

Lower Columbia River Sturgeon Annual Update and Policy Review

Washington Fish and Wildlife Commission Meeting

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Fish Program

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Purpose:

- Provide annual review of stock status and fisheries (included in Commission Policy C-3001 “Lower Columbia Sturgeon Management”)

Background:

- The Lower Columbia River white sturgeon population:
 - Inhabits the lower Columbia River and tributaries below Bonneville Dam;
 - Migrates to marine areas, coastal bays, Puget Sound, and their tributaries.
- Populations above Bonneville Dam considered separate populations and are not included in this briefing;
 - Includes populations in the Snake River and the mid and upper Columbia River.

Annual Review Topics:

- Accounting of fish left unharvested
- Review of harvest outside lower Columbia River
- By-catch in all fisheries
- Predation rates
- Stock status
- Review in-season management actions
- Recommended management changes

Policy Guidance in 2016:

Policy C-3001

- In effect March 1, 2014 through December 31, 2018.

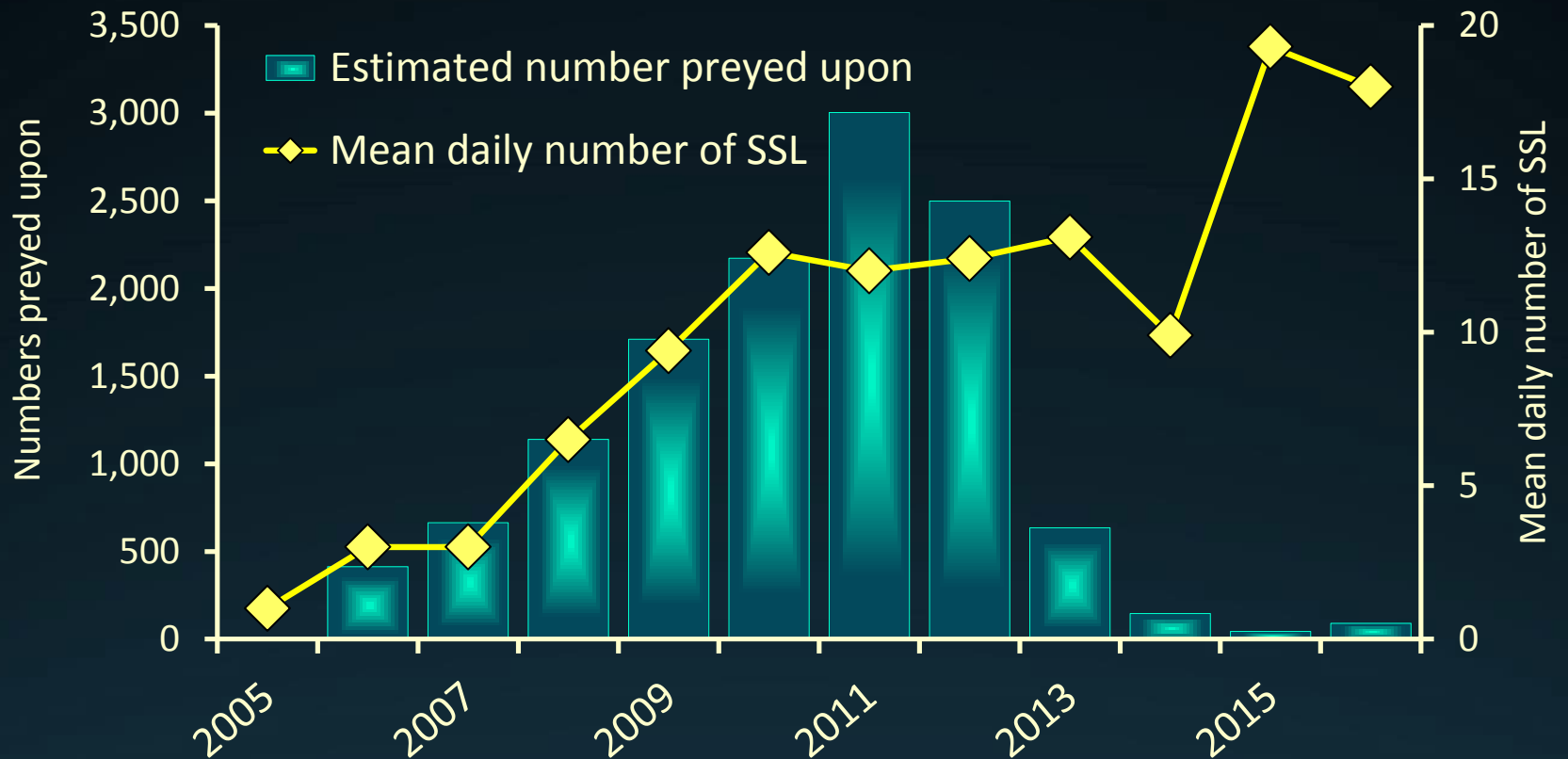
Retention Prohibition

- Retention prohibited since Jan. 1, 2014;

Catch-and-Release

- WFWC directed staff to engage in negotiations with ODFW regarding elimination of catch-and-release fisheries;
- Negotiations concluded with no agreement.

Predation of White Sturgeon: USACE Bonneville Dam Observations

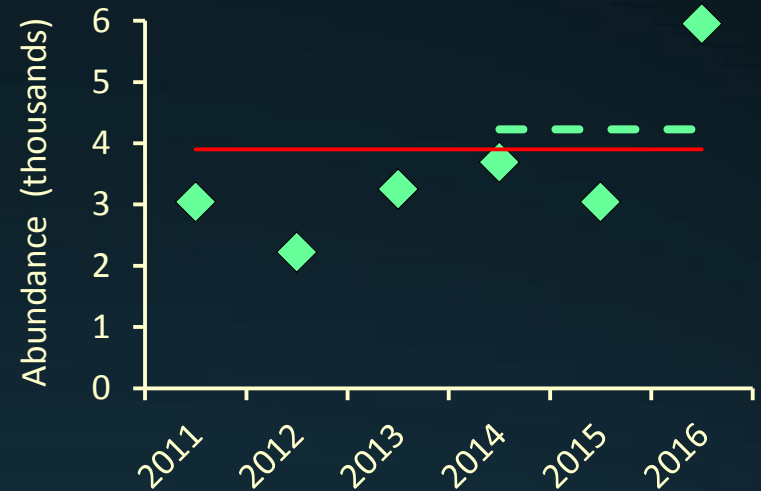


Population Assessment:

- Abundance estimation
 - 1) Historic approach sampled harvest for tag recoveries
 - Estimated just legal-size fish;
 - Not available since 2013 following harvest prohibition.
 - 2) Research setline survey used to obtain tag recoveries
 - Estimates abundance of juvenile and adult fish ≥ 82 cm FL.
- Sport fishery and research fishery CPUE trends
 - Sport data comparable to pre-2014 is not available due to drop in angler participation following harvest prohibition.
- Sub-yearling (Age-0) productivity indexing

Abundance Estimates: Spawner-Size Fish

- The spawner size component (fish $\geq 166\text{cm}$) of the mark-recapture estimate increased 79% from the 2013-2015 average, to 5,950 fish for 2016:
 - The current 3-year average of 4,230 fish is above the 3,900 fish conservation status threshold in the Oregon Plan;
 - This is the first year that the 3-year average is above the threshold.

