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February 8, 2022

MEMORANDUM

TO: Fish and Wildlife Committee Members

FROM: Stacy Horton, Washington Policy Analyst/Biologist

SUBJECT: Progress Report on Northern Pike Eradication Efforts in Lake Roosevelt (project # 2017-004-00)

BACKGROUND:

Presenters: Chris Donley, Region 1 Fish Program Manager from Washington Department of Fish and Wildlife, Marc Terrazas, Fisheries Biologist Spokane Tribe of Indians, and Holly McLellan, Aquatic Invasive Species Manager, Confederated Tribes of the Colville Reservation.

Summary: Representatives from the Washington Department of Fish and Wildlife, the Spokane Tribe of Indians, and the Colville Confederated Tribes will provide the Fish committee with an update on suppression, monitoring and public outreach efforts designed to eradicate invasive northern pike in Lake Roosevelt, and to prevent their movement into anadromous waters.

Relevance: The Northwest Power and Conservation Council approved the *Northern Pike Suppression and Monitoring Project* (#2017-004-00) in 2018, finding this to be high priority work. The Council also requested an annual review of success in eliminating northern pike numbers in the Lake Roosevelt watershed to protect prior mitigation investments, and to keep northern pike from moving into the anadromous areas below Chief Joseph Dam. The Council also recommended that public outreach be included as part of the work.

Workplan: 2014 Columbia River Basin Fish and Wildlife Program Strategies and sub-strategies (Part III; IV Strategies, A. Ecosystem Function; Sub-strategies;3. Non-native and invasive species, and 4. Predator management). The Columbia River Basin Fish and Wildlife 2020 Addendum includes a Strategy Performance Indicator (E 4-5) to evaluate the management, prevention and eradication of invasive non-native northern pike.

Background: Northern pike are an aggressive invasive aquatic species first encountered in Lake Roosevelt in 2007. This species is a threat to the mitigation investments both above and below Grand Coulee Dam and poses a significant risk to salmon and steelhead if they reach anadromous waters. Concerns about the consequences for ESA-listed salmon and steelhead has been a significant driver for suppression efforts since the inception of this project.

Project funding of \$2,785,216 has been allocated to date, which includes \$106,154 that the Council provided from cost savings. In addition to the Lake Roosevelt co-managers (Colville Confederated Tribes, Spokane Tribe of Indians, Washington Department of Fish and Wildlife) cost share and assistance with eradication efforts has come from the Bureau of Indian Affairs, Grant Public Utility District, Chelan County Public Utility District, the National Park Service, and the Kalispel Tribe. Partnerships have been extremely important for this project and enable sponsors to utilize multiple funding sources to implement the full suppression and monitoring plan.

More Info:

Colville Tribes Northern Pike Reward Program Information Site
<https://www.cct-fnw.com/northern-pike>

Northwest Power and Conservation Council Invasive Northern Pike webtool

This webtool displays information on the northern pike problem, management stories, provides monitoring data, and lets others know how to get involved.

<https://pike.nwcouncil.org/>

Upper Columbia Tribes Gather Experts to Strategize About Accelerating the Attack on Northern Pike

FEBRUARY 19, 2021 JOHN HARRISON

<https://www.nwcouncil.org/news/upper-columbia-tribes-gather-experts-strategize-about-accelerating-attack-northern-pike>

Northern Pike Could Be Devastating to Salmon and Steelhead, Scientists Warn in Report on Predation

MAY 14, 2019 JOHN HARRISON

<https://www.nwcouncil.org/news/northern-pike-could-be-devastating-salmon-and-steelhead-scientists-warn-report-predation>

A Review of Predation Impacts and Management Effectiveness for the
Columbia River Basin

COUNCIL DOCUMENT NUMBER: **ISAB 2019-1**

PUBLISHED DATE: MAY 3, 2019

<https://www.nwcouncil.org/isab2019-1>

Lake Roosevelt Northern Pike Suppression and Monitoring Program Update



Presented by:

Holly McLellan, Confederated Tribes of the Colville Reservation

Marc Terrazas, Spokane Tribe of Indians

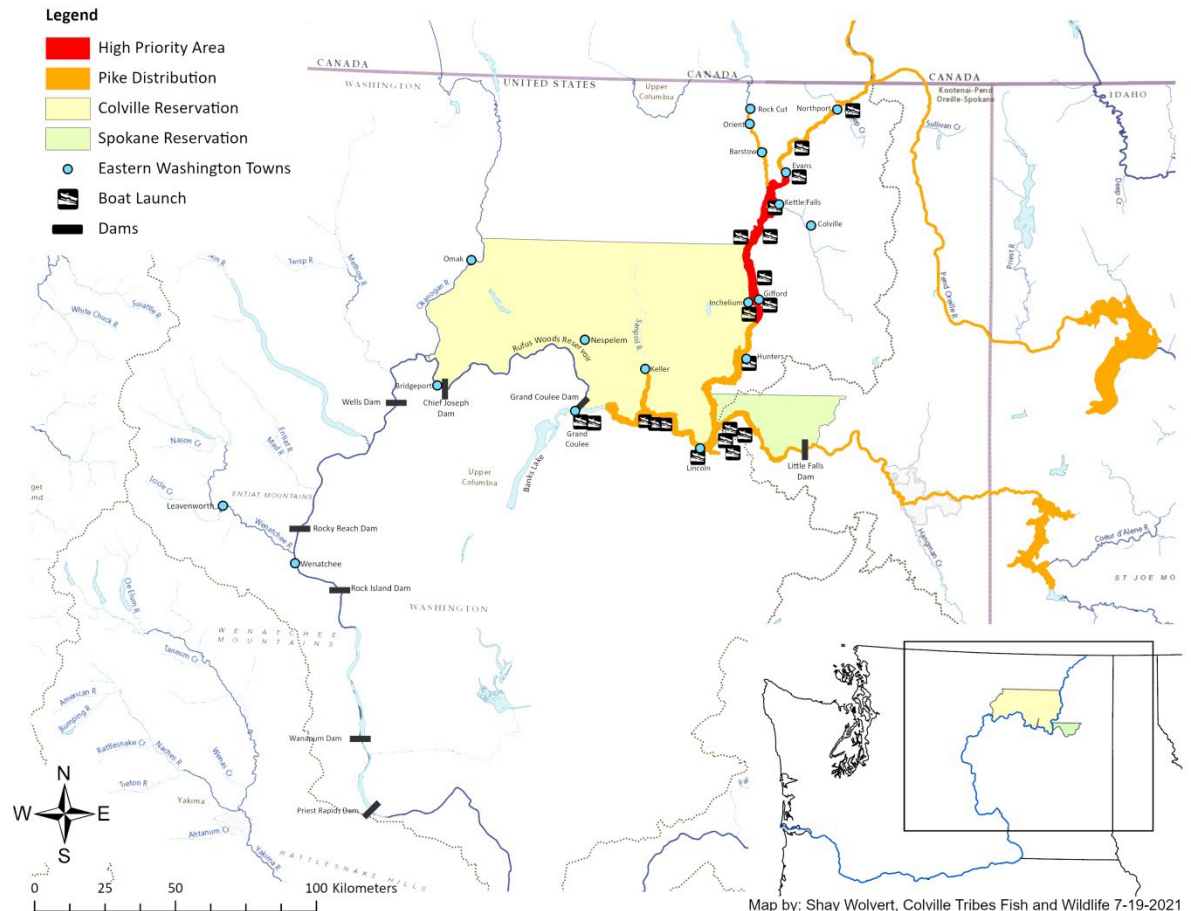
Chris Donley, Washington Department of Fish and Wildlife

