

Agenda Item Summary

BACKGROUND

In December, 2012, the Commission adopted administrative rules implementing its guiding principles and management strategies for a new fisheries framework for lower Columbia River non-tribal fisheries.

www.dfw.state.or.us/fish/OSCRP/CRM/LMCR_fisheries_mgmt_reform.asp.

The Washington Fish and Wildlife Commission subsequently adopted a similar policy (<http://wdfw.wa.gov/commission/policies/c3620.html>).

On June 6, 2013, the Commission reconsidered and readopted rules it adopted in December 2012 (OAR Chapter 635, Divisions 004, 005, 006, 007, 014, 023, 042, and 500).

In 2013, the Oregon Legislature passed Senate Bill 830, which provided direction relevant to the lower Columbia River fishery reform rules, including an adaptive management approach to implementation, and established a Fishery Enhancement Fund as well as a Transition Support Fund. SB 830 also authorized the creation of a Columbia River endorsement to provide enhanced fishing license revenues to the Enhancement Fund and authorized the appropriation of general fund dollars. Funding advanced pursuant to SB 830, including general fund and endorsement license dollars, has provided part of the overall funds used to implement the Commission's rules to date.

Although OAR 635-500-6765 requires "*an initial review in 2014 and... a comprehensive review at the end of the transition period [January 2017],*" Commission members asked for an annual update during the transition period. The Department conducted and provided the Commission with the initial review in January of 2014. This agenda item provides the second annual update for the new management and reform framework for lower Columbia River non-tribal fisheries.

Status of Ongoing litigation

On July 1, 2013, the petitioners in *Fick v. ODFW* moved to stay certain rules the Commission adopted in June 2013 governing commercial and recreational fisheries in the Columbia River and tributaries. The motion for a stay was denied in an order issued on October 22, 2013 by the Appellate Commissioner and adhered to in an order issued by the Oregon Court of Appeals on December 2, 2013. The focus of the litigation now regards the petitioners' request for judicial review of the contested rules by the Oregon Court of Appeals. Arguments were heard last June. The Court has not yet ruled. There has not been any further judicial curtailment of implementing the rules during this judicial review.

2014 PUBLIC INVOLVEMENT

- January 10, 2014 – review of fisheries reform, FWC meeting.
- January 27, 2014 - Met with the Columbia River Recreational Advisory Group and Columbia River Commercial Fishery Advisory Group.
- January 29 through October 23, 2014 - Held 26 Columbia River Compact/Joint State Hearings dealing with mainstem commercial and recreational fisheries downstream from Bonneville Dam.
- March 17 and April 3, 2014 - Met with Columbia River commercial and recreational fisheries stakeholders as part of the North-of-Falcon process for planning summer and fall fisheries.

- December 4, 2014 - Met with the Columbia River Recreational and Commercial Advisory Groups.
- December 5, 2014 – Met with the Columbia River Fisherman’s Protective Union.
- December 12, 2014 - Met with Northwest Sportfishing Industry Association.
- December 15, 2014 - Met with Salmon for All.

OUTLINE OF KEY POLICY OBJECTIVES

Below is a brief outline of key policy objectives reported on in this agenda item:

- 1) Harvest allocation shifts (Issue 1)
- 2) Off-channel (Select Area) commercial fishery enhancements (Issue 2)
 - a) Enhance production in existing fisheries;
 - b) Evaluate expansion of commercial fishing opportunity in existing sites;
 - c) Examine feasibility of establishing new sites.
- 3) Evaluation of alternative commercial fishing gear and techniques (Issue 3)

Additionally, updates on the 2014 fisheries (Issues 4-6), 2014 economic metrics (Issue 7), and white sturgeon stock status (Issue 8) are provided.

ISSUE 1

ALLOCATION SHIFTS

ANALYSIS

The Commission adopted the following policy objective in rule (635-500-6705): *“(5) For steelhead, salmon and sturgeon, prioritize recreational fisheries in the mainstem and commercial fisheries in off-channel areas of the lower Columbia River. Toward this end: a) Assign mainstem recreational fisheries a sufficient share of ESA-impacts and harvestable surplus to enhance current fishing opportunity and economic benefit. b) Assign commercial fisheries a sufficient share of the ESA-impacts and harvestable surplus to effectively harvest fish in off-channel areas and harvest surplus fish with selective techniques in the mainstem Columbia River.”*

This policy objective included a phased shift in allocation among recreational and non-tribal commercial fisheries for 2013 and beyond (OAR 635-500-6715 through OAR 635-500-6750).

For 2014, planned preseason allocation shifts from commercial to recreational fisheries continued per policy guidelines (Table 1). Post-season allocations, by fishery, are discussed in Issues 4, 5, and 6.

Table 1. Summary of preseason allocation policies.

	2013 Preseason Allocation	2014 Preseason Allocation
Spring Chinook	Recreational: 60% ESA-Impact Commercial: 35% ESA-Impact Held in Reserve: 5% ESA-Impact	Recreational: 70% ESA-Impact Commercial: 30% ESA-Impact
Summer Chinook	Recreational: 55% Harvestable Surplus Commercial: 45% Harvestable Surplus	Recreational: 60% Harvestable Surplus Commercial: 40% Harvestable Surplus
Sockeye	Recreational: 70% ESA Impact Commercial: 30% ESA Impact	Recreational: 70% ESA Impact Commercial: 30% ESA Impact
Tule Fall Chinook	Recreational: 69% ESA-Impact Commercial: 31% ESA-Impact	Recreational: 70% ESA-Impact Commercial: 30% ESA-Impact
U. Bright Fall Chinook	Recreational: 44% ESA-Impact Commercial: 56% ESA-Impact	Recreational: 38% ESA-Impact Commercial: 62% ESA-Impact

**ISSUE 2
ANALYSIS**

OFF-CHANNEL (SELECT AREA) ENHANCEMENTS

Enhance Production in Existing Select Area (Off-Channel) Fisheries

One of the policy objectives is to enhance the economic benefits of off-channel commercial fisheries by “providing additional hatchery fish for release in off-channel areas by shifting production, and where possible providing new production... (OAR 635-500-6705(7)(a)).” Although not specified in rule, the Commission provided further guidance related to the numbers and stocks of hatchery fish that were to be released in off-channel (Select) areas.

In the near term (2013 through 2016), the annual Select Area releases were to be as follows, with scheduled objectives for 2017 and beyond provided in parentheses:

- a) Spring Chinook: Oregon initiated an increase of 250,000 per year in 2010 based on OFWC direction in 2008. An additional 500,000 Oregon increase was scheduled for 2013 as part of the transition period. Washington discontinued releases of 350,000 spring Chinook in Deep River in 2014, as planned in the reform package, because of a track record of very poor survival of these fish, and little contribution to the commercial fishery. Washington was also to initiate 250,000 additional production in 2013. (Further increases are scheduled to begin in 2017 to bring the total to 1,250,000 “additional releases” and a cumulative goal of 2,200,000 by 2017).
- b) Coho: Oregon initiated an increase of 120,000 per year in 2010 based on OFWC direction in 2008. An additional 600,000 Oregon increase was scheduled for 2013 as part of the transition period. Washington was also to initiate 200,000 additional production in 2013. (Further increases are scheduled to begin in 2017 to bring the total to 1,920,000 “additional releases” and a cumulative goal of 6,090,000 by 2017).
- c) Select Area Bright (SAB) fall Chinook: An Oregon increase of 500,000 was scheduled for 2013 as part of the transition period. (Further increases are scheduled to begin in 2017 to bring the total to 750,000 “additional releases” and a cumulative goal of 2,200,000 by 2017).

