

Lower Columbia River Sturgeon Annual Review

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Purpose

Annual review of stock status and fisheries.

- Commission Policy C-3001 “Lower Columbia Sturgeon Management”



Outline

- Policy Guidance
- 2020 Fisheries
- Stock Status
- Predation
- 2021 Fisheries



Lower Columbia River White Sturgeon

Distribution:

- The Columbia River, downstream of Bonneville Dam.
- Nearshore marine areas and Washington and Oregon coastal bays and estuaries, including Puget Sound.



Policy Guidance: C-3001

“...to provide consistent management guidelines that promote a healthy population and provide sustainable fisheries.”

Conservation Objectives:

- Increase abundance of spawning population
- Manage with a precautionary approach
- Population monitoring (within available resources)

Fishery Management Objectives:

- Quantify impacts of fisheries on sturgeon abundance
- Consider projected recruitment and mortality sources
- Monitor and manage fisheries

The Commission delegates the authority to the Director to develop and negotiate Lower Columbia Sturgeon Management Accords with Oregon Department of Fish and Wildlife that are consistent with these policies and objectives.



Recent Management

Lower Columbia sturgeon population closed to harvest in 2014.

Since 2017, the department has collaborated with Oregon Department of Fish and Wildlife staff to develop very limited White Sturgeon harvest fisheries in the lower Columbia River that are consistent with the reduced status of the population.

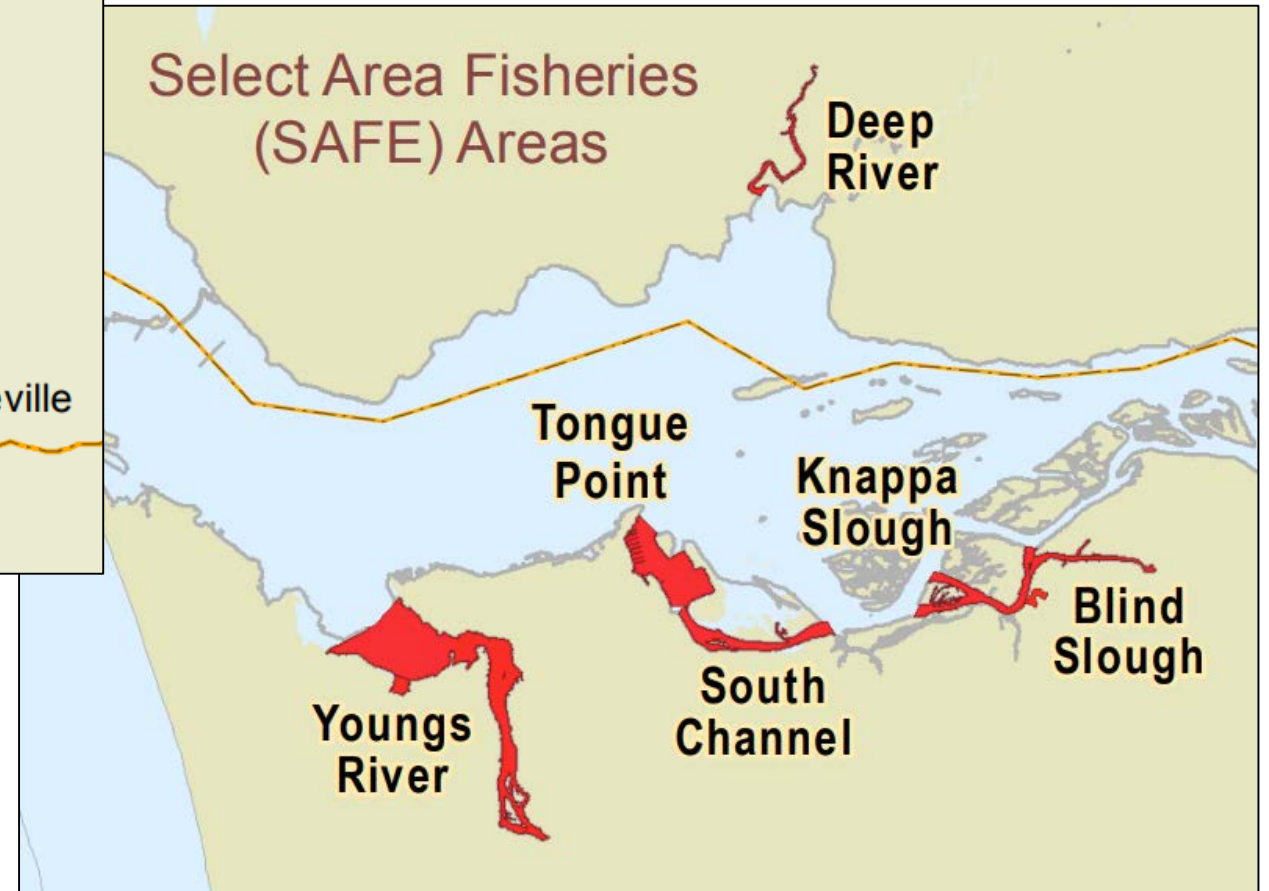


2020 Fishery Harvest Guidelines

- Total Catch Guideline: 5,720 fish
 - Commercial Fishery: 1,140 fish (20%)
 - Sport Fishery: 4,580 fish (80%)



Commercial Areas and Harvest Expectations



Pre-season harvest expectations:
Mainstem – 570 fish
SAFE Area – 570 fish



2020 Commercial Fishing Harvest

Select Area (SAFE):

- Winter: 217 fish
- Spring: 219 fish
- Summer: 111 fish
- **Total:** 547 fish (48%)

Mainstem:

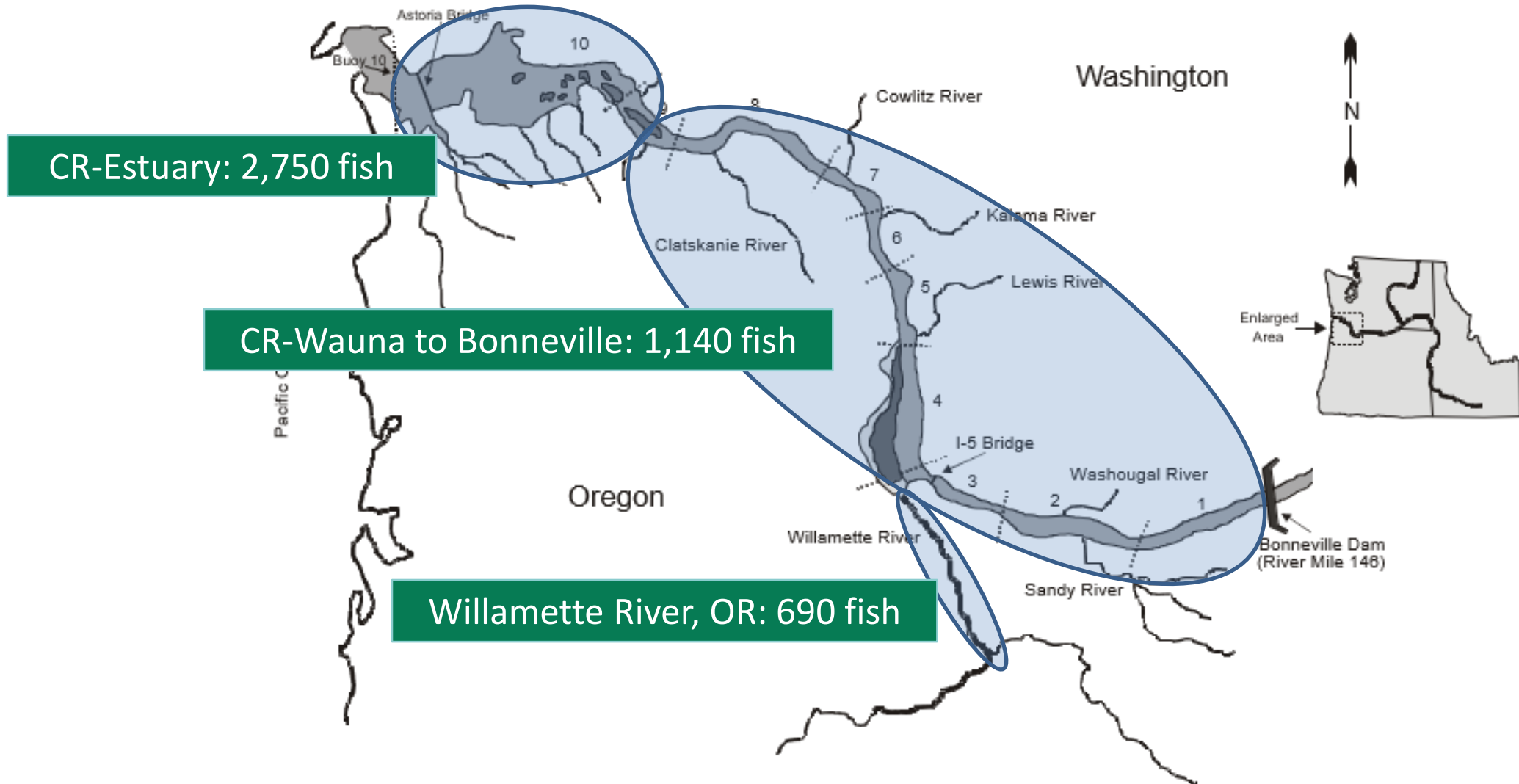
- Early Fall: 406 fish
- Late Fall: 161 fish
- **Total:** 567 fish (50%)

Total Harvest: 1,114 fish

98% of the 2020 commercial guideline



Sport Fishing Areas and Guidelines



2020 Sport Fishing Harvest

Estuary (below Wauna):

- No retention fishery set in 2020.
- 832 angler trips for catch and release fishing.

Wauna to Bonneville:

- Sept. 12–Oct. 3 (5 d)
 - 9,094 angler trips
 - **Total:** 857 fish (75%)
- *includes Cowlitz River, WA

Willamette River, OR:

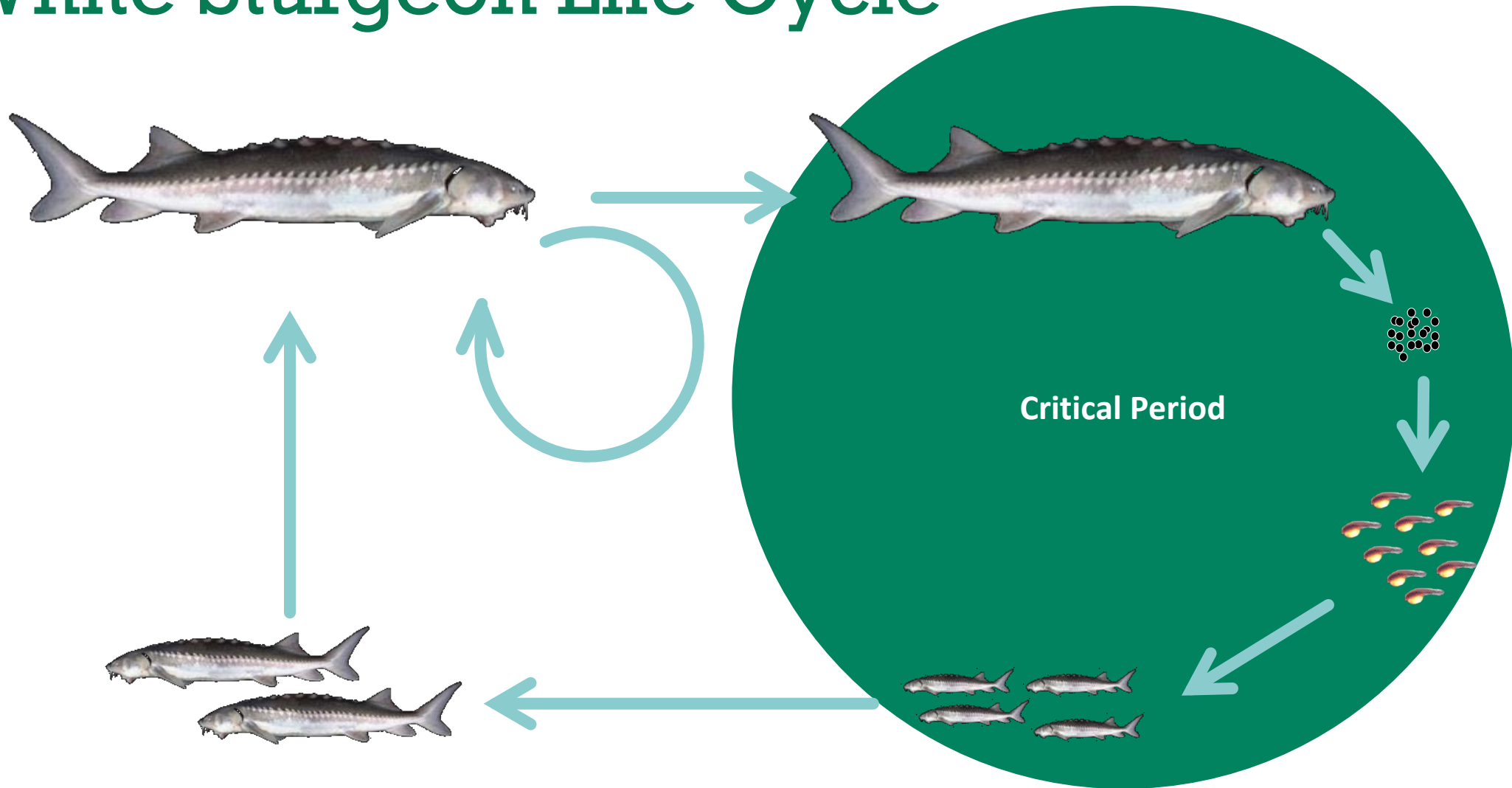
- June 20 & 27 (2 d)
 - 5,091 angler trips
 - **Total:** 167 fish (24%)
- * first time opened since 2013

Total Harvest: 1,024 fish

- 22% of the total 2020 sport guideline
- 22% of the Lower Columbia harvest guideline
- 17,190 total trips for retention and catch-and-release fisheries



