

# 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

- Stock Status
- Predation
- 2021 Fisheries
- 2022 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.

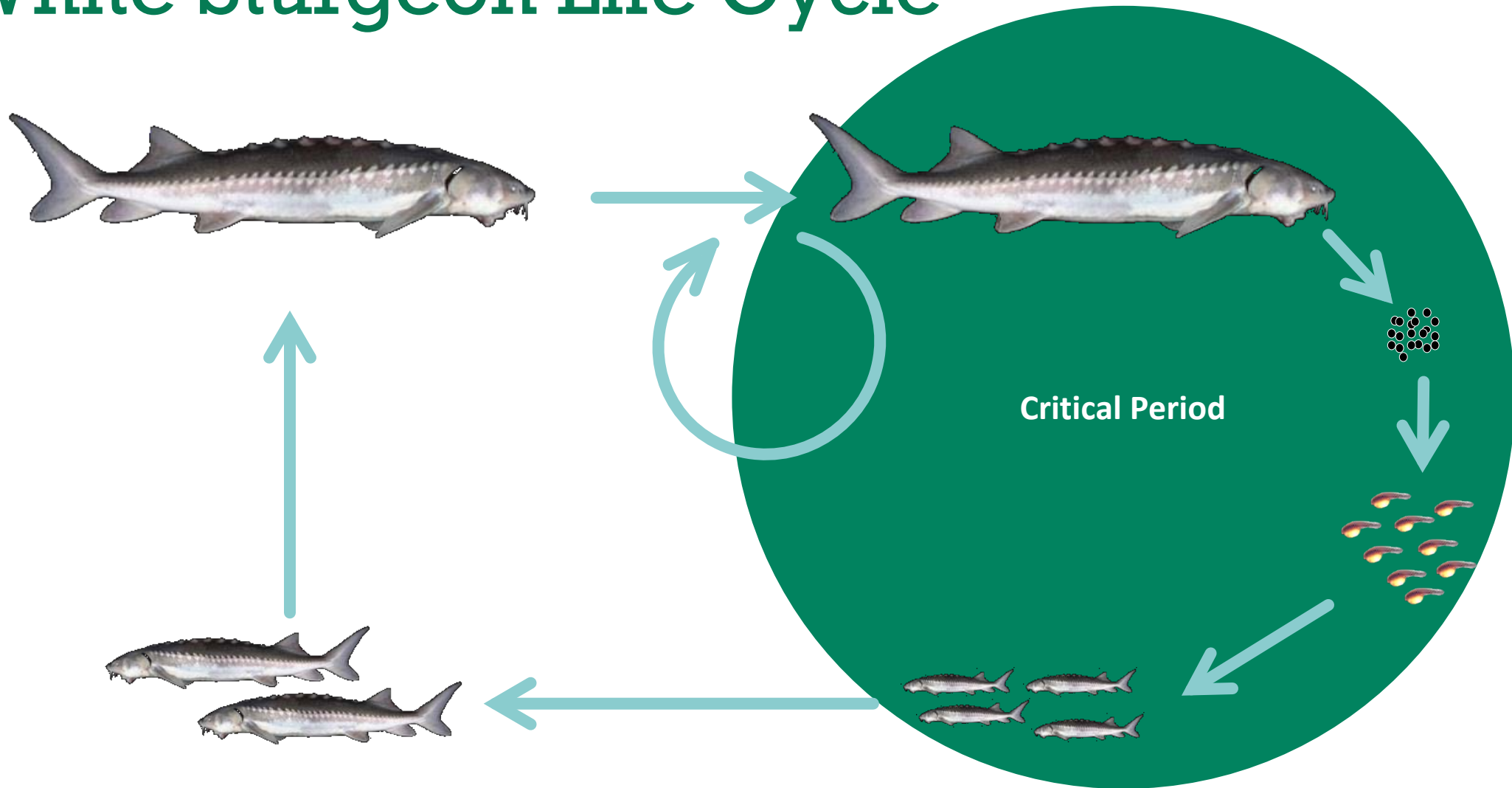


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# White Sturgeon Life Cycle



White Sturgeon picture by Rene Reyes, USBR

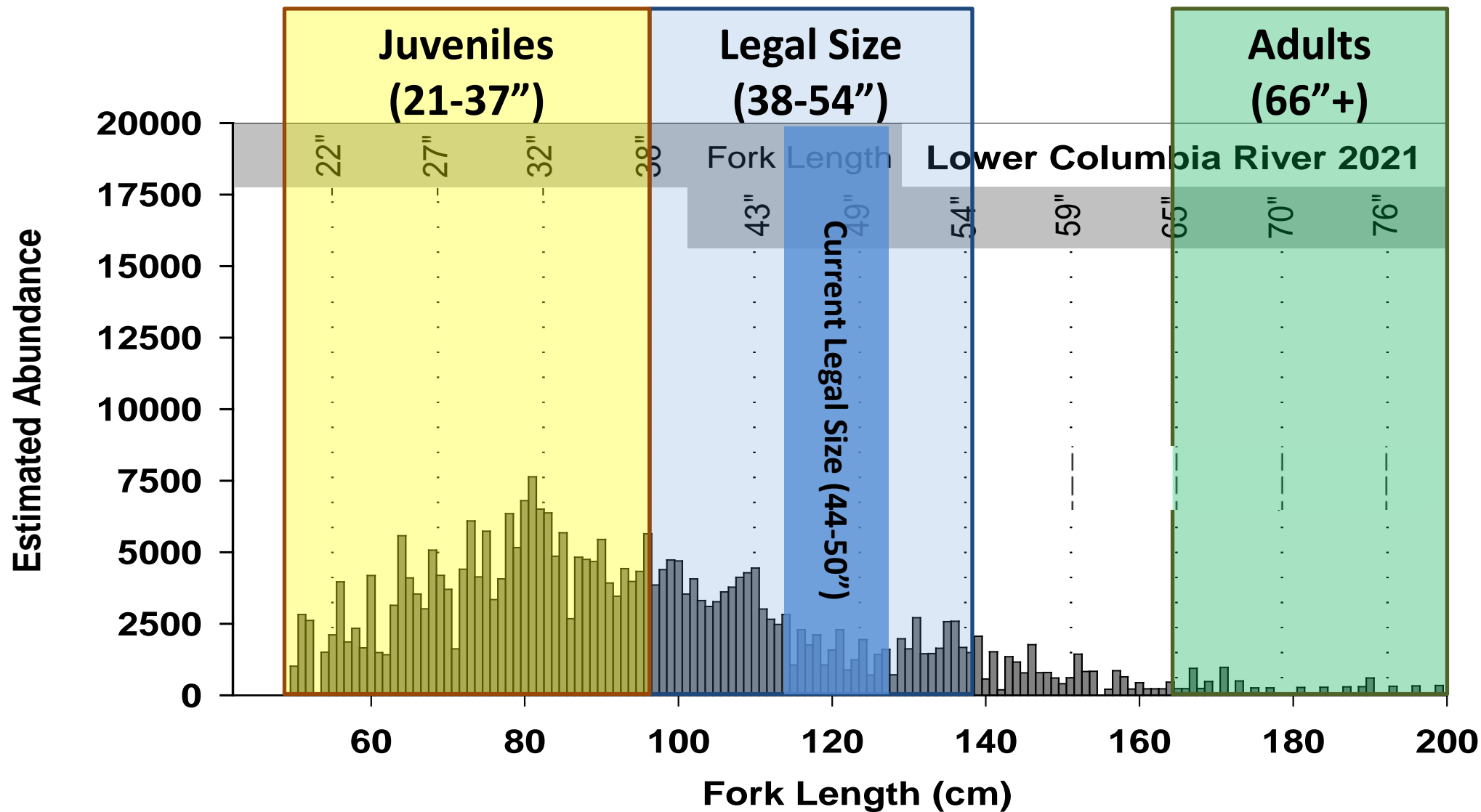
Conceptual model adapted from Klimley et al. 2015



