

NORTHERN PIKE ARE COMING AND YOU SHOULD BE AFRAID

2019 Salmon Recovery Conference



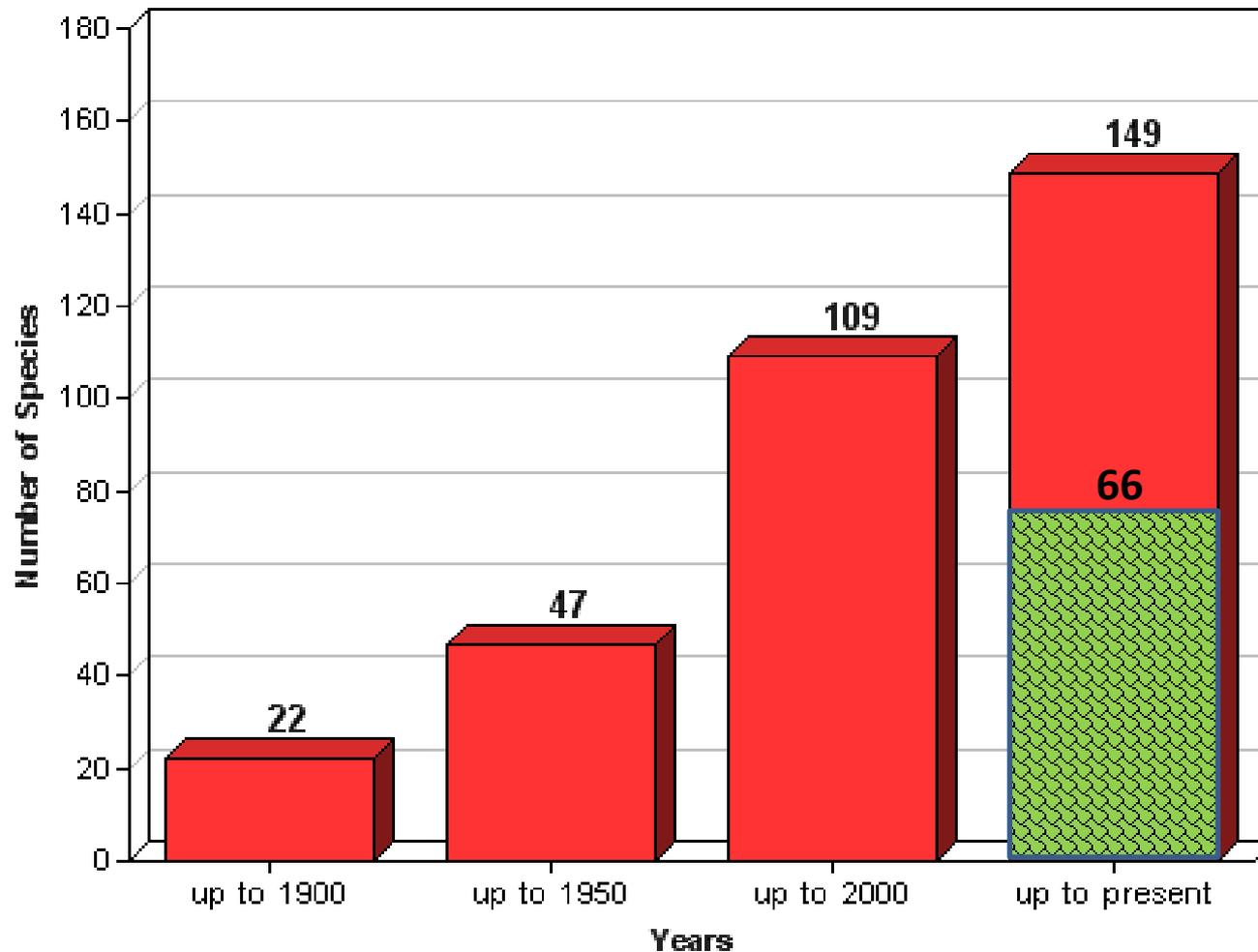
Joe Maroney
Director of Fisheries & Water Resources
Kalispel Natural Resource Department

