

Lake Roosevelt Northern Pike Suppression and Monitoring Program Update

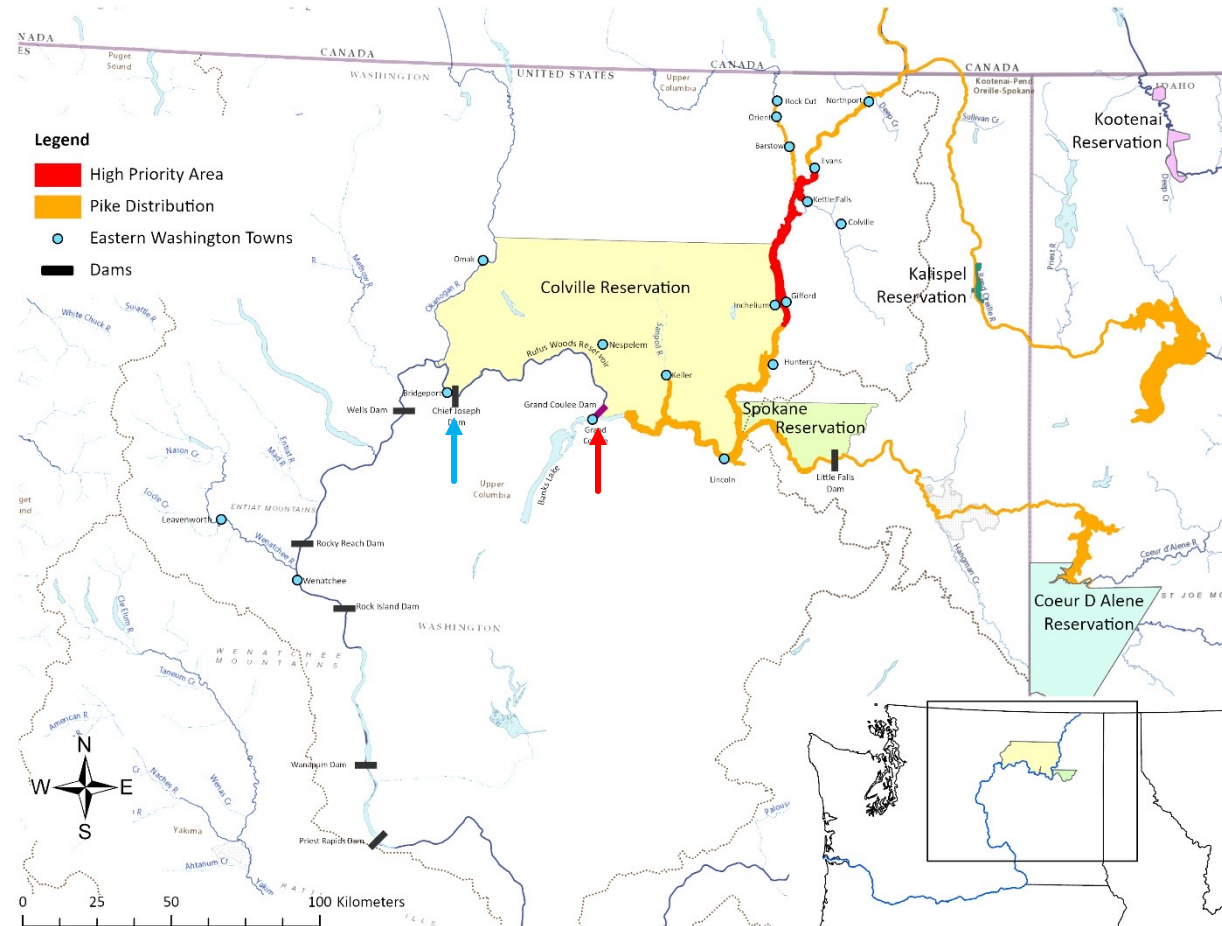


Presented by:
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Confederated Tribes of the Colville Reservation

*Presented to the Columbia Basin Team
December 6th, 2022*

Lake Roosevelt Fishery

- Lake Roosevelt was created by Grand Coulee Dam
- Fisheries are co-managed by Colville Tribes, Spokane Tribe, and WDFW
- Management Goals: Provide fishing opportunities while protecting native fishes
- Tribes and State invest over \$8M a year into the Roosevelt fisheries
- The fishery provides an estimated economic input of \$16M to local economies