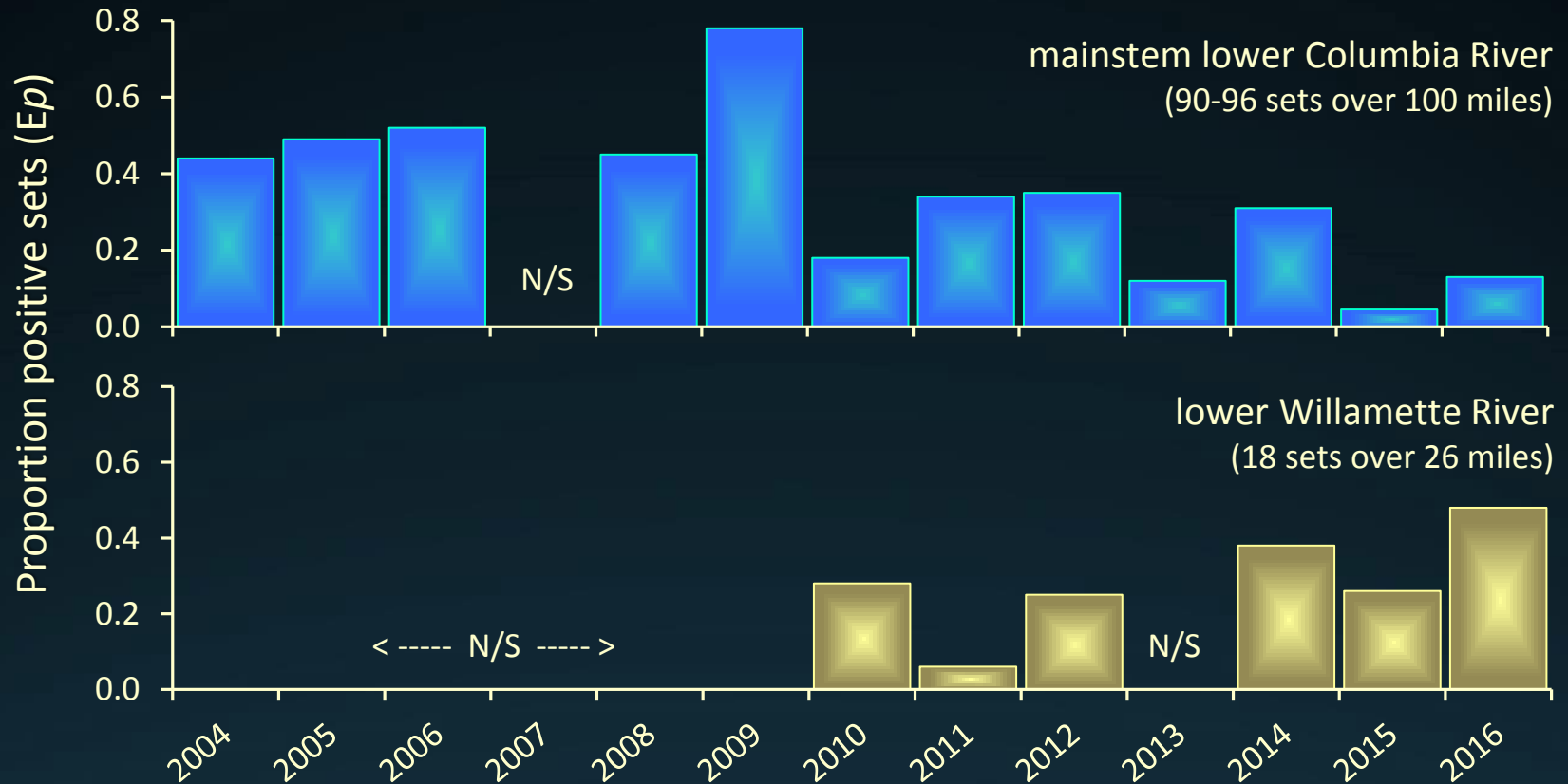


Sub-Yearling Production Index:

- Mainstem Columbia River production index peaked in 2009, followed by the seven lowest years surveyed.
- 2016 was low with sub-yearlings in just 13% of sets.
- The lower Willamette River was added to the survey in 2010.
- The production index for the Willamette River was up, at 0.48 in 2016.



Sub-Yearling Production Index:

