fish restrict the total allowable mortality rate to 9% or less, then non-treaty fisheries would transfer 0.5% harvest rate to treaty fisheries. In no event would non-treaty fisheries go below 0.5% harvest rate.

5. The Treaty Tribes and the States of Oregon and Washington may agree to a fishery for the Treaty Tribes below Bonneville Dam not to exceed the harvest rates provided for in this Agreement.

6. If the total in river run is predicted to exceed 380,000, the Parties agree to consider increasing the total allowed harvest rate and to reinitiate consultation with NOAA Fisheries if necessary.

Year	Sport				Commercial			
	Preseason Allocation	Impact Rate		% Used	Preseason Allocation	Impact Rate		% Used
		Pre	Post			Pre	Post	
2000	50	0.10%	0.06%	62%	50	0.10%	0.13%	131%
2001 <sup>1</sup>	47	0.80%	0.95%	119%	53	0.90%	0.49%	55%
2002 <sup>2</sup>	60	1.00%	1.14%	114%	40	0.70%	0.80%	115%
2003 <sup>2</sup>	65	1.10%	0.85%	78%	35	0.60%	0.70%	117%
2004	60	1.20%	1.18%	98%	40	0.80%	0.94%	118%
2005	60	1.20%	1.05%	87%	40	0.80%	0.65%	82%
2006	57	1.14%	0.57%	50%	43	0.86%	0.83%	97%
2007 <sup>3</sup>	57	1.14%	0.82%	72%	43	0.86%	0.54%	63%
2008	61	1.16%	1.41%	122%	39	0.74%	0.71%	96%

- <sup>1</sup> During in-season management, the commercial fishery transferred 0.1% of their impact (10% of their allocation) to the recreational fishery. Preseason plan included 0.3% set aside for above Bonneville fisheries and management buffer.
- <sup>2</sup> Preseason plan included 0.3% set aside for SAFE and above Bonneville fisheries.
- <sup>3</sup> Fishery managed at 1.5% and 10% buffer for part of the season. Allowable impacts increased to 2.0% late in-season when run exceeded 82,000 fish.

Year	Upriver <sup>1</sup>	Willamette <sup>2</sup>	Other Lower River	Total
2000	186,100	57,500	16,500	260,100
2001	437,900	80,400	22,700	541,000 <sup>3</sup>
2002	331,300	121,700	30,100	483,100 <sup>4</sup>
2003	242,600	126,600	40,200	409,400
2004	221,600	144,400	56,200	422,200
2005	106,900	61,000	27,800	195,700
2006	132,100	59,700	33,400	225,200
2007	86,200	40,500	30,300	157,000
2008	178,800	~27,000	N/A	N/A

- <sup>1</sup> Run sizes calculated including the timeframe of June 1-15.
- <sup>2</sup> Adults and jacks
- <sup>3</sup> Largest return since at least 1938.
- <sup>4</sup> Second largest return.

<u>Year</u>	<u>Predicted</u>	<u>Actual</u>	<u>Recalibrated<sup>1</sup></u>
2000	134,000	178,600	186,100
2001	364,600	416,500	437,900
2002	333,700	295,100	331,300
2003	145,400	208,900	242,600
2004	360,700	193,400	221,600
2005	254,100	106,900	--
2006	88,400	132,100	--
2007	78,500	86,200	--
2008	269,300	178,800	--

<sup>1</sup>. 2000-2004 run sizes adjusted to include June 1-15.

<u>Year</u>	<u>Lower River Sport</u>		<u>Commercial</u>	
	<u>Pre-season Expectation</u>	<u>Actual</u>	<u>Pre-season Expectation</u>	<u>Actual</u>
2000	200-400	300	300-600	500
2001	13-15,000	25,800	6,000	5,400
2002	21,000	20,700	19,500	14,200
2003	10-15,000	17,400	10-15,000	3,200
2004	33,600	23,900	17,700	13,600
2005	24,000	11,400	14,000	5,400
2006		7,000		4,400
2007		6,800		2,900
2008		20,000		5,900

<sup>1</sup>. Kept catches only (adults and jacks). Since 2001 (except for the 2001 commercial fishery) only adipose fin-clipped hatchery spring Chinook could be retained.