Map by: Shay Wolvert, Colville Tribes Fish and Wildlife 12-01-2012

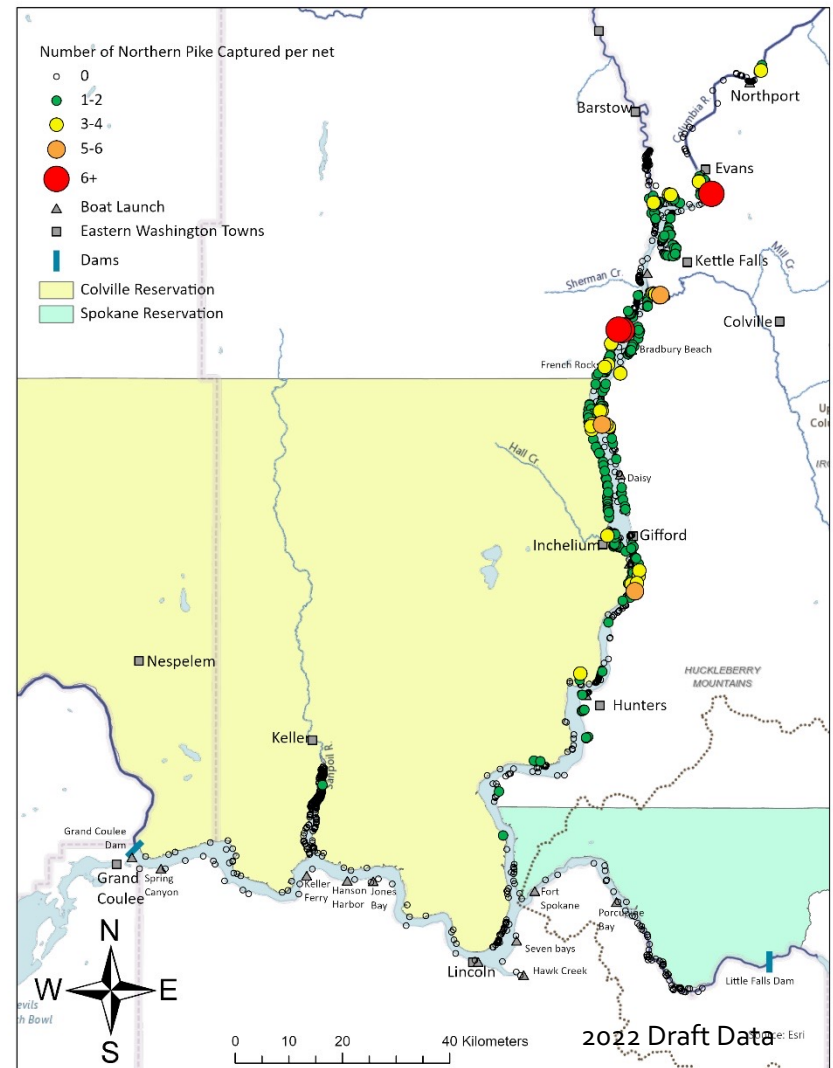
Northern Pike Suppression Annual Work Plan

- NP L. Roosevelt Technical Team Developed a Plan, McLellan et al. 2018 [Northern Pike Suppression and Monitoring Lake Roosevelt](#)
- Implemented annually since 2017

Activity	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Suppression												
Gillnetting (All)			X	X	X	X	X	X	X	X	X	
Electrofishing (CTCR/STI)							X	X	X	X		
Fyke/Seine Netting (CTCR/STI)						X	X					
Reward Program \$10/Pike (CTCR)	X	X	X	X	X	X	X	X	X	X	X	X
Setlines (CTCR)								X	X			
All Hands On Deck (All)					X							
Research/ Monitoring												
Monitoring survey (WDFW)										X	X	
Microchemistry (CTCR)									X	X	X	X
eDNA and DNA Studies (CTCR)					X				X			
Reservoir Op./Stranding (CTCR/WDFW)			X	X								
Harvest via Creel (STI)	X	X	X	X	X	X	X	X	X	X	X	X
Public Outreach (All)	X	X	X	X	X	X	X	X	X	X	X	X
Preventative Measures												
AI plant removal – Okanogan <small>Flowering Rush Removal</small>									X			
AI plant removal – FDR ongoing					X	X						

Suppression and Distribution

- Since 2015, co-managers have removed **19,245** Northern Pike
 - Approx. 1,500 nets/yr by all agencies
- Majority of Pike are captured in upper half of the reservoir
- Pike are spawning in the Kettle River area
- Exceptional growth rates
 - 10 mm/wk post hatch (June)
 - 130 mm or 5 in by September



Actions to reduce Bycatch

- Net material (multi-filament)
- Net mesh size
- Nets set in < 30 ft of water
- Nets set on slopes <20% slope
- Bycatch limits
 - If limits are met, crews stop netting in the area and move to another area
- Limited data collected on bycatch
 - Release quickly back into the water
 - Bycatch mortalities fit for consumption brought back to the Tribal Membership for subsistence



Lake Roosevelt Suppression

All Hands on Deck Survey

Multiagency Effort

Extra effort during pre-spawn period to remove fish before they spawn

Colville Tribes, Spokane Tribe, Kalispel Tribe, WDFW, Chelan PUD, Grant PUD, Bureau of Indian Affairs, National Park Service, Bureau of Reclamation

Dates	# Nets	# Pike	Pike/Net
May 6-9, 2019	475	448	0.94
COVID-2020	--	--	--
April 25 – May 6, 2021	642	207	0.32
April 25-May 7, 2022	671	272	0.40