# 2021 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.



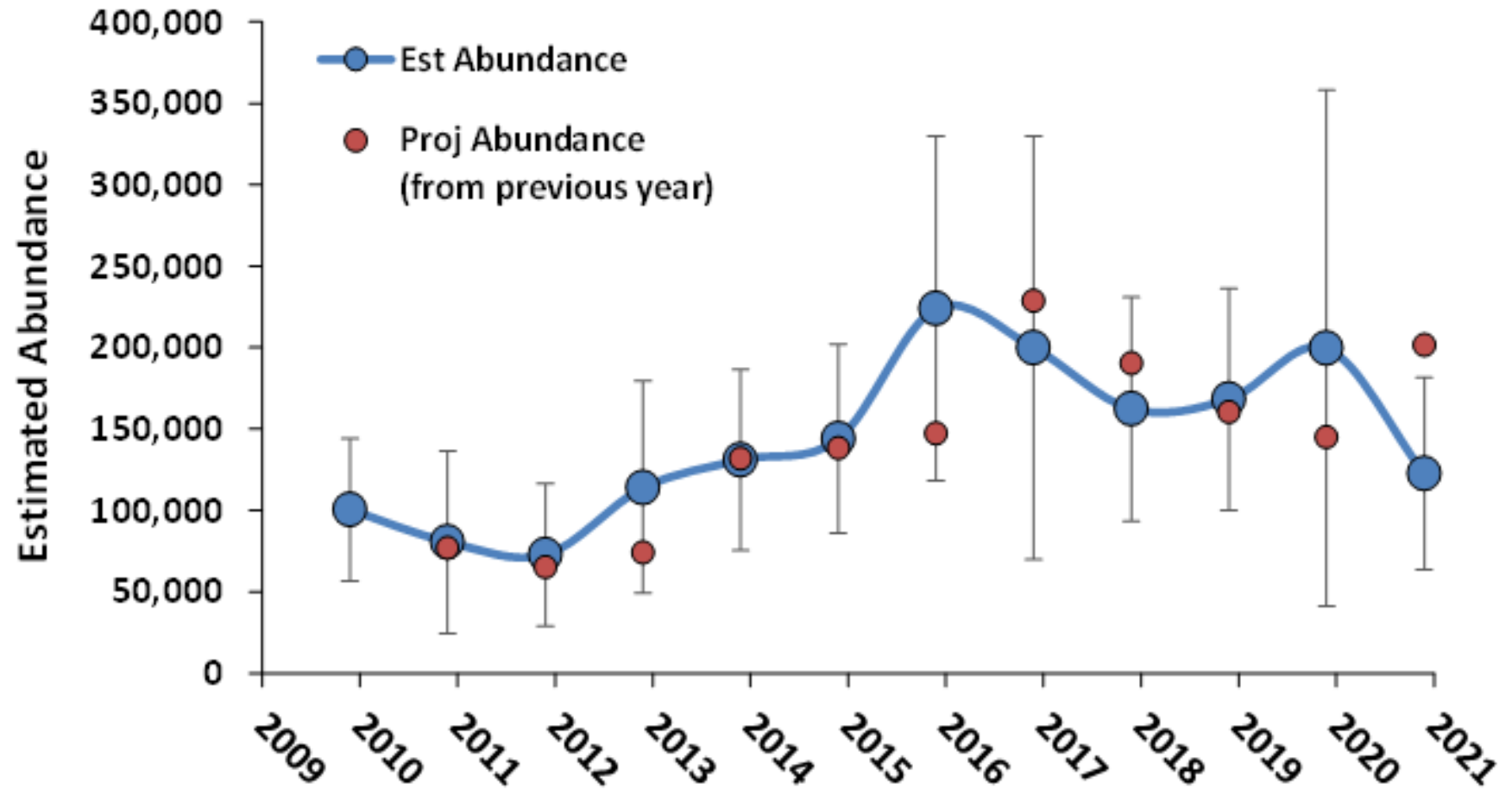


# Trends in Legal Abundance (38-54" FL)

Estimated abundance of 38-54" FL sturgeon.

The large variance around the 2020 estimate is a result of sampling limitations.

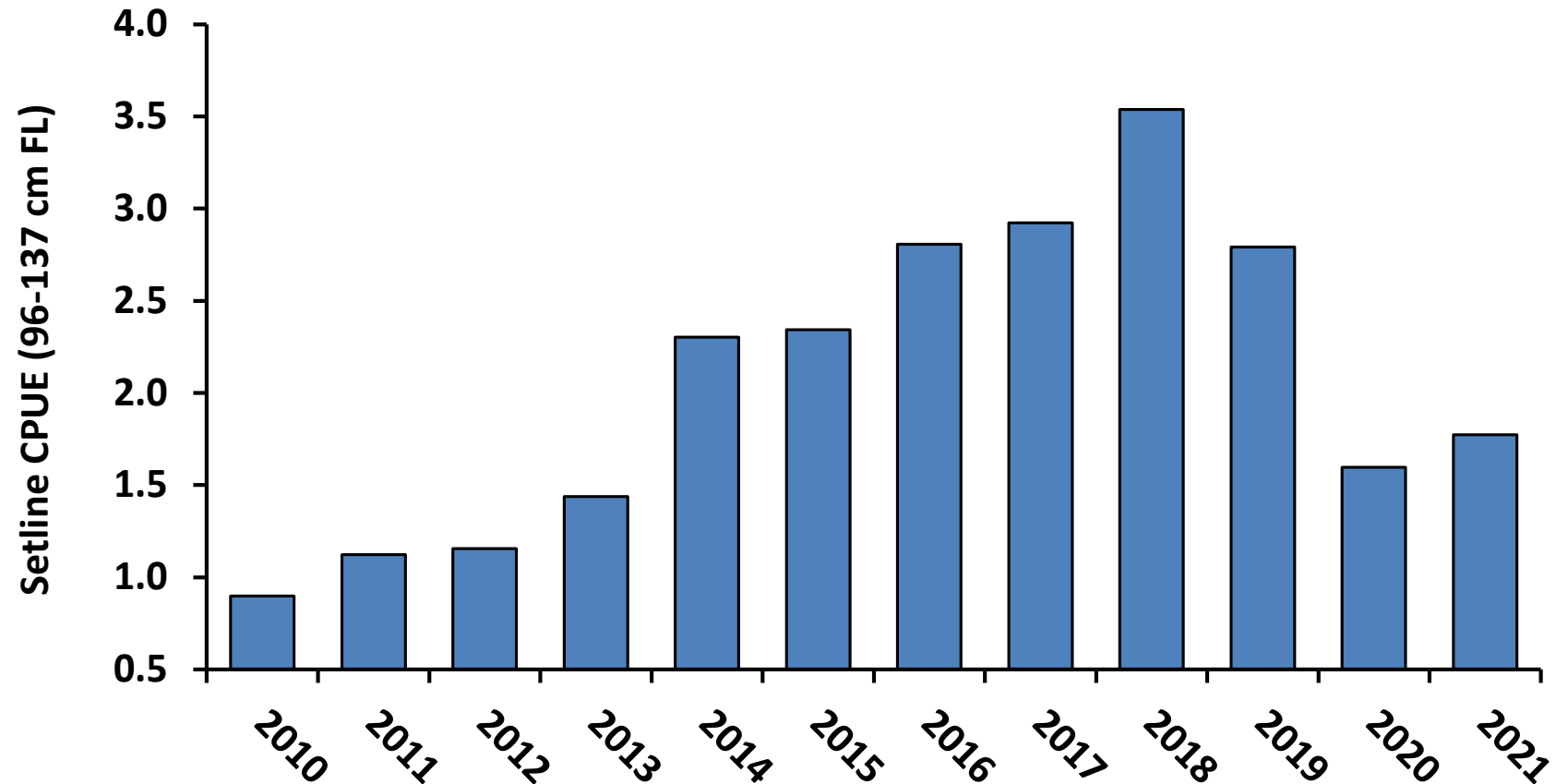
General downward trend in legal abundance since 2016.



# Trends in Legal CPUE (38-54" FL)

Catch of 38-54" sturgeon per setline.

