




# Elodea Eradication in Remote, Dynamic Systems



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# Overview



- ▶ Elodea infestations in the Mat-Su Basin
- ▶ Remote and dynamic Systems
- ▶ History of eradication efforts
- ▶ Where we stand
- ▶ How we plan to move forward



Alexander Lake: 61.746°N 150.896°W  
Sucker Lake: 61.655° N 150.896°W







# Alexander Lake System

- ▶ Hosts 5 species of Pacific salmon
- ▶ Rearing habitat for Chinook, coho, and sockeye
- ▶ Elodea discovered in August 2014
  - ▶ 10 acres initially
- ▶ Spread to 500 acres by August 2016
- ▶ Dynamic System
  - ▶ 4 inlets
  - ▶ 1 outlet



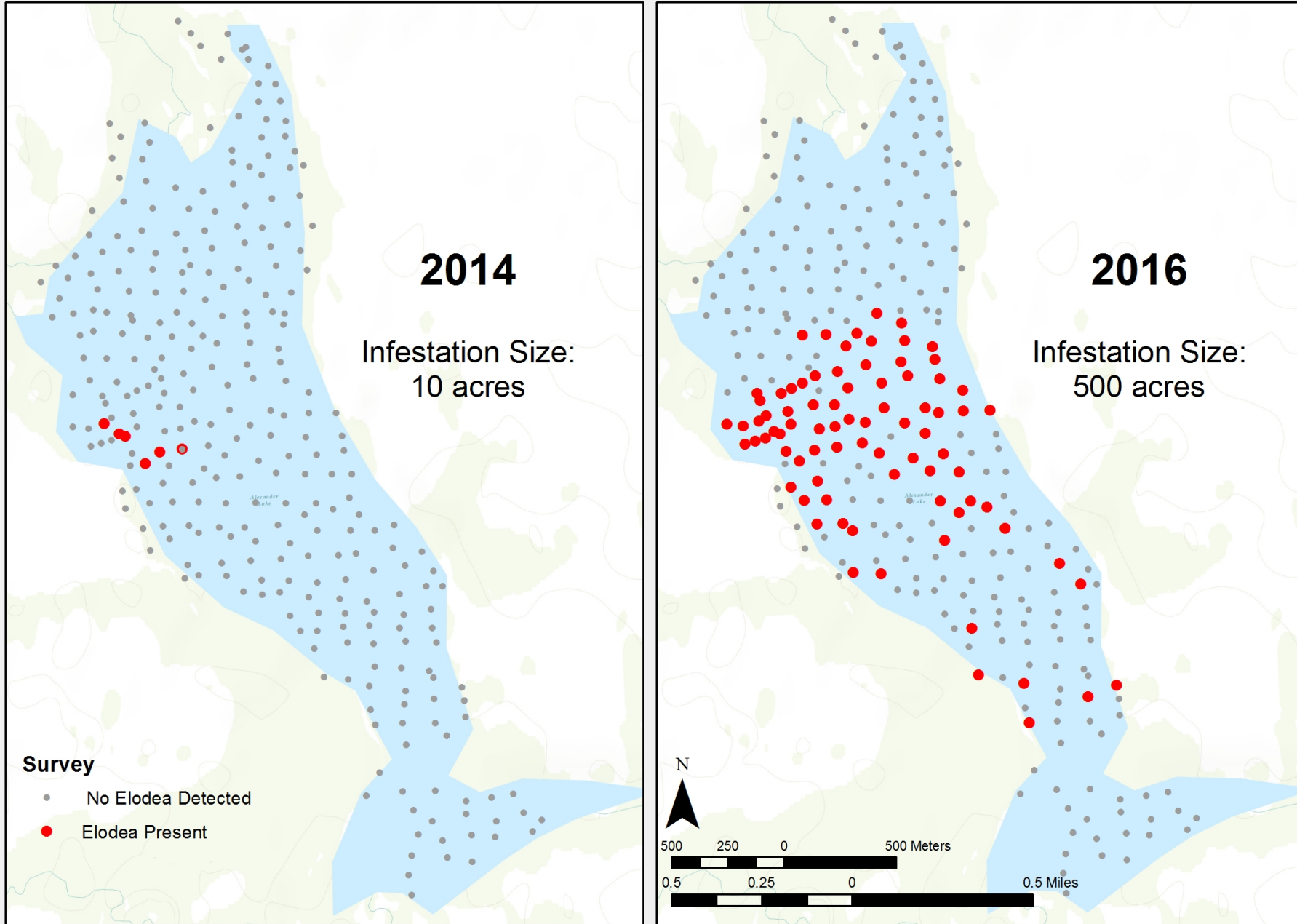


# Alexander Lake Herbicide Treatment Plan

- ▶ Fluridone – SonarOne
  - ▶ Proven effective in Alaska
  - ▶ Fluridone concentration target ~10 ppb
  - ▶ Elodea effected at low concentrations
- ▶ NEPA completed and all permits acquired - August 2016
- ▶ 42 acres to be treated
  - ▶ As a buffer to the 10 acre infestation
- ▶ Elodea found to be expanding exponentially
  - ▶ 500 acres – August 2016