47 in and 27.78 lbs = 140,620 eggs



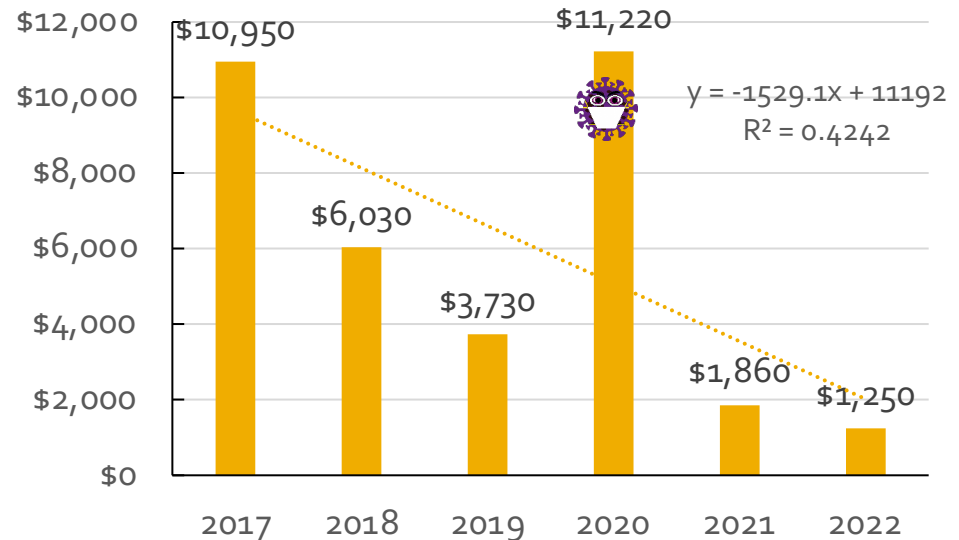
Reward Program/Public Outreach

Reward Program


- Program started in May 2017
- \$10/ Pike head (gift cards)
 - Allowed 59 fish per angler per year
- Total payout to date \$35,040

Public Outreach

- Similar signs posted at all boat launches in Roosevelt and Rufus Woods
- Participated in public outreach events



STOP THE SPREAD OF INVASIVE NORTHERN PIKE



Northern Pike (*Esox lucius*) are a Prohibited Species in Washington State. Anglers are encouraged to kill ALL Northern Pike caught. Harvested Northern Pike must be dead before anglers leave the water where they are caught.

No minimum size or possession limit.





Northern Pike are now present in Lake Roosevelt. This fish species is known to have negative impacts on native fish populations and popular sport fisheries. In addition, further spread of Northern Pike into downstream portions of the Columbia River poses a severe threat to Salmon and Steelhead recovery efforts.

It is illegal to transport or release live fish without a WDFW permit.

Penalty includes up to \$5,000 in Fines and A Year in Prison (RCW 77.15.250) AND a person found guilty can also be ordered to pay all costs of capturing, controlling or killing these fish or their progeny in excess of \$100,000.

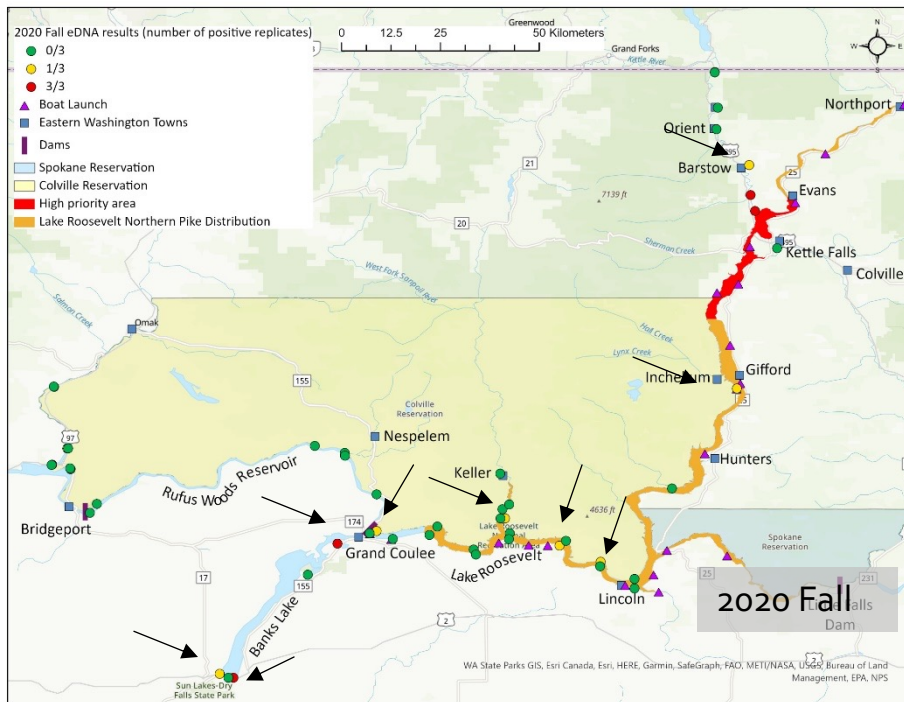
If you see someone transporting or releasing live fish, please call the Washington State Patrol. They will contact the nearest WDFW office.