White Sturgeon Life Cycle



White Sturgeon picture by Rene Reyes, USBR

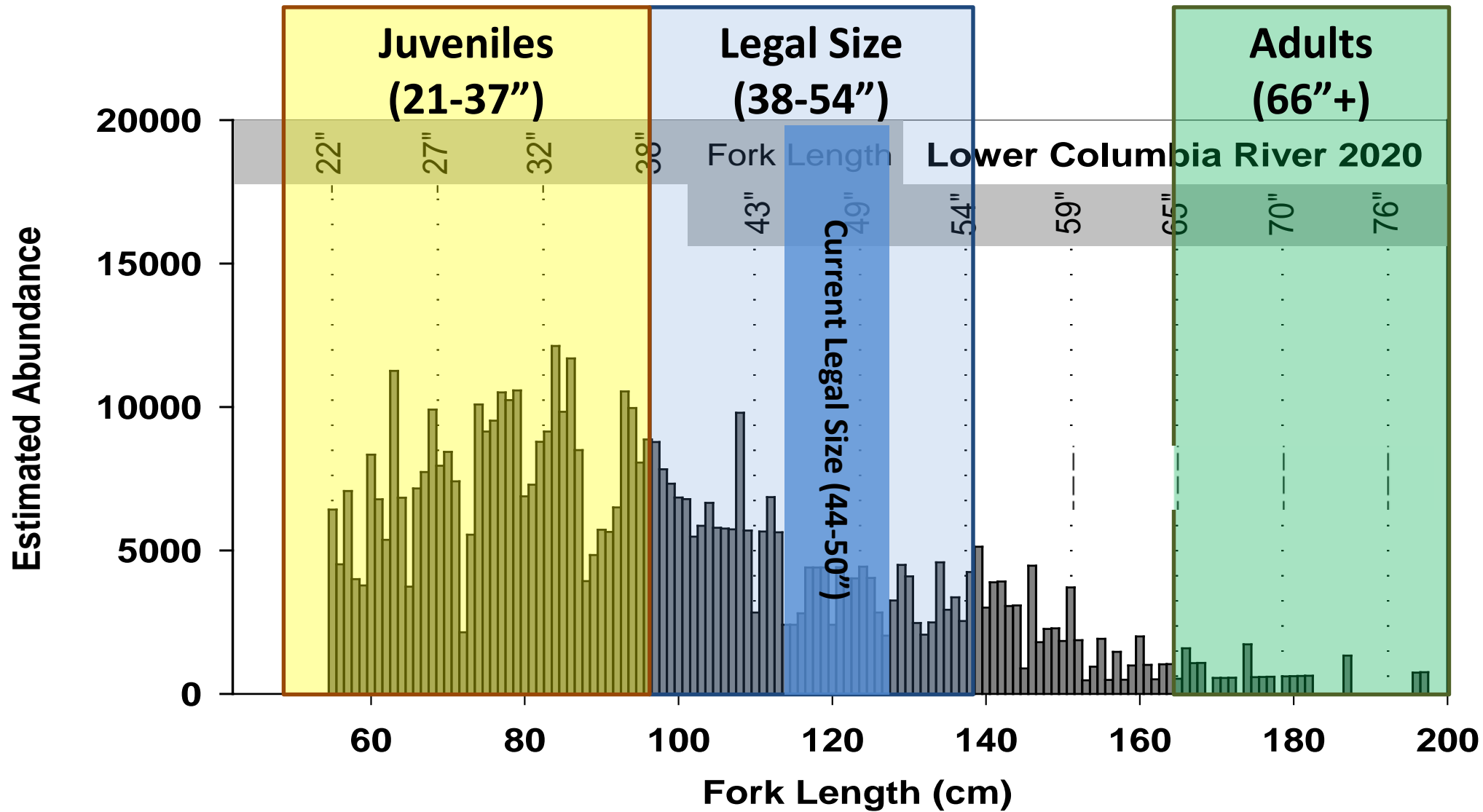
Conceptual model adapted from Klimley et al. 2015



2020 Lower Columbia Sturgeon Size Distribution

Three key age classes are tracked for comparison through time.

"Legal" size refers to the legal harvestable size pre-2014 and is kept for pre-closure comparisons in abundance.

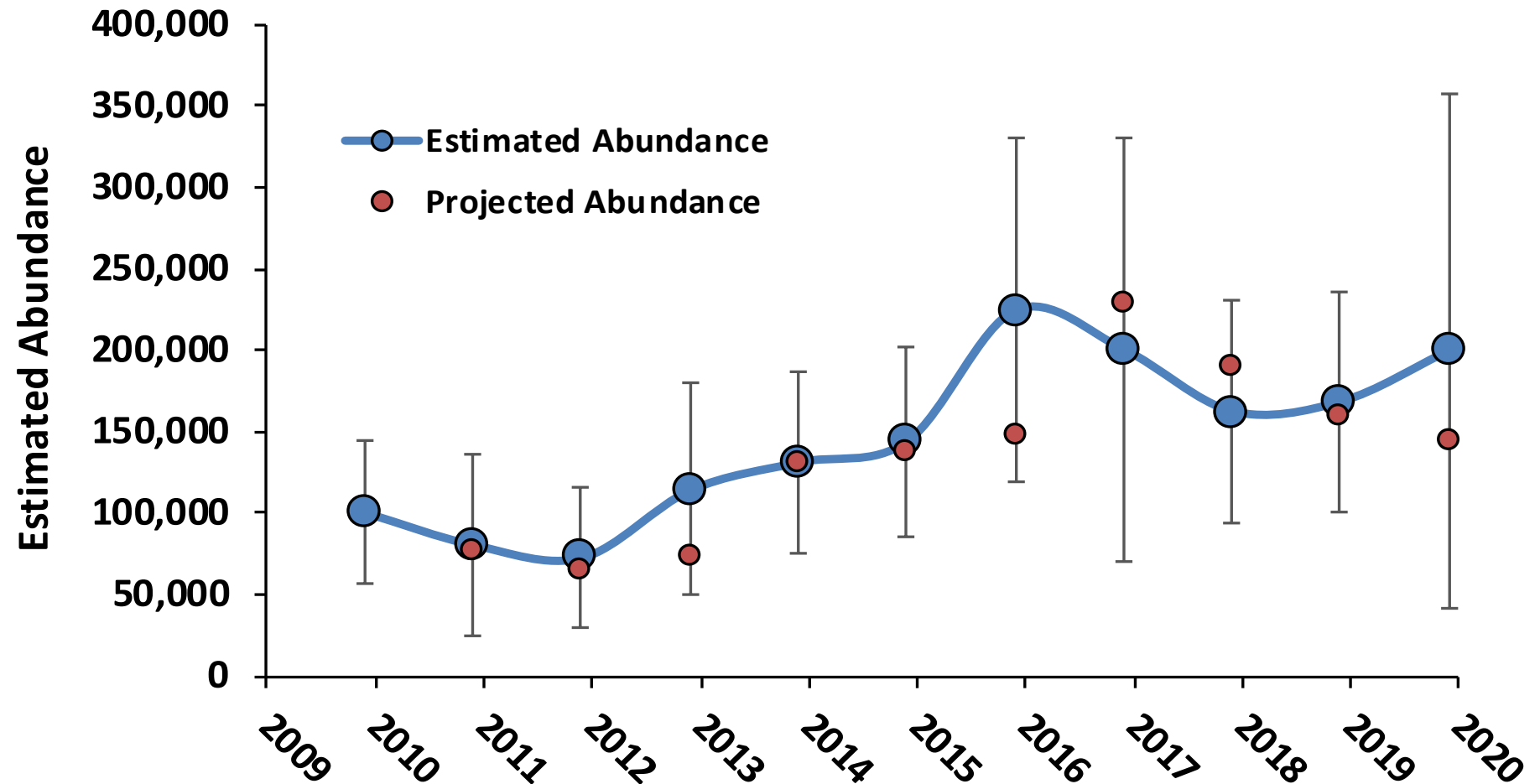


Trends in Legal Abundance (38-54" FL)

Estimated abundance of 38-54" FL sturgeon.