Presented to the Northwest Power and Conservation Council

February 15, 2022

Lake Roosevelt

- 240 km long reservoir
- Annual spring drawdown 6-15 m
- Co-managed by CCT, STI, and WDFW
- N. Pike first observed in the fishery in 2014
- Began suppression and monitoring in 2015
- Lake Roosevelt Suppression and Monitoring Plan McLellan et al. 2018 [Northern Pike Suppression and Monitoring Lake Roosevelt](#)
- Implemented annually



Northern Pike Suppression Work Plan

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 (CCT/STI)							X	X	X	X		
Fyke/Seine Netting (CCT/STI)						X	X					
Reward Program (CCT)	X	X	X	X	X	X	X	X	X	X	X	X
Setlines (CCT)								X	X			
All Hands On Deck					X							
Research/ Monitoring												
Monitoring survey (WDFW)										X	X	
Microchemistry (CCT)									X	X	X	X
eDNA and DNA Studies (CCT)					X				X			
Reservoir Op./Stranding (CCT/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 2018									X			
AI plant removal – FDR ongoing					X	X						

Flowering Rush Removal

Suppression and Distribution

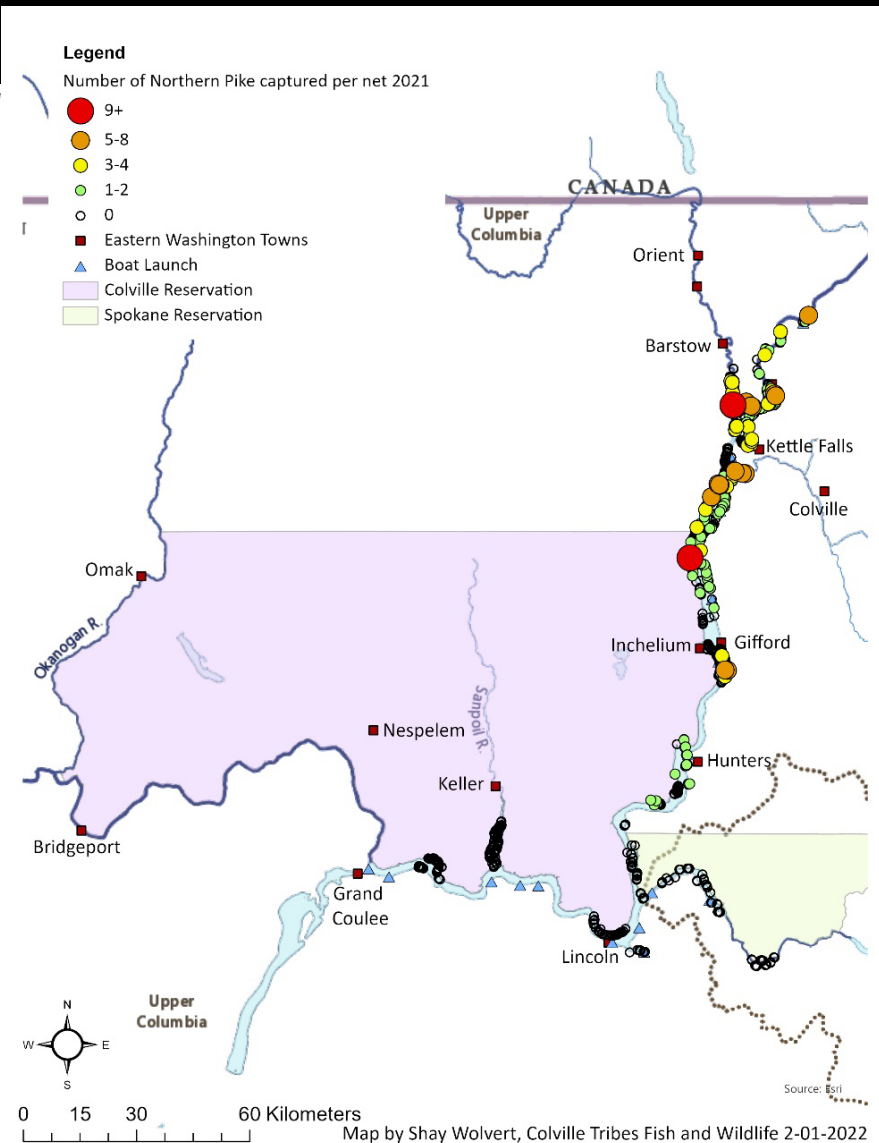
- Since 2015, co-managers have removed **17,994** Northern Pike
 - Approx. 1,500 nets/yr by all agencies
- Majority of Pike are captured in upper half of the reservoir
- Pike are using the Kettle, Evans, Colville, Gifford areas for spawning