Spokane County WSP Dispatch: 509-456-4021
Stevens County WSP Dispatch: 509-684-7421

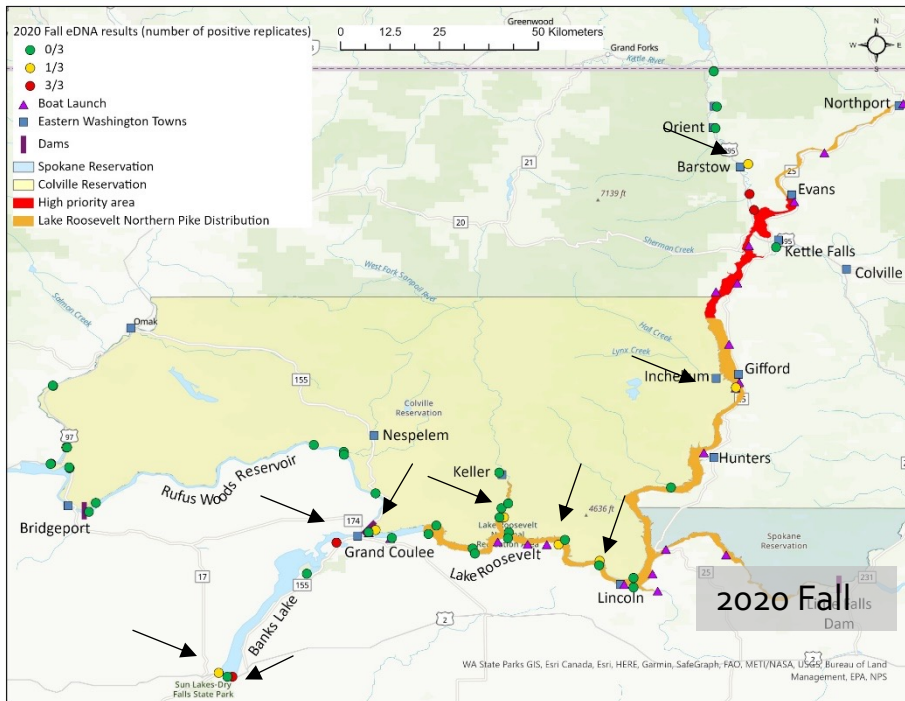
eDNA Fall 2020 to Fall 2021

- Colville Tribes monitor 50 sites in the upper Columbia River
 - Okanogan River upstream to the Canadian border
 - 2021 – added more sites in Rufus
 - In 2021, 9 sites changed from Pike Positive to “No Pike DNA detected”



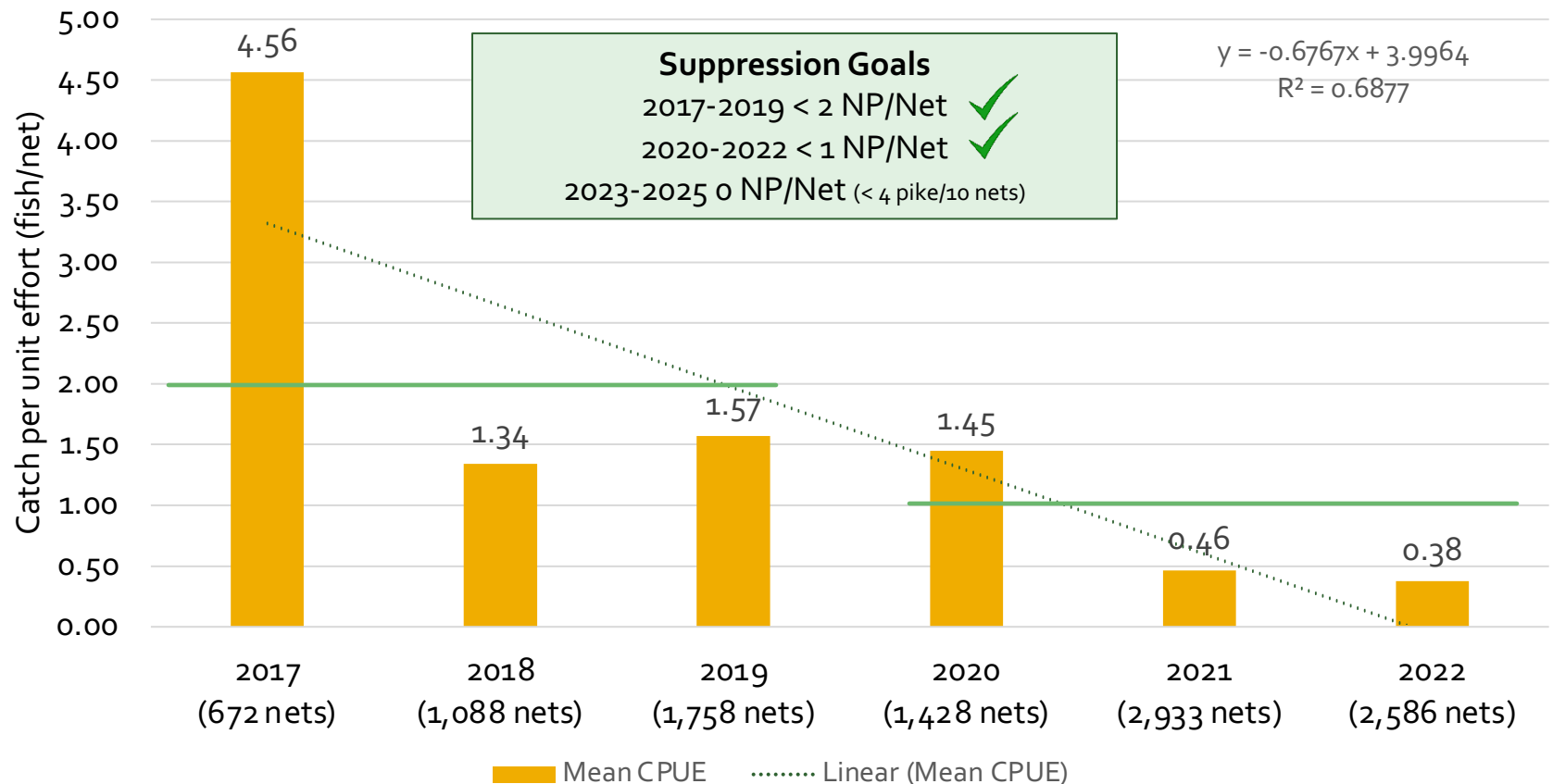
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 - In 2022, (spring data), 3 of the sites went back to “Pike Positive”. *Fall data pending*



