Middle Columbia River White Sturgeon Recreational Fisheries

Delegation of Rulemaking Authority to the Director

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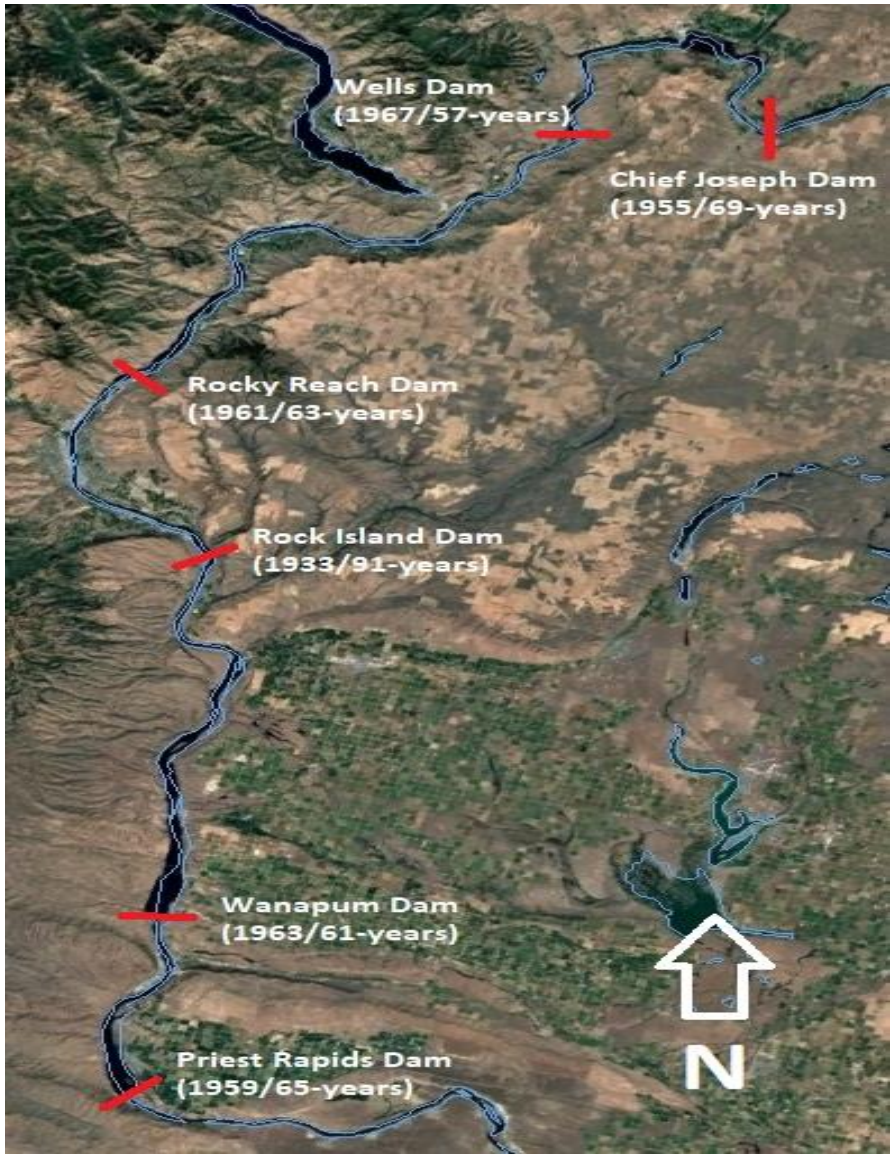
Presentation Outline

- Background
- White Sturgeon Management Plans
- Conservation Aquaculture
- Stocking Rates
- Monitoring and Evaluation
- Recreational Fisheries
- Conclusions
- Request for Delegation of Authority