April 8, 2019

Introduced Species in Washington



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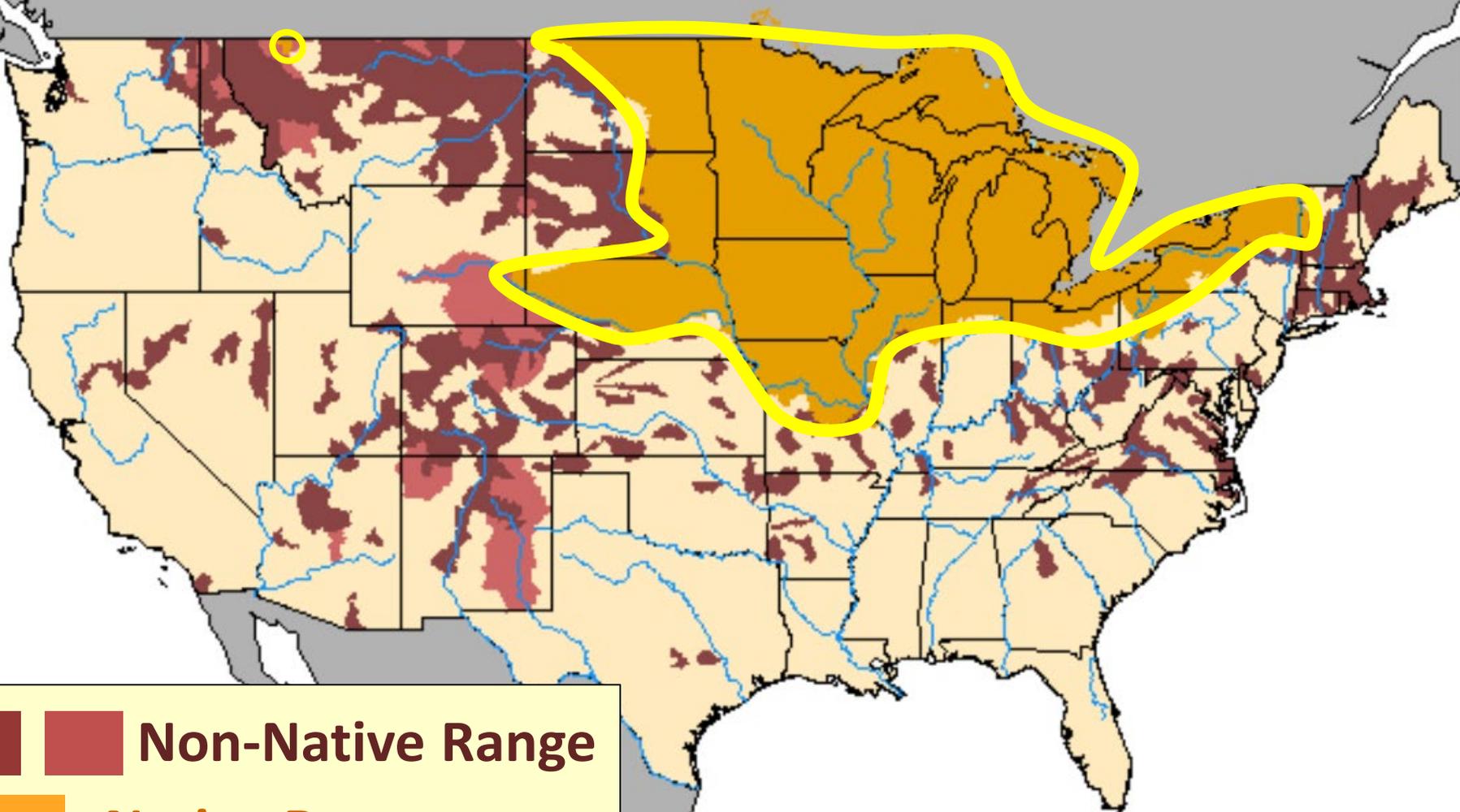
Northern Pike and why are they so bad?

- Apex predator
- Highly invasive and can cause large-scale changes in fish communities.
- When introduced, they can significantly reduce prey densities or eliminate entire species
- The species is highly fecund; some females can produce up to 250,000 eggs.
- They can live over 20 year and grow to over 45 pounds.