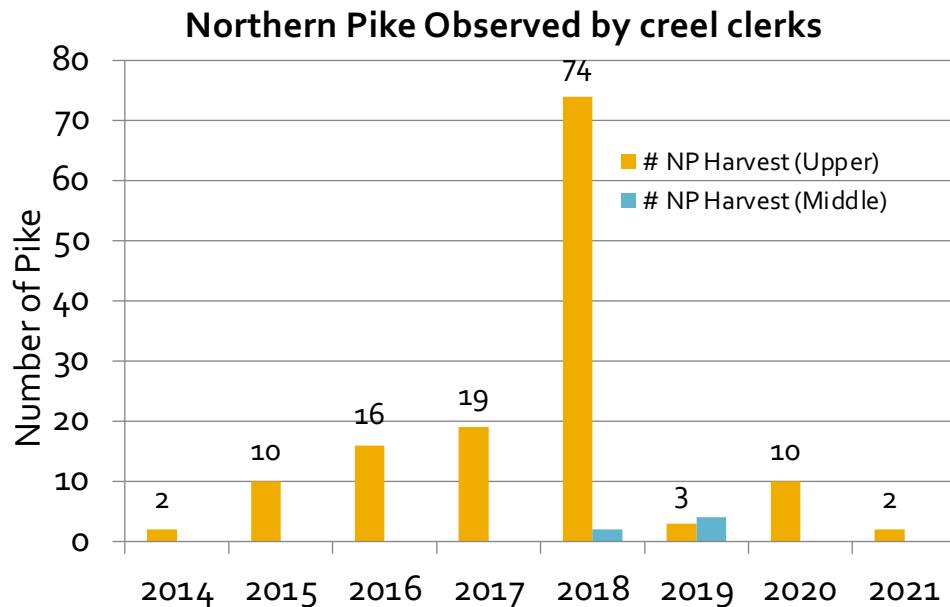
Promising News?