2020 legal abundance higher than projected abundance.

Large variance on 2020 estimate a result of sampling limitations.

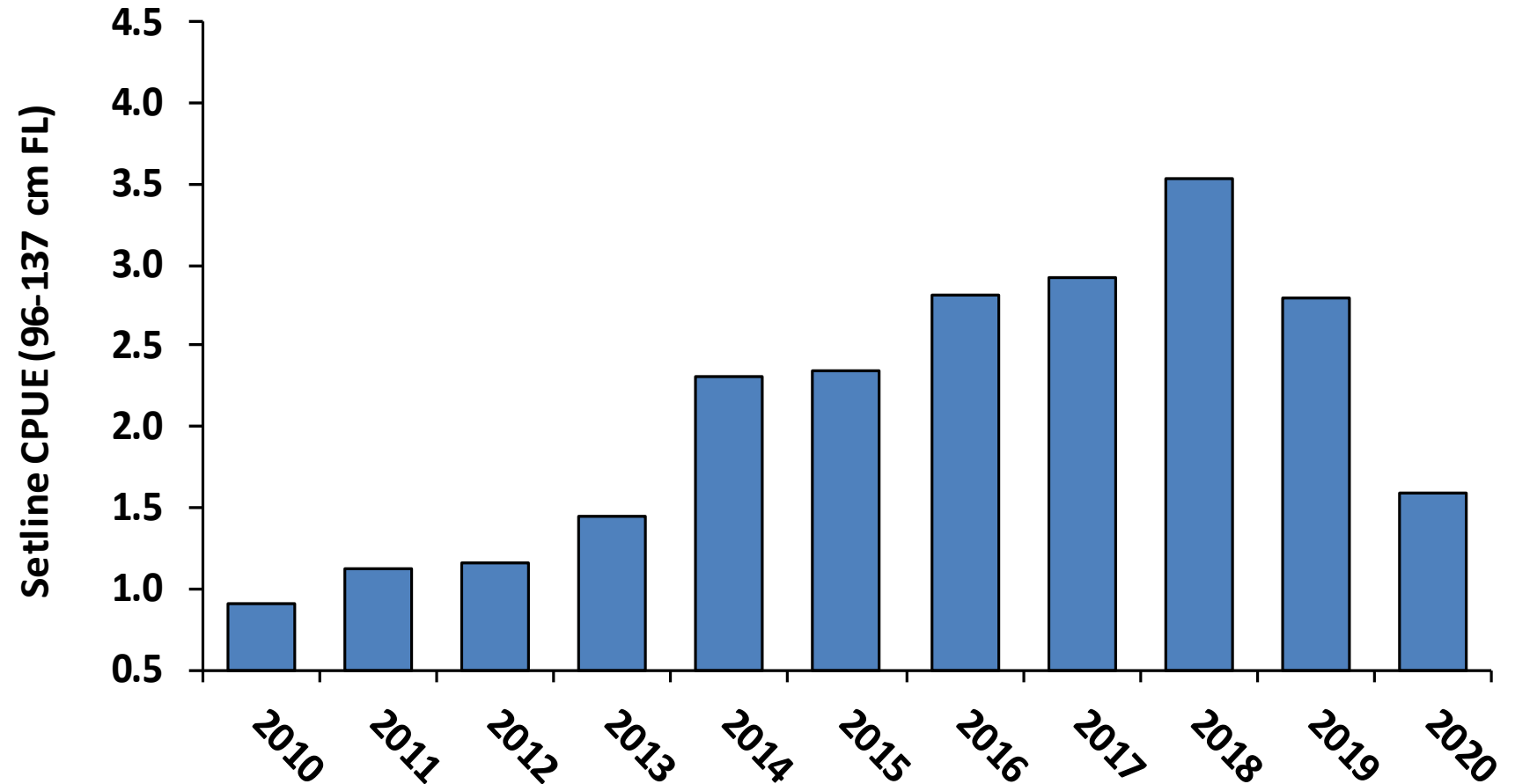


Trends in Legal CPUE (38-54" FL)

Catch of 38-54" sturgeon per setline.

CPUE indicator does not support modeled increase in adult abundance.

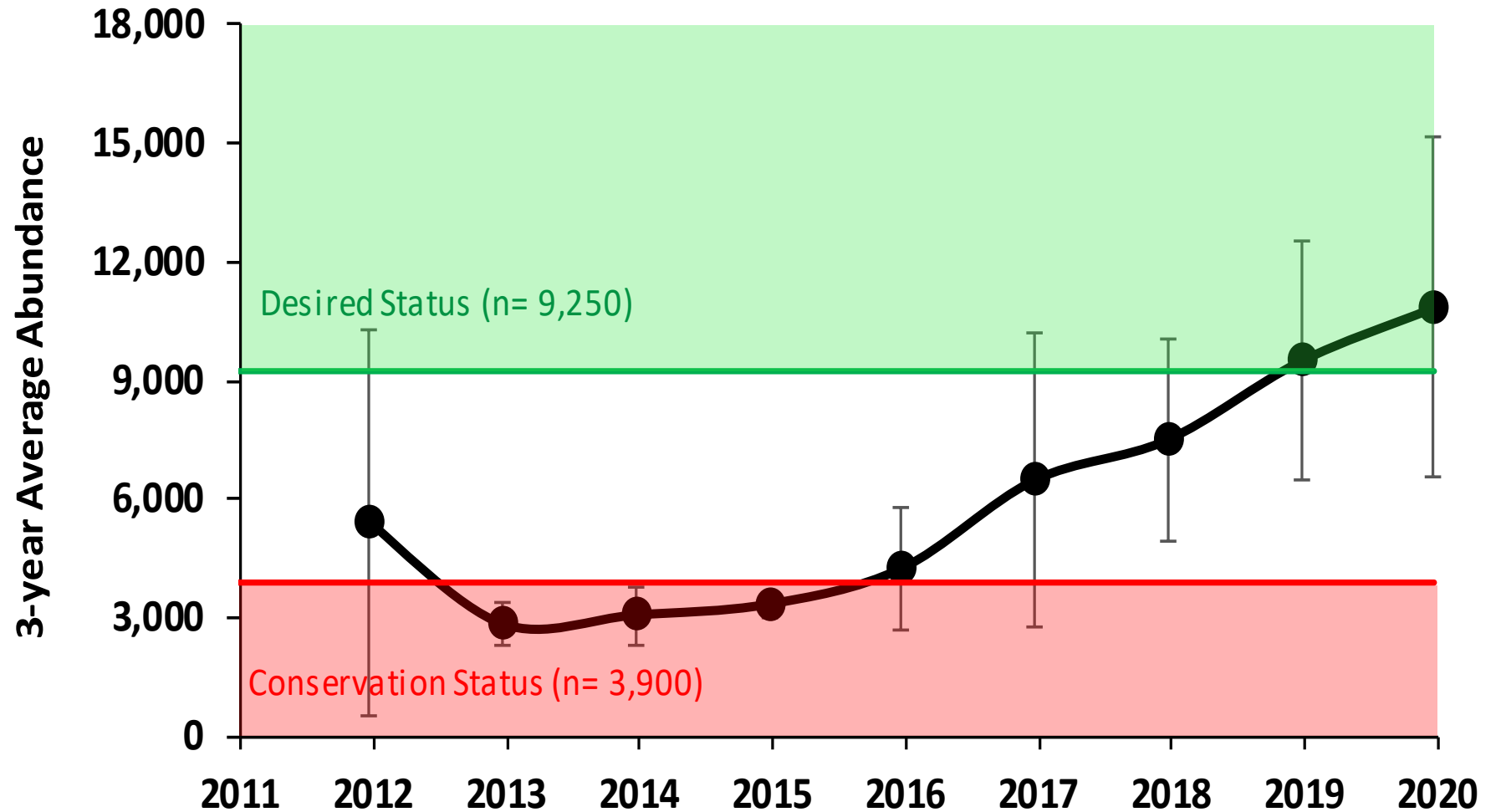
Uncertainty in legal abundance.