Background

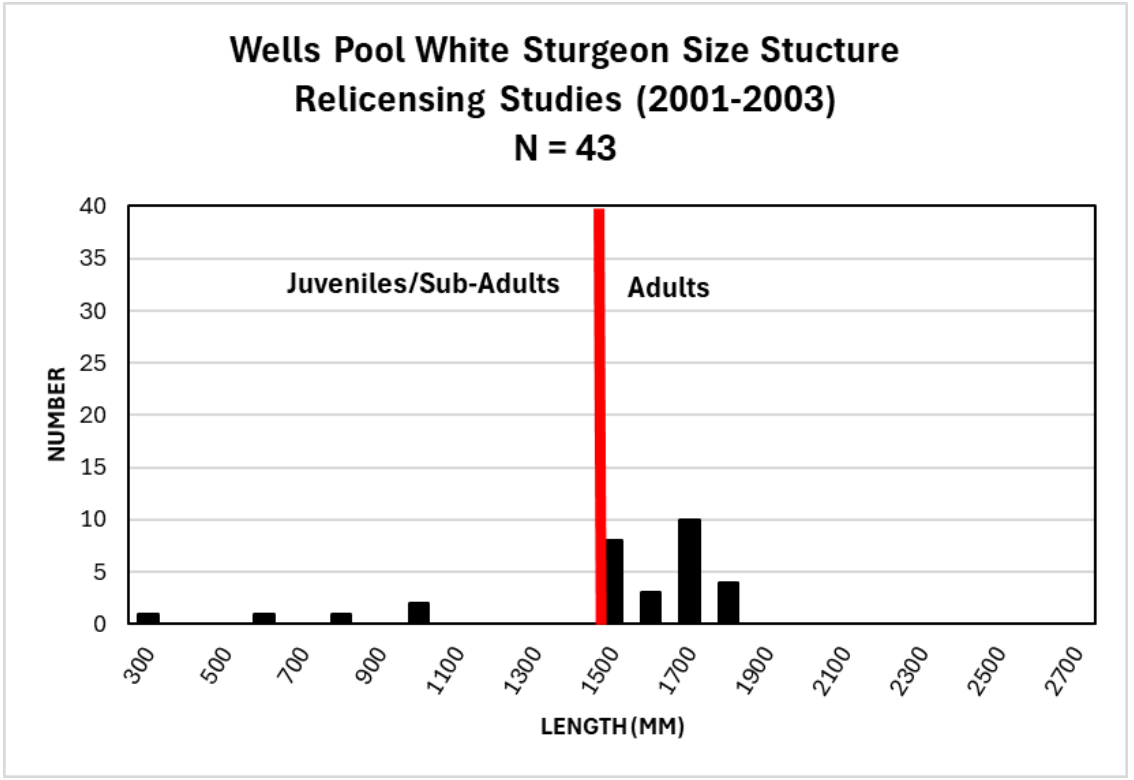
- White sturgeon are found throughout the Columbia and Snake River Basins, however, pre-dam use (e.g., rearing, foraging, migratory, spawning, etc.) of the Middle Columbia River (MCR) is unknown.
- Dam construction in the MCR between the 1930-1960s fragmented the Columbia River white sturgeon population into isolated management units.
- Some downstream movement occurs, but upstream movement is negligible.
- Isolated management units had unknown abundance, age/size structure, and natural recruitment.



Background

- MCR relicensing studies performed in the early-2000s, and findings indicated:
  - Low abundances
  - Mostly adult/older aged fish
  - Minimal or no natural recruitment

- The Federal Energy Regulatory Commission (FERC) issued new hydropower licenses:
  - Priest Rapids-Wanapum Dams (2008; Grant County Public Utility District [PUD])
  - Rocky Reach Dam (2009; Chelan County PUD)
  - Wells Dam (2012; Douglas County PUD)
  - Rock Island Dam (*currently under relicensing*)



MCR White Sturgeon Management Plans

- The PUDs were required to develop white sturgeon management plans (WSMP).
  - Collaborative and consensus-based process amongst license signatories.
  - Adaptive management.
  - Rebuilding efforts in effect through term of licenses (2052).

- Common objectives of WSMP:
  - Rebuild white sturgeon populations commensurate with available habitat.
  - Increase abundance through hatchery supplementation.
  - Determine effectiveness through monitoring and evaluation.
  - Determine natural reproduction, adjust hatchery supplementation accordingly.