2017-2022 Annual Gillnet Suppression_ All Agencies

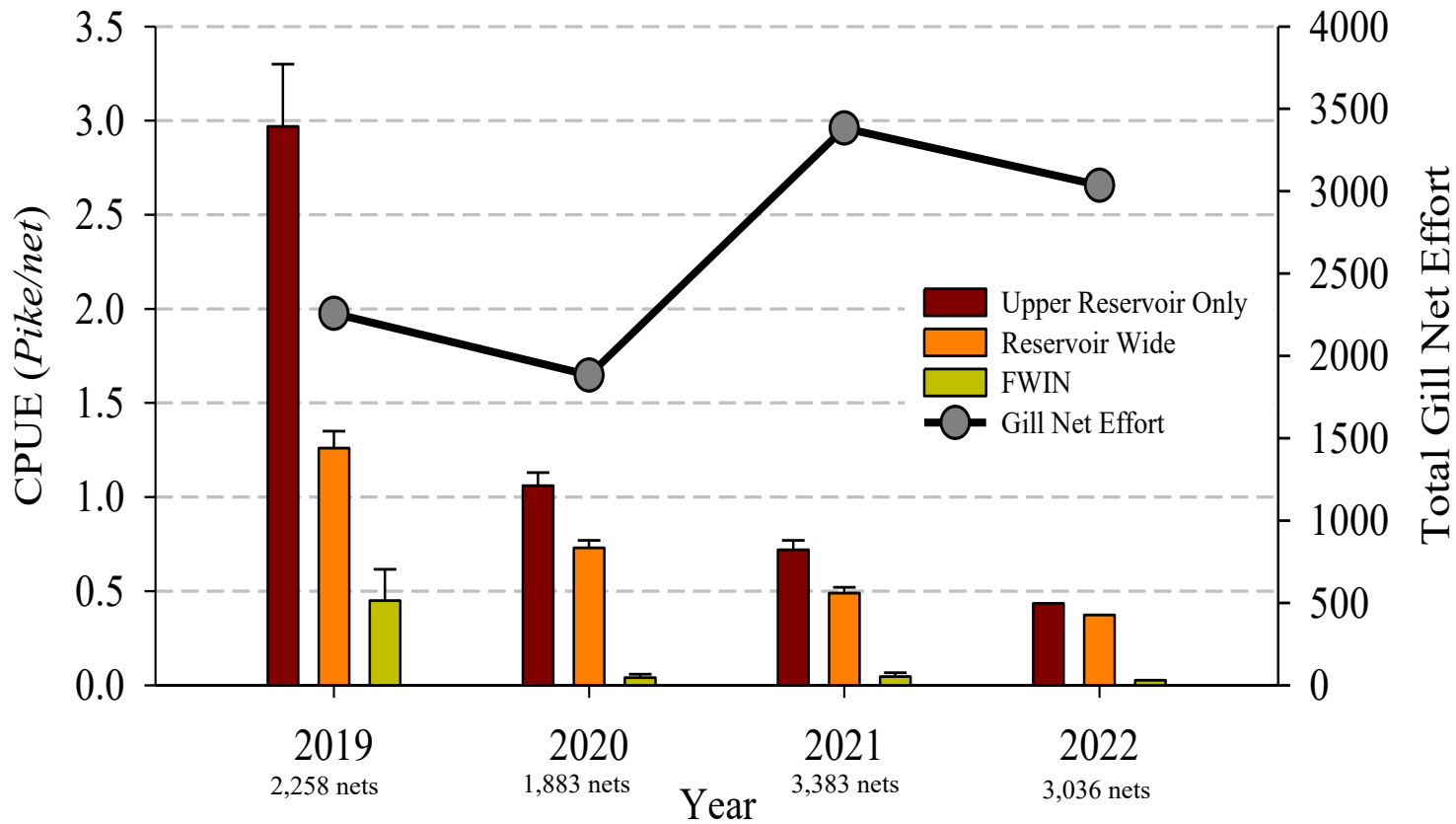


Creel Survey

- Year long reservoir wide creel survey managed by the Spokane Tribe
 - 25 sites monitored throughout the reservoir by co-managers
 - Pike harvest was steadily increasing between 2014-2018
 - Pike harvest dropped after 2018
 - No harvest in the middle and lower sites after 2020