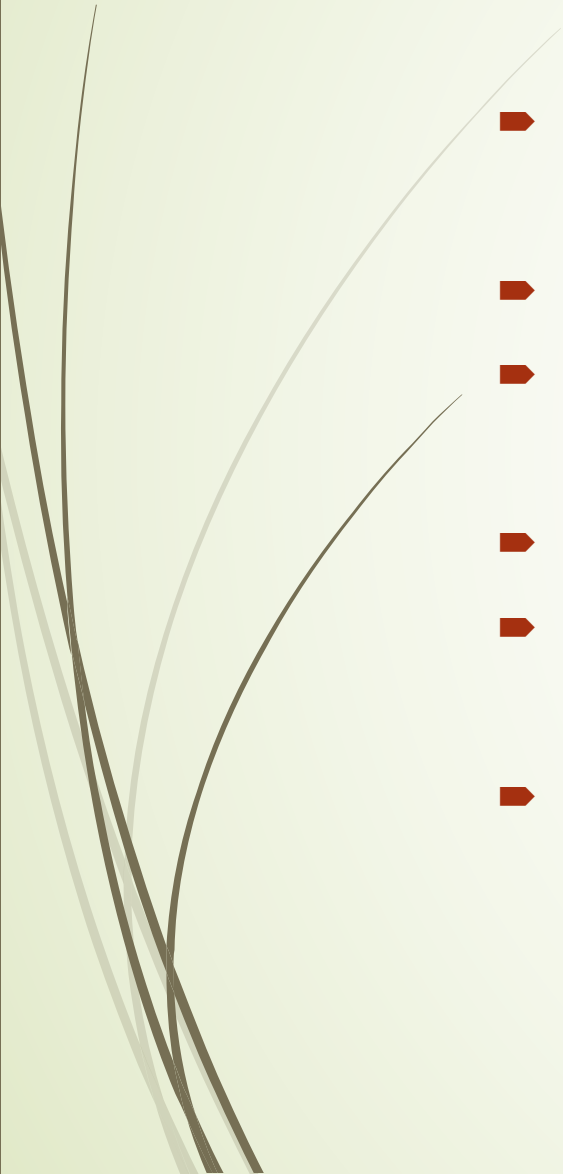


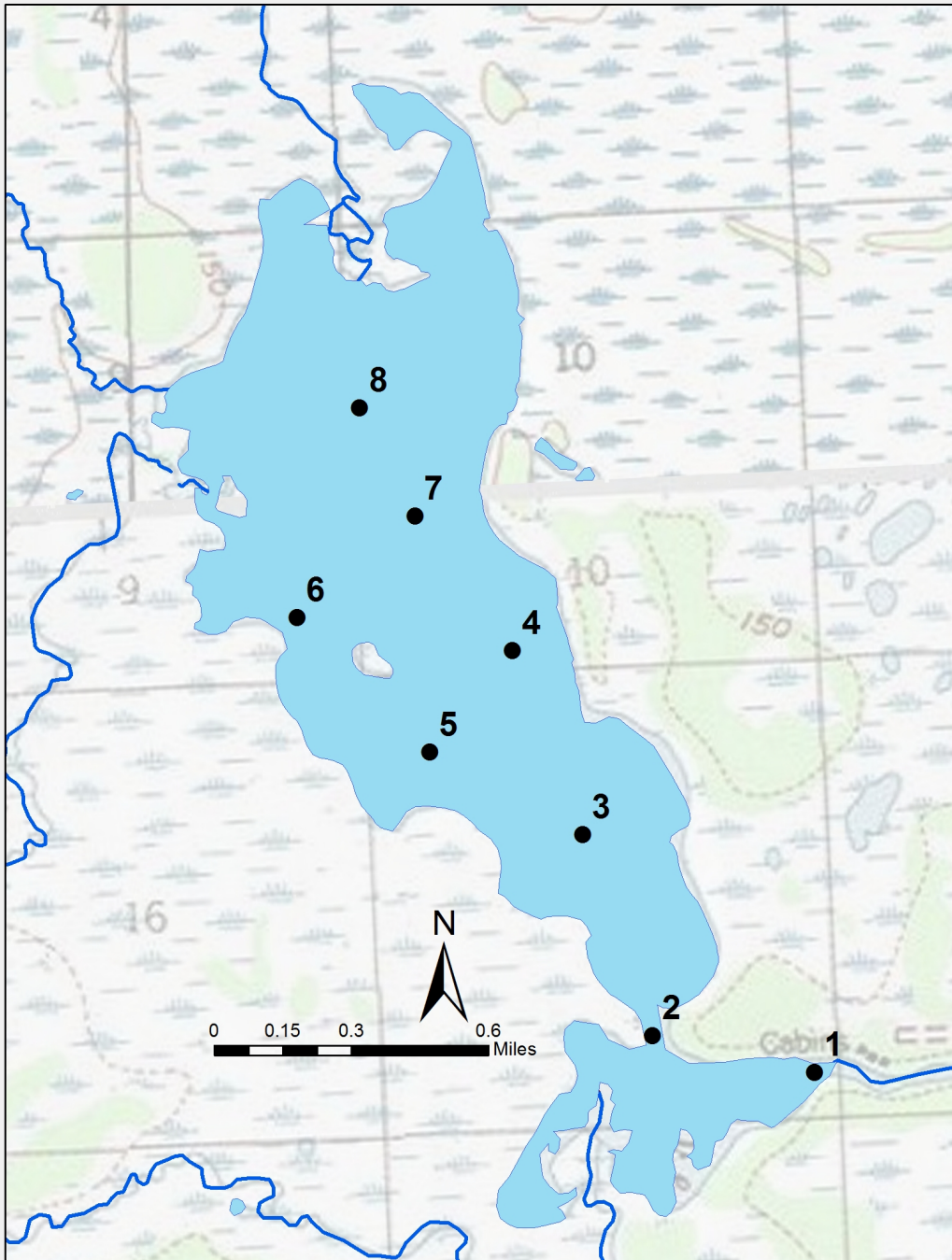
# Alexander Lake Elodea





# Herbicide Treatments 1 and 2

- ▶ In coordination with ADF&G
  - ▶ Treatment 1: 42 acres
  - ▶ August 24, 2016 -> 924 lbs = 46.2 pails
  - ▶ Treatment 2: 500 acres
  - ▶ August 28-29, 2016 -> 2400 lbs = 120 pails
  - ▶ Water Samples taken March 26, 2017
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SePRO Research  
& Technology Campus