In general, enhanced production in off-channel areas is on track, with some exceptions noted below. Oregon met its goal of releasing an additional 500,000 spring Chinook in 2014. As planned, Washington discontinued releases of 350,000 spring Chinook in Deep River in 2014 because of a track record of very poor survival

of these fish, and little contribution to the commercial fishery. This affects the planned approach of the rule reform package. However, Washington initiated a new release of 200,000 spring Chinook in Cathlamet Channel in 2014 as part of WDFW efforts to evaluate potential new Select Area sites.

Coho and Select Area Bright (SAB) fall Chinook releases in 2014 were 104% (number) and 114% (number) of the production goal, respectively. The SAB increase was due to higher than expected broodstock availability allowing for implementation of an extra 250,000 smolt production not scheduled to occur until 2017.

Oregon hatchery production for 2015 releases is on track to meet release targets for coho and spring Chinook, but Washington production is still less than anticipated for spring Chinook. Although SAB fall Chinook releases were higher than planned in 2014, releases will likely fall about 250,000 fish short of goal in 2015 due to a shortage of broodstock returning in 2014.

Table 2 summarizes enhanced Select Area releases by stock and year and expected return years.

Table 2. Summary of Select Area production goals and actual releases.

	Period	Release Year	Total Release Goals	Actual Release Totals	First Adult Return Year
Spring Chinook	Pre-Transition	2010 ^a	1,550,000	1,535,200	2012
		2011 ^a	1,550,000	1,290,700	2013
		2012 ^a	1,550,000	1,529,300	2014
	Transition	2013	2,050,000	1,829,200	2015
		2014 ^b	1,950,000	1,846,600	2016
		2015 ^b	1,950,000		2017
		2016 ^b	1,950,000		2018
		2017+ ^b	2,200,000		2019
	Coho	Pre-Transition	2010 ^a	4,290,000	4,009,700
2011 ^a			4,290,000	3,811,000	2012
2012 ^a			4,290,000	3,995,800	2013
Transition		2013	5,090,000	4,536,700	2014
		2014 ^c	5,090,000	5,305,000	2015
		2015 ^c	5,090,000		2016
		2016 ^c	5,090,000		2017
Long Term		2017+ ^c	6,090,000		2018
SAB Fall Chinook	Transition	2013	1,950,000	1,850,300	2015
		2014	1,950,000	2,227,400	2016
		2015	1,950,000		2017
		2016	1,950,000		2018
	Long Term	2017+	2,200,000		2019

^a Includes 250,000 ChS and 120,000 CO additional production that was specified as part of 2008 OFWC Allocation Policies

^b 350k spring Chinook from WDFW were discontinued in 2014 due to low contribution to fisheries.

^c 200k coho from WDFW scheduled for release in 2015 were discontinued due to budget cuts.

Evaluate Expansion of Commercial Fishing Opportunity in Existing Select Area (Off-Channel) Sites

The Commission's rules also include the policy objective to enhance the economic

benefits of off-channel commercial fisheries by “*expanding existing seasons and boundaries in off-channel areas and/or establishing new off-channel areas (OAR 635-500-6705(7)(b)).*”

Season Expansion: Because of the duration of existing fishing seasons, opportunities to expand current seasons in existing Oregon Select Area (off-channel) sites are limited to the winter timeframe in Tongue Point/South Channel and in Knappa Slough. In 2014, expanded season winter fisheries were opened for the second consecutive year in these two sites. Participation and harvest to date have been limited which is not unexpected for winter Select Area fisheries. Results for Knappa Slough could not be separated from Blind Slough even though staff attempted an on-board observation program to address this issue. In total, additional winter seasons supported 38 new commercial fishing days, 71 additional deliveries, and 165 additional landed spring Chinook for 2013 and 2014, respectively. Commercial landings included an estimated 8 wild upriver spring Chinook in the 2013-14 Tongue Point expanded seasons. In Knappa/Blind Slough, no wild upriver spring Chinook were caught in 2013 and 2 were caught in 2014.

Plans for 2015 include continuing winter fisheries in Tongue Point/South Channel and Knappa Slough.

Table 3. Summary of expanded winter seasons in existing Select Area fisheries, 2013-2014.

Site	Year	Date Range	Days	Total Deliveries	Chinook
Tongue Point	2013	Feb 11-Mar 12	9	23	70
	2014	Feb 10-Mar 14	10	17	33
Knappa Slough	2013	Feb 11-Mar 12	9	19*	37 ^a
	2014	Feb 10-Mar 14	10	12*	25 ^a

^a Includes both Knappa Slough and Blind Slough

Area Boundary Expansion: Since fall 2011, test fishing in areas adjacent to existing Select Area sites has been conducted during the spring and/or fall. To determine if these areas are viable for expanded commercial fisheries, the stock composition of the catch is being evaluated to determine the relative abundance of ESA-listed non-target stocks versus hatchery and other target stocks in these areas. Test fishing effort and catch to date are summarized in Tables 4 and 5.

Current Select Areas and Test Fishing Areas of Expansion

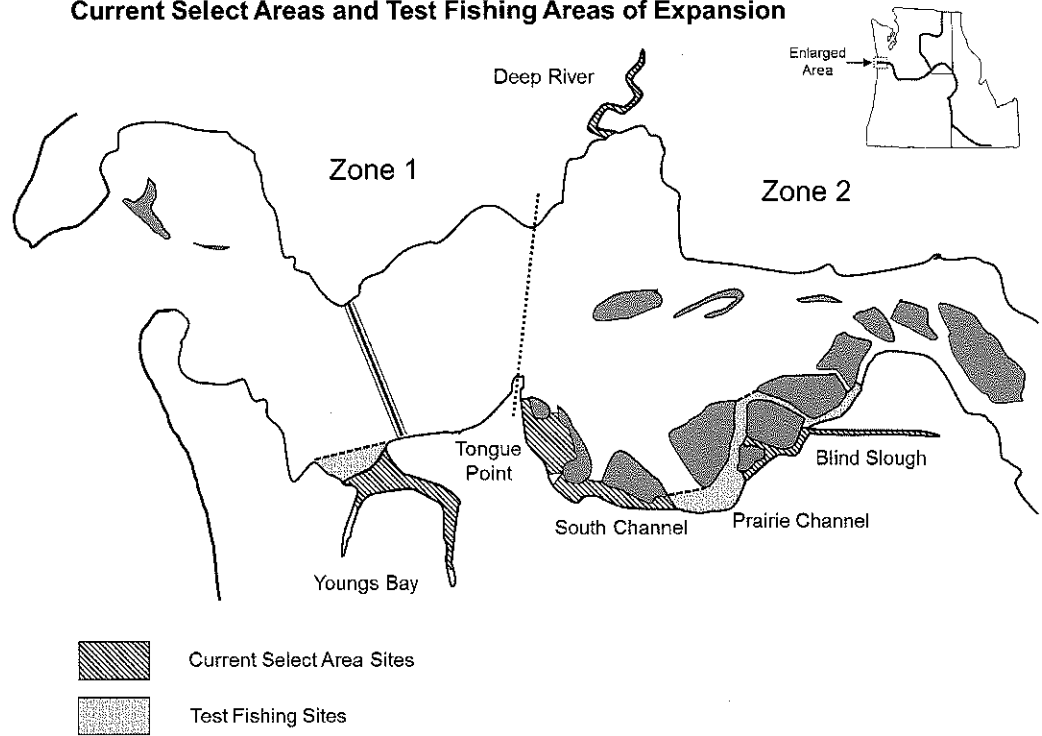


Table 4. Summary of **winter-summer** Select Area site expansion test fishing, 2013-2014.

