

Status of Kenai Peninsula Invasive Northern Pike Control

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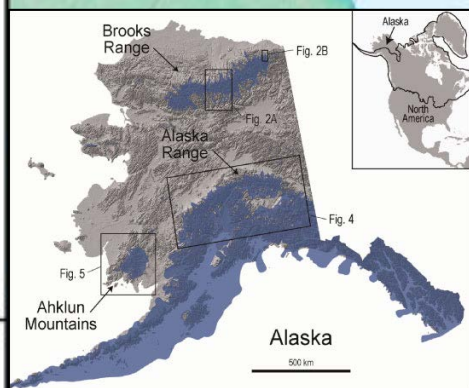
¹ Alaska Department of Fish and Game, Division of Sport Fish, Region II



² United States Geological Survey, Bozeman, MT



Northern Pike Range

Pleistocene Glaciation

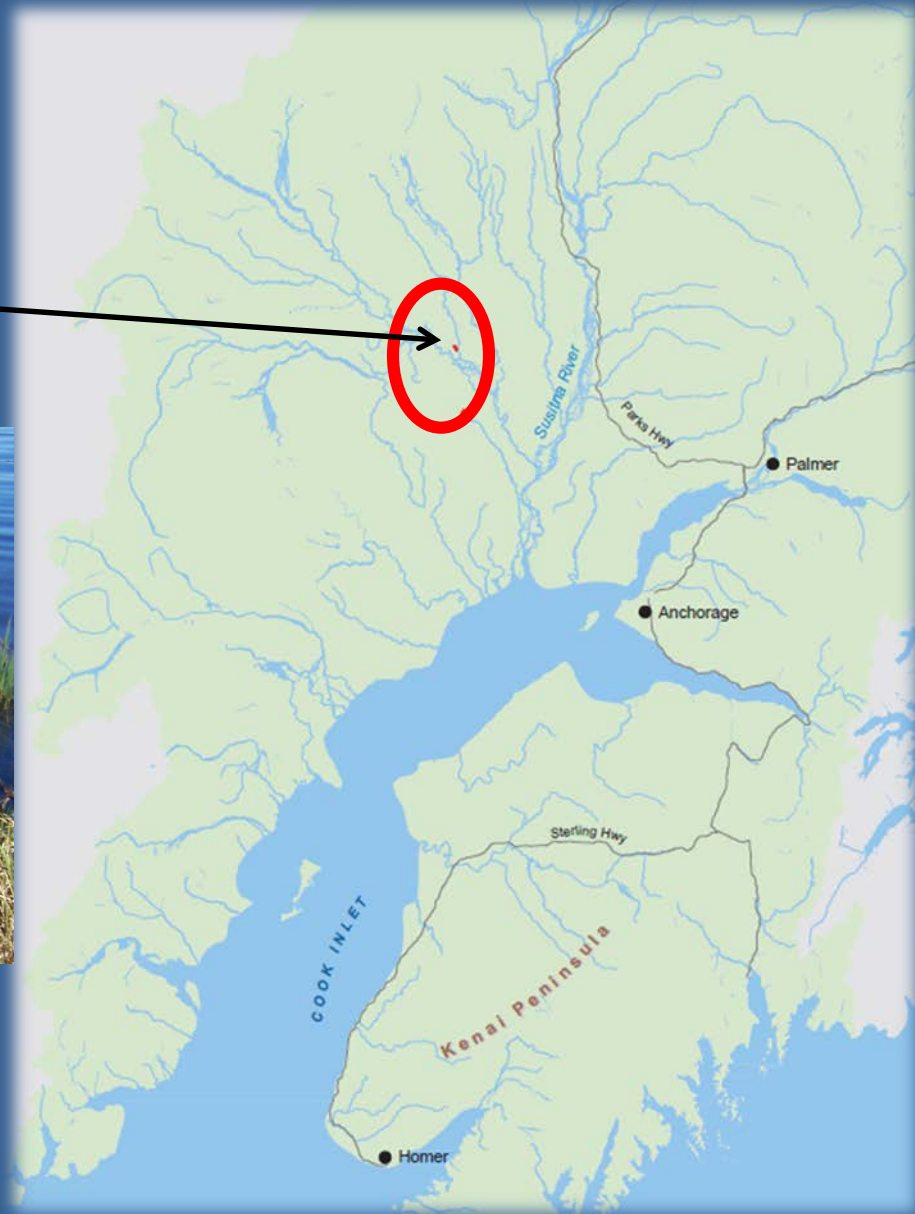


 Native Range
 Introduced Range

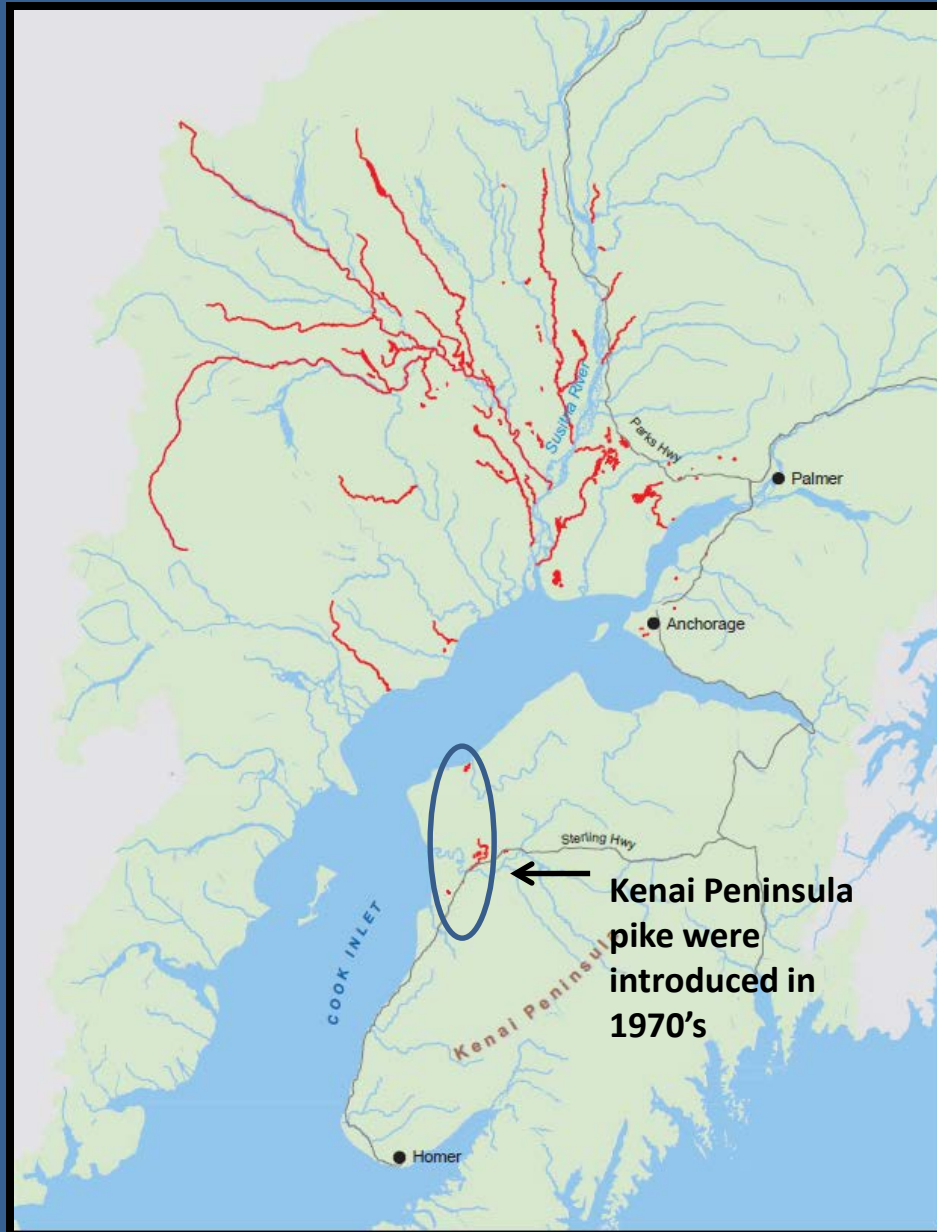
0 125 250 500
Miles

Problem began in the 1950's

First introduction was at
Bulchitna Lake