Trends in Adult Sturgeon Abundance (>66" FL)

Three-year running average of estimated adult abundance from setline data.

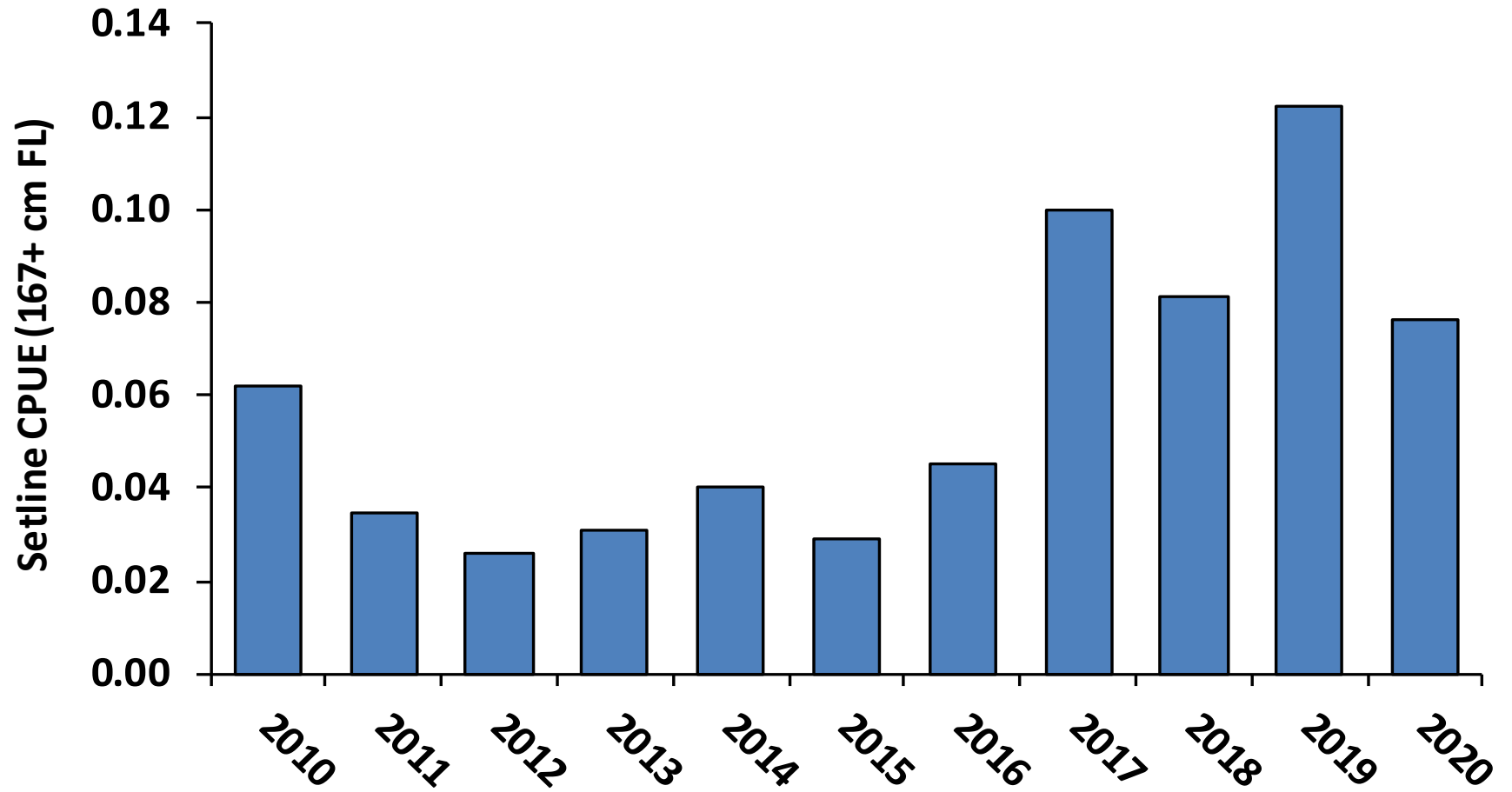
Adult abundance of sturgeon is within the "desired status."