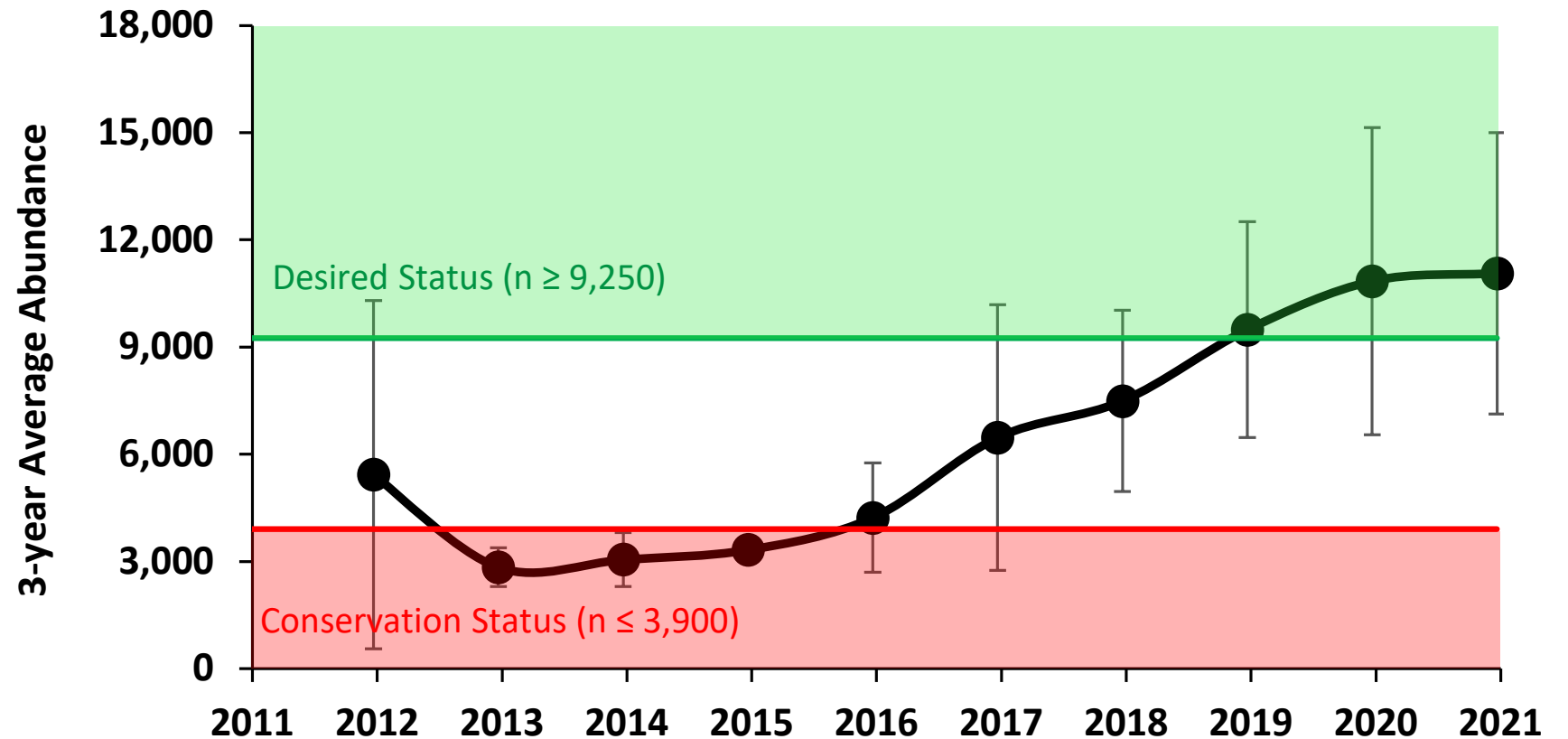
CPUE indicator supports the modeled decline in legal-size abundance.



# Trends in Adult Abundance (>66" FL)

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

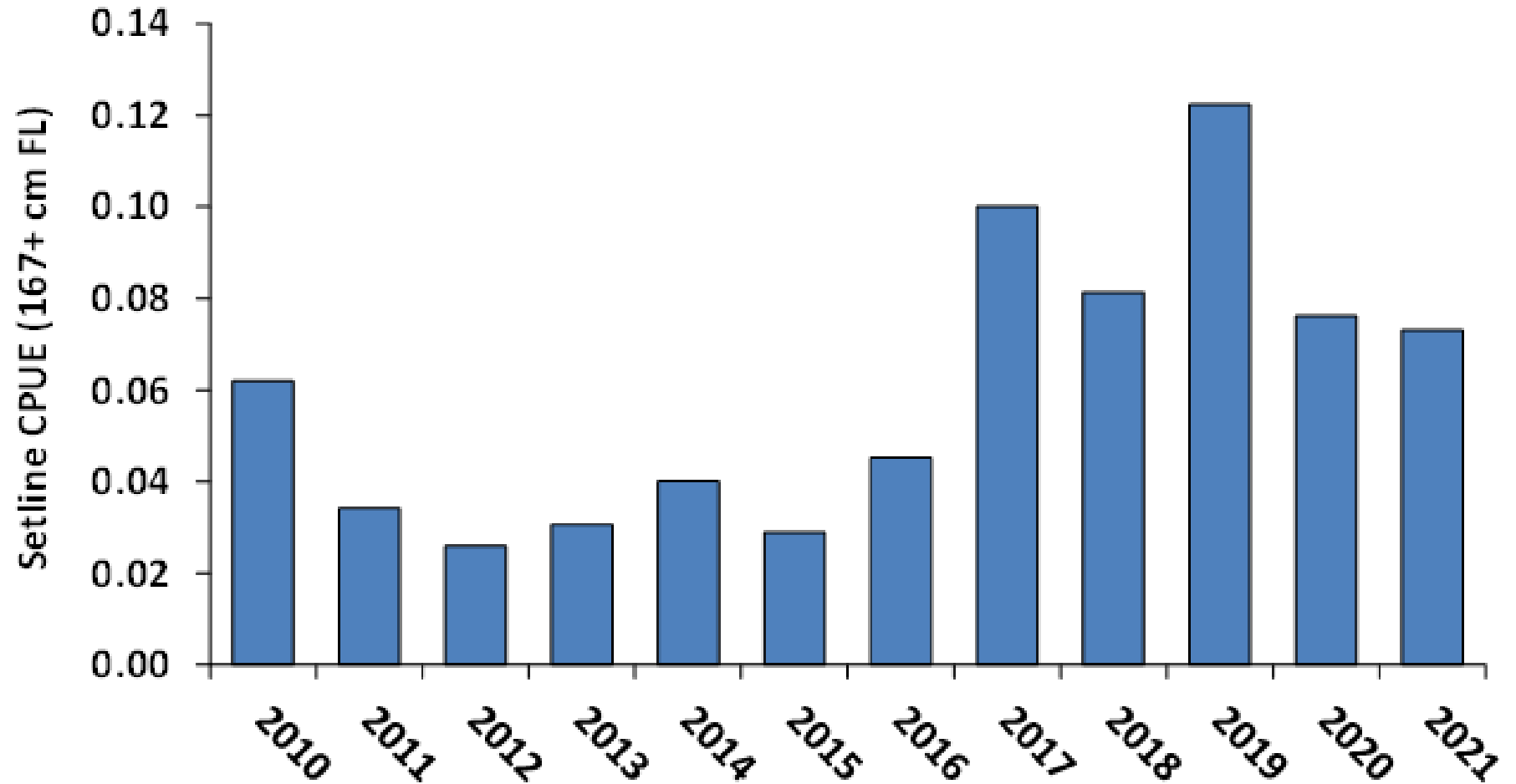
Adult abundance of sturgeon is within the "desired status."



# Trends in Adult CPUE (>66" FL)

Catch of >66" sturgeon per setline.