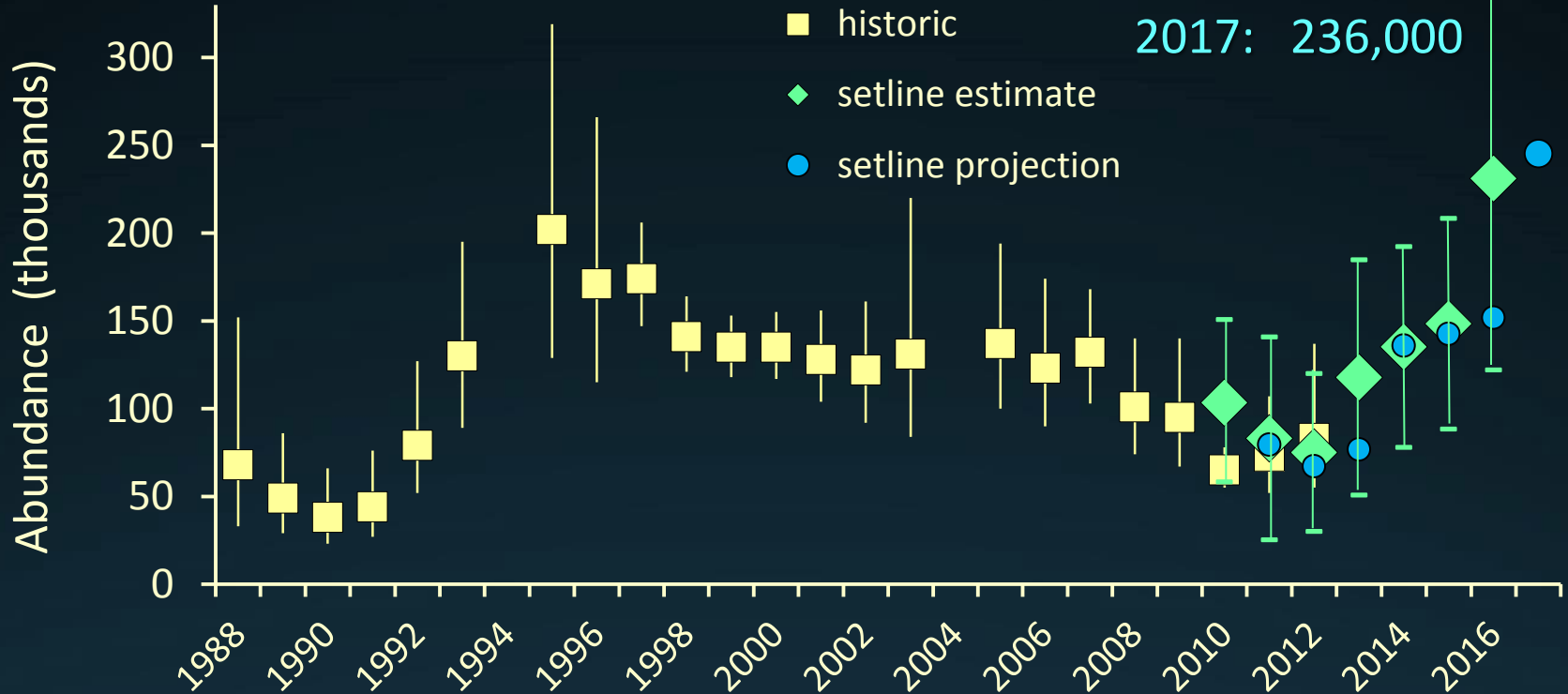


Abundance Estimates: Legal Size Fish in 2016

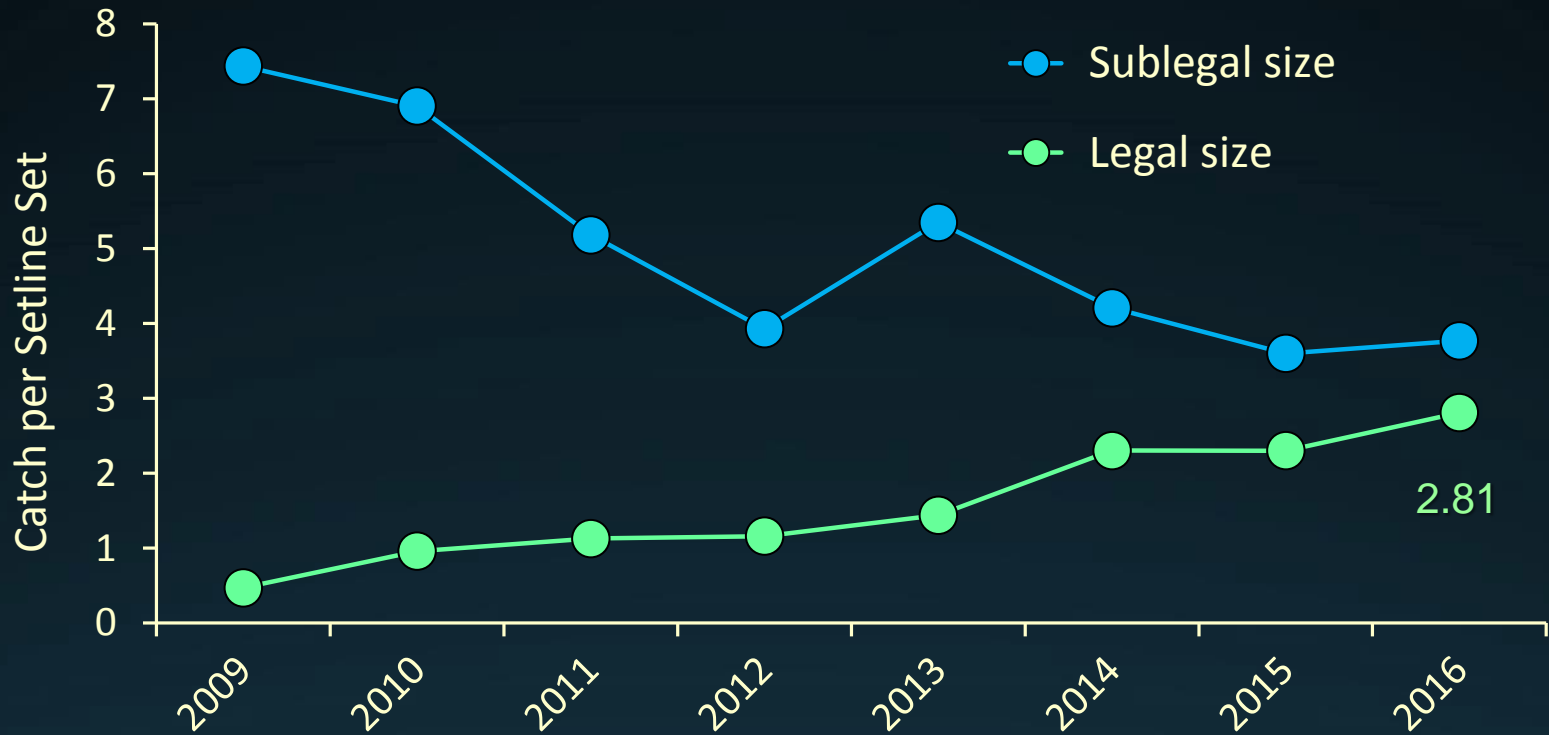
- The mark-recapture survey estimate of juvenile and adult fish ≥ 82 cm FL increased by 45%:
 - 2015 = 263,500 fish,
 - 2016 = 405,900 fish.