Sampling Area	Year	Date Range	Fisher Days	Drifts	CHS ^a	STH handled ^a
Inner Youngs Bay	2013	3/12 - 7/31	35	69	50	3
	2014	3/4 - 5/12	23	43	71	14
	Sum		58	112	121	17
Outer Youngs Bay	2013	3/12 - 7/31	35	68	27	3
	2014	3/4 - 7/31	40	97	29	9
	Sum		75	165	56	12
Lower Prairie Channel	2013	3/12 - 6/13	30	95	119	25
	2014	3/5 - 6/9	30	90	309	47
	Sum		60	185	428	72
Upper Prairie Channel	2013	3/12 - 6/13	32	59	16	12
	2014	3/5 - 6/9	30	30	19	8
	Sum		62	89	35	20

^a Spring Chinook (CHS) – all stocks/hatchery and wild; all steelhead (STH) – hatchery and wild.

Table 5. Summary of **fall** Select Area site expansion test fishing, 2011-2014.

Sampling Area	Year	Date Range	Fisher Days	Drifts	CHF	COH	STH handled
Outer Youngs Bay	2013	8/30 - 10/10	14	29	18	33	3
	2014	8/4 - 10/10	40	80	108	318	12
	Sum		54	109	126	351	15
Lower Prairie Channel	2012	8/30 - 10/1	12	34	49	21	6
	2013	8/30 - 10/10	12	32	135	76	8
	2014	8/26 - 10/5	18	54	148	126	16
	Sum		42	66	332	223	30
Grant Slough	2011	8/28 - 10/12	10	21	14	5	0
	2012	8/30 - 10/1	12	26	10	4	1
	2013	8/30 - 10/10	11	20	39	29	1
	Sum		33	67	63	38	2
Upper Prairie Channel	2011	8/28 - 10/12	10	19	17	2	0
	2012	8/30 - 10/1	12	24	26	4	2
	2013	8/30 - 10/10	10	18	23	8	1
	Sum		32	61	66	14	3

^a *Fall Chinook (CHF) – all stocks/hatchery and wild; coho (COH) – all stocks/hatchery and wild; steelhead (STH) – hatchery and wild.*

Test fishing will continue in 2015 during the winter, spring, summer and fall periods for outer Youngs Bay and during the winter, spring and fall in upper and lower Prairie Channel. Test fishing results will be evaluated for stock composition and encounters of ESA-listed non-target stocks to determine which sites hold potential for area expansion. Catches of ESA-listed stocks are to be expected in these areas and have occurred during testing. Evaluation of the potential effects of full implementation of fisheries on available ESA impacts is ongoing.

Establishing New Off-Channel Sites: Efforts by ODFW to identify new Select Area (off-channel) sites were initiated in 2014 and included initial reconnaissance to identify candidate sites for further evaluation. This effort utilized past assessments of potential off-channel sites conducted in the 1990s along with site visits, discussions with commercial fishers, and consultation with Select Area Fisheries Project staff to narrow down the list to three top candidates. As a result of this process, Clifton Channel (OR), Westport Slough (OR), and Coal Creek Slough (WA) were selected for further evaluation.

Contracted test fishing occurred in each of these sites during the spring and fall of 2014 (Table 6). Data collected will be used to estimate potential take of ESA-listed non-target adult salmonids which will contribute to evaluation of the suitability of each site for implementation as an off-channel fishery. Potential sites will also be evaluated to determine costs associated with constructing new rearing facilities. Finally, the homing potential of suitable sites will be evaluated to determine how likely released smolts are to return to each site as adults.

In 2013 and 2014, WDFW conducted spring test fishing in Cathlamet Channel to evaluate its potential as a new off-channel fishing site. Spring Chinook smolts (200,000) were released at this site in 2014, with similar numbers planned for 2015.

Table 6. Summary of test fishing in **potential new** Select Area fishing sites, 2013-2014.

Site	Year	Date Range	Fisher		All Catch (Adults)		
			Days	Drifts	Chinook	Coho	Steelhead
Clifton	2014	3/31 - 6/11	48	187	194	--	55
		9/14 - 10/26	21	82	72	174	9
		Sum	69	269	266	174	64
Westport Slough	2014	3/26 - 6/10	48	191	9	--	16
		9/9 - 10/31	38	152	146	139	0
		Sum	86	343	155	139	16
Coal Creek Slough	2014	3/27 - 6/13	24	96	0	--	6
		9/8 - 10/31	22	88	14	33	2
		Sum	46	184	14	33	8
Cathlamet Channel	2013	4/22-5/20	15	62	102	--	20
	2014	2/24-5/19	37	151	183	--	69
	Sum	52	213	285	0	89	

**ISSUE 3
ANALYSIS**

EVALUATION OF ALTERNATIVE COMMERCIAL FISHING GEAR AND TECHNIQUES

Another policy objective adopted in rule by the Commission is: “develop and implement selective fishing gear and techniques for commercial mainstem fisheries to optimize conservation and economic benefits consistent with mainstem recreational objectives” (OAR 635-500-6705 (8)). Since 2009, Oregon and Washington fisheries staff have been evaluating alternative gear types for use in Columbia River commercial fisheries. Department funding for this research is from base budget and federal Mitchell Act funds, in addition to funding appropriated and authorized through SB 830, passed by the Oregon legislature in 2013.

Results to Date

The gears evaluated to date include beach seines, purse seines, tangle nets, trolling gear, hook and line, fish traps, and arrow nets. Discussion of the potential use of a fish wheel is ongoing, but the gear has not yet been tested. The following is a brief summary of results to date for each gear type:

Seines

- Evaluations of purse and beach seines fished during fall 2009-2012 handled relatively large numbers of Chinook and coho, indicating potential as viable selective commercial gear types. The number of steelhead handled, especially in beach seines, was also significant. Certain stocks of steelhead are ESA-listed and allowable mortality for fish handled and released is capped at 2% of the adult return for all non-Indian mainstem fisheries.
- Evaluations of purse and beach seines fished during summer 2011-2014 handled moderate numbers of Chinook but sockeye catch was high. This poses a problem since this run includes ESA-listed Snake River sockeye which have a maximum allowable take limitation of 1% of the Columbia River return.
- Data from a long-term post-release mortality study conducted by Washington Department of Fish and Wildlife during 2011-2013 were analyzed by the *US v. Oregon* Technical Advisory Committee (TAC). Due to technical issues with the study, the TAC was only able to agree on a set of interim rates based on the study

data for managing the pilot 2014 seine fisheries. These rates were considerably higher for Chinook and coho in both seine types, but were relatively low for steelhead.

TAC interim 2014 mortality rates for Chinook, coho, and steelhead based on studies during fall 2011-2013.

Gear	Chinook	Coho	Steelhead
Beach Seine	34.3%	38.4%	8.3%
Purse Seine	22.5%	28.9%	3.3%

WDFW's Science section has been re-analyzing the seine mortality study data to attempt to address some of the technical problems encountered during TAC's review. WDFW has proposed a revised methodology and mortality estimates for Chinook and steelhead for review by the TAC. These new estimates are lower for Chinook and coho than the interim values used for 2014. TAC and NOAA review is expected to be completed by March 2015.