2008
37.5 lbs
44.5" length

Northern Pike

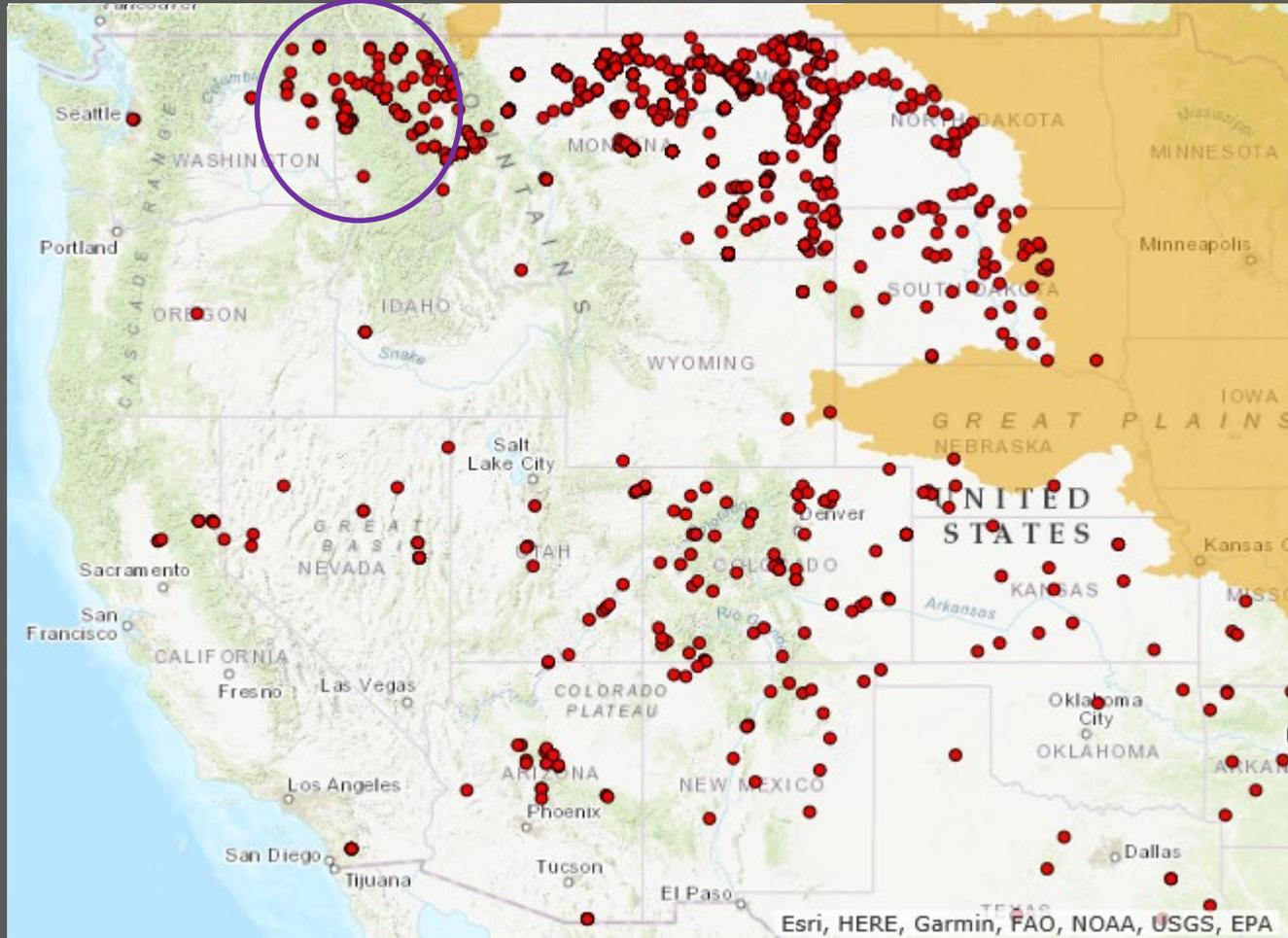


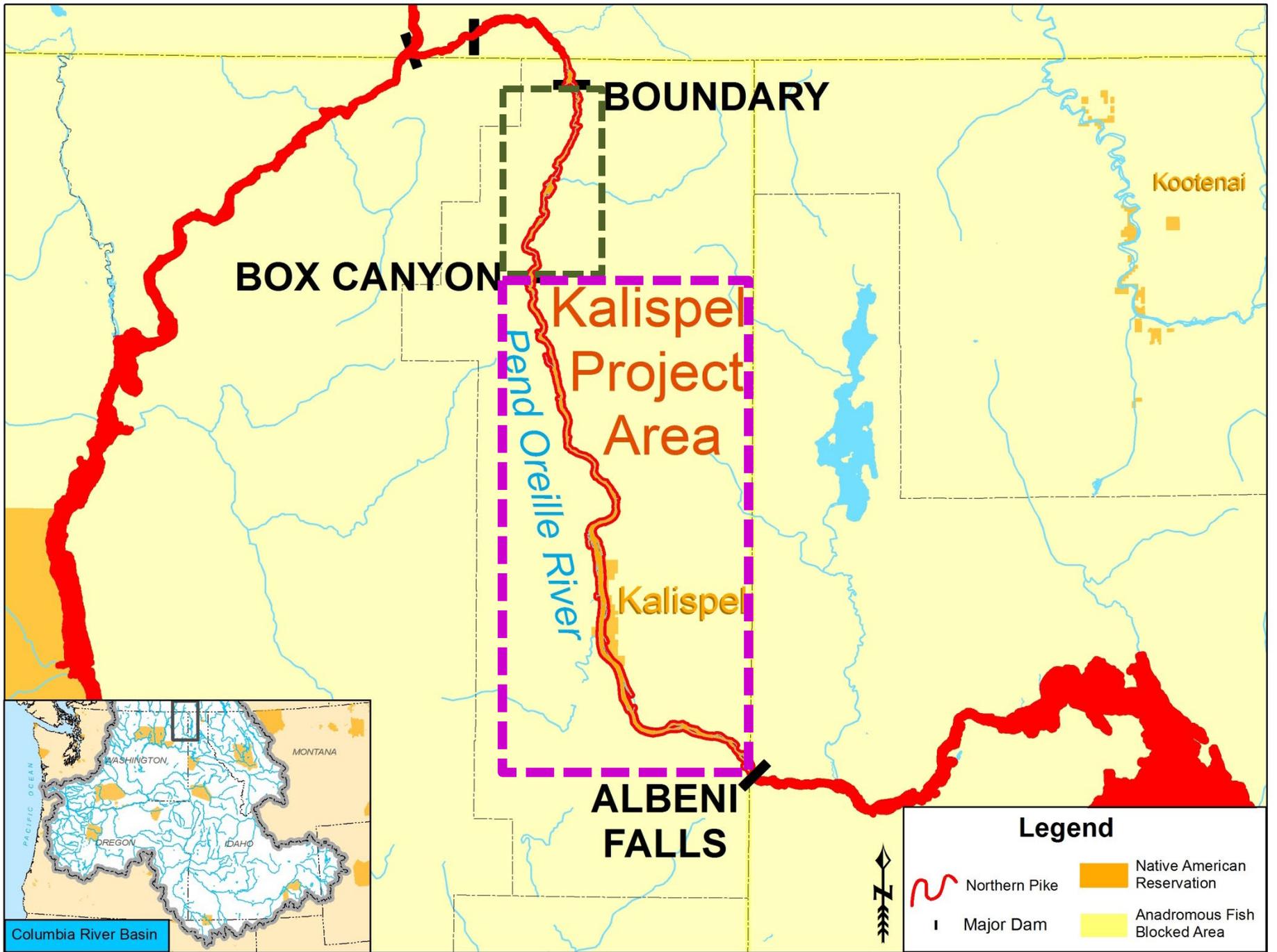
  **Non-Native Range**

 **Native Range**

Northern Pike expansion throughout the West

1998





Source: Washington State Department of Fish and Wildlife

Kalispel Tribe and Washington Department of Fish & Wildlife thinking

“PIKE ARE A PROBLEM, NOT AN OPPORTUNITY”

Management goals:

- Minimize impact to native species
- Reduce spread of pike to other waters, including the Columbia River
- Reduce numbers of pike in Box Canyon Reservoir