Expansion after 50 years



Expansion driven by natural dispersal and additional illegal introductions

Ecological Cost



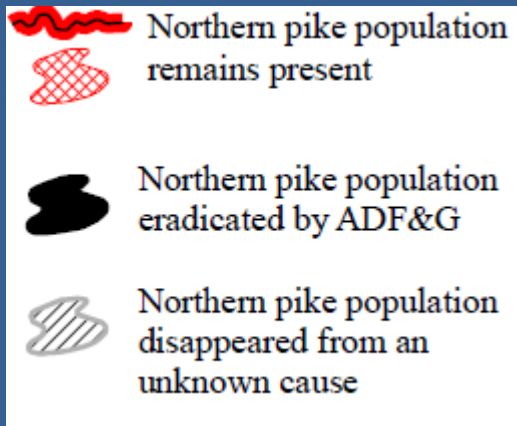
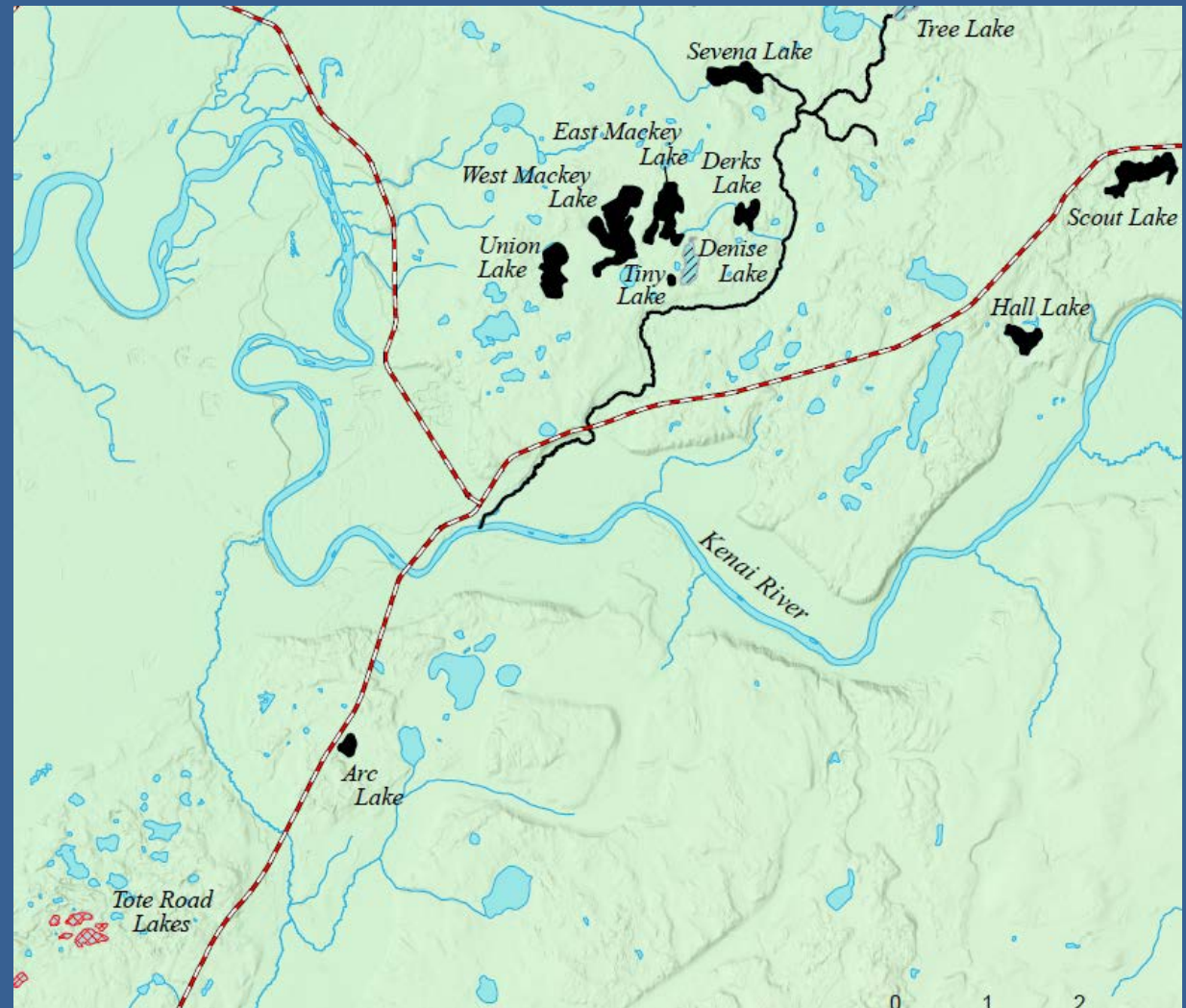
Salmon fingerlings in pike stomachs; Susitna R. drainage.