- A pilot commercial seine fishery was implemented in fall 2014 using the interim rates shown in the table above. Catch results of the pilot fishery are described in Issue 6.

Coho tangle net

- Tangle nets (≤ 3.75 -inch mesh) were initially evaluated during fall 2009-2011 for use in catching coho. The evaluation showed decent catch rates, high mark rates, moderate immediate mortality, and low by-catch.
- Based on these results, a full-fleet fishery using this gear and live-capture regulations (live boxes, drift time limits, etc.) along with on-board monitoring was implemented in October 2013 and 2014.
- A long-term survival evaluation initiated in 2013 and replicated in 2014 indicates immediate mortality for this gear type may be higher than anticipated. Methods for this study are similar to those used for seine gears and for past evaluations of spring Chinook captured in large mesh gillnets and tangle nets. Evaluation of post-release mortality is ongoing.

Ocean Salmon Troll gear

- Commercial troll gear was evaluated during fall 2009 using two contracted ocean salmon trollers and gear commonly used in ocean salmon troll fisheries.
- Catch rates for Chinook and coho were very low.
- Additional field work is not anticipated using this gear/method.

Hook and line

- Staff evaluated the potential of standard recreational hook-and-line gear for application in a fall commercial fishery by analyzing data collected during 2010-2014 from professional guides participating in the Buoy 10 fishery.
- Catch rates, total catch volume, and low mark rates limit the potential as a large-scale commercial fishery, but this method may have application as a fishery enhancement at certain times and in certain areas, particularly if visual stock identification of wild fish is possible.

Pound net

- A fixed pound net trap was evaluated by WDFW during fall 2013.

- Catch rates were negligible, possibly due to implementing the trap too late in the run.

Floating fish trap

- Two floating fish traps were tested during the fall of 2009 and 2010.
- Catch rates for both Chinook and coho were low, but additional lead and fyke configurations remain untested, and trap construction methods may have affected the ability to retain encountered fish in the trap.

Fish wheel

- ODFW staff have been working with a commercial fisher to evaluate a floating fish wheel to harvest American shad, but field testing is yet to occur.
- Staff anticipates that operation of the wheel would also provide an opportunity to evaluate the feasibility of this gear to capture salmon for commercial harvest.
- Securing authorization and permits allowing installation and operation of this gear type in the Columbia River Gorge National Scenic Area has proven to be a significant obstacle.

Arrow net

- Limited field testing of a shore-based arrow net, which consists of a large-mesh lead with a tangle net fish trap on the outer end, occurred in 2013 and 2014.
- Catch rates were moderate, primarily due to the gear being fishable at slack tide only.

Future Work

Evaluations of alternative commercial fishing gears and approaches are on-going and expected to continue in 2015 possibly including:

- A review of seine mortality estimation methodologies
- Completion of the third year of the coho tangle net mortality study
- Continued field testing of the pound net
- Continued field testing of a floating fish trap
- Evaluation of the potential for a floating fish wheel, which could be operated outside of the Gorge Scenic Area.
- Evaluation of potential visual stock identification (VSI) metrics to help differentiate wild tule fall Chinook from upriver bright fall Chinook.
- Evaluation of catch and quality of fish caught in existing weirs (predominately WA) in lower Columbia River tributaries.

Because pound nets, fish traps, and fish wheels cannot be deployed directly from a boat, they generally require installation of pilings in order to anchor the gear. This makes these gear types especially challenging to field test due to permitting requirements for installation of pilings in the river. Previous experience has shown that applying for piling installation is time-consuming, and pilings may ultimately be rejected by permitting agencies. Piling installation is relatively expensive and restricted to in-water work windows which can further complicate field testing.

ISSUE 4
ANALYSIS

2014 FISHERIES REVIEW - SPRING CHINOOK

Preseason Planning

In 2014, management guidelines for the harvest of upriver spring Chinook were based on forecasted run-sizes to the Columbia River mouth of 227,000 adult upriver spring Chinook and 58,700 Willamette spring Chinook, and catch-balance provisions under the *U.S. v. Oregon* Management Agreement.

Actual Returns

The actual return of adult upriver spring Chinook was 242,600 or 107% of the pre-season forecast. The actual return of Willamette spring Chinook to the Columbia River is 51,800, or 88% of forecast.

A total of 15 Columbia River Compact (commercial and tribal fisheries) and 11 Joint State Hearing (recreational fisheries) meetings were held during the spring season. Seven TAC meetings occurred during the spring period, resulting in four formal run size updates for upriver spring Chinook. The most significant update occurred on May 5 when the TAC updated the run size to a minimum of 185,000. This action allowed pre-update buffers to be removed for non-tribal fisheries. Catches in recreational and commercial mainstem fisheries were on par with expectations.

Recreational Fisheries

Downstream from Bonneville Dam

Seasons: Prior to a run-size update, the recreational fishery downstream from Bonneville Dam was open for Chinook retention January 1 through February 28 from Buoy 10 upstream to the I-5 Bridge under permanent rules. Under temporary rules, the fishery remained open March 1 through April 14 from Buoy 10 upstream to Bonneville Dam, although the area between Beacon Rock and Bonneville Dam was open only to bank fishing. During this period, the fishery was closed on three Tuesdays (March 25, April 1, and April 8) to allow for possible commercial fishery openers. Following the run update, the fishery re-opened April 19, May 9-10, and May 15-June 15 from Tongue Point upstream to Bonneville Dam (except bank only from Rooster Rock upstream prior to May 15). The bag limit was one adipose fin-clipped Chinook per day throughout the season. In total, angling was open for 77 of a possible 107 days from March 1 through June 15, including 13 of 30 days in April.

Harvest/Angler Trips: An estimated 15,728 adult spring Chinook of all stocks were kept and 6,776 were released from 145,642 angler trips downstream of Bonneville Dam. In addition, 1,793 jack Chinook and 2,434 steelhead were also kept. The catch rate averaged one adult Chinook kept for every 9.3 angler trips.

The recreational fishery downstream from Bonneville Dam caught 13,572 adult upriver spring Chinook compared to 15,643 allowed under the *U.S. v. Oregon* catch balancing agreement and Commission allocation policies. This was 87% of the available catch balancing allocation for this fishery which was primarily due to the effect of declining catches following mid-May run updates.

Upstream of Bonneville Dam

Seasons: Prior to the run-size update, anglers were allowed to retain spring Chinook from March 16 through May 9 from Bonneville Dam upstream to the Oregon/Washington border. After the run-size update, the fishery reopened May 31 through June 15. The bag limit was one adipose fin-clipped Chinook per day

throughout the season. Between March 15 and June 15, this fishery was open for retention for a total of 71 of a possible 92 days.

Harvest/Angler Trips: An estimated 2,140 adult Chinook were kept from 7,913 angler trips. An additional 908 adult Chinook were released. The catch rate averaged one adult Chinook kept for every 3.7 angler trips. In the Snake River, anglers kept 1,454 spring Chinook and released 553 fish.

Recreational anglers upstream from Bonneville Dam slightly exceeded their final allocation of 3,589 adult upriver spring Chinook with total mortalities of 3,777, or 105% of the allocation.