- The legal-size component (fish 96-137cm FL) increased by 56%:
 - 2015 = 143,890 fish,
 - 2016 = 223,960 fish.

Abundance Trend: Legal-Size Fish

2012: 72,700
 2013: 114,200
 2014: 130,990
 2015: 143,890
 2016: 223,960
 2017: 236,000



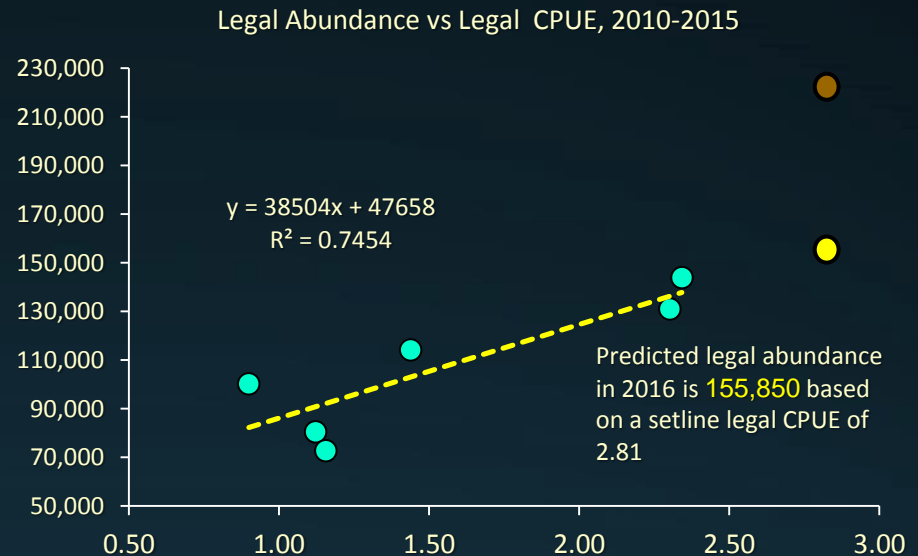
Relative Abundance: Research Fishery Catch Rates