**Table 6. Recent Lower Columbia Spring Chinook Seasons <sup>1</sup>**

Year	Sport		Commercial	
	Mth to I-5 Br.	I-5 Br. To Bonn Dam	Mth to I-5 Br.	I-5 Br. To Bonn Dam
2000	Jan 1-Mar 15	Closed	7 days Large mesh Feb 13-29	Closed
2001	Jan 1-Apr 17 Apr 25-29	Mar 12-Apr 17 Apr 25-29	6 days Large mesh Feb 26-Mar 9	Closed
2002	Jan 1-Apr 28 May 5-15	Mar 16-Apr 28 May 5-15	15 days Tangle net Feb 25-Mar 27	Closed
2003	Jan 1-Apr 5  Apr 6-May 15 <sup>2</sup> Wed-Sun weekly	Feb 15-Apr 5	3 days Large mesh Feb 17 and 19 Tangle net March 21	Closed
2004	Jan 1-April 30	Mar 16-April 21	8 days Large mesh March 4, 9, 11, 15, and 18. Tangle net March 23, 25, and 29.	Closed
2005	Jan 1-April 20 and June 4-15	March 16-April 20 3-days per week and one fish bag limit above Rooster Rock  June 4-15	9 days Large mesh Feb 22, 24, March 1, 3, 7, 10, and 14 Tangle net March 29 and 31	Closed
2006	Jan 1-Apr 13 and May 17-June 15	May 17-June 15	11 days All large mesh Feb 23 March 2, 7, 9, and 14 May 16, 18, 23, 25, 30 June 1	Closed
2007	Jan 1-April 15 and May 16-June 15	June 6-15	3 days Large mesh March 6 & 20 Tangle net March 22	1 day Large mesh Reduced area (Light 50 to 85)
2008	Jan 1 – Feb 24. During Mar 24 – Apr 4, the area from the mouth up to Hayden Island W. powerlines was open	Mar 16 – Apr 20 (lower Boundary was the Hayden Island W. powerlines, 6 days per week, 1 fish bag)	Closed	3 days small mesh Apr 1, 8, 15 (lower boundary was the Hayden Island W. powerlines)

<sup>1</sup>. Fisheries since 2001 (except for the 2001 commercial fishery) have been restricted to adipose fin-clipped hatchery spring Chinook only.

<sup>2</sup>. Fishery reduced in-season to 4 days/week below I-5 Bridge and closed above I-5 Bridge.

**Table 7. Below Bonneville Main-stem Recreational Spring Chinook Fishery and Run Sizes**

Year	Angler Trips	Catch	Upriver Run <sup>1</sup>	Total Run <sup>1</sup>
2000	9,900	300	186,100	260,100
2001	172,300	25,800	437,900	541,000
2002	175,100	20,700	331,300	483,100
2003	160,800	17,400	242,600	409,400
2004	156,300	23,900	221,600	422,200
2005	124,700	11,400	106,900	195,700
2006	86,800	7,000	132,100	225,200
2007	83,000	6,800	86,200	157,000
2008	103,000	20,000	178,800	N/A

<sup>1</sup>. Run sizes calculated including the timeframe of June 1-15.

**Table 8. Main-stem Commercial Spring Chinook Fishery**

Year	Fish	Pounds	Price per pound <sup>1</sup>
2000	500	9,400	\$4.97
2001	5,400	114,700	\$3.64
2002	14,200	225,800	\$4.16
2003	3,200	61,900	\$4.63
2004	13,600	200,100	\$3.88
2005	5,400	82,600	\$4.15
2006	4,400	71,800	\$5.39
2007	2,900	49,200	\$7.50
2008	6,000	81,600	\$7.59

<sup>1</sup>. Oregon only.

**Table 9. Commercial and Sport Harvest of Spring Chinook in Select Area Fisheries**

Year	Commercial <sup>1</sup>	Sport
2000	6,300	260
2001	8,700	500
2002	11,100	550
2003	7,500	990
2004	10,100	1,080
2005	2,400	160
2006	7,100	340
2007	6,600	200
2008	3,500	Na

<sup>1</sup> Spring Chinook only. Does not include SAB fall Chinook.