Non-Indian Commercial Fisheries

Mainstem

Five commercial fishing periods (8-12 hours each) occurred from April 1 through June 5 in Zones 1-5. For two of the openers (April 1 and May 7) fishers were required to use tangle nets ($\leq 4\frac{1}{4}$ -inch mesh) to minimize post-release mortality. However, in the May 7 opener, catches of American shad were very high. High catches of shad can create difficulties in fishing under live capture rules, which limit total drift time. Therefore, for the last three openers (May 20-21, May 28-29, and June 4-5), large mesh (≥ 8 -inch) gear was used to reduce catch of shad and also to avoid handle of building numbers of steelhead. Combined landings totaled 3,514 adult and 486 jack spring Chinook, and 1,200 shad. An additional 2,182 adult spring Chinook were released. Deliveries ranged from 43 to 149 per period.

The final allocation to the non-Indian mainstem commercial fishery under the *U.S. v. Oregon* catch balancing agreement and Commission allocation policy was 4,534 adult upriver spring Chinook. Of this total, the fishery used 3,364 or 74% of its catch balancing allocation. The remaining 26% was not accessible because the fishery hit ESA impact limitations before hitting the catch balance limit.

Select Area (Off-channel)

Select Area winter and spring commercial fisheries were open in Youngs Bay, Tongue Point/South Channel, Blind/Knappa Sloughs, and Deep River (Washington). Participation and harvest are summarized in Table 7.

Table 7. Summary of 2014 winter/spring Select Area seasons.

Site	Season	Dates	Days	Deliveries per period	Chinook
Youngs Bay	Winter	Feb 10-Mar 26	20	0-18	245
Tongue Point/ South Channel.		Feb 10-Mar 12	9	0-9	33
Blind Slough		Feb 10-Apr 1	15		
Knappa Slough		Feb 10-Mar 14	10	0-10	172
Deep River		Feb 10-Apr 1	15	0-5	39
Subtotal					489
Youngs Bay	Spring	Apr 17-Jun 13	23	3-60	1,952
Tongue Point/ South Channel		Apr 24-Jun 13	12	0-8	39
Blind Slough/ Knappa Slough		Apr 17-Jun 13	14	0-17	295
Deep River		Apr 17-Jun 13	17	0-3	26
Subtotal					
Total					2,801

Harvest in Select Area winter and spring commercial fisheries were well below expectations and the poorest since 2005. Due to relatively high interceptions of

upriver spring Chinook early in the fishery, emergency closures were enacted during the peak of the spring season to ensure ESA limitations were not exceeded. However, the final post run-update allocation of adult upriver spring Chinook for Select Area commercial fisheries was 362 fish, of which the fishery used 257, or 71% of its allocation.

Table 8. Summary of upriver spring Chinook catch balance and ESA-impact sharing in 2014 non-treaty fisheries.

		Catch Balance			ESA Impacts		
		Pre	Post	Actual	Pre	Post	Actual
Commercial	Mainstem	1,734	4,534	3,364	0.210%	0.450%	0.509%
	Select Area	238	362	257	0.150%	0.150%	0.107%
	Total	1,972	4,896	3,621	0.360%	0.600%	0.616%
Recreational	Mainstem	10,157	15,643	13,572	0.840%	1.050%	0.793%
	BONN to McN	1,354	2,086	2,231	0.112%	0.140%	0.126%
	Snake River	976	1,503	1,546	0.168%	0.210%	0.152%
	Total	12,487	19,232	17,349	1.120%	1.400%	1.070%
Total Non-Tribal		14,459	24,128	20,970	1.480%	2.000%	1.686%

ISSUE 5 ANALYSIS

2014 FISHERIES REVIEW - SUMMER CHINOOK AND SOCKEYE

Preseason Planning

In 2014, management guidelines for the harvest of summer Chinook were based on forecasted run-sizes to the Columbia River mouth of 67,500 adults. Fishery allocations were based on the *U.S. v. Oregon* and Upper Columbia management agreements, and Commission guidance for sharing of harvest allocations downstream of Priest Rapids Dam. The combined harvest guideline for adult summer Chinook in non-treaty fisheries downstream of Priest Rapids Dam was 4,733 fish, with 2,840 allocated to recreational fisheries and 1,893 for commercial fisheries.

Based on the pre-season sockeye forecast of 347,100 and a one percent ESA limit on Snake River sockeye, the combined management guideline in all non-Indian fisheries was 3,470 fish.

Actual Returns

The actual return of adult summer Chinook was 78,300 (hatchery and wild) or 116% of the pre-season forecast and the actual return of sockeye was 645,100, nearly double the forecast. The recent large abundances of sockeye are almost entirely comprised of upper Columbia stocks returning to the Wenatchee and Okanogan systems, although increases in ESA-listed Snake River sockeye have also been observed. Based on actual returns, the in-season management guidelines for summer Chinook increased by about 37%, and nearly doubled for sockeye.

A total of six Columbia River Compact (commercial and tribal fisheries) and two Joint State Hearing (recreational fisheries) meetings were held during the summer season. Four TAC meetings occurred during the period, resulting in three formal run size updates for summer Chinook. Each update resulted in an in-season estimate exceeding preseason expectations, resulting in additional harvest opportunity.

Recreational Fisheries

Downstream from Bonneville Dam

The recreational fishery downstream from Bonneville Dam was open for adipose fin-clipped summer Chinook and any sockeye retention June 16 through June 30. Sockeye retention reopened July 3-31 and summer Chinook retention reopened July 3-6 and July 11-31. An estimated 1,980 adult hatchery Chinook, 6,961 hatchery steelhead, and 932 sockeye were kept from 53,661 angler trips targeting Chinook, sockeye and steelhead during June 16 through July 31. This fishery was open to retention of Chinook for a total of 40 days of a possible 46 days.

The final allocation to the recreational fishery downstream from Bonneville Dam was 3,316 adult summer Chinook. Of this total, the fishery used 2,385 (including release mortalities), or about 72% of its allocation. This was due to Chinook mark rates that were much lower than expected and lower than prior seasons (37% at Bonneville Dam in 2014 compared to ~50-60% in prior years).

Bonneville Dam to Priest Rapids Dam

Anglers were allowed to retain hatchery Chinook and any sockeye from June 16 through July 31 between Bonneville and Priest Rapids dams. The estimated catch included 440 hatchery Chinook kept (780 unmarked fish released) and about 730 sockeye.

Anglers in this area were able to access about 95% of their preseason allocation of summer Chinook using 559 of the available 585 Chinook mortalities.

Non-Indian Commercial Fisheries

Mainstem

Five commercial fishing periods (8-12 hours each) occurred (June 16-17 and July 7-8, 14-15, 21-22, and 28-29). The fisheries occurred in Zones 1-5 with an 8-inch mesh restriction. Fishers landed 2,743 Chinook and 276 sockeye. Deliveries were 75 for the first period and 21-30 for the other four periods. The fishery exceeded its allocation of 2,601 adult summer Chinook by 5%.

Select Area (Off-channel)

Select Area summer commercial fisheries occur in Youngs Bay to harvest late spring hatchery Chinook and early-returning Select Area bright hatchery fall Chinook, as opposed to upriver summer Chinook targeted in mainstem fisheries. Seven periods occurred from June 16 through July 31. Open hours for the initial four fishing periods were 50-100% greater than previous years to provide additional opportunity. Fishers landed 1,842 Chinook and 29 sockeye. Deliveries ranged from 29-82 per period. Chinook landings were 15% higher than the recent 5-year average.