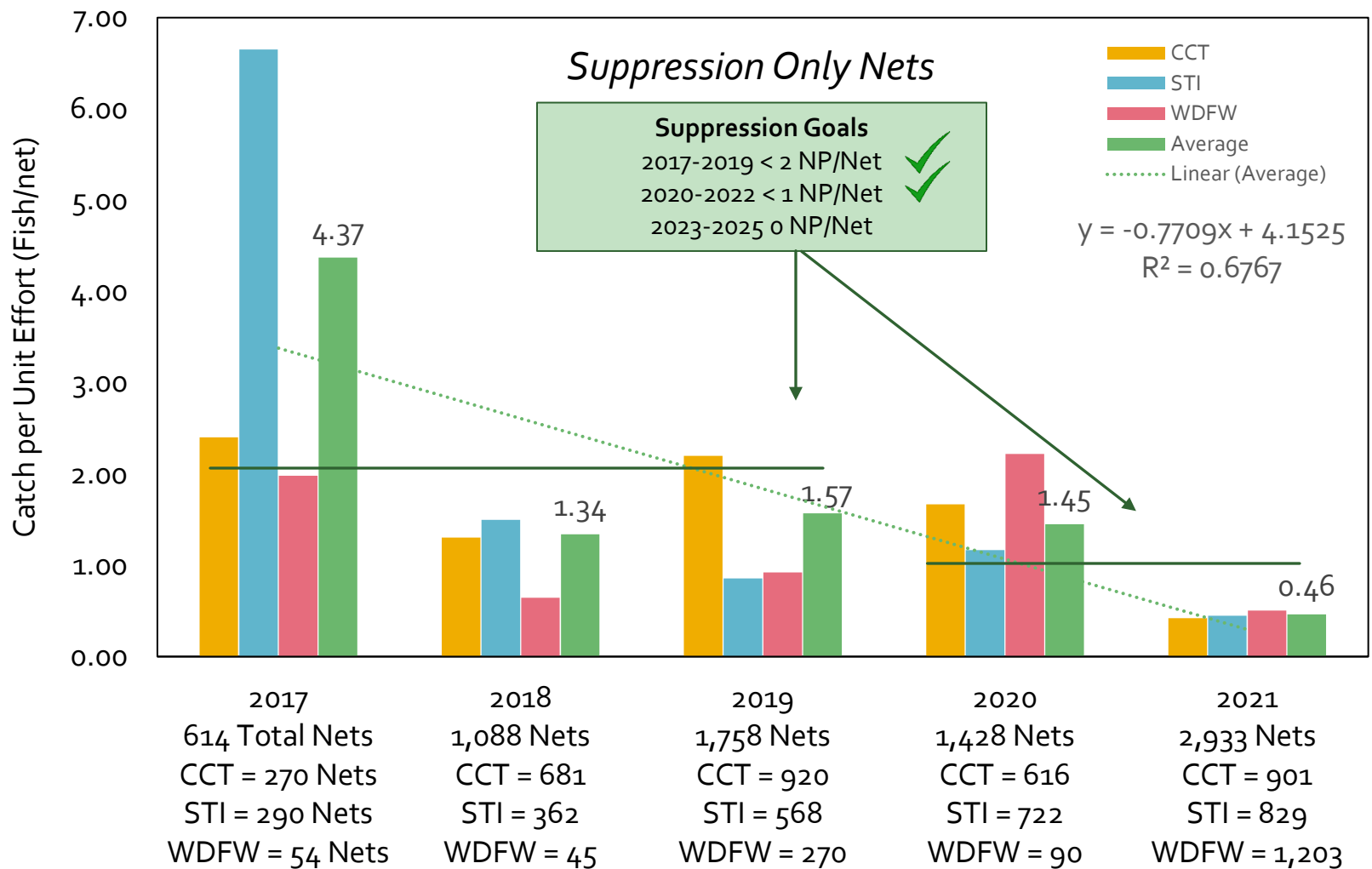
Redband Trout



Wild Kokanee



Promising News?



Lake Roosevelt Suppression

All Hands on Deck Survey

Multiagency Effort

Extra effort during pre-spawn staging period to remove fish

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

- May 6-9, 2019
 - 475 nets = 448 Pike removed (0.94 pike/net)
- 2020 – canceled COVID-19
- April 26-May 7, 2021
 - 642 nets = 207 Pike removed (0.32 pike/net)



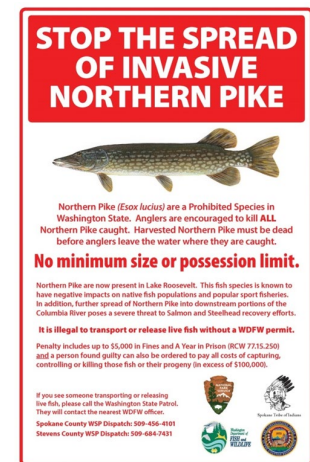
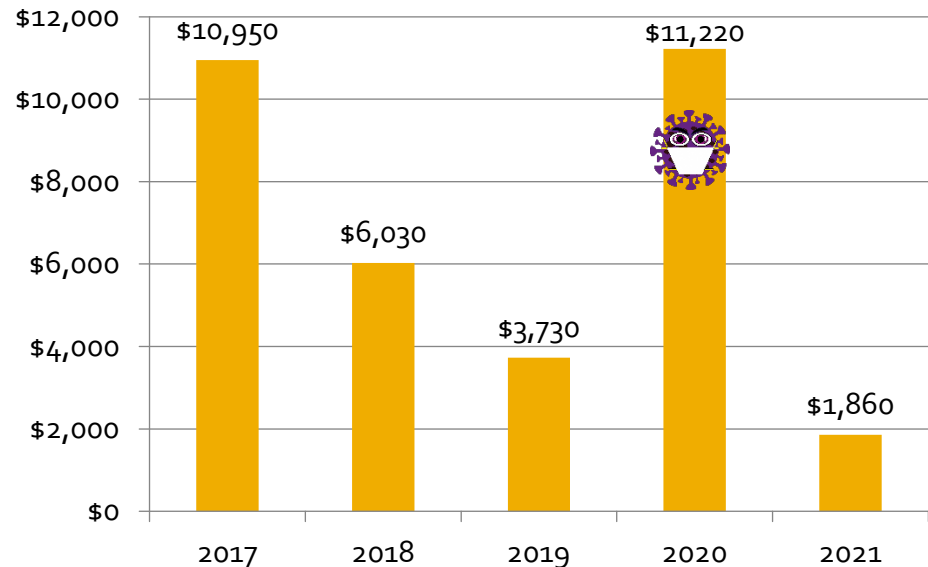
Reward Program/Public Outreach