Invasion/Action Timeline

2004

NP First Detected in Box Canyon Reservoir

2005

NP Studies/Surveys Initiated

2010

1st Annual SPIN Survey in Box Canyon Reservoir

2011

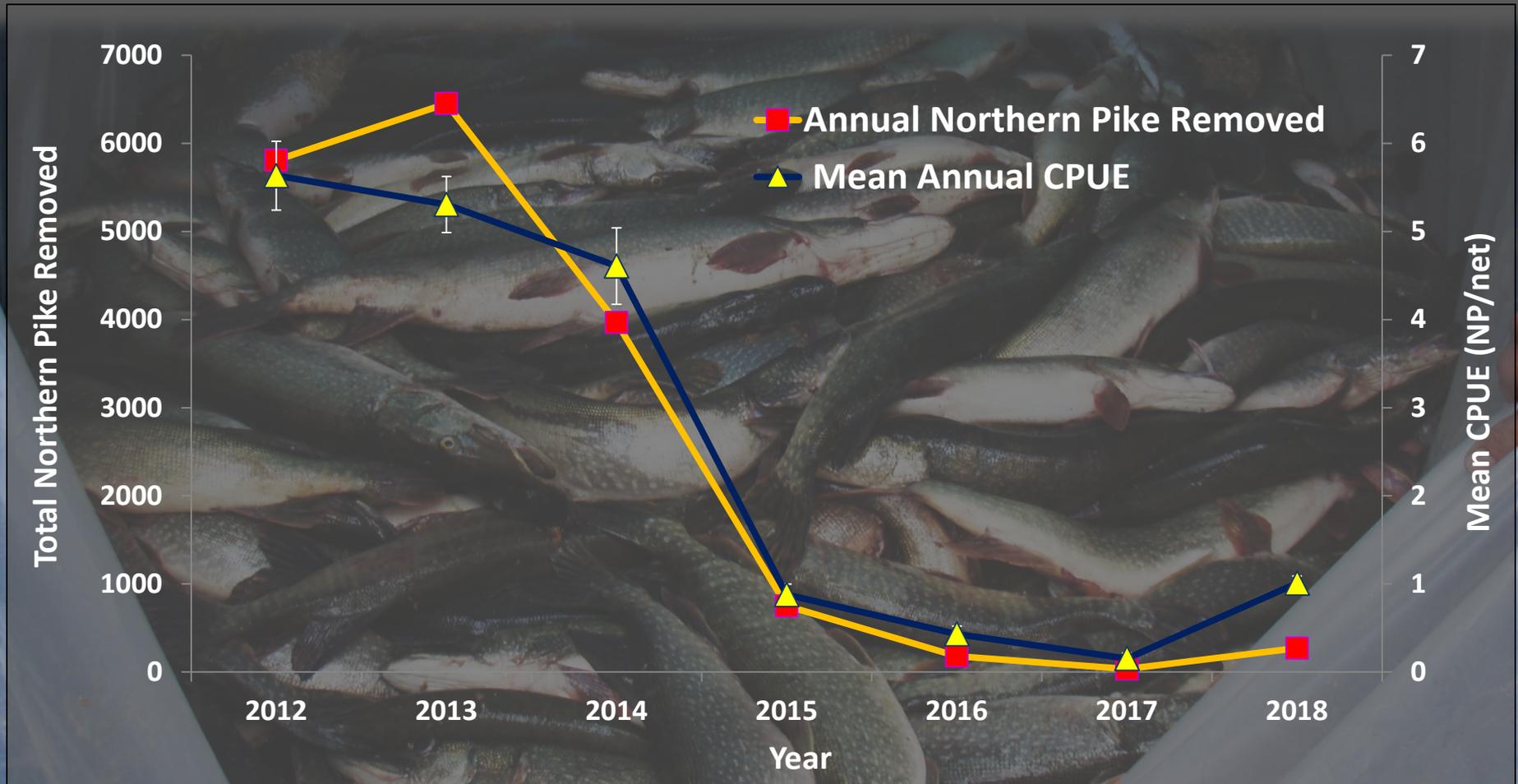
Box Canyon Reservoir Suppression Pilot

Initiate Public Outreach & Regulation Changes

2012

Full Suppression Initiated Box Canyon Reservoir (2012-2018)

Box Canyon Suppression 2012 – 2018: Results



- Removed nearly 17,500 Northern Pike from Box Canyon Reservoir
- 18.8 metric tons (42,000 lbs) of Northern Pike removed from Box Canyon Reservoir

Program Success to Date



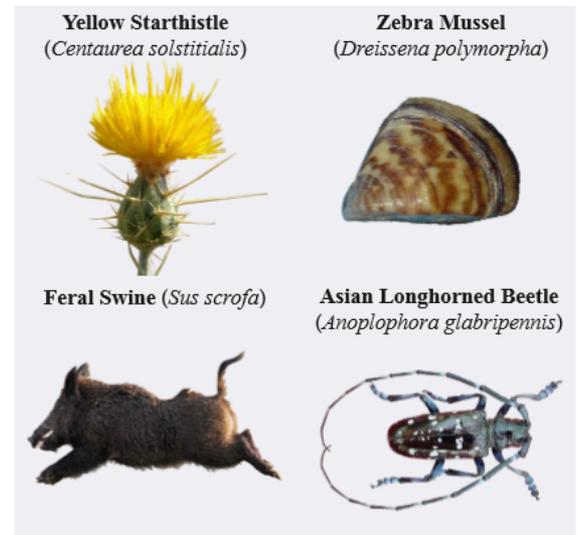
- Removed >17,500 NP
- Reduced relative abundance of Northern Pike by >98% in a 89 km long reservoir (Box Canyon)
- Demonstrated the feasibility and effectiveness of this Program in large & complex river system