Pike impacts are most extreme in shallow weedy systems
... like the Moose R. and Beaver CK that support rearing salmon
and trout.



Surface feeding coho salmon smolt in Moose River

Status of pike waters on the Kenai Peninsula



Pike eradication timeline



Arc L. 2008



Scout L. 2009



Hall and Tiny L. 2011



Soldotna CK Drainage 2014-Present



Stormy L. 2012

Post-Pike Native Fish Restoration

Stormy Lake Example



Collecting gametes from wild Stormy Lake arctic char for hatchery rearing (2011)



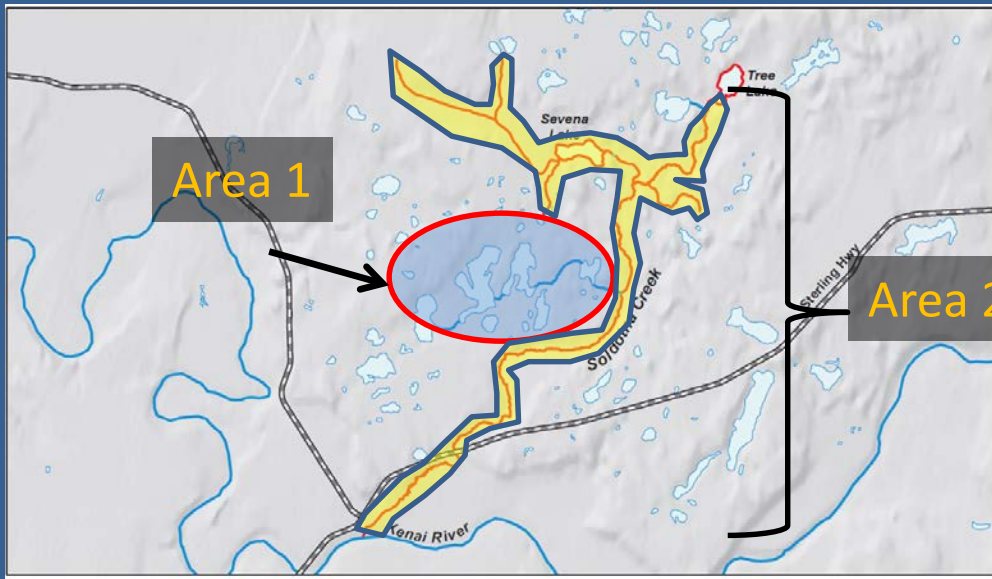
Temporarily holding Stormy L. native fish in offsite net pens (2012)



Transporting native fish by snowmachine



Stocking natives back into Stormy Lake (2013)



Soldotna Creek Native Fish Rescue

- 2014: make Area 1 pike-free
- 2015 - 2017: Relocate native fish from Area 1 to Area 2





Rainbow: 3,194
Dolly Varden: 3,279
Juv. coho salmon: 40,340
Sculpin: 3,718
Stickleback: 32,853

+83,374 native fish released
into the Mackey Lake system

Evaluating Eradication Success: Netting and eDNA surveys



Sevena Lake 2016, pre-rotenone treatment

Under-ice netting: what does an empty net tell you?



March 4, 2015



April 2, 2015

All pike carcasses detectable after 48 days

Average detection rates by distance from pike source

Live pike cage



Stocked at very low pike densities, 18 - 239 grams of pike /Ha-m



eDNA persistence after carcass stocking (simulated rotenone treatment)

Average detection rate:

7 days = 54.2%

35 days = 8.3%

70 days = 0.0%

Conducted at 3 lakes

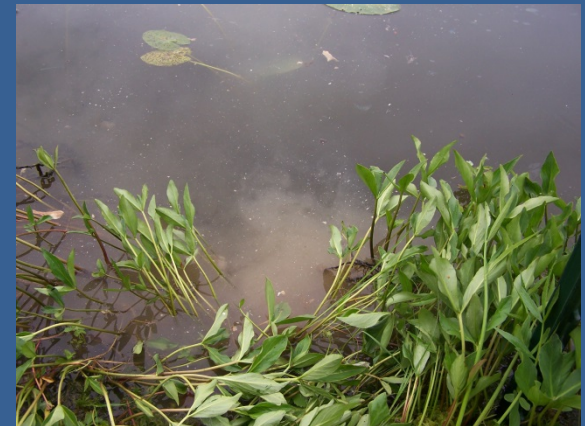
Samples collected 1m
from carcasses

Water temp 15-20C°

Moderate pike
densities, 5,410 -
7,219 grams of pike
/Ha-m



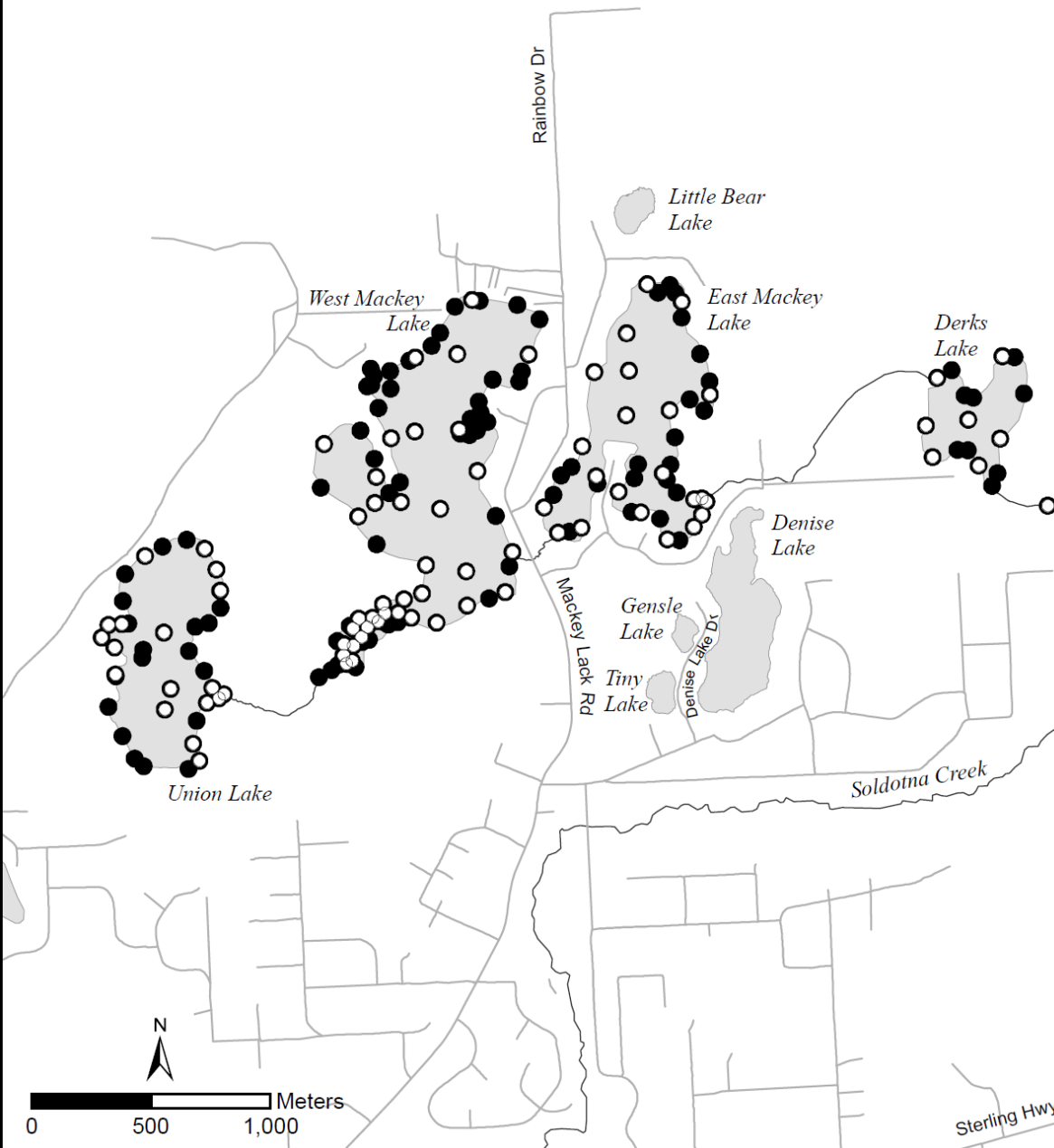
Cage with decomposing pike carcasses



Plume from decomposition

Pre and post-rotenone TX: eDNA sample locations

Using eDNA to help
evaluate the success
of a rotenone
treatment



- = post-treatment sample site
- = pre and post-treatment sample site

- Sampled 4 lakes
- Sampled littoral habitat



eDNA Sampling Results

Pre-treatment detections: **82.4%** (N=85)