- Overarching Goals throughout Middle Columbia:
  - Rebuild white sturgeon populations.
  - Stable age structures.
  - Adequate numbers of adults = meaningful spawning events.
  - Populations sustained through natural reproduction.
  - Similar approach used elsewhere

MCR Conservation Aquaculture Strategies

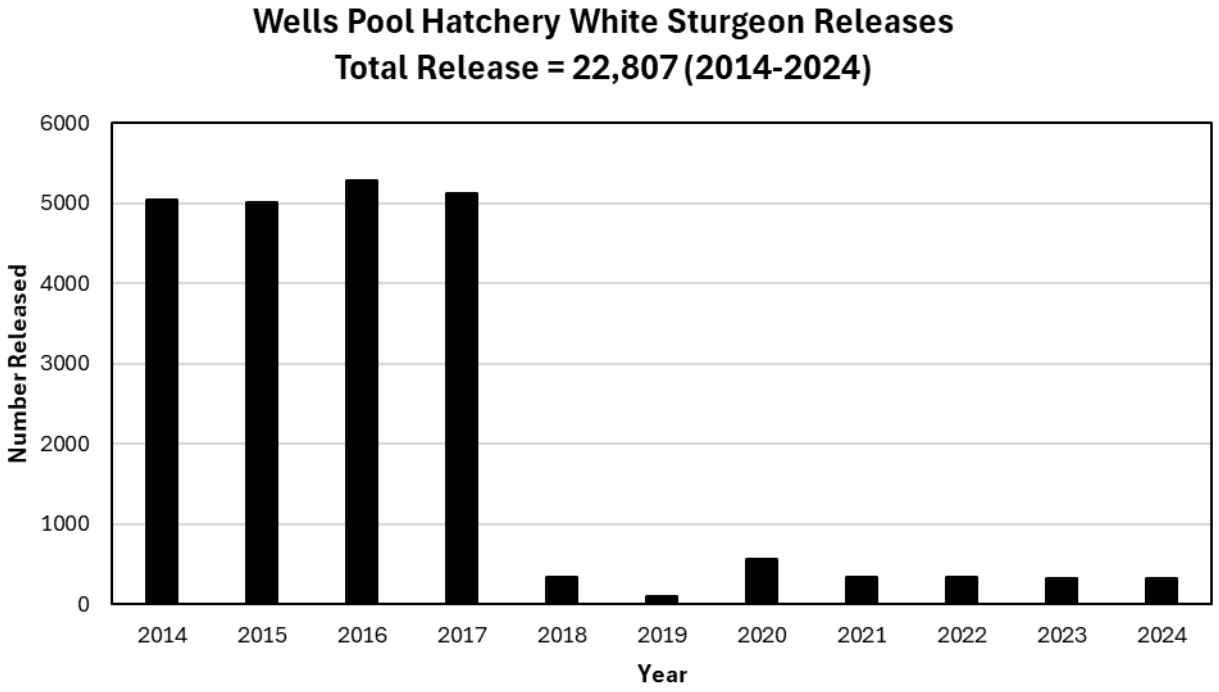
- Hatchery supplementation began in the 2011.
- Initial target stocking rates ranged 5,000-6,500 hatchery yearlings.

Strategies:

- Direct gamete–conventional broodstock program
  - Source population: adults captured in John Day Reservoir.
  - Spawn Site: Yakama Nation Sturgeon Hatchery.
  - Reared and released as yearlings at local hatcheries.
  - Conventional methodology and experience existed to get started quickly.
  - Low number of parents as compared to entire spawning population
  - Size selectivity bias.
  - Only one conservation aquaculture program still uses this strategy.
- Direct-caught-larvae
  - Source population: free-drifting sturgeon larvae captured in Lake Roosevelt.
  - Reared and released as yearlings at local hatcheries.
  - High genetic diversity (# of alleles) and a greater representation of the entire spawning population.
  - Limited locations identified to capture wild fish at the larval stage.
  - Two of three conservation aquaculture programs transitioned to this strategy.