**Table 10. Recent Summer Chinook Run Sizes**

Year	Total Run	Priest Rapids Dam	Wells Dam
2000	23,200	22,300	6,400
2001	54,900	53,200	33,200
2002	92,800	96,300	61,100
2003	83,100	83,000	46,600
2004	65,400	67,100	31,400
2005	60,100	61,200	31,100
2006	76,200	52,200	25,700
2007	37,200	30,600	13,200
2008	54,000	39,300	21,100

<b>Table 11. Recent Harvest of Summer Chinook</b>					
<u>Year</u>	<u>Commercial</u>	<u>Below Bonneville Sport</u>	<u>Bonneville to Priest Rapids</u>	<u>Total Sport</u>	<u>Below Bonneville Angler Trips</u>
2002	No season	1,497	111	1,608	54,839
2003	No season	2,108	328	2,436	46,943
2004	186	1,325	157	1,482	41,850
2005	2,787	1,610	136	1,746	38,505
2006	4,819	4,988	166	5,154	43,802
2007	1,122	2,363	82	2,445	23,732
2008	1,368	2,270	800	3,070	30,505

Note: Allocation in place for 2006-2008 for 50/50 sharing.

<b>Table 12. Main-stem Commercial Summer Chinook Fishery</b>			
<u>Year</u>	<u>Summer Chinook</u>	<u>Pounds</u>	<u>Price per pound<sup>1</sup></u>
2004	186	2,948	\$1.69
2005	2,787 <sup>2</sup>	46,537	\$2.15
2006	4,819 <sup>2</sup>	97,929	\$2.53
2007	1,122 <sup>2</sup>	21,906	\$2.89
2008	1,370 <sup>2</sup>	24,716	\$3.00

<sup>1</sup> Oregon only.

<sup>2</sup> Preliminary landings.

**Table 13. Recent Columbia River Summer Chinook Seasons**

Year	Sport			Commercial
	Tongue Point to Bonneville	Bonneville to McNary	McNary to PR Dam	I-5 Br. To Bonn Dam
2002	June 28-July 31 mark-selective	July 1-31 mark selective	July 1-31 <sup>1</sup> mark selective	No season
2003	June 16 July 31 mark selective	June 16 July 31 mark selective	July 1-31 <sup>1</sup> mark selective	No season
2004	June 16 July 31 mark selective	June 16 July 31 mark selective	June 16 July 31	June 30-july 2 Two-12 hr periods
2005	June 16 July 31 mark selective in June	June 16 July 31 mark selective in June	June 16 July 31	June 23- July 26 Six 10-hr periods
2006	June 16 July 31	June 16 July 31	June 16 July 31	June 28- July 31 Thirteen 10-12 hr periods
2007	June 16-30	June 16-July 3	June 16- July 3	June 25- July 2 Two 10-hr periods
2008	June 21-28	June 16-July 1	June 16- July 1	June 24- July 8 Three 10-hr periods And one 6-hr period for sockeye

<sup>1</sup> Upstream to the Hwy 395 Bridge near Pasco, Washington.

**Table 14. Estimated Abundance of 42-60 Inch White Sturgeon in the Lower Columbia River, 1987-2007.**

Year	Total Length Interval (inches)		
	42-48	48-60	42-60
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	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 <sup>1</sup>	N/A	N/A	N/A
2005	106,900	30,000	136,900
2006	88,100	35,300	123,400
2007 <sup>2</sup>	102,800	28,900	131,700

1. Abundance estimates for 2004 were not developed due to data collection and modeling concerns.

2. Preliminary.

**Table 15. Annual Recreational Catches of White Sturgeon in the Lower Columbia River and Comparisons to Catch Guidelines, 1993-2008<sup>1</sup>.**

Year	Below Wauna		Above Wauna			Combined		
	Catch	Guideline	Catch	Adjusted Catch <sup>23</sup>	Guideline	Catch	Adjusted Catch <sup>2</sup>	Guideline
1993	20,107	Na	17,780		Na	37,900		
1994	15,578	Na	17,893		Na	33,500		
1995	29,714	Na	15,423		Na	45,100		
1996	27,694	Na	15,068		Na	42,800		
1997	24,511	Na	13,646		Na	38,200		53,840
1998	30,303	Na	11,293		Na	41,600		53,840
1999	29,238	Na	10,561		Na	39,800		40,000
2000	24,267	Na	16,238		Na	40,500		40,000
2001	21,619	Na	19,597		Na	41,200		39,500
2002	26,234	Na	12,045		Na	38,300		38,300
2003	18,367	19,200	13,565	13,811	12,800	31,932	32,178	32,000
2004	15,050	16,000	10,519	13,029	12,800	25,569	28,079	28,800
2005	17,911	17,783	11,891	12,979	11,560 <sup>4</sup>	29,802	30,890	29,343
2006	15,726	16,000	8,545	10,697	12,800	24,271	26,423	28,800
2007	19,131	16,274	10,675	15,316	13,852 <sup>4</sup>	29,806	34,447	30,126
2008	13,614	13,143	8,121 <sup>5</sup>	13,919 <sup>5</sup>	12,387 <sup>45</sup>	21,735 <sup>5</sup>	27,533 <sup>5</sup>	25,530

1. Recreational catch estimates for 1993-2002 are above and below the western tip of Puget Island.
2. Represents combined estimated harvest in the Columbia and Willamette rivers. Willamette River harvest is the amount in excess of 1986-1996 baseline (1,225).
3. Final Willamette River harvest estimates were not available until 2008.
4. Actual in-season guidelines were different than represented here.
5. Projected.