ISSUE 6 ANALYSIS

2014 FISHERIES REVIEW - FALL CHINOOK AND COHO

Preseason Planning

In 2014, catch expectations for the harvest of fall Chinook and coho in recreational and non-tribal commercial fisheries were based on forecasted run-sizes to the Columbia River mouth of a record 1,500,000 adult fall Chinook (including 919,000 Upriver Brights, of which 61,000 were Snake River wild stock) and a strong return of 640,000 adult coho. Although some years have had very large returns of either Chinook or coho, returning run sizes of this magnitude for both species in the same

year have not generally been observed. Fisheries were modelled based on allocations of lower Columbia River natural (LCN) tule fall Chinook ESA-impacts and consideration of recreational fishery objectives.

Actual Returns

The actual return of adult fall Chinook is not yet final, but is expected to be approximately 1.15 million or about 77% of the pre-season forecast. Over 77% of the return was mid-Columbia and Upriver Bright fall Chinook. Almost 855,000 adults passed Bonneville Dam through December 19. The actual coho return to the Columbia River is not yet complete but is expected to exceed 885,000, or 139% of forecast.

A total of 15 Columbia River Compact (commercial and tribal fisheries) and five Joint State Hearing (recreational fisheries) meetings were held during the fall season. Seven TAC meetings occurred during the period, resulting in three formal run size updates for upriver fall Chinook, though upriver stocks were not constraining for fisheries in 2014. Wild B-run steelhead were a constraining stock, and there were also three updates to the B-run wild steelhead run size. The three updates changed the expected run size from 6,500 in preseason to 9,100, 9,350, and 9,900 wild B-run steelhead, respectively. These updates ensured significant opportunity for commercial fisheries to access upriver bright Chinook. Run sizes for the constraining lower river wild tule Chinook stock cannot generally be updated during the season.

Recreational Fisheries

Seasons:

Buoy 10 to Tongue Point: The fishery was open for Chinook retention August 1 through September 1 with a daily bag limit of two fish/one Chinook. During August 30 – September 1, only fin-clipped Chinook could be retained. Chinook retention reopened October 1 when the bag limit was also increased to two Chinook. Retention of adipose fin-clipped coho and steelhead was allowed August 1-December 31. Due to the expected large coho return, one additional coho was allowed as part of the daily bag limit September 2-30 and October 3-December 31. In total, the fishery was open to retention of Chinook for 32 days in August-September (61 days possible).

The Youngs Bay Control Zone was adopted by the Commission in February 2014 and was implemented from August 1–September 15, 2014. Staff is still assessing stock-specific catch of fall Chinook in the 2014 Buoy 10 recreational and Youngs Bay Select Area commercial fisheries.

Tongue Point to Warrior Rock: The fishery opened for Chinook retention August 1 with a daily bag limit of two fish/one Chinook. Chinook retention continued through September 14 but retention was restricted to only adipose fin-clipped Chinook September 8-14. The fishery reopened to Chinook (fin clipped or not) retention October 1 with a two fish/two Chinook daily bag limit. The fishery was open for retention of Chinook for 45 days in August-September (61 days possible).

Warrior Rock to Steamboat Landing: The fishery was open to Chinook retention August 1-December 31 with a two fish/two Chinook daily bag limit.

Steamboat Landing to Highway 395 Bridge (near Pasco, Washington): This boundary definition was new for 2014 and was created to establish an area where anglers would be able to keep an additional Chinook from the large 2014 upriver return, while avoiding catches of LCN tules. The fishery was open for Chinook retention August 1-December 31 with a daily bag limit of three fish/three Chinook.

Buoy 10 to Highway 395 Bridge: For the entire season, each legal angler aboard a vessel was allowed to deploy angling gear until the daily bag limit of salmon/steelhead for all anglers aboard the vessel was achieved (party rule). This rule has been in place in the Buoy 10 fishery for many years. It was applied for the first time in the upriver areas this year in order to increase angler access to the large 2014 upriver return.

Harvest/Angler Trips:

Buoy 10 to Tongue Point: An estimated 26,800 Chinook (hatchery and wild) and 57,600 hatchery coho were kept from 107,700 angler trips. An additional 16,600 Chinook and 40,300 coho were released. The number of Chinook kept was the third highest for this fishery while the total Chinook handle was the highest. The catch rate averaged one adult salmon kept for every 1.3 angler trips. Chinook take totaled 29,983 fish.

Although the fishery caught less than preseason expectations for total Chinook take, impacts on LCN tule Chinook will likely exceed the preseason allocation due to a higher percentage of this stock in the catch than anticipated. At this time, the final run size for LCN tule Chinook has not been calculated, thus current estimates of impact are based on the preseason run expectation. The total take of adult hatchery coho was about 65,300, or 116% of preseason expectations, reflecting the higher than expected abundance.

Tongue Point to Bonneville Dam: An estimated 26,300 adult Chinook and 5,800 adult hatchery coho were kept from 143,900 angler trips. The number of Chinook kept was the third highest for this fishery. An additional 6,800 Chinook and 3,000 coho were released. The catch rate averaged one adult Chinook kept for every 4.5 angler trips.

The total take of adult Chinook (including release mortality) in the fishery was about 27,634, which was 65% of the preseason expectation of 42,780. The difference is primarily due to the lower overall run size and lower than anticipated catch rates early in the season, likely as a result of warm water conditions. However, impacts on LCN tule Chinook will likely be close to the preseason allocation for this fishery due to a higher-than-expected frequency of this stock in the catch. The total take of adult hatchery coho was about 6,340, or 167% of expectations. This catch was a record high for this area.

Upstream from Bonneville Dam: Estimates of catch of adult Chinook in fisheries upstream from Bonneville Dam are based on average harvest rates from past seasons (pending availability of angler catch record cards for 2014) and are expected to be about 9,200.

Non-Indian Commercial Fisheries

Mainstem

Chinook Fisheries

Early fall mainstem commercial fisheries consisted of 13 nine-hour periods targeting Chinook from August 3 through September 2 in Zones 4-5 with a 9-9³/₄-inch mesh restriction. Fishers landed 47,732 Chinook and 966 coho. Deliveries ranged from 8 to 148 per period. The preseason expectation was 86,450 Chinook based on the large forecast. As with the recreational fishery, catches in the early commercial fisheries were substantially less than expected.

Late fall commercial fisheries targeting Chinook included 18 nine- to twelve-hour periods from September 14 through October 31. All openers occurred in Zones 4-5 to minimize take of LCN Chinook. Fishers were required to use large mesh (≥ 8 -inch). Combined landings totaled 49,932 Chinook and 6,603 coho. Deliveries ranged from 1 to 144 per period. The actual catch was more than twice the preseason expectation of 23,000 Chinook, and brought the total Chinook catch to a total of 97,664 (89%) out of an expected 109,450 fish.

Coho Fisheries

Nine 12-hour commercial fishing periods targeting coho occurred from October 1 through October 21 in Zones 1-3 with a 3 $\frac{3}{4}$ -inch tangle-net mesh restriction. Fishers landed 18,960 hatchery coho and 2,066 Chinook. Deliveries ranged from 17 to 39 per period.

Agency observers onboard commercial fishing boats that participated in the tangle-net coho fisheries monitored 262 drifts from 64 boats. Of the 1,520 coho observed, 83% were marked, which was very high and exceeded expectations, although mark rates on coho are generally highest later in the season. The observed handle of 20 steelhead (0.016 steelhead per marked coho) was low. The observed immediate mortality rate was 14.5% compared to 6.9% in the 2013 fishery, and may have been due to warmer water (65°F vs 61°F) this fall.