Target Stocking Rates

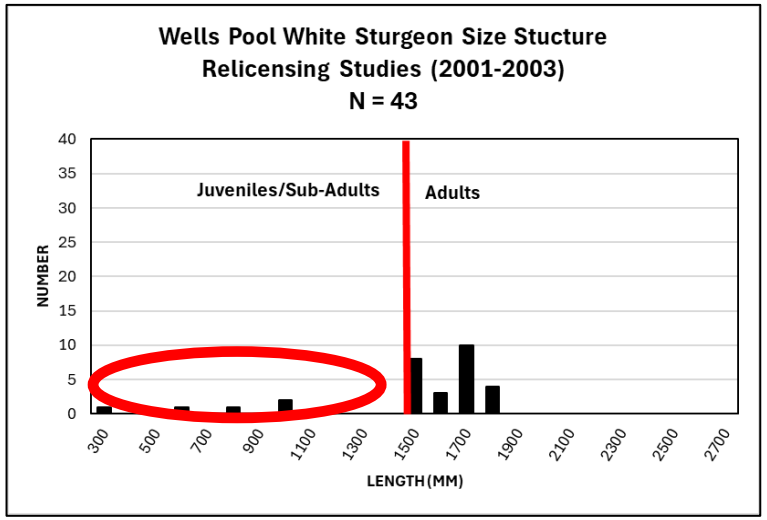
- The programs established reservoir-specific adult abundance targets:
  - Abundance targets determined by estimating sturgeon densities based on reservoir area
  - Goal to reach abundance targets between 2035–2050
- Population growth models were developed to determine the stocking rates that achieve the established adult abundance targets.
- In recent years, the programs began stocking larger-sized hatchery fish:
  - ≥200 gram at release
  - Higher post-release survival rates
  - Requires fewer stocked fish
- Concerns over earliest stocking events.



Monitoring and Evaluation (M&E)

- PUDs fund M&E efforts to evaluate the effectiveness of hatchery supplementation at rebuilding white sturgeon populations.
- Monitoring and evaluation activities include, but not limited to:
  - Juvenile and adult indexing surveys
  - Tracking movements of white sturgeon
  - Assess natural reproduction and recruitment
- Analyses include, but not limited to:
  - Abundance estimates
  - Size structure
  - Survival rates
  - Reservoir movement and immigration/emigration

Monitoring and Evaluation (M&E)



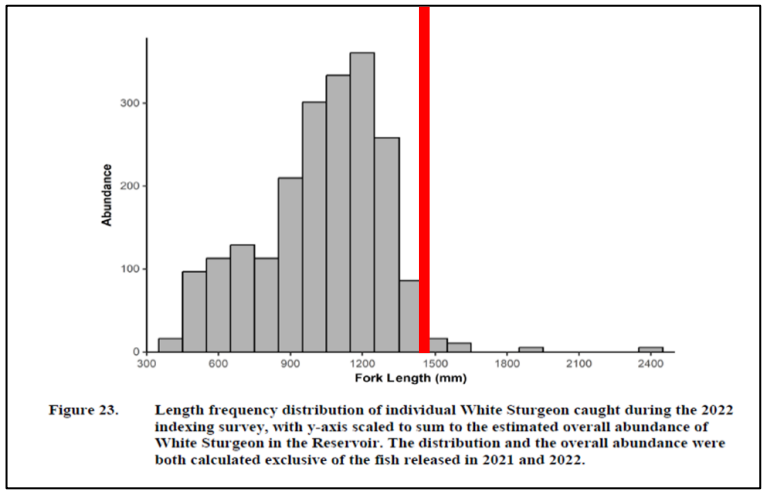


Figure 23. Length frequency distribution of individual White Sturgeon caught during the 2022 indexing survey, with y-axis scaled to sum to the estimated overall abundance of White Sturgeon in the Reservoir. The distribution and the overall abundance were both calculated exclusive of the fish released in 2021 and 2022.

Estimates of Wells Reservoir sturgeon abundance in 2022.