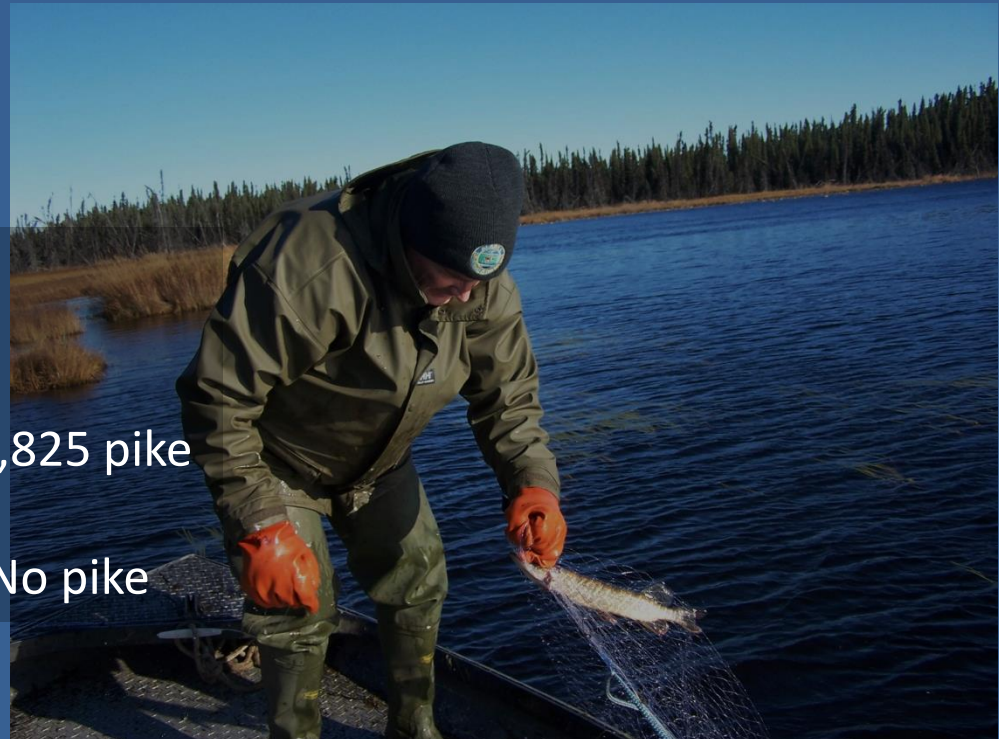
Post treatment detections: **1.7%** (N= 179)