Relative Abundance: Legal-Size Fish in 2016

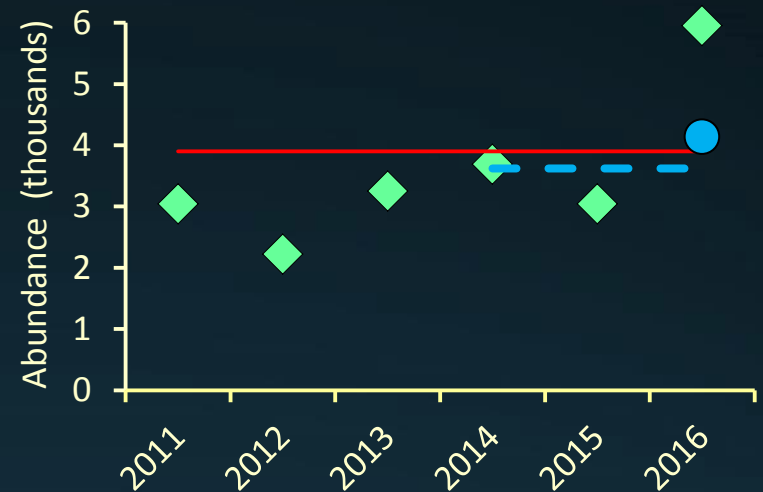
- The alternative catch-rate based estimate is **155,850** legal-size fish for 2016.

- This is close to the 2015 projection of 147,100 legal-size fish for 2016.