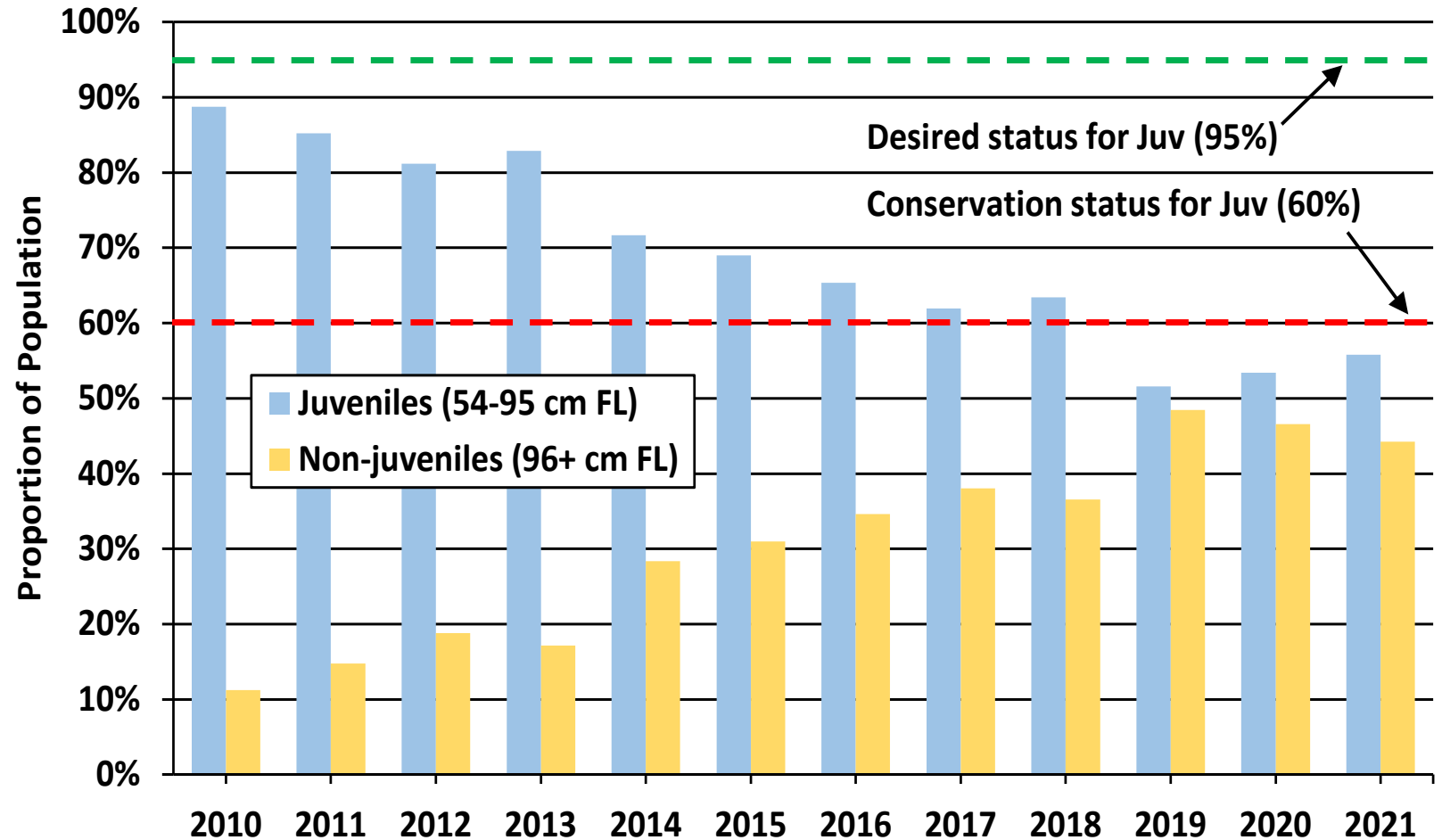
CPUE indicator supports the modeled adult abundance estimate.



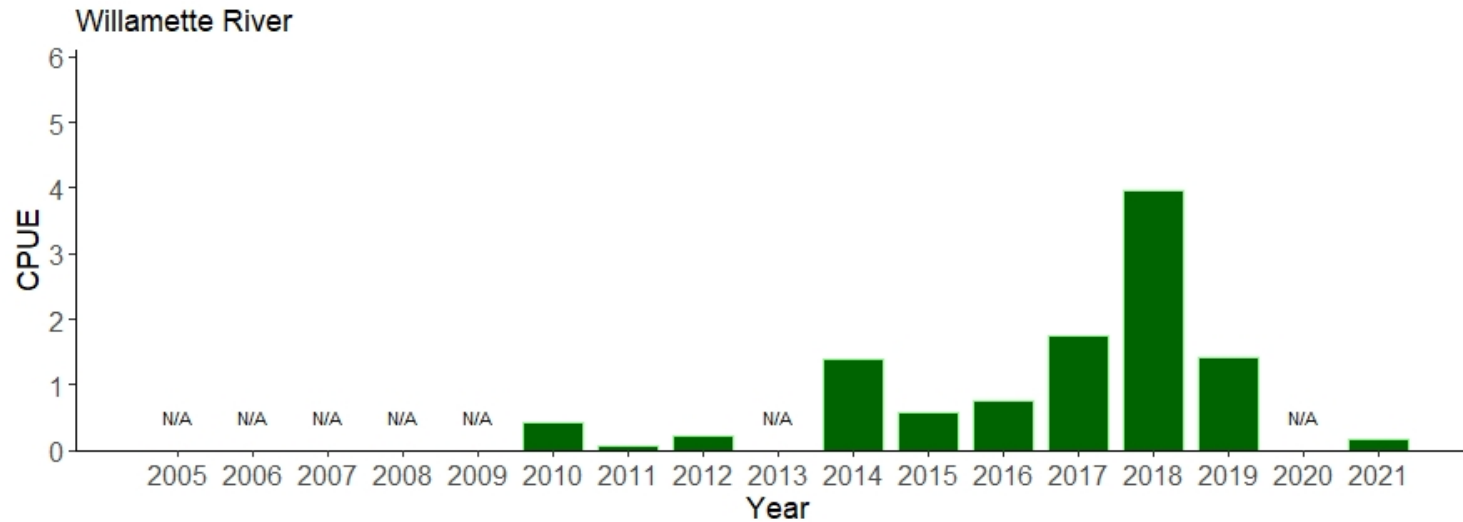
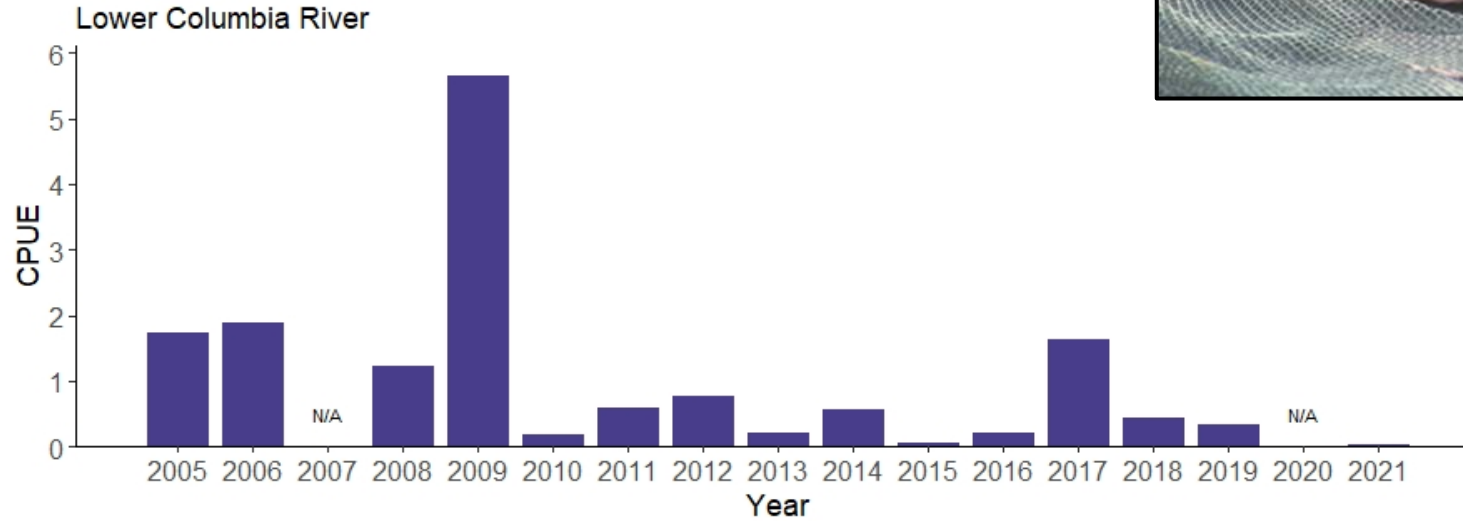
# Population Composition: 2010-2021

The juvenile portion of the population is below the conservation status for 3<sup>rd</sup> consecutive year.

Contributing to the decline in legal size sturgeon 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.

2021 yielded the lowest catch of juveniles in the Columbia River, and 2<sup>nd</sup> lowest in the Willamette River.