Thirteen 12-hour commercial fishing gillnet periods targeting coho occurred from October 9 through October 31 in Zones 1-3 with a 6-inch mesh restriction. Fishers landed 46,284 coho and 2,143 Chinook. Deliveries ranged from 19 to 89 per period.

Total take in coho-directed fisheries was about 66,950 coho (including release mortality in the tangle-net fisheries), which was 26% higher than expectations based on the preseason run size.

Select Area (Off-channel)

Select Area fall commercial fisheries were open in Youngs Bay, Tongue Point/South Channel, Blind/Knappa Sloughs, and Deep River (Washington).

Table 9. Participation and harvest in 2014 Select Area fall seasons.

Site	Dates	Days	Deliveries per period	Chinook	Coho
Youngs Bay	Aug 5-Oct 31	73	0-101	11,797	65,559
Tongue Point/ South Channel	Aug 25-Oct 31	46	0-42	5,460	50,798
Blind Slough/ Knappa Slough	Aug 25-Oct 31	46	2-16	4,654	24,564
Deep River	Aug 18-Oct 24	36	1-22	2,485	27,075
Total				24,396	167,996

Landings in fall Select Area fisheries were excellent. Coho landings were the highest ever recorded, at nearly 150% of the previous high catch in 2003. Chinook harvest was the highest since 1988. The average price per pound decreased by approximately 33% from 2013, possibly due to the high total harvest in 2014 fall fisheries. The large coho return was a result of very good smolt-to-adult survival. Smolt releases contributing to the 2014 Select Area coho return were only 9% larger than base production levels.

Pilot Mainstem Seine Fishery

A 22-day pilot research seine fishery was implemented during August 19 - September 30 to address research-related questions regarding implementation of this new commercial fishery. Therefore, mortalities on ESA-listed stocks for this fishery were applied to the allowable impacts reserved for research rather than being subtracted from commercial fishing impacts. Because research impacts are limited, the fishery was restricted in scope in order to provide a reasonable economic return for participants. A total of 10 fishers (four purse and six beach) were randomly drawn from a pool of 45 applicants (15 purse and 30 beach).

The fishery was operated under an Individual Fisher Quota (IFQ) system that limited allowable steelhead handle and the number of adult Chinook and coho that could be kept and sold. Sales of jack Chinook and jack coho were allowed but did not count toward quotas. IFQs by gear type are shown in Table 10.

Table 10. Summary of individual and combined quotas for the lower Columbia River pilot seine fishery, 2014.

Gear	Chinook (kept)		Coho (kept)		Steelhead (handle)	
	Individual	Total	Individual	Total	Individual	Total
Beach	500	3,000	250	1,500	360	2,160
Purse	750	3,000	450	1,800	360	1,440
Sum		6,000		3,300		2,600

To limit mortalities of LCN tule Chinook and lower Columbia River natural coho, allowable sales were limited to marked fish only. Regulations required unmarked salmon and all steelhead to be released. The fishery was observed by agency staff at a rate of 100%.

Combined landings for the fishery totaled 2,439 adult and 355 jack Chinook and 1,031 adult and 39 jack coho (see table below). Landings varied widely among fishers. Beach seiners landed 0-95% of their adult Chinook IFQs and 0-92% of adult coho IFQs. Purse seiners landed 4-94% of their adult Chinook IFQs and 0-61% of adult coho IFQs.

An additional 7,642 unmarked Chinook, unmarked coho, and steelhead were released. Mark rates by species were low for Chinook (38%), very low for coho (32%), and average for steelhead (66%). Catch results by seine type are shown in Table 11.

Table 11. Summary of kept and released catch in fall Columbia River pilot seine fishery, 2014.

	Kept				Released				Steelhead
	Chinook		Coho		Chinook		Coho		
	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	
Beach	1,133	204	489	20	1,425	209	902	28	456
Purse	1,306	151	542	19	2,620	386	1,319	50	247
Total	2,439	355	1,031	39	4,045	595	2,221	78	703
	3,864 (33.6%)				7,642 (66.4%)				

The average weight of Chinook landed in seines was 20% less than Chinook landed in the mainstem gillnet fishery, while coho were similar in weight. The observed ratio of about 3 steelhead-per-10 marked adult Chinook was similar to pre-season

expectations. Based on post-fishery interviews with participants, a) low mark rates resulting in a high percentage of the catch being released and b) high start-up and operational costs were the most significant issues encountered in the fishery.

Pending final run reconstructions for fall Chinook stocks, the most recent available assessment of fall Chinook impact by fishery was conducted in mid-October. Based on this assessment, post-season sharing of LCN fall Chinook is estimated to be approximately 80% for recreational fisheries and 20% for commercial fisheries while impacts on SRW fall Chinook are approximately 36% for recreational fisheries and 64% for commercial fisheries. Updated estimates of these impacts will be completed over the winter.

Table 12. Summary of most recent available estimates of fall Chinook post-season allocations.

SRW – IMPACTS		
	<u>Impact</u>	<u>Percent</u>
Recreational	4.62%	36%
Commercial	8.05%	64%

LRH - Impacts		
	<u>Impact</u>	<u>Percent</u>
Recreational	6.40%	80%
Commercial	1.56%	20%

**ISSUE 7
ANALYSIS**

2014 FISHERIES REVIEW - ANGLER TRIPS AND EX-VESSEL VALUE

One of the policy objectives in rules adopted by the Commission in June 2013 reads “in a manner that is consistent with conservation and does not impair the resource, seek to enhance the overall economic well-being and stability of Columbia River fisheries in Oregon” (OAR 635-500-6705 (4)). For recreational salmon fisheries, an economic measure considered during the Columbia River fisheries reform process was the number of angler trips. For commercial fisheries, an economic measure considered was ex-vessel value. Expansion factors, or “multipliers,” can be applied to both of these metrics in order to estimate total economic impacts, but the results of such estimates would be expected to still be proportional to the original metrics. No efforts have been made to apply multipliers to either angler trips or ex-vessel value in this document.

Both of these measures are strongly affected by factors beyond the control of managers, particularly overall fish returns. This makes it very challenging to isolate effects solely due to allocation shifts and management actions. Department staff is currently working to develop an assessment framework and additional reference points that can be used to evaluate progress going forward.

Recreational Fisheries

Combined angler trips for salmon and steelhead in 2014 for the lower Columbia River downstream of Bonneville Dam were the highest observed since 1977. The total number of nearly 71,000 Chinook kept was also the highest since at least 1969. Table 13 lists the total angler trips in 2012-2014 by season/fishery.

Table 13. Number of recreational salmonid angler trips downstream of Bonneville Dam, 2012-2014.

	Angler Trips		
	2012	2013	2014
Spring	127,900	109,700	145,600
Summer	80,700	52,000	53,700
Fall – B10	65,100	65,800	107,700
Fall - mainstem	128,800	141,500	143,900
Total	402,500	369,000	450,900

The total catch of Chinook in mainstem recreational fisheries in 2014 was a record high, at 70,800 fish. This exceeds the previous record in 2013 of 63,000 fish. Including areas upstream of Bonneville where catch estimates are available (does not include Hanford Reach and some other fishery areas) and the lower Willamette/Clackamas spring fishery, a total of 94,000 Chinook, 16,000 steelhead, and 63,400 coho were harvested by recreational anglers in 2014. If the 30,000 sockeye harvested in the upper Columbia River areas are included, total salmon/steelhead harvest exceeds 200,000 fish.