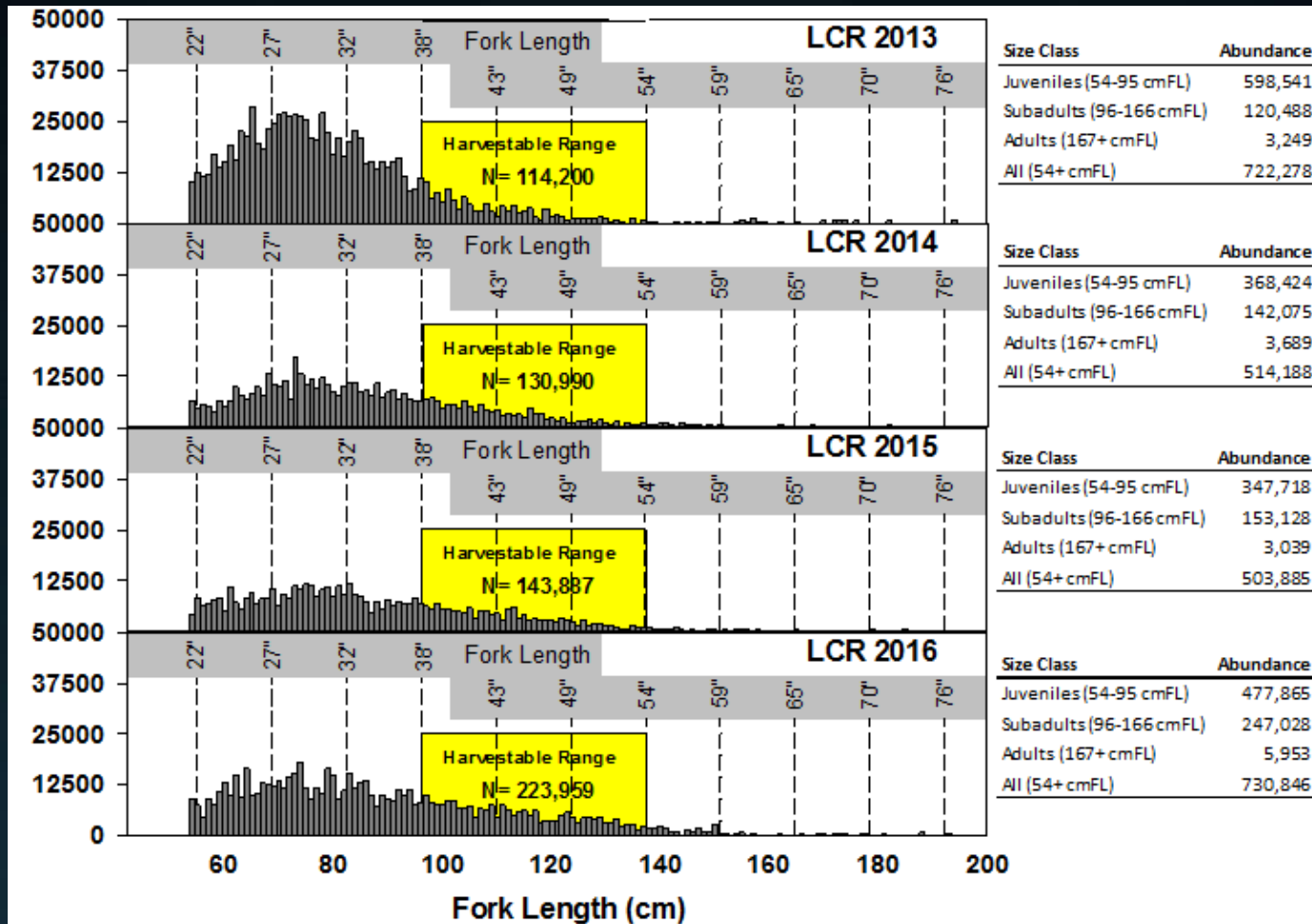


Relative Abundance: Spawner-Size Fish

- An alternative estimate, based on the spawner-size to legal-size ratio and the 155,850 legal-size estimate results in **4,140** spawner-size fish for 2016:
- The three-year average of 3,620 fish is below the conservation threshold.



Setline Catch-Frequency by Size:



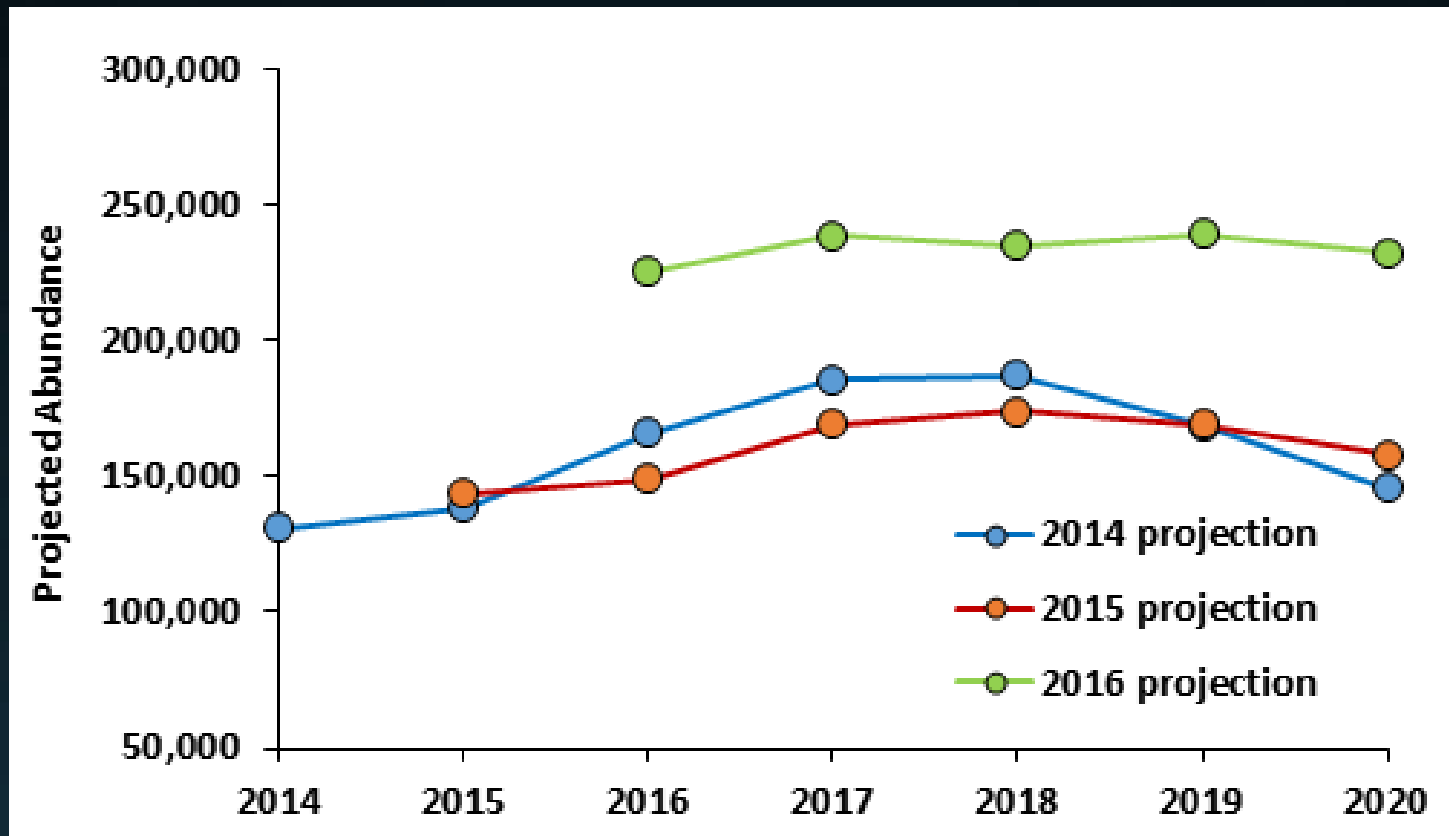
Size Class	Abundance
Juveniles (54-95 cmFL)	598,541
Subadults (96-166 cmFL)	120,488
Adults (167+ cmFL)	3,249
All (54+ cmFL)	722,278