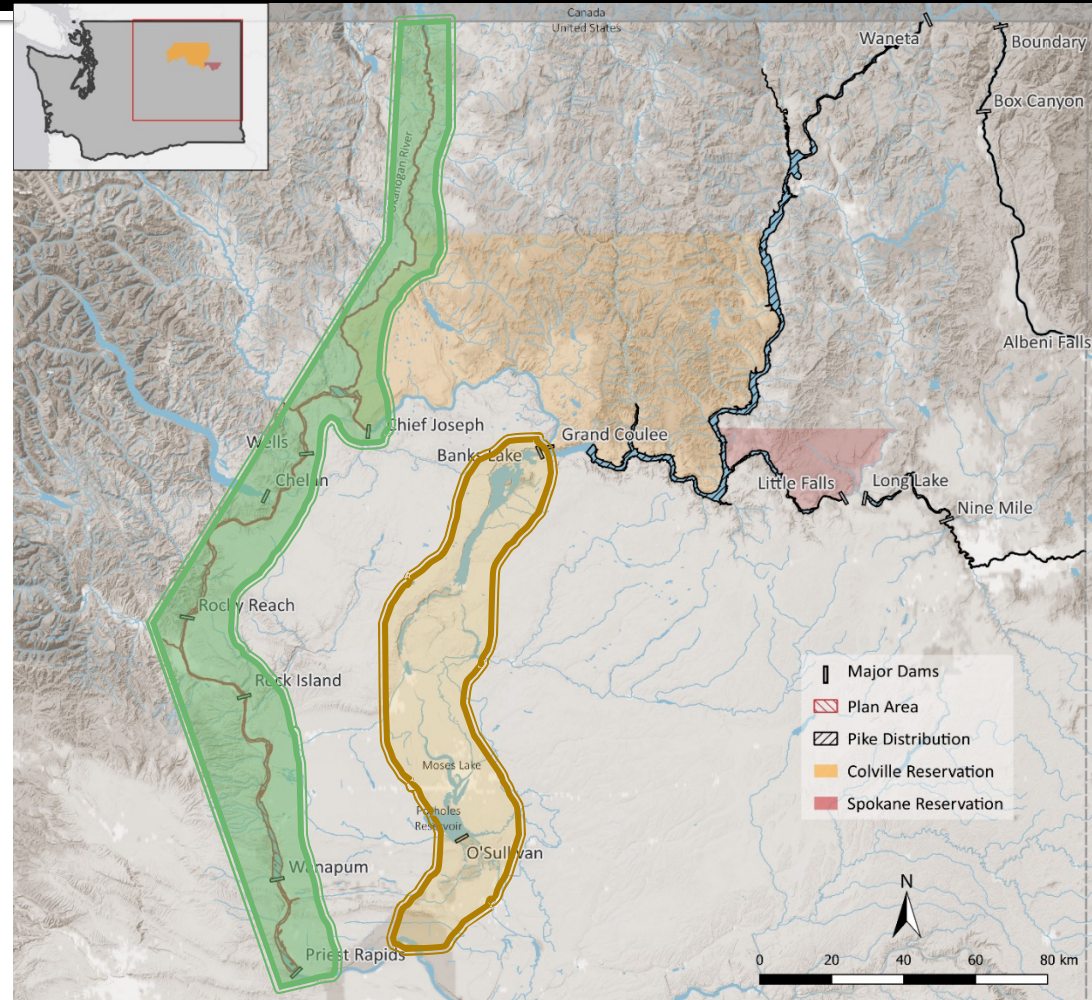
Reservoir Wide Standardized Surveys



Data provided by WDFW, Tyler Parsons

Northern Pike Mid-Columbia River Rapid Response Plan

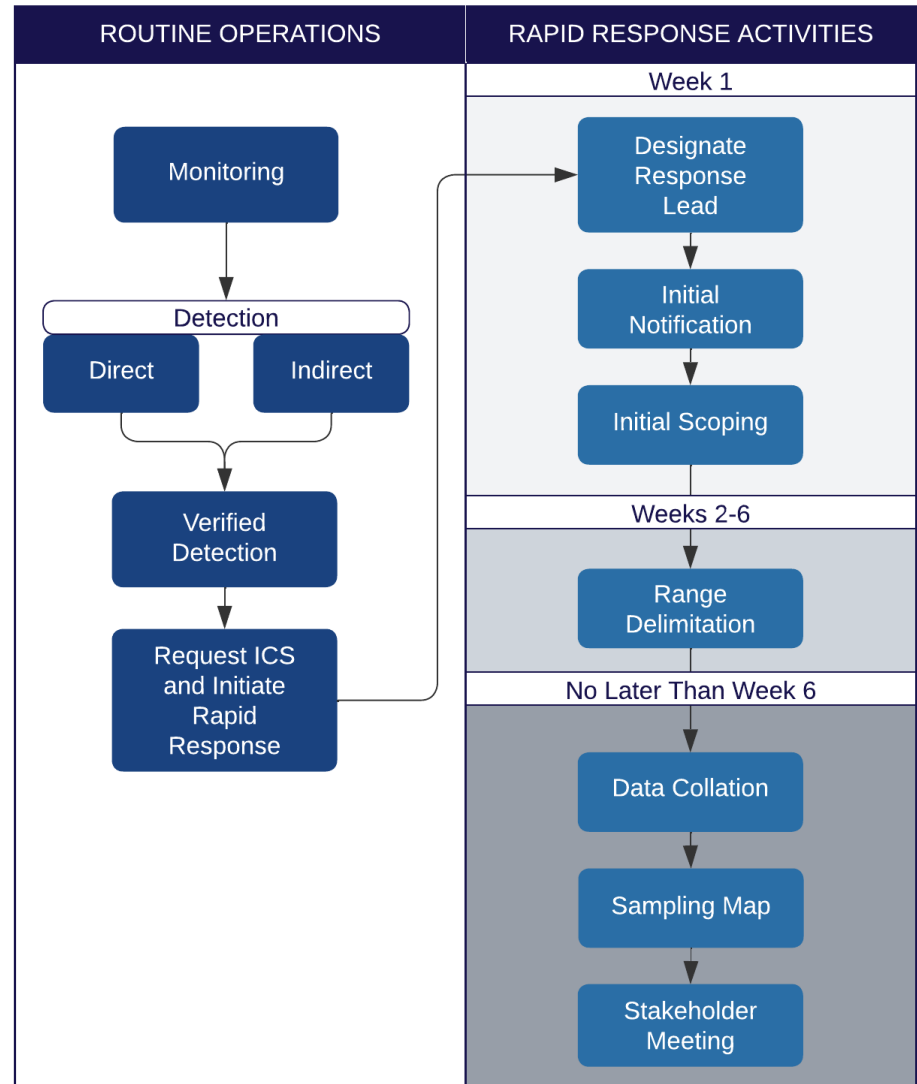
- Since eDNA monitoring began in 2017, various false detections
 - Need a plan that would guide communications and a response if Pike are confirmed in new areas
- Colville Tribes contracted with Four Peaks Environmental in Oct 2021
 - Dr. Erika Rubenson
 - Finalized in Oct 2022
- Vision
 - Plan sits under the larger WDFW State wide
 - Need specific plans for regions
 - Roosevelt, Rufus, Mid- C
 - *Banks Lake – Columbia Basin



Northern Pike Mid-C Rapid Response Plan

- Identifies key players
- Describes invasion pathways and current monitoring
- Detection
- Rapid Response Activities
- Fish Sampling Guidelines
- Public Outreach

- The Plan:
 - On CTR website www.cct-fnw.com/northern-pike
 - Provided to Northwest Regional Northern Pike Coordination Forum
 - Will Provide to PUDs
 - Douglas PUD, Aquatic Settlement Work Group
 - Chelan PUD, Rocky Reach Fish Form
 - Grant PUD, Priest Rapids Coordinating Committee



