

# Northern Pike Suppression in the Columbia River System



**Presented To:** Invasive Species Research Conference June 20, 2017

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# Transboundary Stakeholders

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## Canada

BC Ministry of Forests, Lands and Natural Resource Operations

Columbia Basin Trust

Mountain Water Research

Okanagan Nation Alliance

Thompson Rivers University

Salmo River Streamkeepers

Central Kootenay Invasive Species Society

Castlegar and District Wildlife Association

Jim Bailey, Local Author

Golder Associates Ltd.

BC Hydro

Columbia Power Corporation



## United States

Washington Department of Fish and Wildlife

Colville Confederated Tribes

Spokane Tribe of Indians

Kalispel Tribe of Indians

Coeur d'Alene Tribe

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# Background – Northern Pike Introductions

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- ▶ History of illegal and legal introductions
- ▶ Ecosystem level impacts
- ▶ Abundance, species composition and competition
- ▶ Potentially impact recovery of species at risk
- ▶ Diseases and parasites





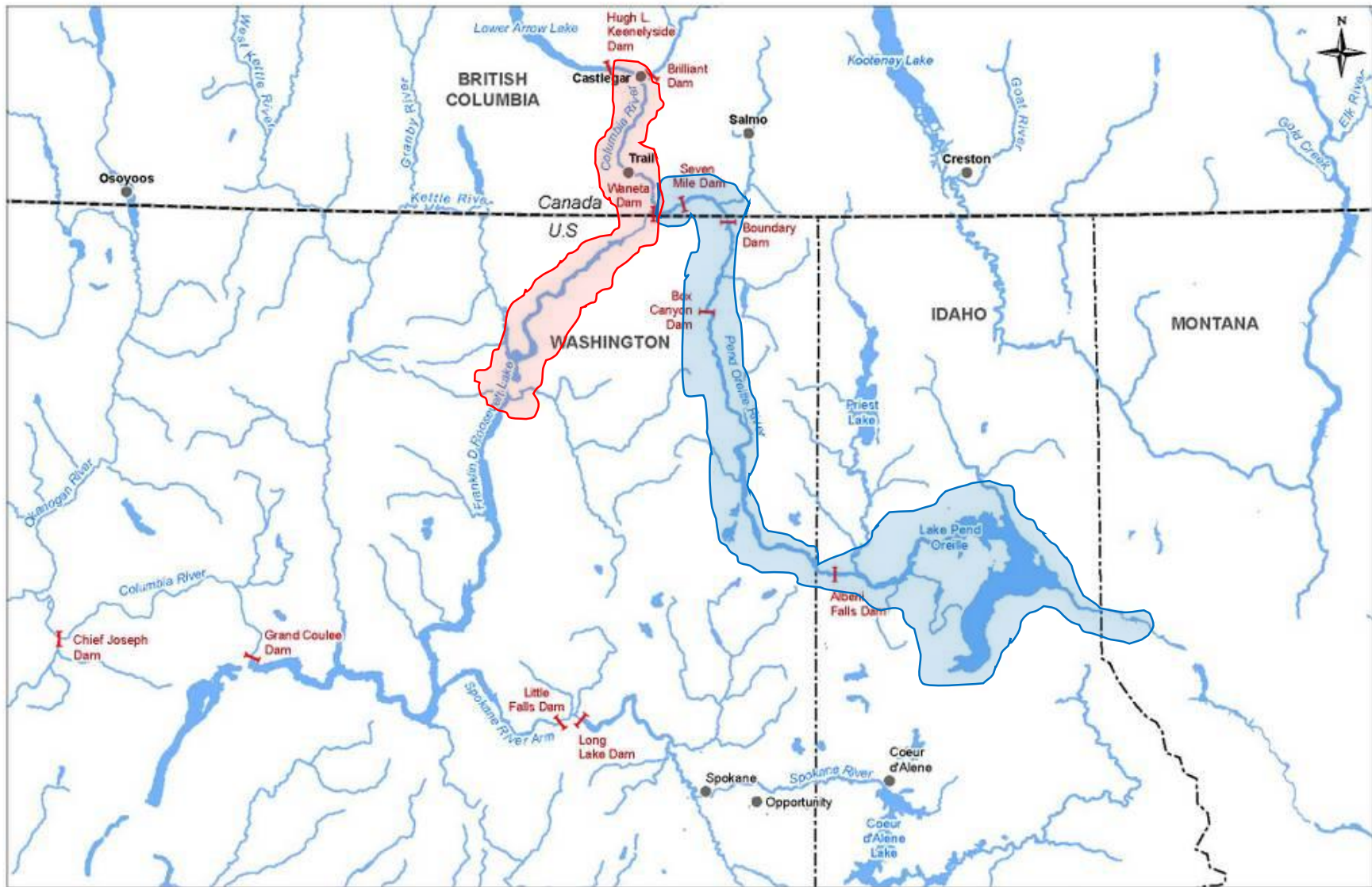
# Background – Columbia River Invasion

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▶ Pathway of introduction:

- ▶ Illegal introduction in Flathead Lake system of Montana, 1980's
- ▶ Traveled downstream into Pend d'Oreille system and ultimately Columbia
- ▶ Illegal introduction directly to Columbia?





- Legend**
- Populated Place
  - I Dam Location
  - International Boundary
  - - - State Boundary
  - Stream
  - Waterbody

0 5 10 20  
Kilometers  
Scale 1:1,250,000

**Reference:**  
 Data BC: Data Distribution Service  
 Open Government License  
 (http://www.data.gov.bc.ca/)  
 Geographic Names  
 Open Government License - Canada  
 (http://nla.gov.ca/nla/eng/about-datagov)




CLIENT: **Columbia trust**

TITLE: **Columbia River Northern Pike Invasion Overview Map**

PROJECT: **Columbia River System Northern Pike Suppression**

DATE: Apr. 2017	ANALYST: MF	DAWG: CL	<b>Figure 1</b>
PROJECT: 01-01-001_Overview			
JOBNO: VES2635			
COORDINATE SYSTEM: NAD 1983 UTM Zone 11N			



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# Columbia River Northern Pike Concerns

- ▶ Impacts to native fish populations, species-at-risk, disease, introduction to other tributaries, extended range upstream and downstream.





# Columbia River Suppression and Research

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- ▶ Summary of actions in the Canadian and U.S. sections of the Columbia River

<b>Activity</b>	<b>Canada</b>	<b>US</b>
Angling Regulations	X	X
Angler Incentives	X	X
Education and Angler Awareness	X	X
Gill Net Suppression	X	X
Boat Electrofishing		X
Other Juvenile Detection Programs	X	X
Telemetry	X	X
Otolith Geochemistry	X	X
Environmental DNA (eDNA)	X	X
Habitat Reduction	X	

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# Angler Regulations, Incentives, Education

- ▶ Unlimited daily angling quotas
- ▶ Reward and bounty programs
- ▶ Reclassification as prohibited species (Washington)
- ▶ Education programs
  - ▶ Angler awareness
  - ▶ “Clean, Drain and Dry” and “Don’t Let it Loose”
  - ▶ Watercraft inspection stations

## 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 encountered. 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 pose 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 those 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 officer.

Spokane County WSP Dispatch: 509-456-4101  
Stevens County WSP Dispatch: 509-684-7431







# Gill Net Suppression

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- ▶ Initiated in 2013 in Canada; 2015 in U.S.
- ▶ Canadian program modeled on successful Pend d'Oreille program
- ▶ Targeted suitable habitat
- ▶ Targeted pre-spawning period
- ▶ Short sets to limit bycatch
- ▶ In Canada, 30-40% pop removed
- ▶ Successful method of suppression





# Research

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- ▶ Telemetry to locate spawning habitat, evaluate movements
- ▶ Microchemical otolith analysis to determine geographical life history
- ▶ Risk of moving to Arrow Lakes
- ▶ eDNA feasibility
- ▶ Stomach content analysis
- ▶ Juvenile detection programs





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# Habitat Reduction - Canada

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- ▶ Eurasian Watermilfoil suppression program initiated in 2017
  - ▶ Control invasive weeds
  - ▶ Reduce Pike habitat





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# Boat Electrofishing Suppression – U.S.

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- ▶ Effective method of capturing juvenile pike in late summer/fall 2016
- ▶ Daytime
- ▶ Shallow weedy bays
- ▶ High capture rates





# Outcomes – Next Steps

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- ▶ Establish a transboundary Northern Pike committee
- ▶ Continue suppression efforts



# Acknowledgements

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**Columbia Basin Trust**

**BC Ministry of Forests, Lands and Natural Resource Operations**



Ministry of Forests,  
Lands & Natural  
Resource Operations

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