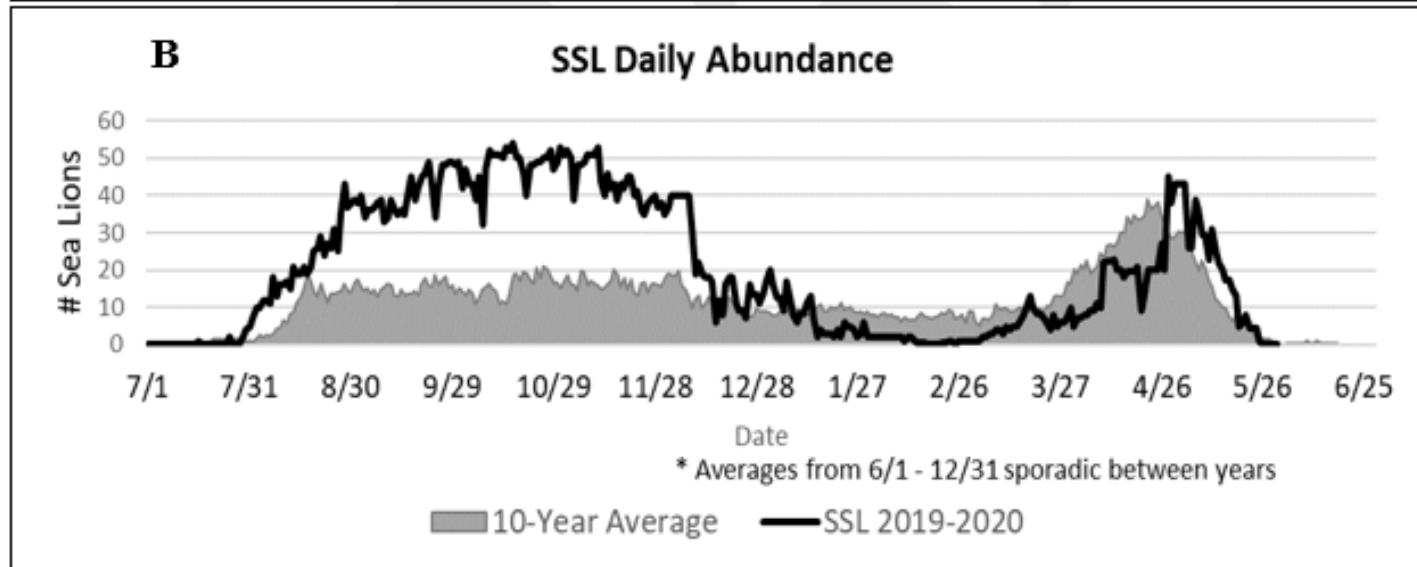
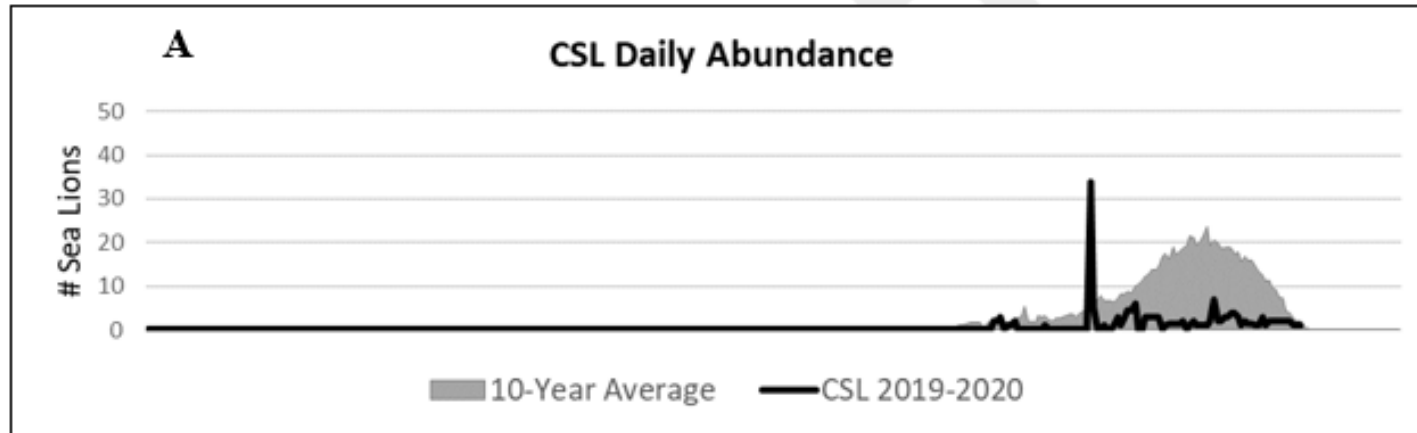


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# Pinniped Abundance at Bonneville Dam



Steller Sea Lions (SSL) were first observed at Bonneville Dam in 2003 and are now responsible for most of the predation on sturgeon.

Recently, there has been a shift to increasing SSL abundance throughout the year.

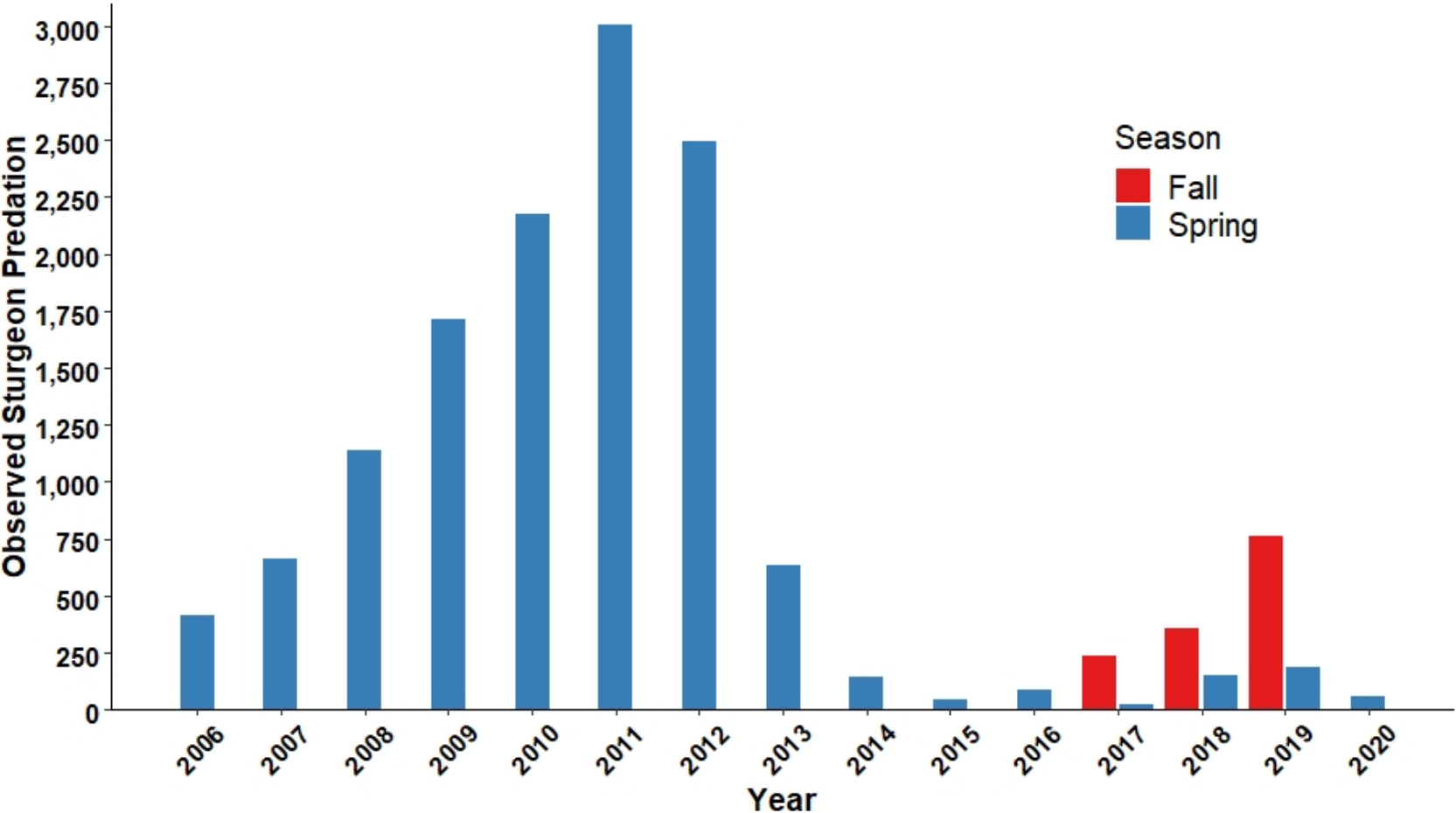


Source: Army Corps of Engineers, Draft 2020 report





# Predation on Sturgeon at Bonneville Dam



Predation on sturgeon increased, then decreased, dramatically in the first decade of observations.

In years with data available for both seasons, fall predation rates are much higher than observed in the spring.

This dataset is limited to the observable area directly below Bonneville Dam.