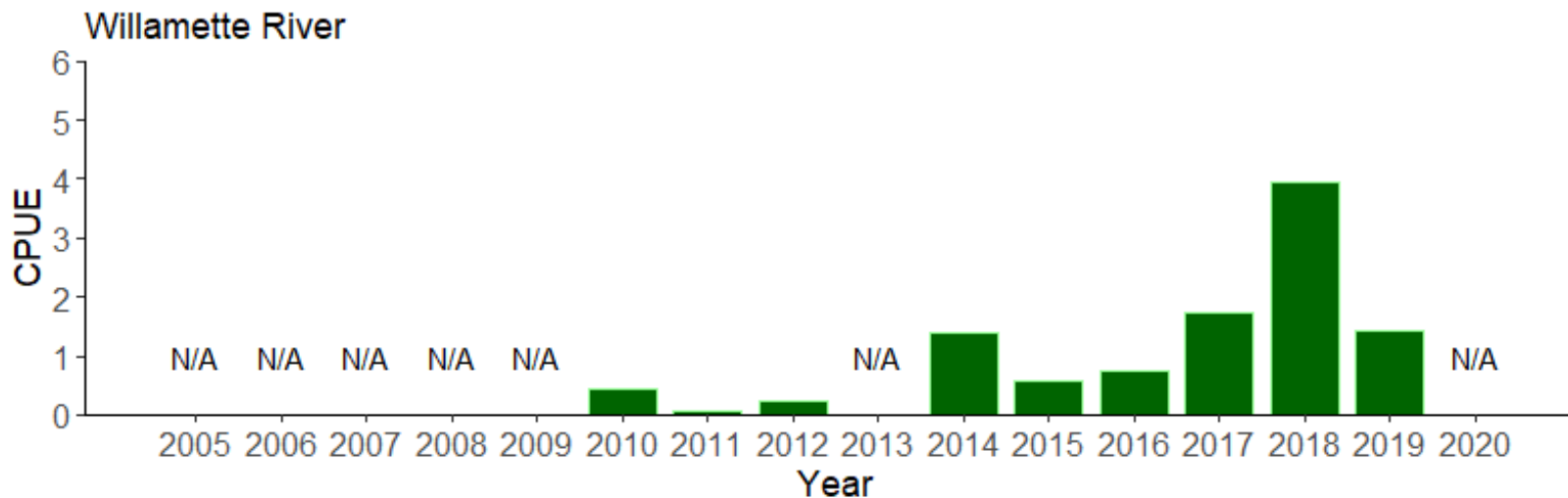
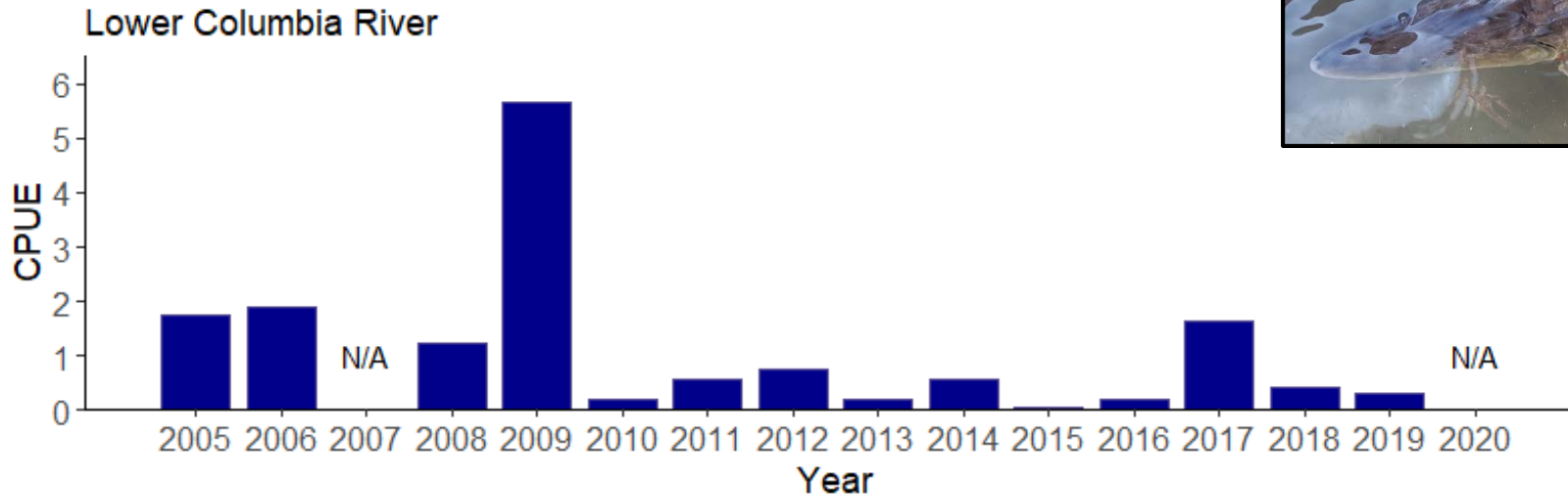
Trends in Adult Sturgeon Abundance (>66" FL)

Catch of >66" sturgeon per setline.

CPUE indicator supports modeled increase in adult abundance.



Age-0 Catch Per Net



This data, collected by ODFW, is a first-look at the success of spawning in a given year.

Data should only be evaluated within rivers, not between rivers.

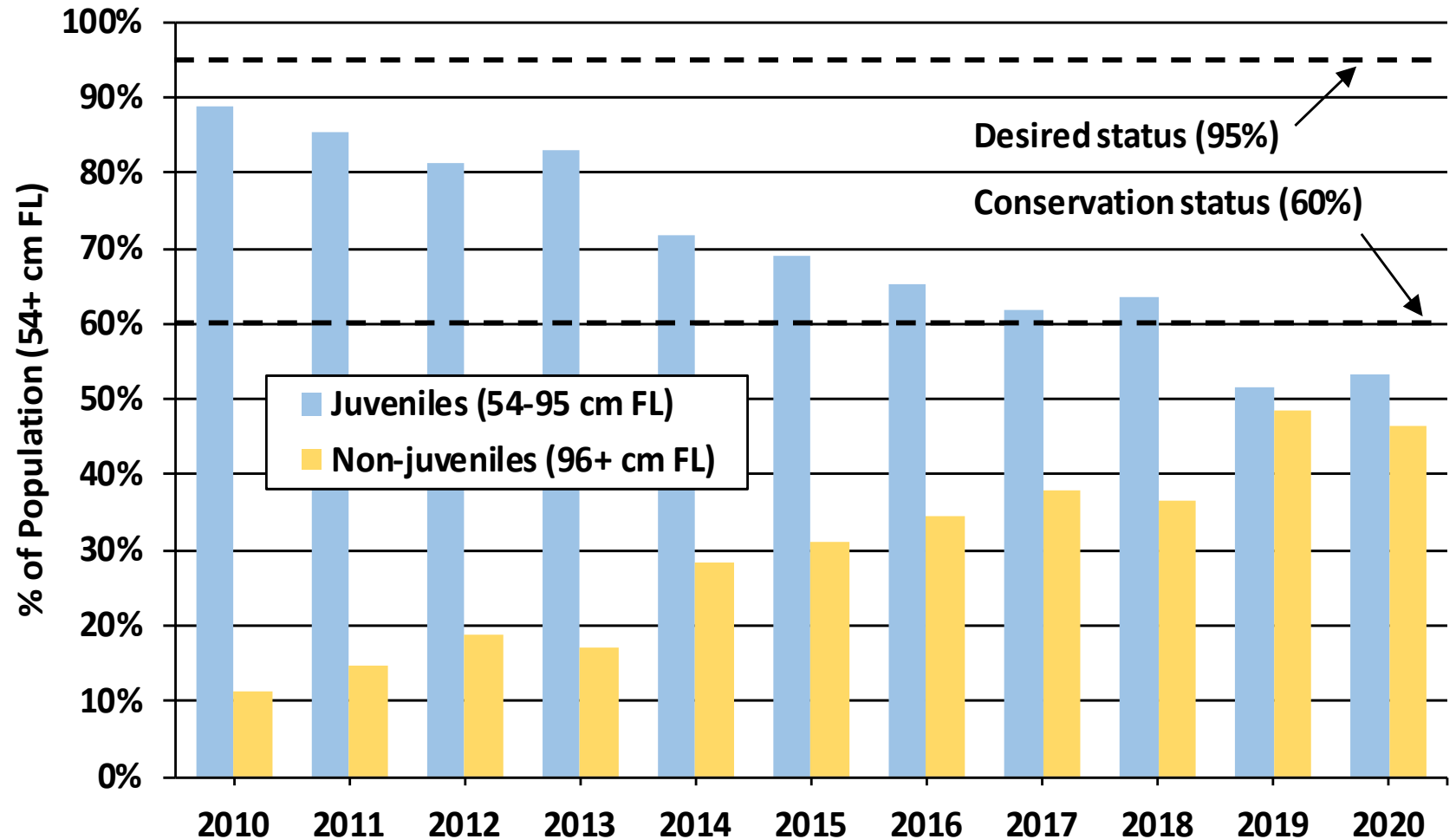
ODFW's reduced funding did not allow for Age-0 sampling in 2020 and may impact future sampling efforts.