Washington Invasive Species Council Top Priority Species

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More than 700 invasive species are known to be in and around Washington State, all of which pose a threat to Washington's environment, economy, and human health. Of these known species, the Washington Invasive Species Council has selected 50 priority species for action by the council using science and professional judgment. These species represent the gravest threats to Washington's plants, animals, and businesses that depend on the rich biodiversity of our state.

Terrestrial Plants	Insects	Aquatic Animals	Aquatic Plants	Infectious Diseases	Terrestrial Animals
Butterfly Bush	Apple Maggot	Asian Carp	Brazilian Elodea	Infectious Amphibian Diseases	Feral Swine
Common Crupina	Brown Marmorated Stink Bug	Invasive Crabs	Caulerpa	Infectious Fish Diseases	Mediterranean White Snail
Garlic Mustard	Emerald Ash Borer	Invasive Frogs & Crayfish	Flowering Rush	Rose Syndrome/Pd	
Invasive Knapweeds	European Chafer	Invasive Tunicates	Hydrilla		
Invasive Knotweeds	Gypsy Moths	Invasive Zooplankton	Invasive Natter		
Kudzu	Invasive Longhorned Beetles	New Zealand Mud Snail	Phragmites		
Leafy Spurge	Japanese Beetle	Northern Pike	Purple Loosestrife		
Poison Hemlock	Onion Leaf Miner	Northern Snakehead	Spartina		
Puncturevine	Scarlet Lily Beetle	Nutria	Starry Stonewort		
Rush Skeletonweed	Sirex Woodwasp	Overbite Clam			
Scotch Broom	Spotted Wing Drosophila	Quagga/Zebra Mussels			
Scotch Thistle					
Tamarisk					



Western Governors Association Invasive Species Risk-Assessment Survey Results: February 2018

Top-10 Established Aquatic Species

1. Eurasian Watermilfoil
2. Quagga and Zebra Mussel
3. New Zealand mudsnail
4. Asian Clam
5. Curly-leaved pondweed
6. Silver Carp
7. Northern Pike
8. Purple loosestrife
9. Hydrilla
10. Whirling disease



Aquatic survey participants: 17 States (AK, AZ, CA, CO, HI, MT, ND, NE, NM, NV, OK, OR, SD, TX, UT, WA, WY)