Source: Army Corps of Engineers, Draft 2020 report

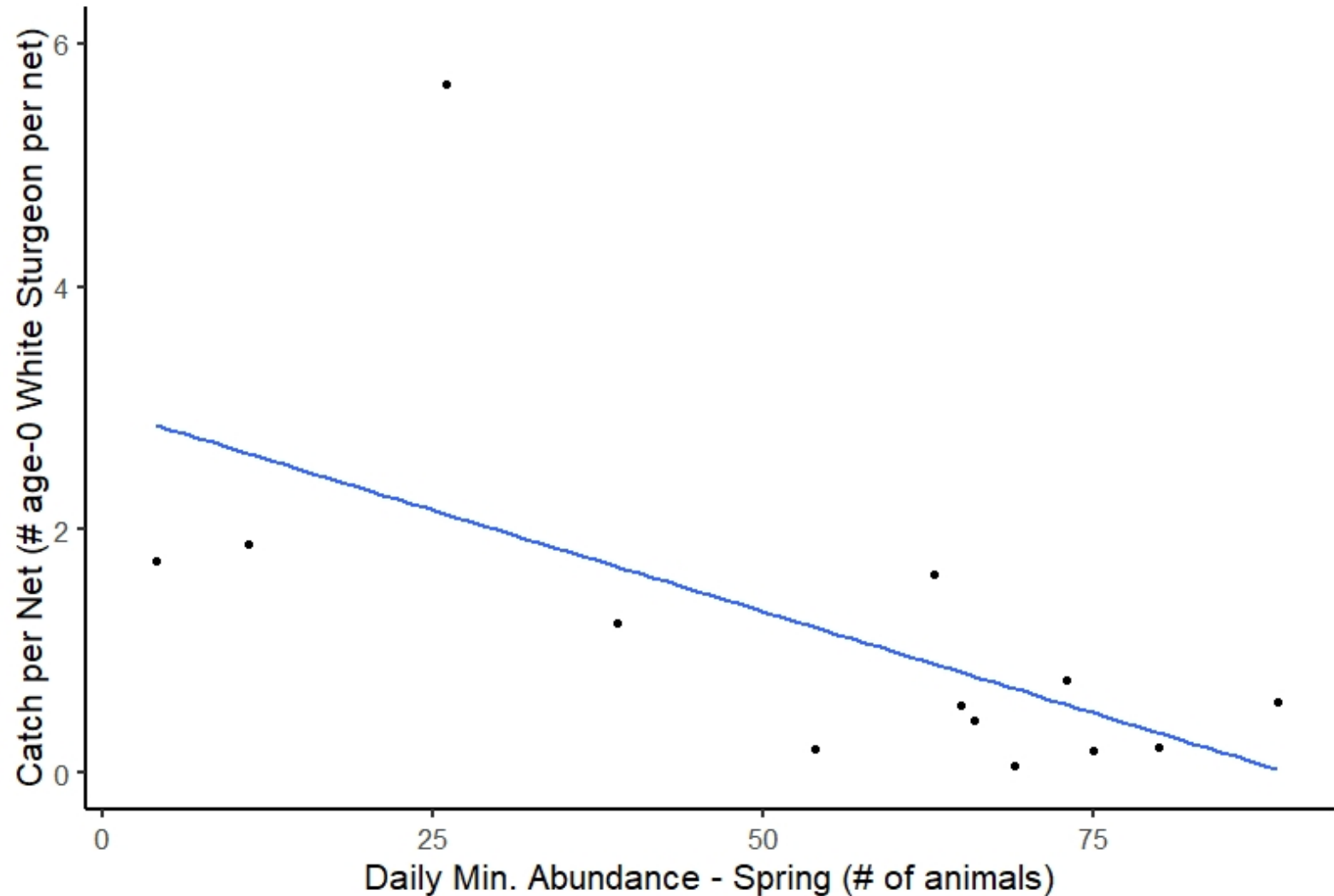


# SSL Linkage with Decline in Recruitment

An analysis by ODFW in 2019 indicated that the abundance of Steller 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 SSLs.

Since approval, 43 SSLs have been removed at Bonneville.



Source: Peter Stevens, ODFW 2019

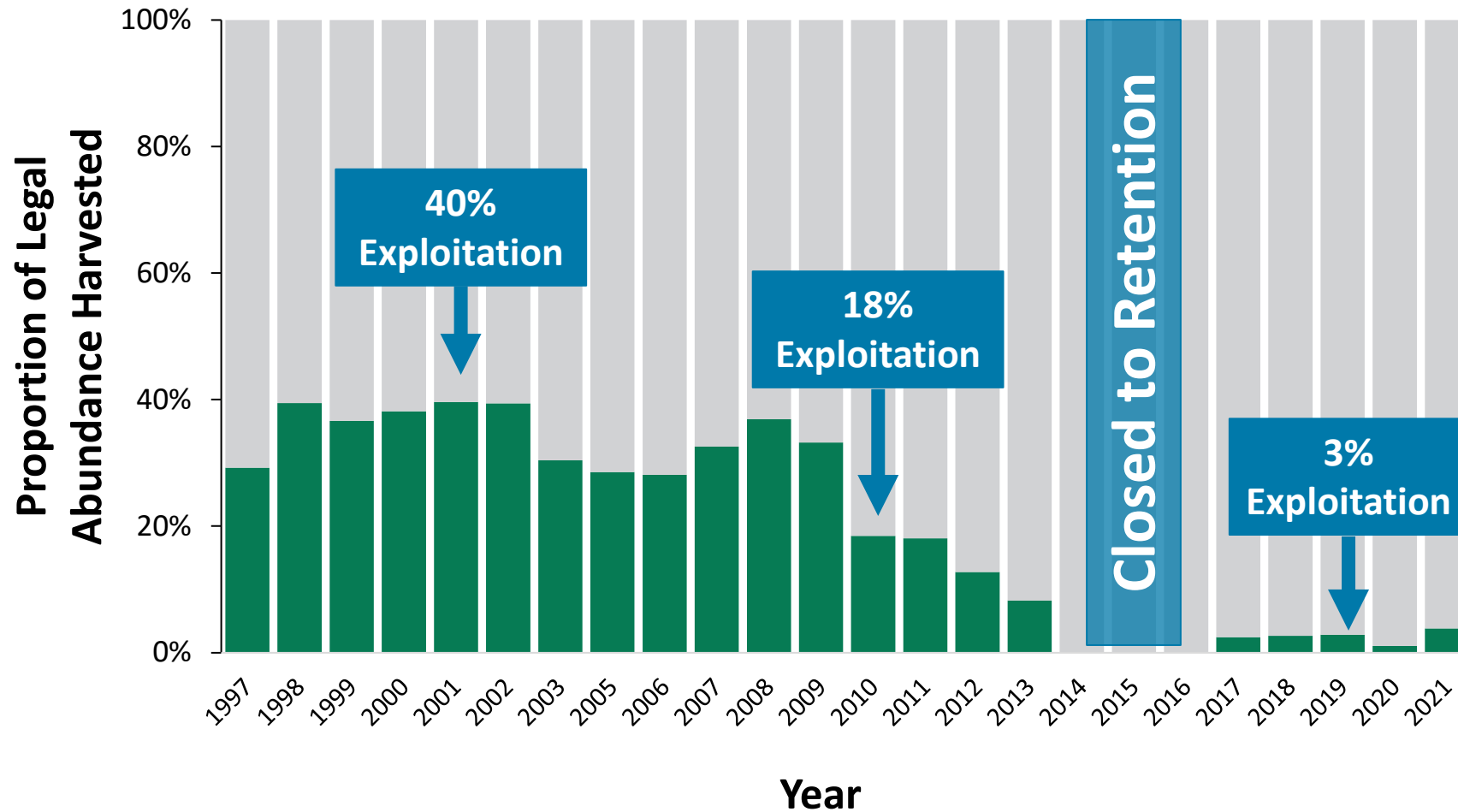


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# Summary of Past Retention Fisheries