Size Class	Abundance
Juveniles (54-95 cmFL)	368,424
Subadults (96-166 cmFL)	142,075
Adults (167+ cmFL)	3,689
All (54+ cmFL)	514,188





Size Class	Abundance
Juveniles (54-95 cmFL)	347,718
Subadults (96-166 cmFL)	153,128
Adults (167+ cmFL)	3,039
All (54+ cmFL)	503,885

Size Class	Abundance
Juveniles (54-95 cmFL)	477,865
Subadults (96-166 cmFL)	247,028
Adults (167+ cmFL)	5,953
All (54+ cmFL)	730,846





Projected Legal-Size Abundance No Harvest Scenario



Summary:

Metric	Value	Interpretation	Brief Summary
Legal Abundance			
Mark-recapture:	223,960		57% increase from 2015, but doesn't match modeled projection and is not supported by CPUE trend in gillnet & setline tagging fisheries.
CPUE regression:	155,850		Based on CPUE in research setline fishery. Modest increase matches expectation from 2015 projection.
Length Frequency Distribution	69% Juveniles		Continued low relative abundance of juvenile fish over time indicates productivity issues. Supported by CPUE trend in gillnet & setline tagging fisheries.
Projected trend in legal abundance	Flat		Modeled recruitment to legal size results in slight net growth in legal abundance under no-harvest scenario and a decrease with harvest.

Summary:

Metric	Value	Interpretation	Brief Summary
Spawner Abundance			
Mark-Recapture:	5,950		Adult abundance metric is above Oregon Conservation Plan conservation status threshold (3-year average of 3,900 adult fish).
	3-yr avg. = 4,230		
CPUE Regression:	4,140		Increase in adult abundance, but 3-year average remains below conservation status threshold.
	3-yr avg. = 3,620		
Sub-yearling Production Index	0.13 vs 12-yr avg. of 0.35		Mixed – For the 7th consecutive year LCR white sturgeon production is low in the mainstem, but up in the Willamette River. This continues the recent trend.
Sea Lion Abundance	High		Continued high sea lion abundance is problematic for white sturgeon population growth.

Conclusions

- Status of adult, sublegal and sub-yearling population segments have not shown substantial improvement.
- Legal-size abundance has increased, but it is not certain by how much;
 - Near-term population growth appears stagnant in the absence of a retention fishery.

Public Input

- Sport advisors generally supported some type of retention fishery:
 - Since retention prohibition, angler participation is averaging just 10% of the previous 5 year average.
- A portion of the sport advisors supported maintaining the retention prohibition.
- Commercial advisor meeting was scheduled for January 11th but was postponed due to inclement weather.

Proposed Actions

- Over the next 1-2 years develop a long term (5-15 years) management strategy that considers population viability and sustainable fishing opportunity.
- Work with ODFW to reevaluate current methodology for estimating annual abundance.

Next Steps

- WDFW and ODFW jointly manage sturgeon populations and fisheries in the lower Columbia River.
- ODFW will be presenting information to their Commission February 10.
- WDFW and ODFW staffs will confer in late February to discuss outcomes of Commission meetings.
- A briefing in March to update the Commission regarding discussions with ODFW.

Thank You

Questions/Discussion?



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