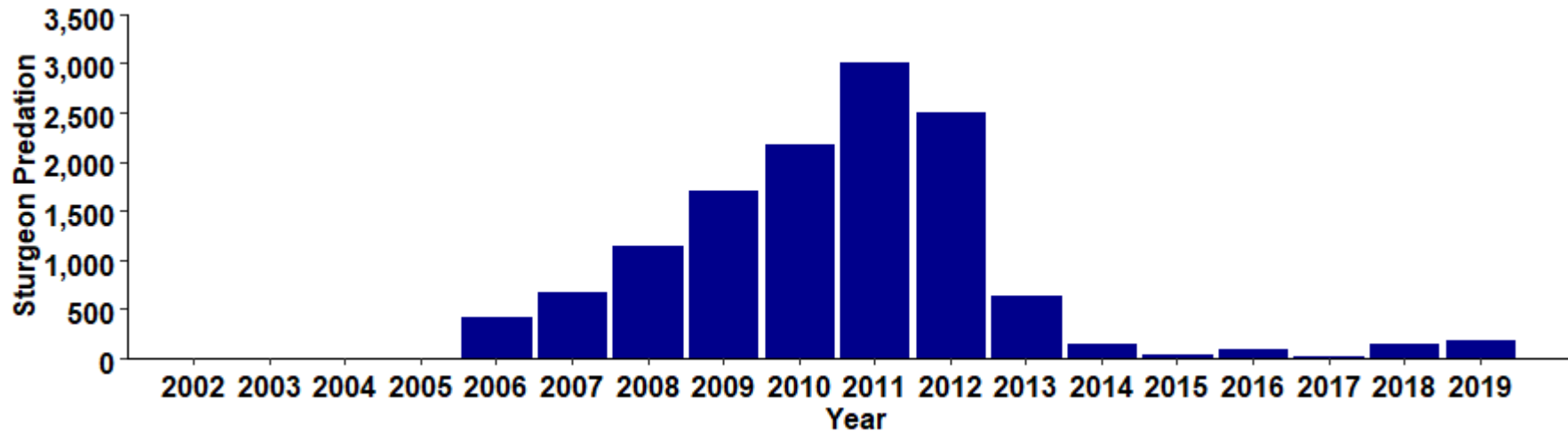
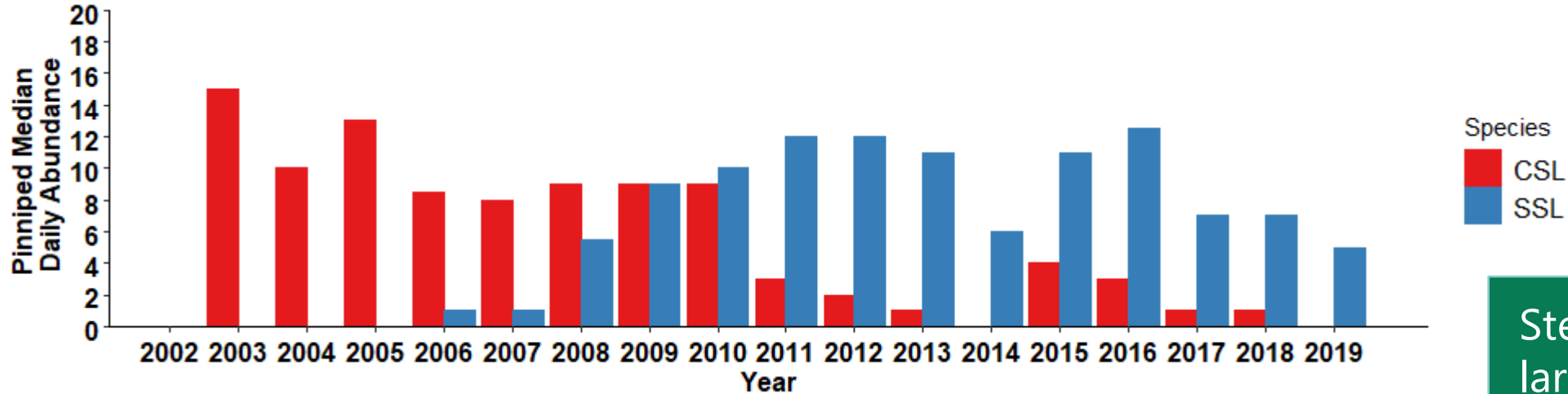
Population Composition: 2010-2020

The juvenile portion of the population is below the conservation status for 2nd consecutive year.

Expected decline in future abundance of legal harvestable sturgeon.



Pinniped Predation at Bonneville Dam



Steller Sea Lions have largely replaced California Sea Lions at Bonneville Dam, a primary sturgeon spawning location.

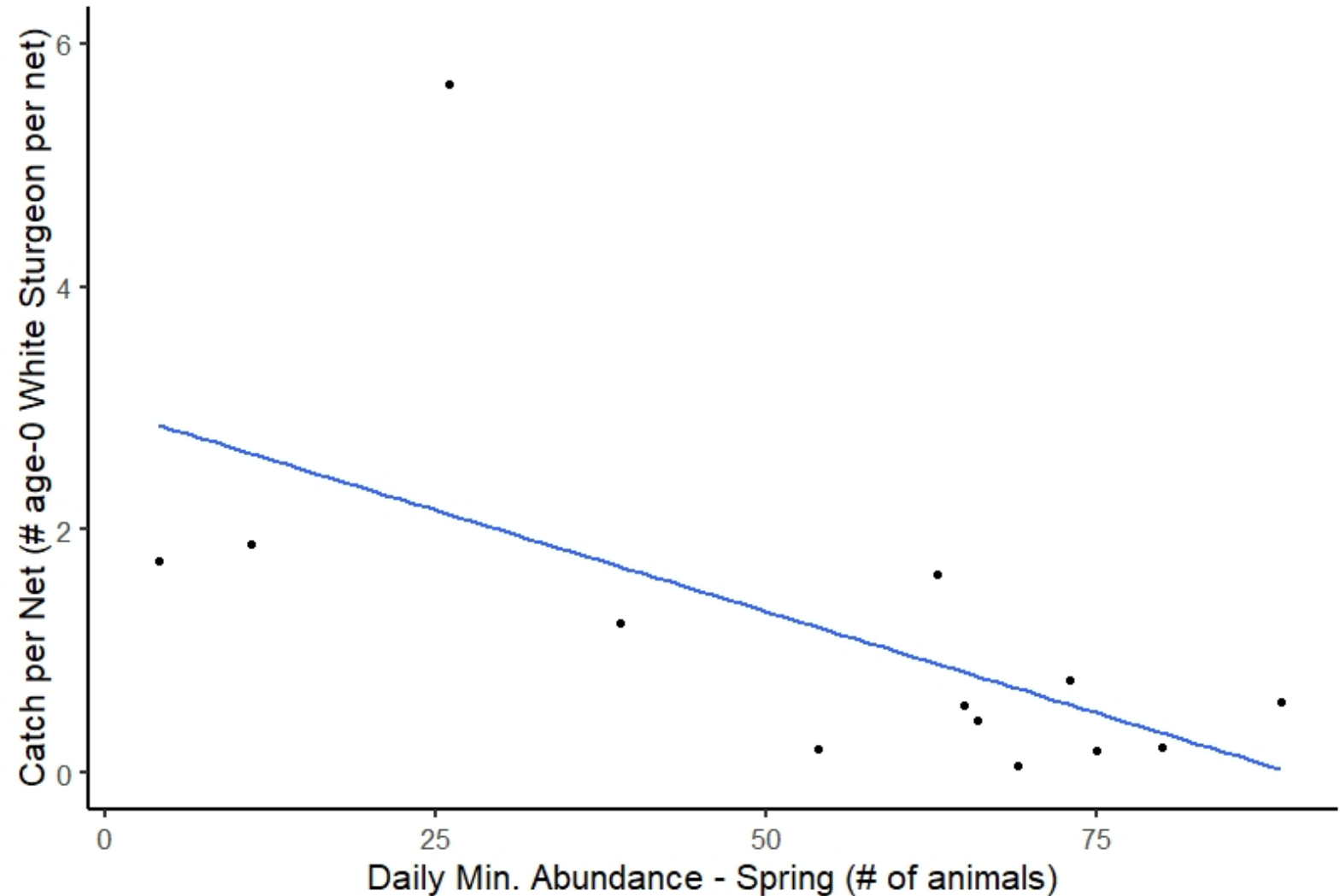
Observed predation has decreased, but sea lions may impact sturgeon spawning indirectly.