Northern Pike DNA Study

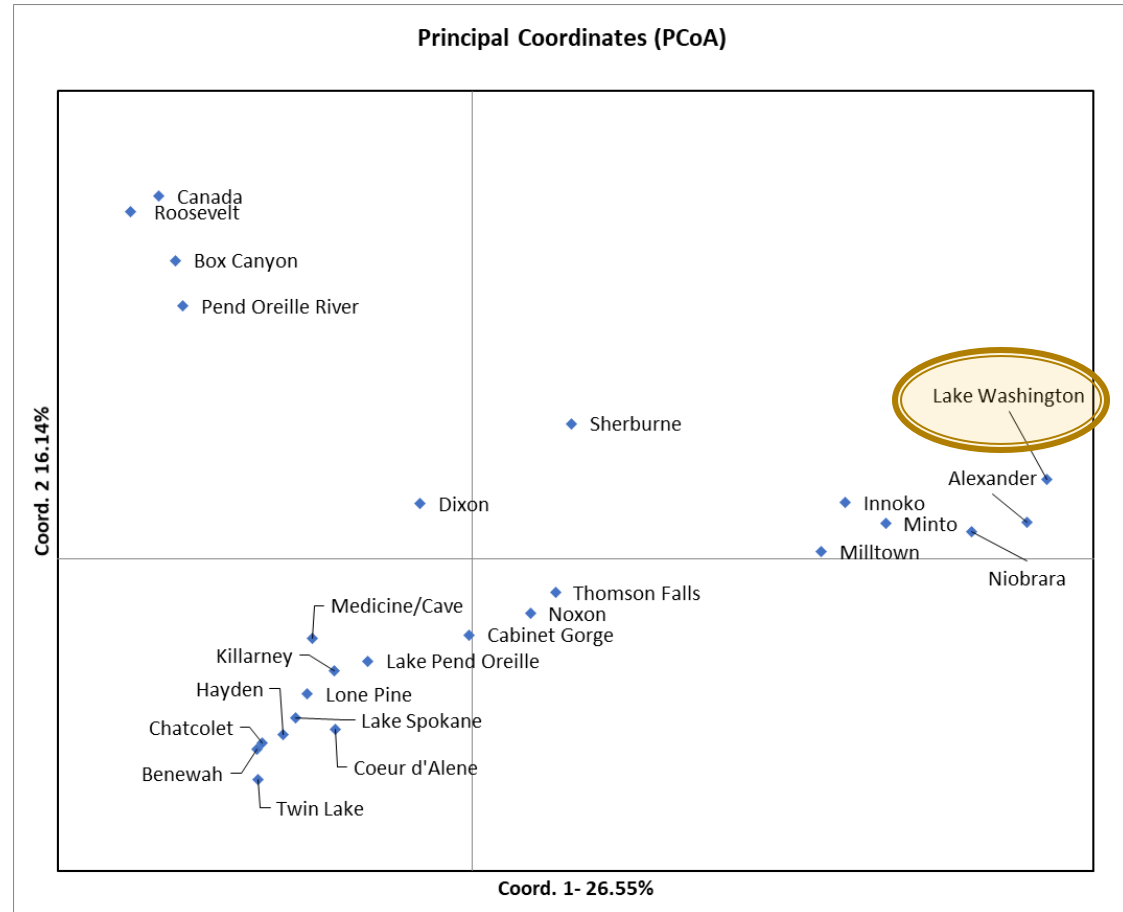
- Northern Pike DNA database developed by Rocky Mountain Research Station, Missoula.
 - Dr. Carim
 - Collaborative effort with Colville, Kalispel, Spokane and Coeur d'Alene Tribes, and Idaho, Montana, Minnesota and Alaska Fish and Game
 - Database now has 34 populations
 - Originally developed to help understand the invasion pathways.
- Muckleshoot Tribe has captured 5 Northern Pike in Lake Washington
 - 2017: n=3
 - 2022: n=2
 - Use the database to help understand their origin

State	Native	Nonnative	Grand Total
Alaska	2	1	3
British Columbia		1	1
Idaho		9	9
Minnesota	9		9
Montana		7	7
Washington		4	4
Wyoming		1	1
Grand Total	11	23	34



Lake Washington Pike

- The Lake Washington Pike
 - Are not related to any of the Pike in the database
 - Have alleles that are not found in any of the Pike in the database
 - Are more related to each other than any other population
 - Have a higher genetic diversity than the non-native populations
 - Only grouping because of the high genetic diversity
 - Genetic assignment is zero to the next closest populations
 - The mystery continues....



Program Accomplishments

- Identified spawning locations
- Removed 9,623 females, up to 442 million eggs
- Developed a eDNA monitoring program with partners
- Engaged the public with the Reward Program and outreach materials
- Contained the spread of Northern Pike in Lake Roosevelt and tributaries and stopped the spread into downstream water bodies
- Developed a N. Pike DNA database that can be used to assign fish to natal populations
- Finalized a Mid-Columbia Rapid Response Plan
- Protecting the Lake Roosevelt fishery
- In 2023, planning an acoustic tracking study with funding from the NPS
- Plan to continue the suppression and monitoring program through 2025



Questions?

- Many thanks to our many partners