Reward Program

- Program started in May 2017
- \$10/ Pike head (VISA gift cards)
 - Only 59 fish per angler per year
- Total payout to date \$33,790

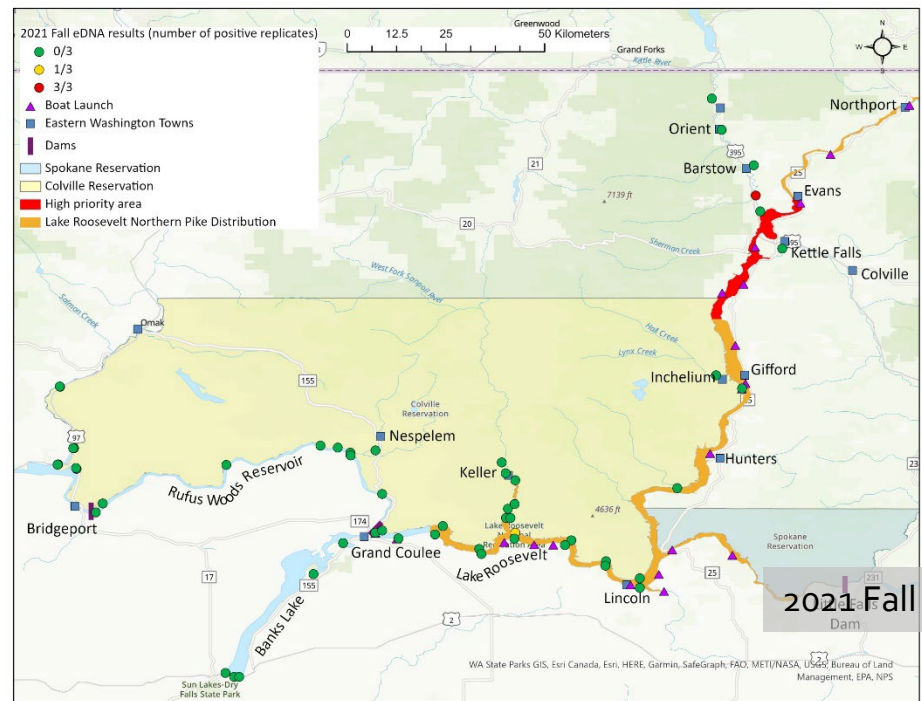
Public Outreach

- Similar signs posted at all boat launches in Roosevelt and Rufus Woods
- Participated in Wenatchee River Institute Invasive Freshwater Mussel and Northern Pike Workshop (July 22)



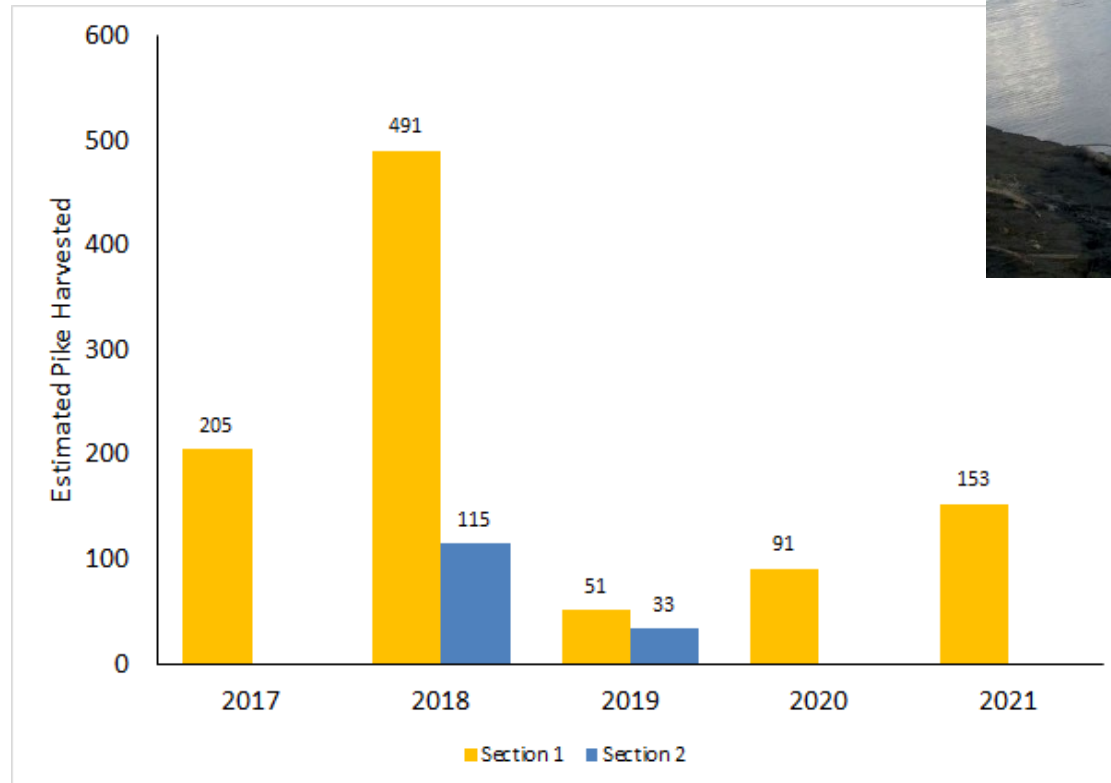
eDNA Fall 2020 to Fall 2021

- 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, 8 sites changed from Pike Positive to “No Pike DNA detected”