**Table 16. Commercial Catch of White Sturgeon by Season, Annual Commercial Catch, and Comparisons to Catch Guidelines, 1993-2008.**

Year	Mainstem							Select Area			Grand Total	Guideline
	Winter Sturgeon <sup>1</sup>	Winter Salmon	Summer	Early August	Late August	Late Fall	Total	Spring/Summer	Fall	Total		
1993	990			0	0	7,010	8,000	30	20	50	8,150	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	6,200	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	12,800	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 <sup>2</sup>	1,490	27		2,170	410	3,430	7,530	250	170	420	7,950	8,000
2004 <sup>2</sup>	1,696	174	9	1,550	917	3,219	7,565	184	117	301	7,866	8,000
2005 <sup>2</sup>	473	70	1,369	1,129	965	3,793	7,799	279	74	353	8,152	8,200
2006 <sup>2</sup>	288	1,651	544	1,548	363	3,492	7,886	317	109	426	8,312	8,000
2007 <sup>2</sup>	1,424	47	414	2,646	91	2,734	7,356	257	148	405	7,761	7,850
2008 <sup>2</sup>	869	17	523	2,706	103	3,170	7,388	337	134	471	7,859	7,927

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

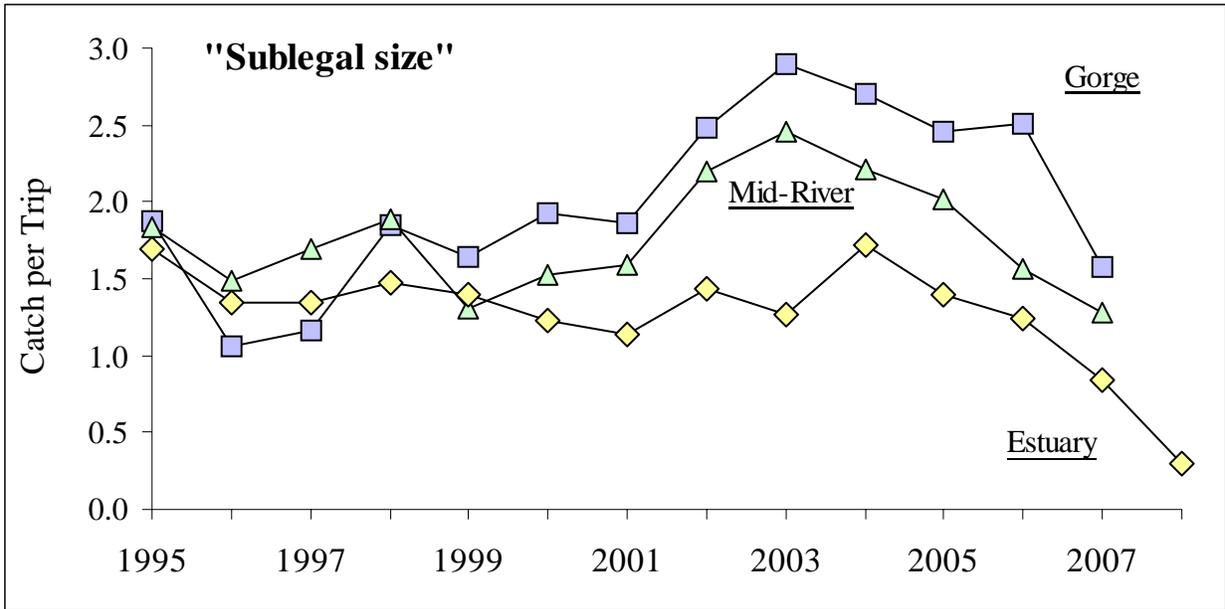


Figure 1. Catch rates of white sturgeon less than 42-inches in length in lower Columbia River recreational fisheries, 1995-2008.