Post-TX detections (N=3) likely from non-living sources

Gillnet Catch

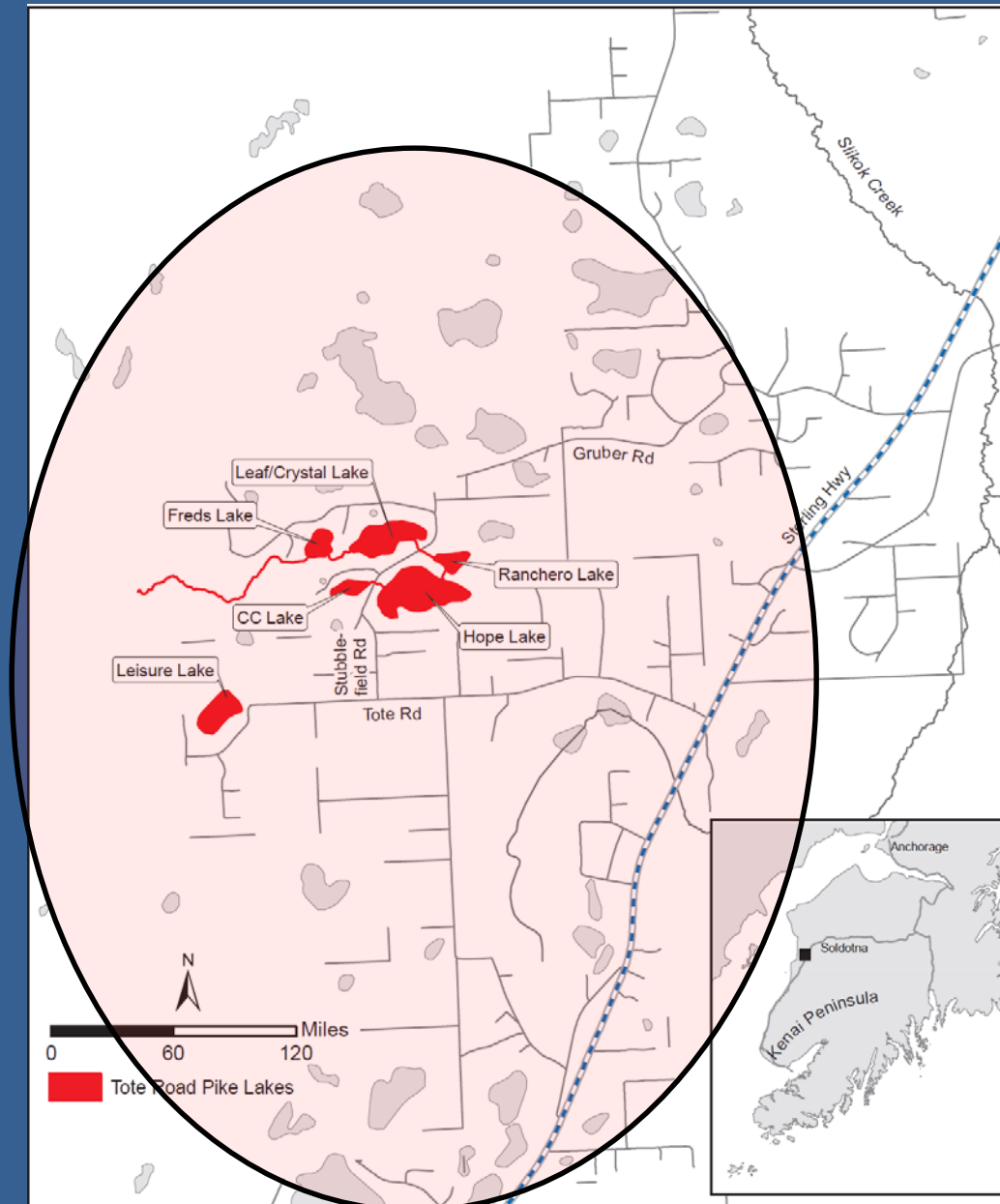
Pre-treatment (78,336 adj. net hours): 1,825 pike

Post treatment (23,472 adj. net hours): No pike



What's next?

Tote Road Pike Lakes



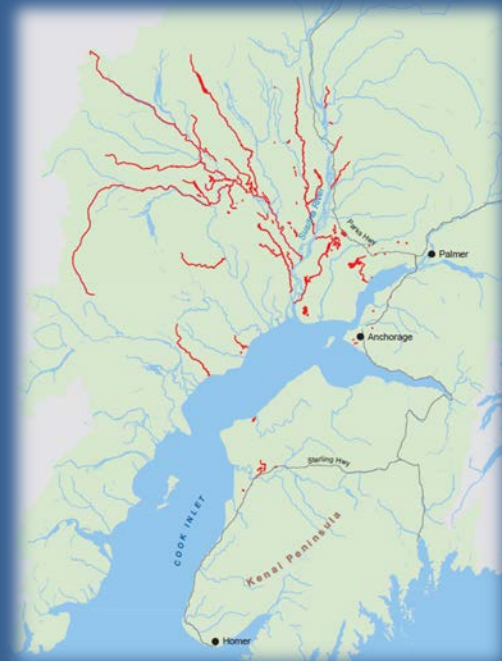
Removal in
2018?

Concerns:

Removing pike from the entire Susitna drainage is beyond our ability – right now.

Pike are pioneering south along the west side of Cook Inlet

Intentional sabotage of control programs



This presentation is over but efforts against invasive pike aren't!



Photo courtesy Steve McCurdy (ADFG) Innoko River, AK 1989.

Special thanks to these supporting partners!

- Kenai Peninsula Fish Habitat Partnership
- Alaska Sustainable Salmon Fund (AKSSF)
- USFWS (Kenai Field Office and Conservation Genetics Lab (Anc.))
- USGS Bozeman, MT
- Kenai Watershed Forum
- Cook Inlet Aquaculture
- Kenai National Wildlife Refuge
- Kenai Watershed Forum