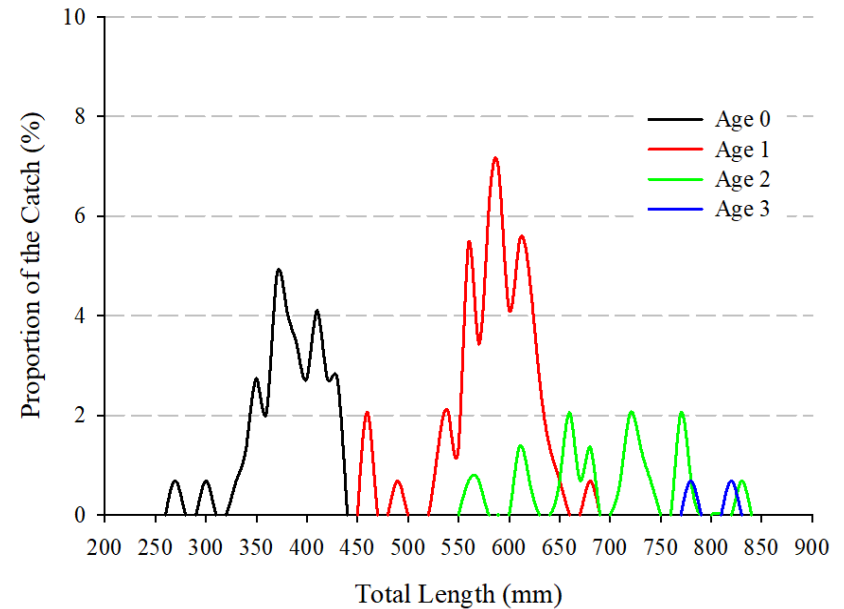
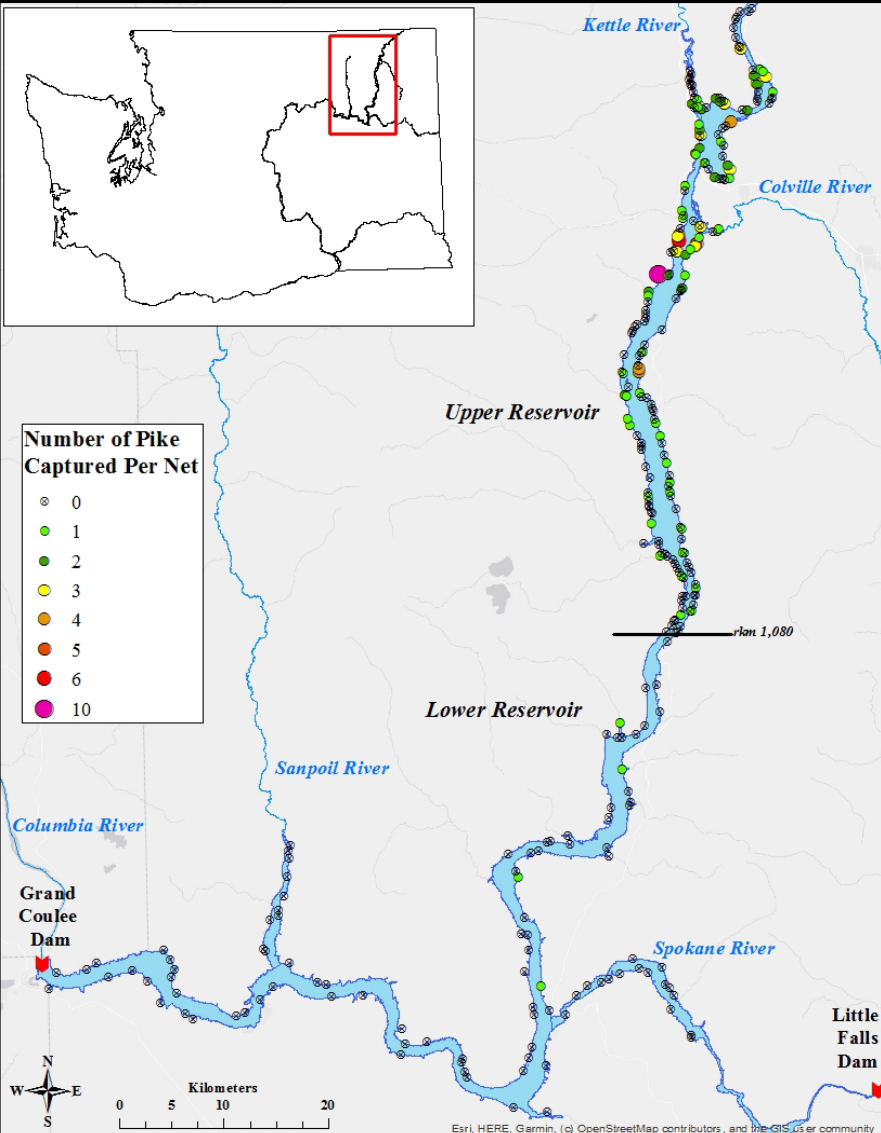


Creel Survey

- Consistent methodology since 2016
 - Access site and bus route surveys
 - Most pike in upper reservoir



