



Lake Spokane Carp Removal

Spokane River Forum

April 26, 2023

Chris Moan, Fisheries Habitat Biologist

Lake Spokane

- Dissolved Oxygen (DO) impairment
 - Spokane River and Lake Spokane Total Maximum Daily Load
 - Total Phosphorus
 - Current inputs and present in sediment
- Lake Spokane Dissolved Oxygen Water Quality Attainment Plan
 - Carp



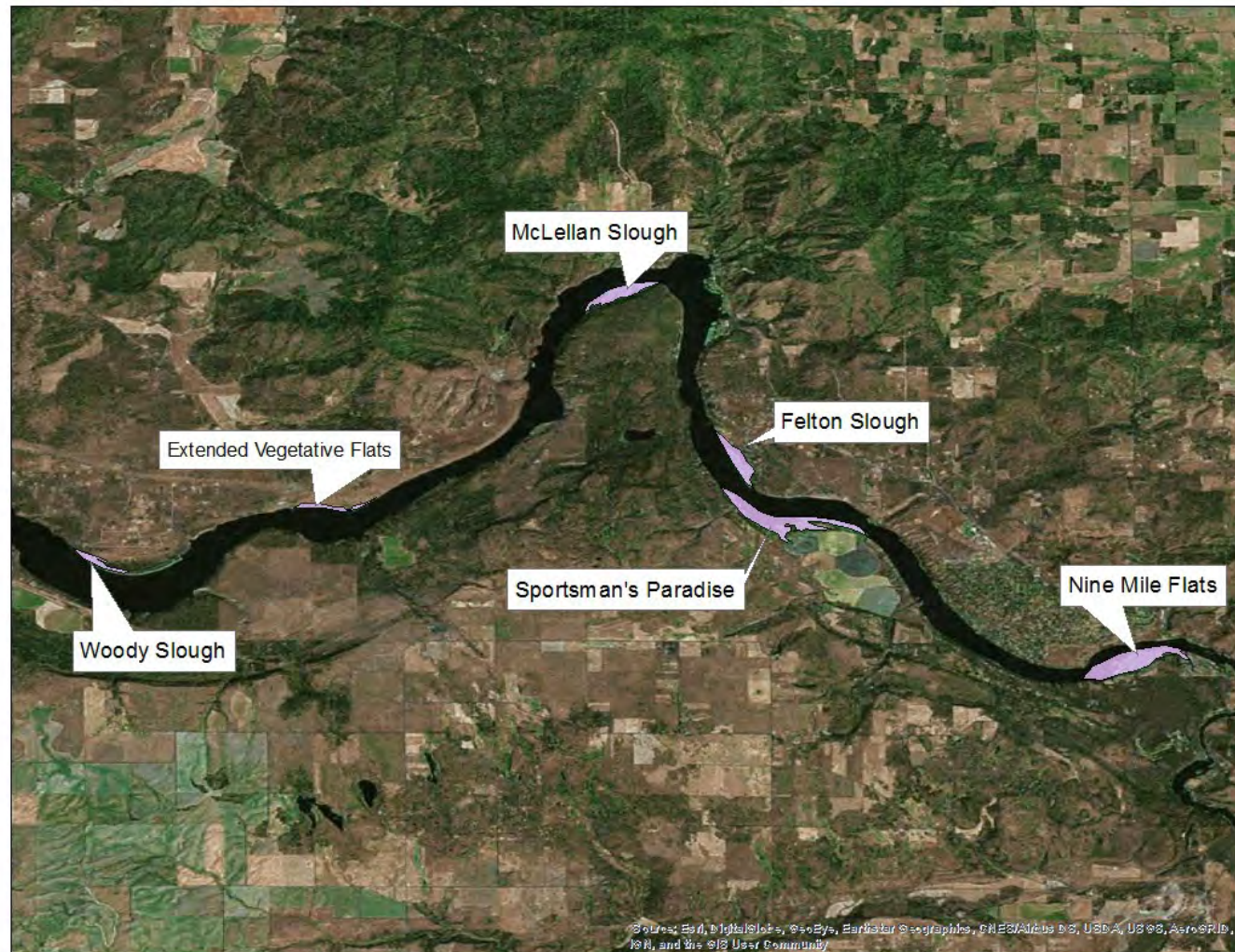
Why Remove Carp?

- Root and uptake bottom sediments when feeding
 - Increase turbidity by re-suspending sediments in the water column
 - Releasing phosphorus and nitrogen
 - Excretion
- Spawning behavior re-suspends sediments
- Nutrient retention within their body