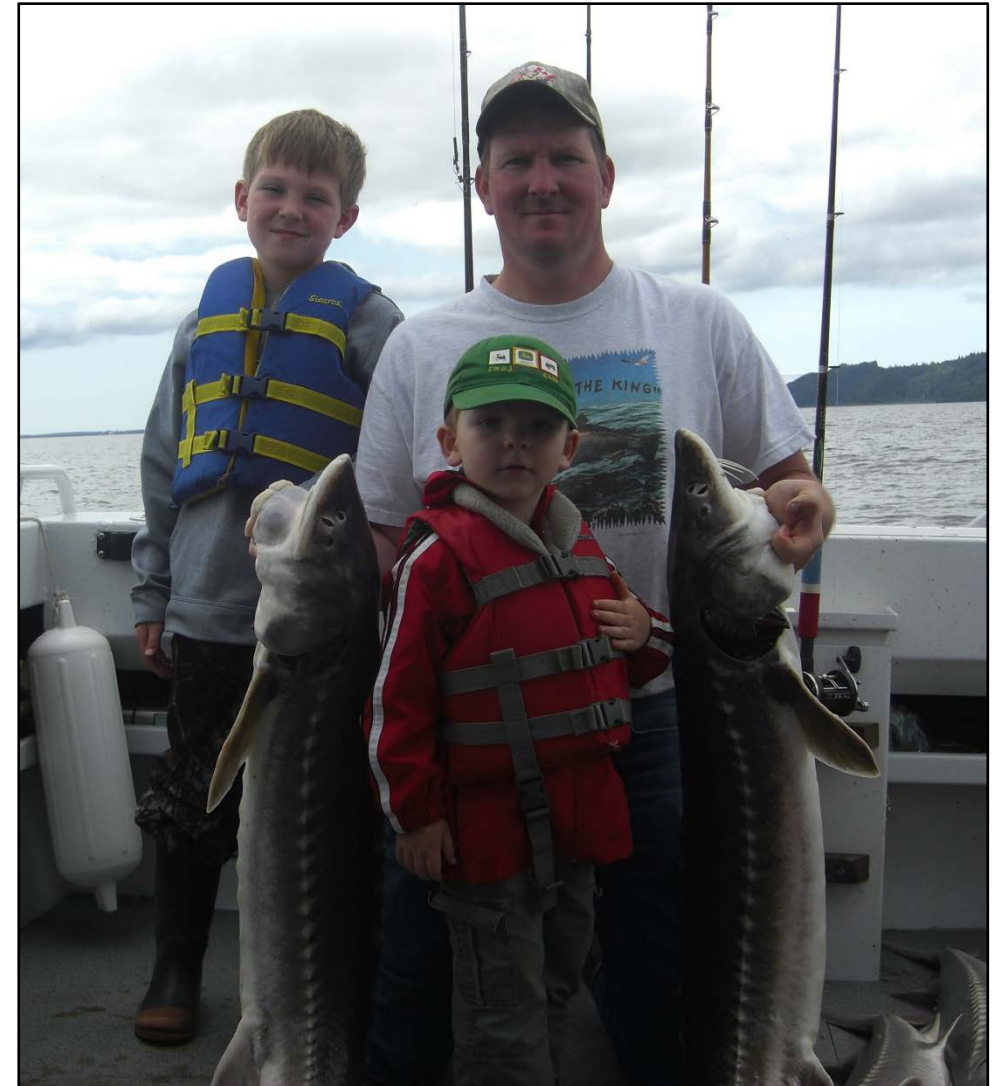
Due to a declining legal abundance estimate, exploitation rates were reduced starting around 2010, and the retention fishery was closed from 2014-2016.

In 2017, the fishery was re-opened with a reduced legal-size slot and exploitation rate on the legal-size abundance with the goal of increasing escapement of legal-size fish to the spawning adult size.

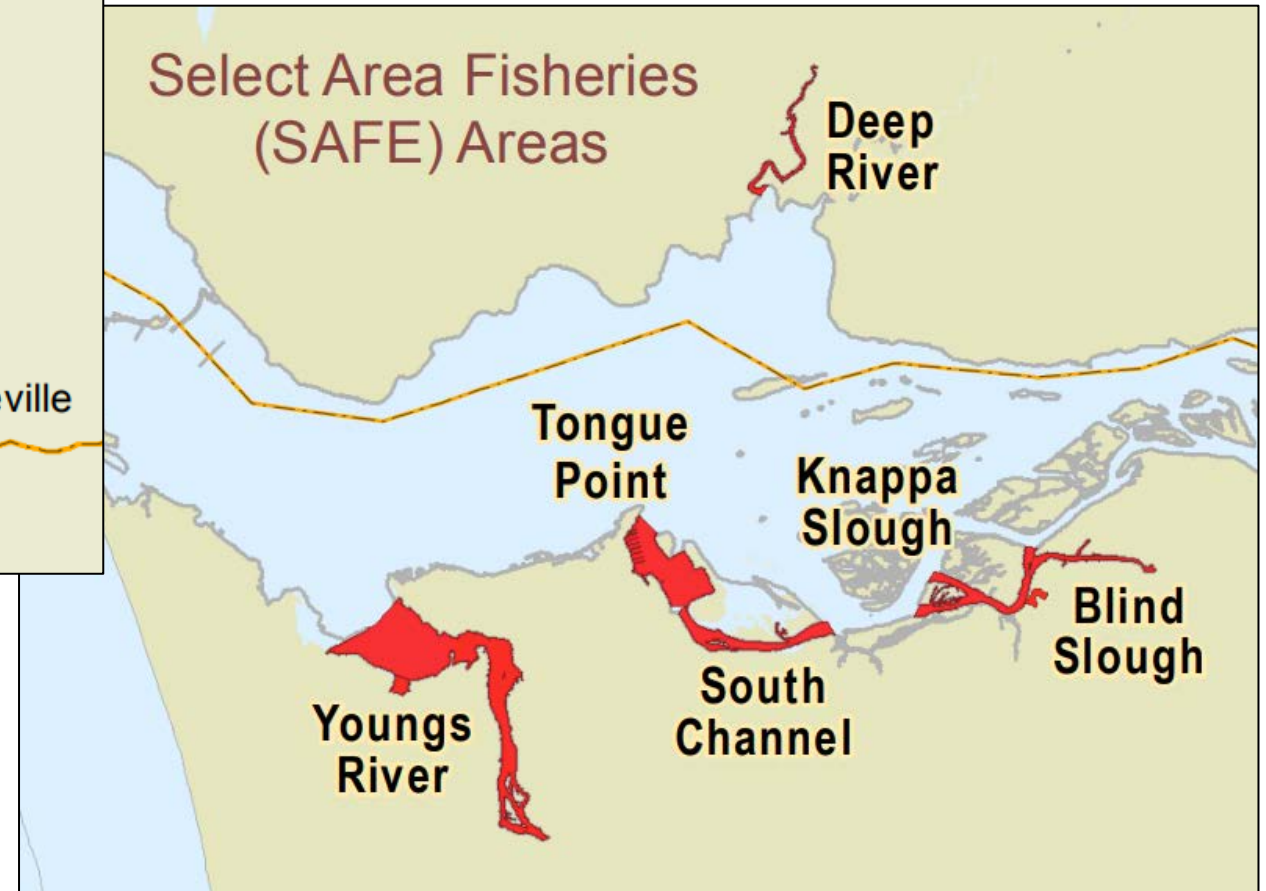


# 2021 Fishery Guidelines

- Total Catch Guideline: 6,160 fish
- Commercial Fishery: 1,230 fish (20%)
- Sport Fishery: 4,930 fish (80%)



# Commercial Areas and Harvest Expectations



Pre-season harvest expectations:  
Mainstem – 615 fish  
SAFE Area – 615 fish



# 2021 Commercial Fishing Harvest

## Select Area (SAFE):

- Winter: 132 fish
- Spring: 233 fish
- Summer: 63 fish
- Fall: 371 fish
- **Total:** 799 fish (67%)