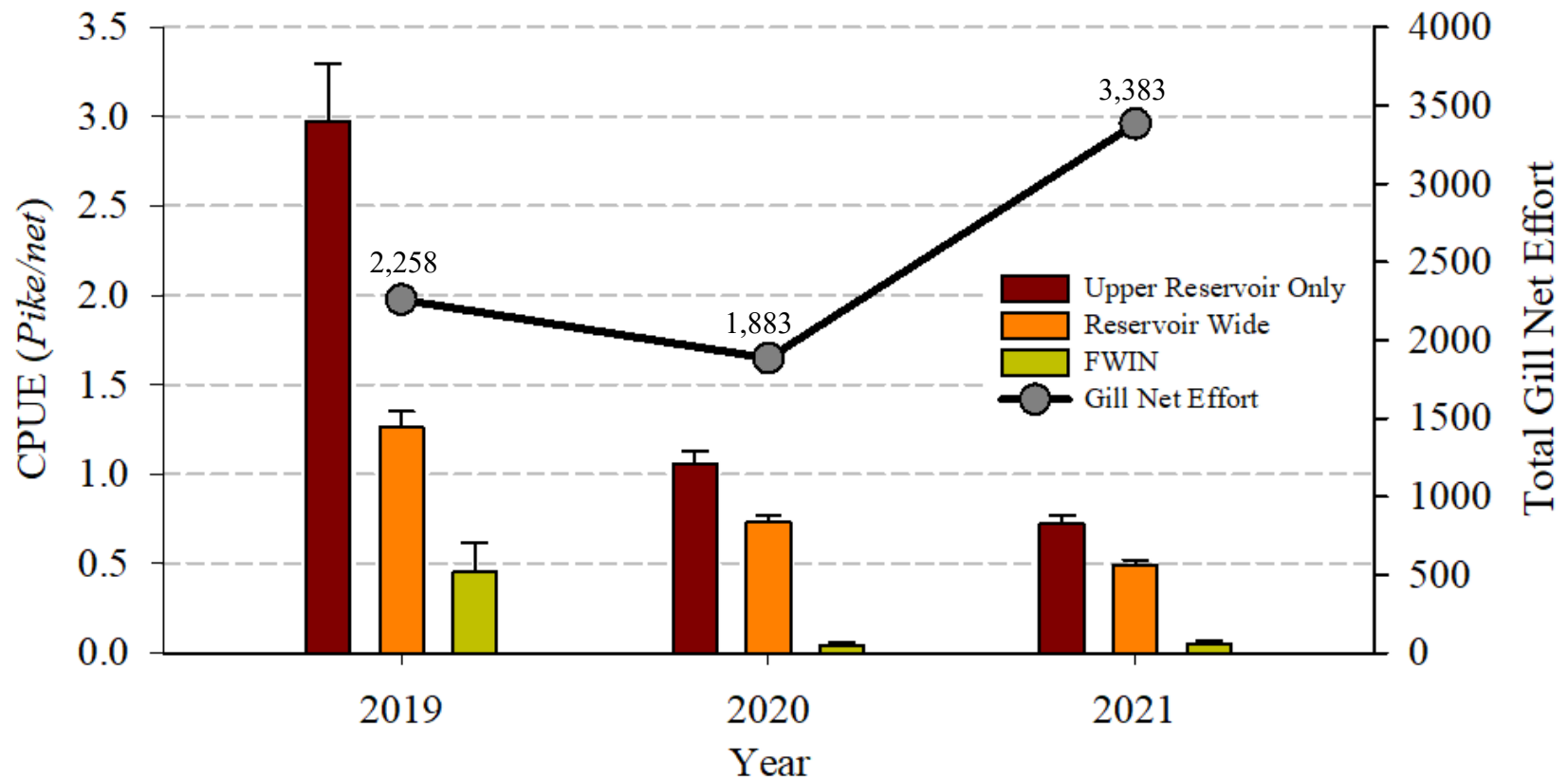
Northern Pike Monitoring 2021



	Mean Total Length (SE) at Age				
Age	0	1	2	3	Total
n	48	78	24	2	146
Male	379 (7)	582 (6)	696 (17)	na	542 (14)
Female	395 (7)	596 (8)	695 (27)	803 (18)	546 (19)
Total	387 (5)	588 (5)	696 (14)	803 (18)	544 (10)

	Northern Pike Maturity Schedule, Fall 2021				
Age	0	1	2	3	
Male (n=81)	84	100	100	na	
Female (n=64)	0	91	100	100	

Reservoir Wide Standardized Surveys

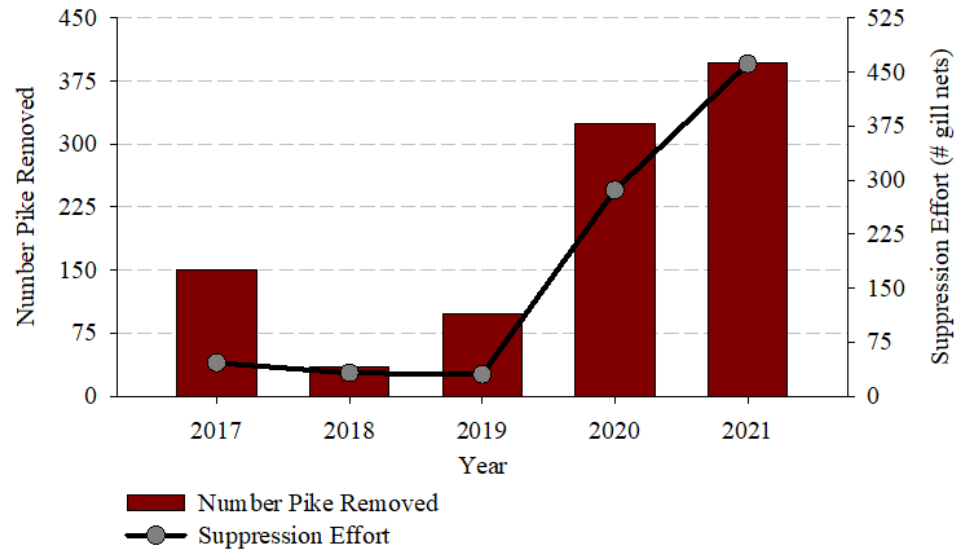
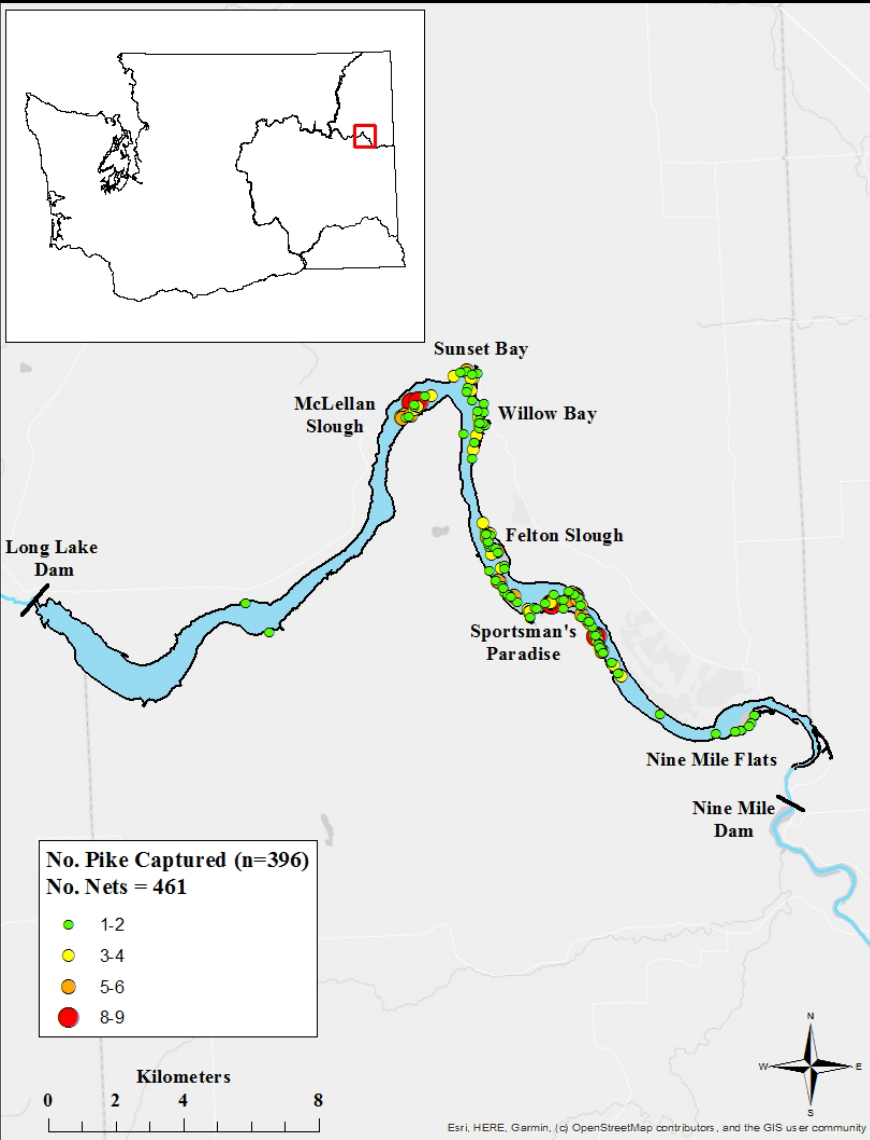