Pinniped Abundance vs Age-0 Catch Per Net

The abundance of Stellar Sea Lions is a significant predictor of weak White Sturgeon recruitment.




In 2020, NMFS approved an application allowing WDFW and partners to expand their program to lethally remove sea lions.



Source: Peter Stevens, ODFW 2019





2020 Summary

Metric	N	Interpretation	Brief Summary
Abundance Trends 38" – 54" FL	199,500		<ul style="list-style-type: none"> Increased abundance from 2019; however, COVID-19 related sampling issues resulted in increased variability in estimates.
Adult (>66" FL)	2020: 14,500 3-yr avg.: 10,844		<ul style="list-style-type: none"> 2020 3-yr adult abundance average is above minimum desired status level (threshold = 9,250 adults). Variability issues exist in these estimates as well.
Population Structure	~53% juvenile		<ul style="list-style-type: none"> Low relative abundance of juvenile and sub-legal sized fish indicates population productivity issues; Below conservation status level (threshold = 60%)



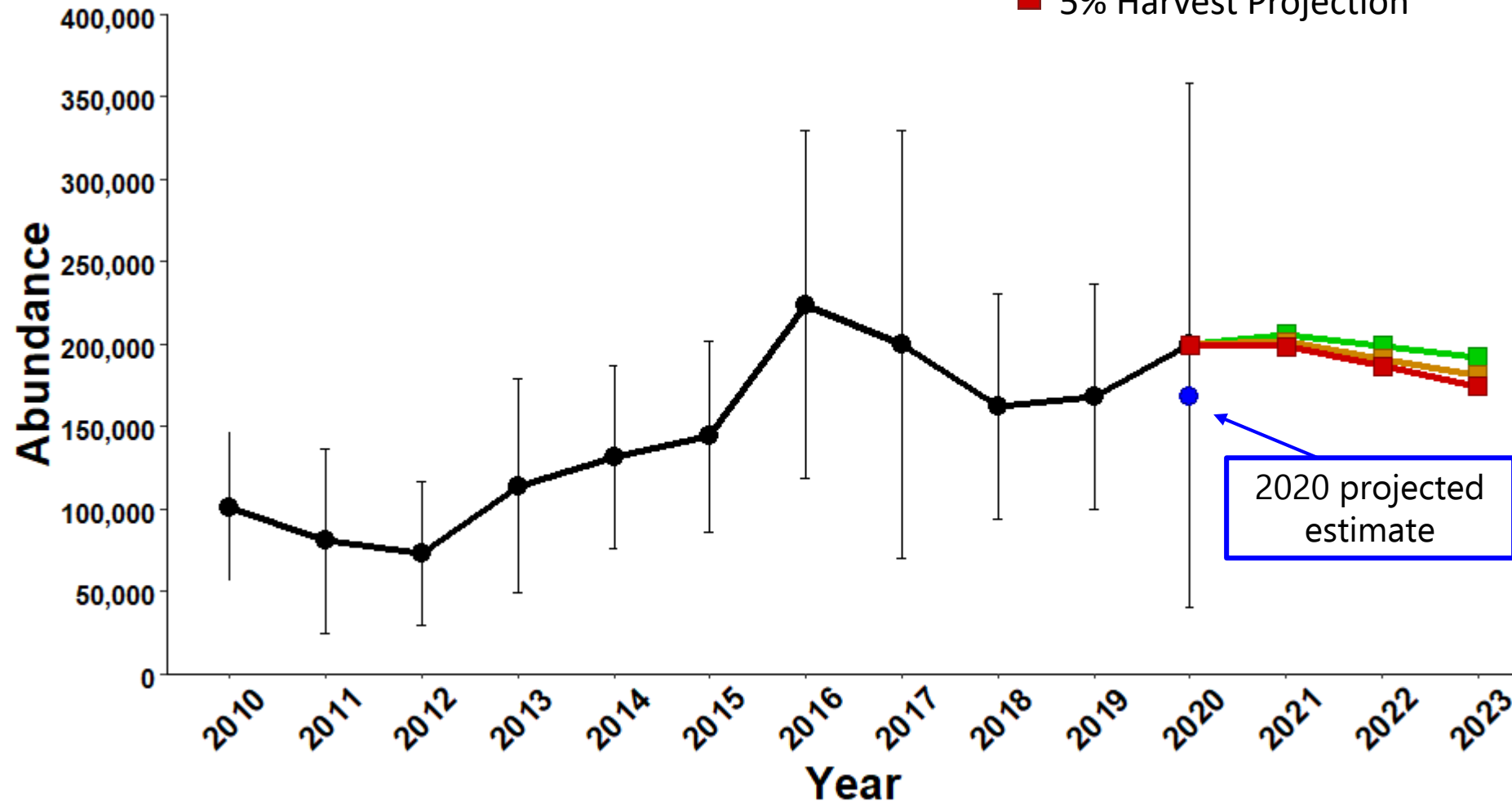
2020 Summary

Metric	N	Interpretation	Brief Summary
Recruitment Index (CPN)	N/A		<ul style="list-style-type: none"> • Reductions in funding have reduced our capacity to conduct this work.
Sea Lion Predation	Not yet available for 2020		<ul style="list-style-type: none"> • NMFS recently approved a permit allowing co-managers greater flexibility in their management of Steller sea lions.
LCR Fisheries (retention and catch-and-release)	Columbia River: 12,099 angler trips Total: 17,190 angler trips		<ul style="list-style-type: none"> • Participation still down from pre-closure levels, but interest in retention fishing opportunity remains. No Estuary fishery in 2020. Willamette River opened for retention in 2020.



Legal Abundance Forecast

- No Harvest Projection
- 3% Harvest Projection
- 5% Harvest Projection



Due to uncertainties in the 2020 abundance estimate, staff recommend using the conservative 2020 projected estimate to set 2021 fisheries with a low harvest rate similar to recent fisheries.



Public Input

Shared stock status update with Columbia River advisory groups in January.

- Sport advisors expressed conservation concerns but generally supported another retention fishery similar to the structure of 2017-2020.
- Commercial advisors also expressed conservation concerns but agreed with assessment and asked for a balanced approach to commercial harvest.



Next Steps

- Work with ODFW to develop another short-duration retention fishery, similar to 2017-2020.
- Target low harvest rate and lower legal-size abundance, similar to 2020, to continue building population while providing sustainable fishing opportunity.



Thank you



Questions?