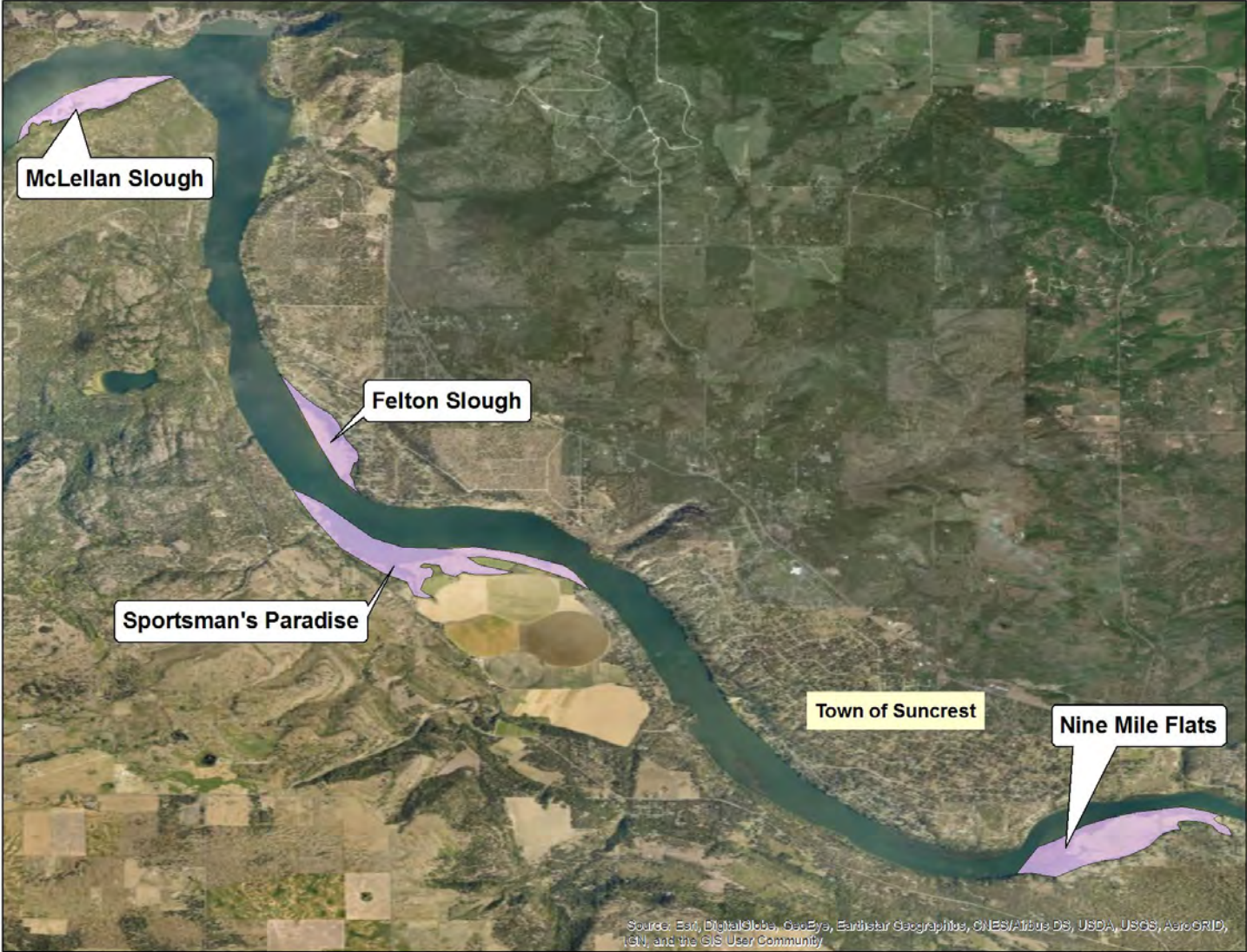


2013-2014 Acoustic Tracking Study

- Identified 6 locations where carp spawn in late May, early June
- Some carp aggregate in winter



Sampling Locations



Winter 2017

- Sampled February 27- March 3
- Set 16 gill nets
- Collected 149 carp weighing over 1,030 lbs



Spring 2017

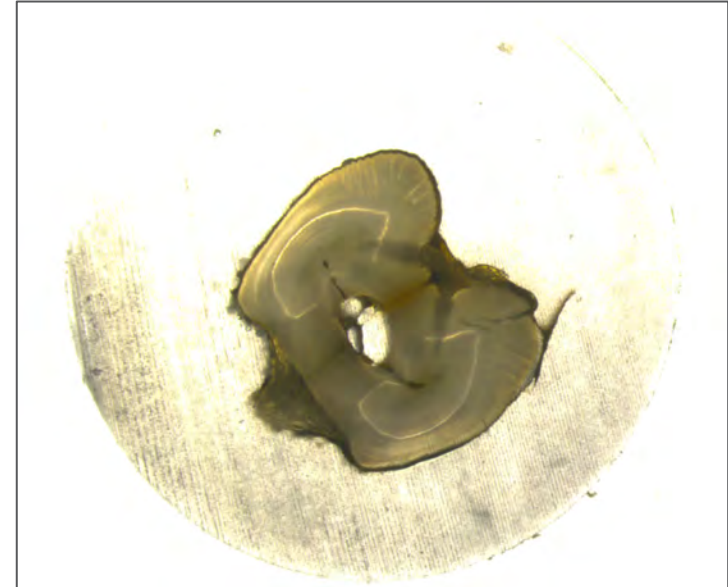
- In 2017, Avista partnered with WDFW, U of I, and the Spokane Tribe
- Sampled in March and May using gill nets and boat electrofishing. Set 50 nets and electrofished 75 sites
- Collected over 1,200 carp weighing a total of over 10,300 lbs
- Removed 371 mature females before they spawned



Photo by Rich Landers/Spokesman Review

Spring 2017

- Carp ranged in size from 13 – 34 inches; 1.9 – 21.9 lbs
- Carp ranged in age from 2 – 18 years old; catch dominated by age 8 and older
- Carp had healthy body condition and grow faster after age 2 than average carp in other lakes



Summary

- In total 5,335 carp collected, 54,176 pounds
- 295 lbs of total phosphorous removed in carp biomass

	2017	2018	2019	2020	2021	2022
Total Carp Collected	1,219	557	577	1,227	951	804
Carp Weight Removed (lbs)	10,310	5,183	5,432	13,580	10,301	9,370
Average Total Solids (% wet wt)	32%					
Average TP (% dry wt)	1.70%					
TP Removed (lbs)	56	28	30	74	56	51

Conclusions

- Gill netting can effectively collect carp during their pre-spawning period
- Conclude removal by mid-June
- Continue removal in 2023



Questions?

Special thanks to:

WDFW
Spokane Tribal Fisheries
University of Idaho
Suncrest Park