Program Accomplishments

- Identified spawning locations, target during spawning period
- Removed 8,800 females, up to 442 million eggs
- Developed a robust 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
- Developing a Mid-Columbia Rapid Response Plan
- Assisted with developing the Regional Northern Pike Forum
 - Led by UCUT organization



Lake Spokane Spring 2021

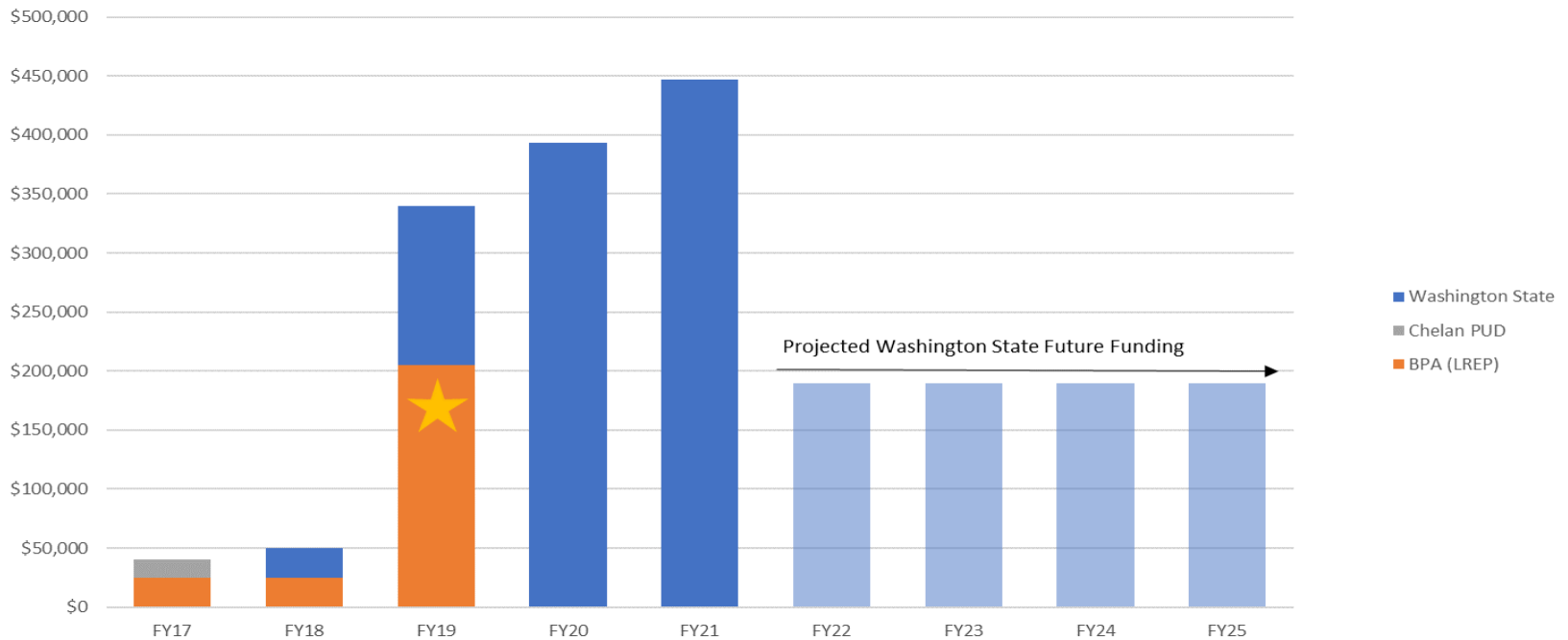


Year	Nets	Pike	CPUE (SD)	Ep
2017	46	150	3.26 (4.25)	0.85
2018	32	34	1.06 (1.85)	0.44
2019	30	98	3.27 (4.29)	0.83
2020	286	324	1.13 (1.81)	0.47
2021	461	396	0.86 (1.61)	0.35