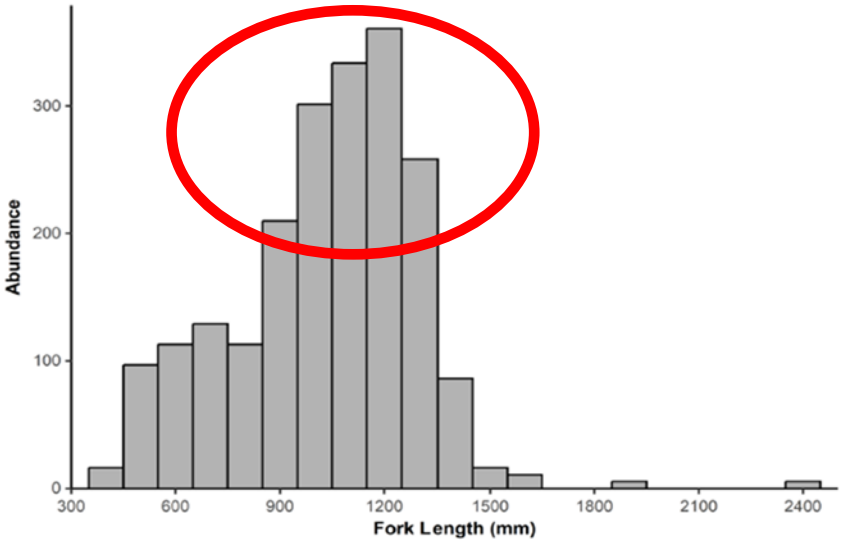
Brood Year	Release Year	Number Released	Size at Release (g)	2022 Abundance Estimate**	LCL	UCL	Percent of Population	Post-Release Survival
2013	2014	5,044	166.5	651	199	7,588	32%	12.9%
2014	2015	5,009	97.6	691	104	7,282	34%	13.8%
2015	2016	5,289	147.0	65	38	346	3%	1.2%
2016	2017	5,131	118.4	355	138	1,103	17%	6.9%
2017	2018	337	281.0	12	6	5,041	1%	3.6%
2018	2019	99	364.7	57	16	620	3%	57.9%
2019	2020	570	495.7	143	59	660	7%	25.2%
2020	2021	338	916.7	NA	NA	NA	--	--
2021	2022	332	448.1	NA	NA	NA	--	--
Other*	--	--	--	81	58	415	4	--
TOTAL:		**22,149**		**2,055**	**618**	**23,055**		

*Includes wild fish, re-tagged hatchery fish, and immigrants from Rocky Reach Reservoir.

**Abundance estimates excludes 2021 and 2022 hatchery releases due to sample size limitation.

Recreational Fisheries

- Objectives:
  - Reduce abundances of early direct gamete hatchery releases with overrepresented families
  - Take advantage of current stocking rates that provide recreational fishing opportunities
- Considerations:
  - Results from M&E basis for when to prosecute a fishery and establishing a harvest target.
  - Coordination and agreement with Tribal Co-managers required.
  - Recreational fisheries will be closely monitored.



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Recreational Fisheries

- Potential season structure and rules:
  - Season between September and November
  - Reservoir specific slot length limits
  - Daily limit 1 sturgeon
  - Annual limit 2 sturgeon
  - Catch Record Card required
  - Other statewide rules apply
- Season anticipated in 2025 (Rocky Reach Reservoir)

Conclusions

- Hatchery supplementation efforts are “backfilling” missing juvenile/sub-adult age classes in MCR reservoirs
  - Some variability in population growth between reservoirs
- Rebuilding efforts based off empirical data
- Adult abundance targets/”rebuilt sturgeon populations” expected to occur between 2035-2050
- Recreational fisheries used as a tool to address early stocking events and provide recreational fishing opportunities.

Agency Request

Delegation of White Sturgeon Rulemaking Authority in the MCR to Director

- Rational:
  - Permanent fishing rules are needed to prosecute recreational fisheries
  - Publish fishing rules in the Sport Fishing Rule Pamphlet
  - Fishery openings in MCR reservoirs would be staggered
  - Recreational fisheries expected to occur routinely/annually
  - Adjustments to fishing rules may be needed
  - Delegation would reduce the number of instances staff would need to come before the Commission requesting rulemaking

Acknowledgements

- Chelan County Public Utility District
- Douglas County Public Utility District
- Grant County Public Utility District
- LGL Environmental Services
- WSP Canada Inc.

Questions?