## Mainstem:

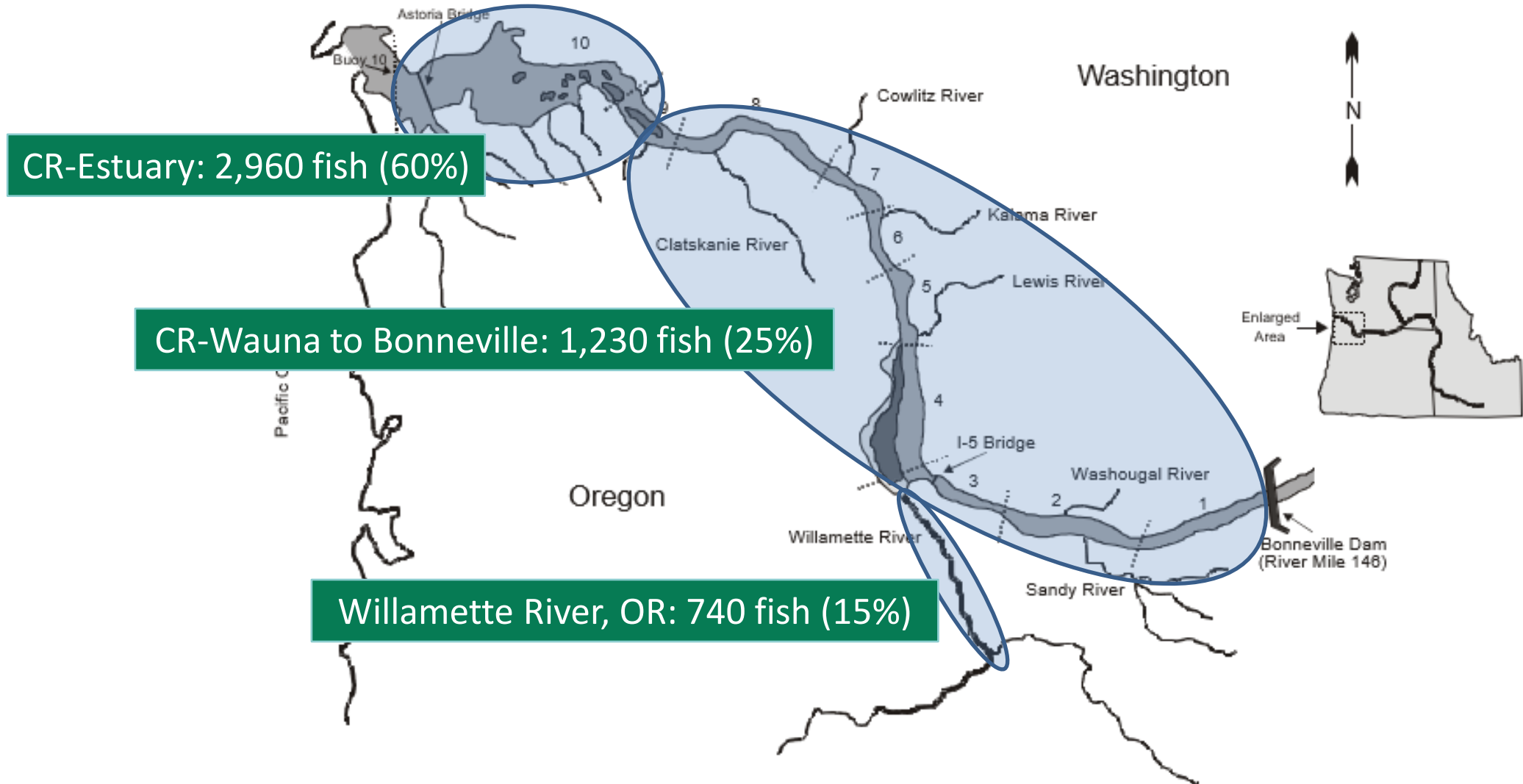
- Early August: 27 fish
- Late August: 270
- Late Fall: 98 fish
- **Total:** 395 fish (33%)

**Total Harvest: 1,194 fish**

97% of the 2021 commercial guideline



# Sport Fishing Areas and Guidelines





# 2021 Sport Fishing Harvest

## Estuary (below Wauna):

- May 10–Jun. 12 (13 d)
- 19,106 angler trips
- **Total:** 2549 fish (86%)

## Wauna to Bonneville:

- Sept. 11–29 (6 d)
  - 10,487 angler trips
  - **Total:** 885 fish (72%)
- \*includes Cowlitz River, WA

## Willamette River, OR:

- June 12 & 19 (2 d)
  - 2,801 angler trips
  - **Total:** 87 fish (12%)
- \* 2<sup>nd</sup> time opened since 2013

## **Total Harvest: 3,521 fish**

- 71% of the total 2021 sport guideline
- 82% of the Lower Columbia harvest guideline
- 31,227 total angler trips for retention and catch-and-release fisheries in the Lower Columbia



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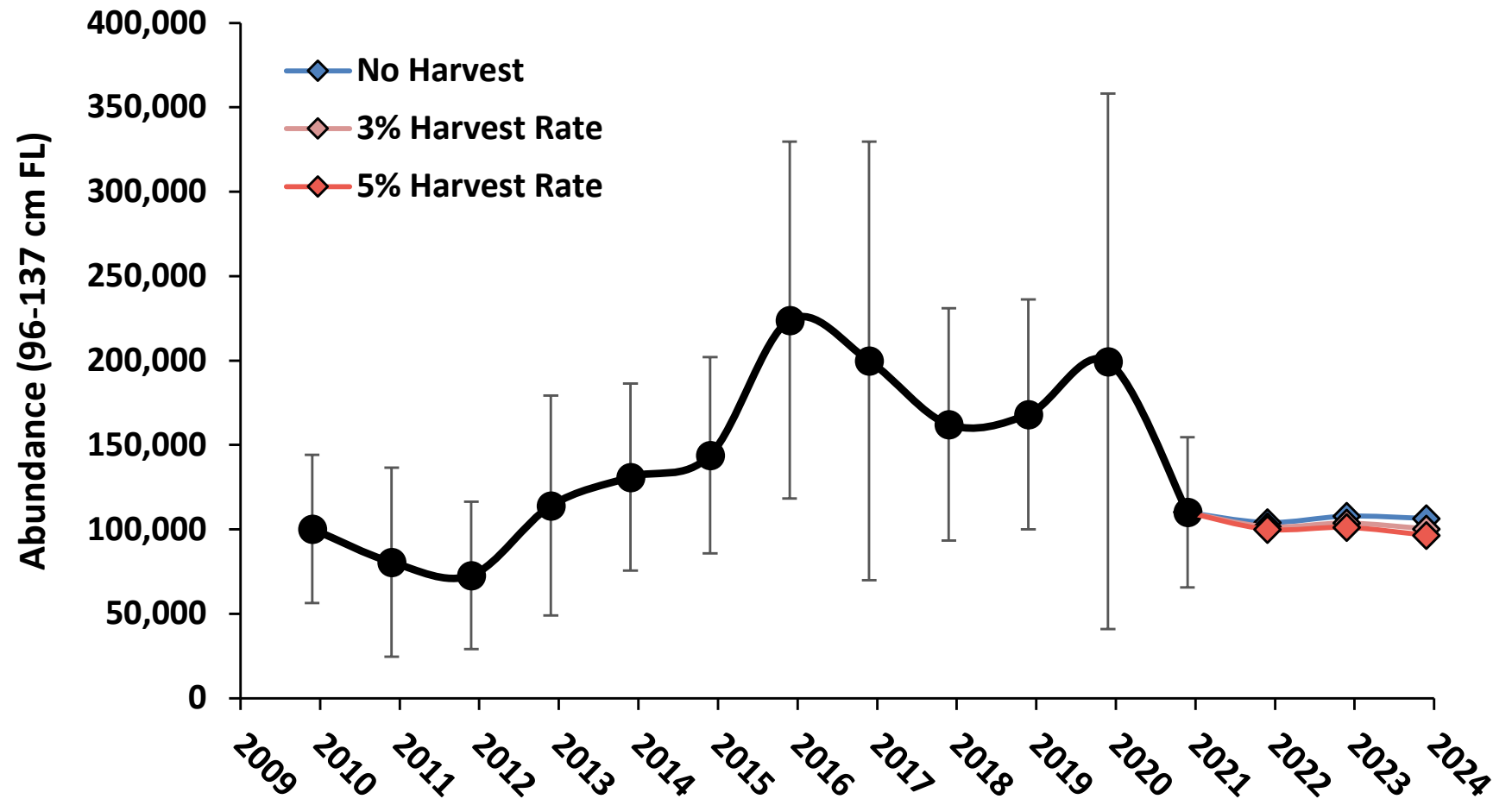
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# Projected Legal Abundance

The low exploitation rate is projected to have a minimal impact on the legal-abundance.

Due to a decline in legal abundance, retention guidelines will be reduced for the 2022 fishing season.



# Public Input

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

- Sport advisors expressed conservation concerns about sturgeon recruitment. Several, but not all, supported another retention fishery even if the opportunity/guideline was reduced.
- Commercial advisors expressed conservation concerns about sturgeon numbers compared with the historical population. Advisors asked for a balanced approach to harvest.



# Next Steps

- Work with ODFW to develop another short-duration retention fishery, similar to 2017–2021, but incorporating reduced retention guidelines across all areas.
- Target low harvest rate to escape fish, building the spawning adult portion of the population, and continuing to provide sustainable fishing opportunity.



**Thank you**



**Questions?**