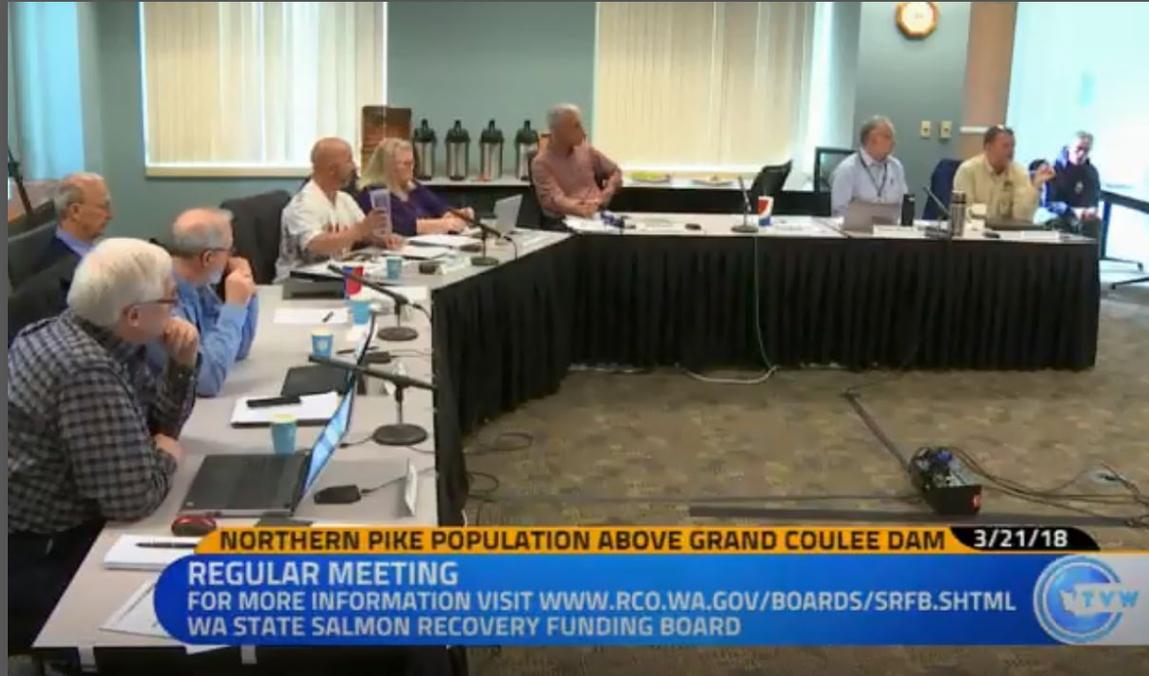
Salmon Recovery Funding Board

March 21, 2018 Briefing

Concerns about the Northern Pike Population above Grand Coulee Dam

Board Letters to the following:

- Governor Inslee
- Northwest Power & Conservation Council
- Washington Department of Fish & Wildlife
- Chelan County PUD
- Grant County PUD
- Douglas County PUD



<https://www.tvw.org/watch/?eventID=2018031136>



Photo Credit: Mike Rayton, Colville Confederated Tribes

Mouth of Okanogan River

Northern pike caught in Lake Washington could have impact on juvenile salmon

Originally published January 27, 2017 at 3:21 pm | Updated January 28, 2017 at 1:11 am

The Seattle Times



Photo of Northern Pike caught in Lake Washington on Jan. 24 was taken by Brian Noel.

Economic Effects due to Northern Pike

“The Economic Impact on Plumas County of Alternative Northern Pike Eradication and Management Scenarios for Lake Davis, California”; August, 2006

- Measure the potential statewide economic effects of pike escapement
- Inform decision-makers about the potential consequences of not implementing a pike eradication project
- Annual Economic loss based upon 10% Reduction



Regional Economic Effects

Measure	Direct	Indirect	Induced	TOTAL
Recreational Fishing (Freshwater)				
Output (\$ million)	-\$10.00	-\$3.73	-\$4.02	-\$17.75
Income (\$million)	-\$3.47	-\$1.22	-\$1.42	-\$6.12
Employment (jobs)	-166	-24.4	-34.3	-174.7
Recreational Fishing (Marine)				
Output (\$ million)	-\$0.86	-\$0.30	-\$0.34	-\$1.49
Income (\$million)	-\$0.30	-\$0.10	-\$0.12	-\$0.51
Employment (jobs)	-9.1	-1.9	-2.9	-13.9
Commercial Fishing				
Output (\$ million)	-\$1.81	-\$0.58	-\$1.08	-\$3.47
Income (\$million)	-\$1.01	-\$0.21	-\$0.38	-\$1.60
Employment (jobs)	-46.2	-3.7	-9.2	-59.2

Source: Lake Davis Eradication Project EIR/EIS 2006

Net economic values generated by Washington fisheries in 2006

- Commercial Salmon = \$7,091,000
- Recreational Salmon (freshwater and saltwater) = \$129,419,300
- Recreational Steelhead = \$51,260,500
- Recreational Trout = \$145,903,900
- Combine for almost 71% of all recreational fisheries in Washington

Economic Analysis of the **Non-Treaty** Commercial and Recreational Fisheries
in Washington State 2008



Annual economic loss based upon 10% reduction

- Commercial Salmon = \$709,100
- Recreational Salmon (freshwater and saltwater) = \$12,941,930
- Recreational Steelhead = \$5,126,050
- Recreational Trout = \$14,590,390

Annual total = \$33,367,470

Acknowledgements

- Bonneville Power Administration
- US Bureau of Indian Affairs
- Avista Corporation
- Seattle City Light
- Eastern Washington University
- Washington Department of Fish and Wildlife
- Kalispel Tribe of Indians
- Hardworking KNRD Field Crew



Thank You! Questions?



More Information:

Websites: http://wdfw.wa.gov/ais/esox_lucius/

and <http://kalispeltribe.com/kalispel-natural-resources-department/>