Commercial Fisheries

Total catch of coho in mainstem and Select Area fisheries was the highest since 2003. Total catch of Chinook in mainstem and Select Area fisheries was the highest since the late 1980s, as was catch of overall salmon (all species).

Ex-vessel value of commercial fisheries was calculated as total landings in pounds (lbs) multiplied by the average price per pound (\$/lb) paid to fishers upon delivery of their catch.

In 2014, mainstem fisheries accounted for 60% of the total commercial Chinook and coho value in the lower Columbia River, with Select Area fisheries comprising 40%. Mainstem fall Chinook alone represented 43% of the total ex-vessel value for mainstem and Select Area's combined (Table 14).

Table 14. Ex-vessel values of salmon landed during 2014 commercial fisheries (excluding pilot seine fishery).

Fishery	Season/Stock	Harvest (numbers)	Landings (lbs)	Avg Price (\$/lb)	Ex-Vessel Value (\$)
Select Area (Off-channel)	Spring/Chinook	2,801	36,227	\$6.99	\$253,105
	Summer/Chinook	1,842	29,454	\$3.43	\$101,151
	Fall/Chinook	24,396	312,239	\$1.59	\$497,219
	Fall/Coho	167,996	1,436,684	\$1.13	\$1,620,781
	Subtotal		197,035	1,814,604	
Mainstem	Spring/Chinook	4,000	48,179	\$6.65	\$320,521
	Summer/Chinook	2,743	44,643	\$3.86	\$172,190
	Fall/Chinook	101,873	1,678,119	\$1.58	\$2,653,139
	Fall/Coho	72,813	520,791	\$1.17	\$609,258
	Subtotal		181,429	2,291,732	
Total		378,464	4,106,336		\$6,227,364

The total annual ex-vessel value of Chinook and coho during 2012-2014 mainstem and Select Area commercial fisheries are summarized in Table 15. Landed value was

substantially higher in 2013 and 2014 than 2012, as a result of large fall salmon returns.

Table 15. Ex-vessel value of Chinook and coho salmon in lower Columbia River commercial fisheries, 2012-2014.

	2012	2013	2014
Mainstem	\$1,886,370	\$3,212,689	\$3,755,108 ^a
Select Area	\$1,305,444	\$2,131,769	\$2,472,256
Total	\$3,191,814	\$5,344,458	\$6,227,364

^a Value of pilot seine fishery is not included.

As mentioned previously, the 2014 pilot seine fishery was operated under ESA impacts typically used for test fishing and research studies. Since this small reserve is not typically used for harvest fisheries, the commercial ex-vessel value of the pilot seine fishery is reported separate from other conventional fisheries detailed above.

Table 16. Ex-vessel value of Chinook and coho salmon in the 2014 pilot seine fishery.

	Chinook		Coho		Total	
	Number ^a	Value	Number ^a	Value	Number ^a	Value
Beach	1,337	\$27,187	509	\$4,825	1,846	\$32,012
Purse	1,457	\$28,887	561	\$4,746	2,018	\$33,633
Total	2,794	\$56,074	1,070	\$9,571	3,864	\$65,645

The average ex-vessel value for the six beach seine operations was \$5,337 (range \$30-\$13,355). For the four purse seine operations, ex-vessel value averaged \$8,378 (range \$691-\$18,319). The average ex-vessel value per delivery (fishing day) was \$1,456 for beach seiners and \$1,596 for purse seiners. The average crew size for both beach and purse seine operations was 4.2 fishers.

ISSUE 8 ANALYSIS

UPDATE ON POPULATION STATUS OF WHITE STURGEON IN THE LOWER COLUMBIA

Indications of the status of white sturgeon in 2014 are mixed. Positive indicators are increasing abundance of legal-sized fish and increased abundance of pre-adult, over-legal sized fish. Cautionary signs include continued low abundance of adult fish and the absence of indications of improvements in juvenile recruitment.

Abundance Trends

The actual abundance of legal-sized white sturgeon in 2014 was estimated at 130,990, representing a 15% increase from the 2013 estimate of 114,200. This continues an expected and generally positive trend in legal abundance since 2010, when the legal population declined to an estimated 65,300 fish; the lowest level since 1991. The projected abundance of legal-sized fish for 2015 is 138,200. This projected abundance is similar to estimates during 1999-2005.

Based on current estimates, the abundance of spawner-size adult (>165 cm fork length and Age 25+) white sturgeon remains depressed. The abundance estimate for 2014 is about 3,700 fish with a 2012-2014 average abundance of about 3,100 fish. This results in the three-year running average being below the conservation status threshold of 3,900 adult fish identified in the Lower Columbia River and Oregon Coast White Sturgeon Conservation Plan previously adopted by the Commission.

Table 17. Estimated and projected abundance of 38-54 inch FL white sturgeon in the lower Columbia River, 2008-2015.

Year	Historic method estimate ¹	Setline method ¹		Harvest guideline
		Estimate	Projection	
2008	101,200	N/A	N/A	40,000
2009	95,000	N/A	N/A	40,000
2010	65,300	100,200	N/A	24,000
2011	72,800	80,500	77,000	17,000
2012	83,400	72,700	65,000	10,400
2013	--	114,200	74,300	10,105
2014	--	130,990 ²	131,700	--
2015	--	--	138,200 ²	--

¹ Historic method is the number of fish present at the start of July (2008-09) or May (2010-2012), while the setline method is the number of fish present at the start of the year.

² Preliminary.

Recruitment

Since 2004, ODFW staff have conducted monitoring of Age-0, or young-of-the-year (YOY), white sturgeon in the lower Columbia River to assess annual spawning success and recruitment. Sampling is conducted in the winter and is designed to target juvenile sturgeon that were spawned earlier the same year.

Staff deploy small-mesh gillnets (2-inch stretched measure) at standard index sites from the lower Gorge downstream to the upper estuary, including the lower Willamette River (since 2010). The catch per set (CPUE) of YOY sturgeon and proportion of sets with at least one YOY (Ep) are used as indices to monitor trends in recruitment (Table 18). However, until enough paired years of YOY index data and detailed stock assessment data are available, it is problematic to attempt to compare YOY index results or to infer absolute levels of recruitment from the index data.

Table 18. Catch per set of Age-0 white sturgeon in the lower Columbia River, 2004-2014.

Year	Lower Columbia R		Willamette R	
	CPUE	Ep	CPUE	Ep
2004	1.29	0.44		
2005	1.74	0.49		
2006	1.88	0.52		
2007	--	--		
2008	1.23	0.45		
2009	5.66	0.78		
2010	0.19	0.18	0.50	0.28
2011	0.58	0.34	0.06	0.06
2012	0.77	0.35	0.75	0.25
2013 ¹	0.21	0.12	--	--
2014 ²	0.56	0.31	1.38	0.38

¹ Incomplete sampling year in both LCR and Willamette R

² Preliminary assessments based on length frequency examinations.

Fisheries

Although sturgeon retention fisheries were closed in 2014, catch-and-release was still allowed and fisheries were monitored. Compared to 2013, angler participation dropped by 90% in the estuary and by 80% in the rest of the lower river. Despite the reduced effort, angler reported catch rates were very high, and staff received many reports of high total catches during the season.