WDFW Funding

2017-2021 WDFW Funding \$1.0 M
 2017-2019 BPA Funding (LREP) \$255,000

★ Includes \$180,000 for WDFW gill netting vessel



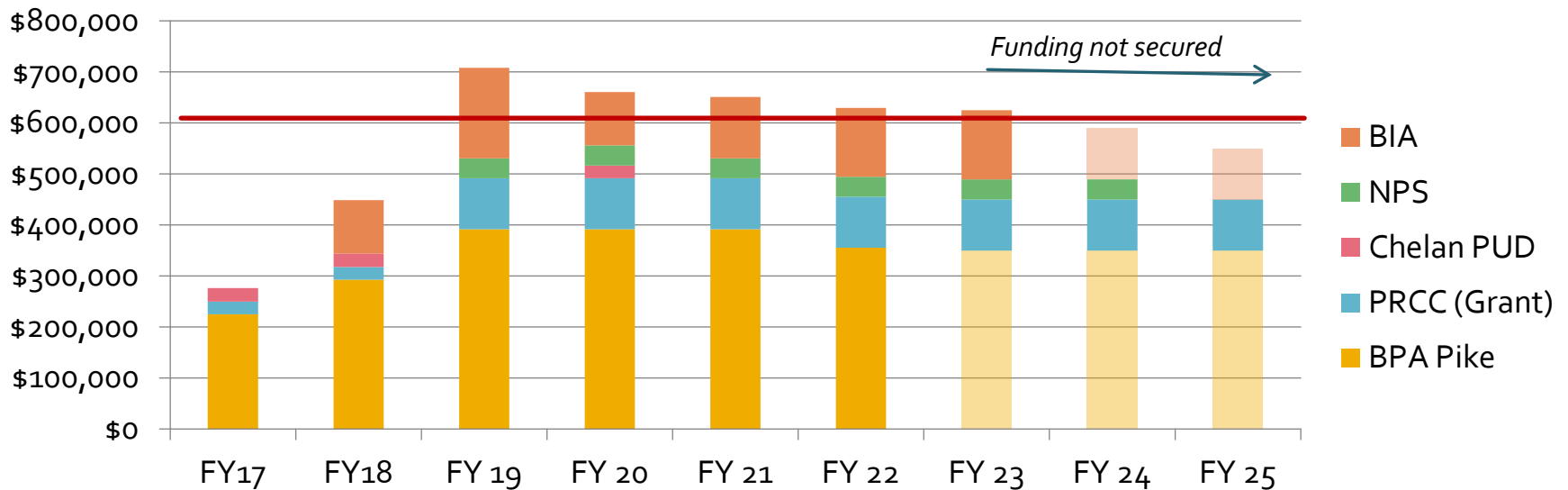
2017 BPA Northern Pike Proposal WDFW Monitoring and Suppression				
FY 2018	FY 2019	FY 2020	FY 2021	FY 2022
\$161,004	\$189,348	\$193,883	\$198,531	\$215,217

2020 BPA Northern Pike Proposal WDFW Monitoring				
FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
\$114,243	\$116,000	\$117,786	\$119,607	\$134,489

BPA Project 2017-004-00
 WDFW Not Funded

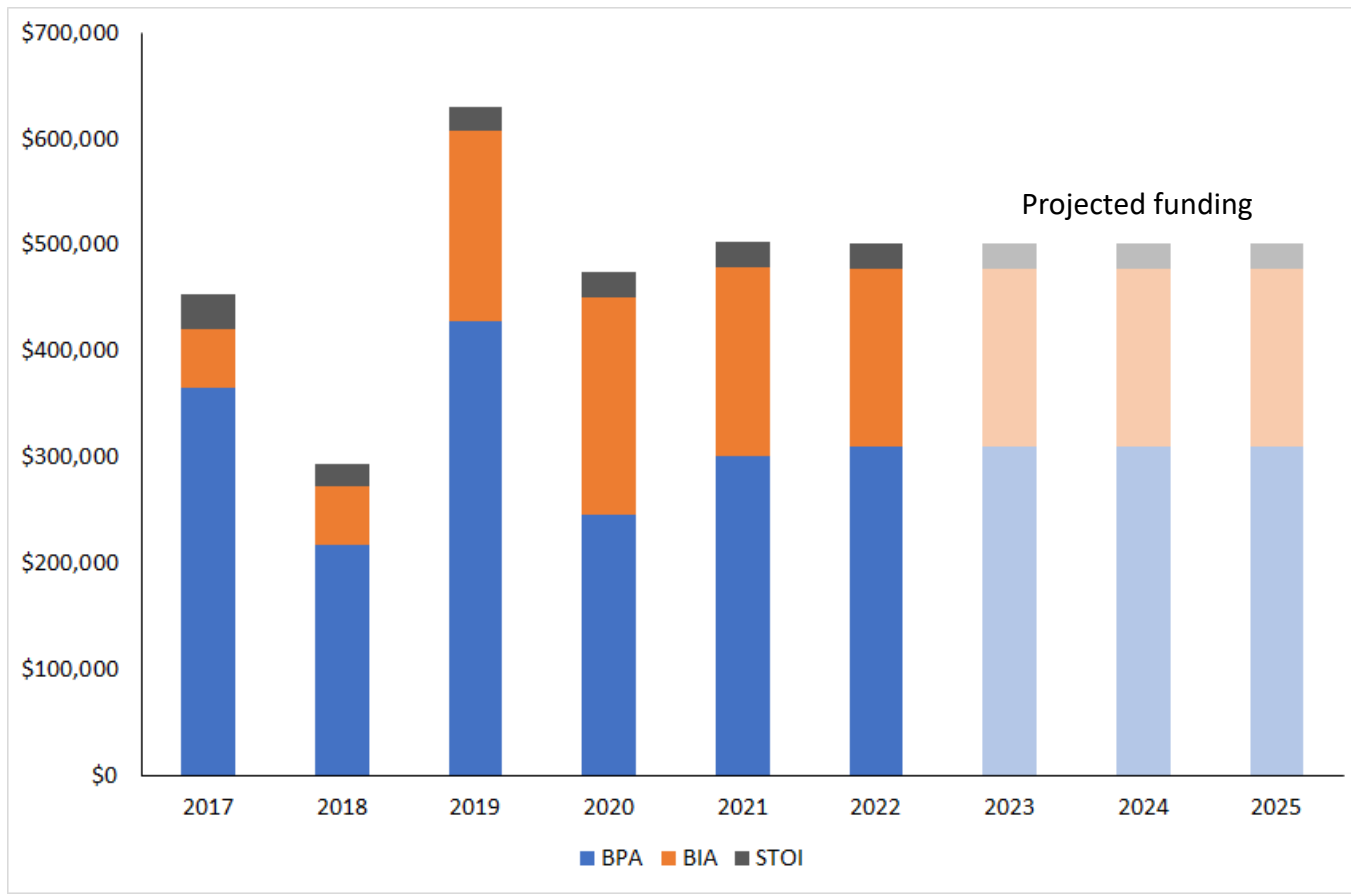
CCT Funding

- Between 2017-2021 CCT spent \$2.7 M combating the spread of N. Pike
- Mean annual CCT program is \$600,000 to operate
 - Secured FY22-25 Grant PUD \$100,000/yr (Priest Rapids Coordinating Committee)
 - NOAA, USFWS, WDFW, CCT, YN, CT of Umatilla, Grand PUD)
 - CCT Negotiating MOA with BPA (\$350,000/yr) – *Not secured*
 - BIA: annual request (\$135,000/yr)
 - NPS: request \$50,000/yr



STI Funding

- From 2017-2021 STOI spent \$2.36 M combating the spread of N. Pike
- Mean annual STOI program was \$471,000 to operate from 2017-2021



Questions?

- Many thanks to our amazing partners