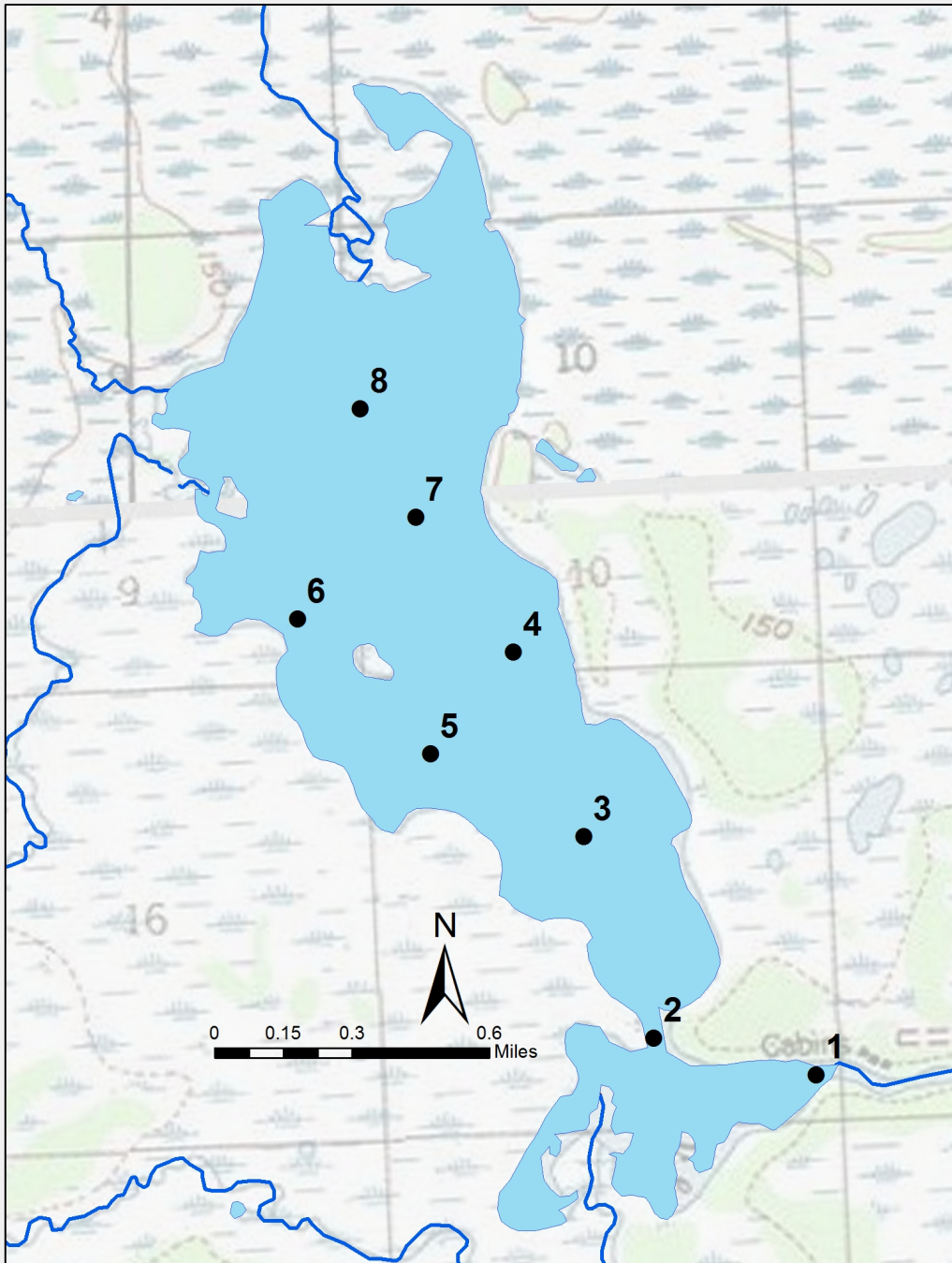
Sample Location	Test	Method	Results	Sample Date
FT8	Sonar/Fluridone (ug/L)	FAST 10	1.6	03/26/2017
FT7	Sonar/Fluridone (ug/L)	FAST 10	<1	03/26/2017
FT6	Sonar/Fluridone (ug/L)	FAST 10	2.4	03/26/2017
FT5	Sonar/Fluridone (ug/L)	FAST 10	2.3	03/26/2017
FT4	Sonar/Fluridone (ug/L)	FAST 10	<1	03/26/2017
FT3	Sonar/Fluridone (ug/L)	FAST 10	<1	03/26/2017
FT2	Sonar/Fluridone (ug/L)	FAST 10	<1	03/26/2017
FT1	Sonar/Fluridone (ug/L)	FAST 10	<1	03/26/2017



# Herbicide Treatment 3

- ▶ In coordination with ADF&G
  - ▶ Treatment 3: 500 acres
  - ▶ May 18, 2017 -> 2400 lbs = 120 pails
  - ▶ Water Samples taken September 14, 2017
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Sample Location	Test	Method	Results	Sample Date
FT1	Sonar/Fluridone (ug/L)	FAST 10	1.9	09/14/2017
FT2	Sonar/Fluridone (ug/L)	FAST 10	<1	09/14/2017
FT3	Sonar/Fluridone (ug/L)	FAST 10	<1	09/14/2017
FT4	Sonar/Fluridone (ug/L)	FAST 10	<1	09/14/2017
FT5	Sonar/Fluridone (ug/L)	FAST 10	<1	09/14/2017
FT6	Sonar/Fluridone (ug/L)	FAST 10	<1	09/14/2017
FT7	Sonar/Fluridone (ug/L)	FAST 10	<1	09/14/2017
FT8	Sonar/Fluridone (ug/L)	FAST 10	<1	09/14/2017







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Sucker Lake:  $61.655^{\circ}\text{N}$   $150.896^{\circ}\text{W}$

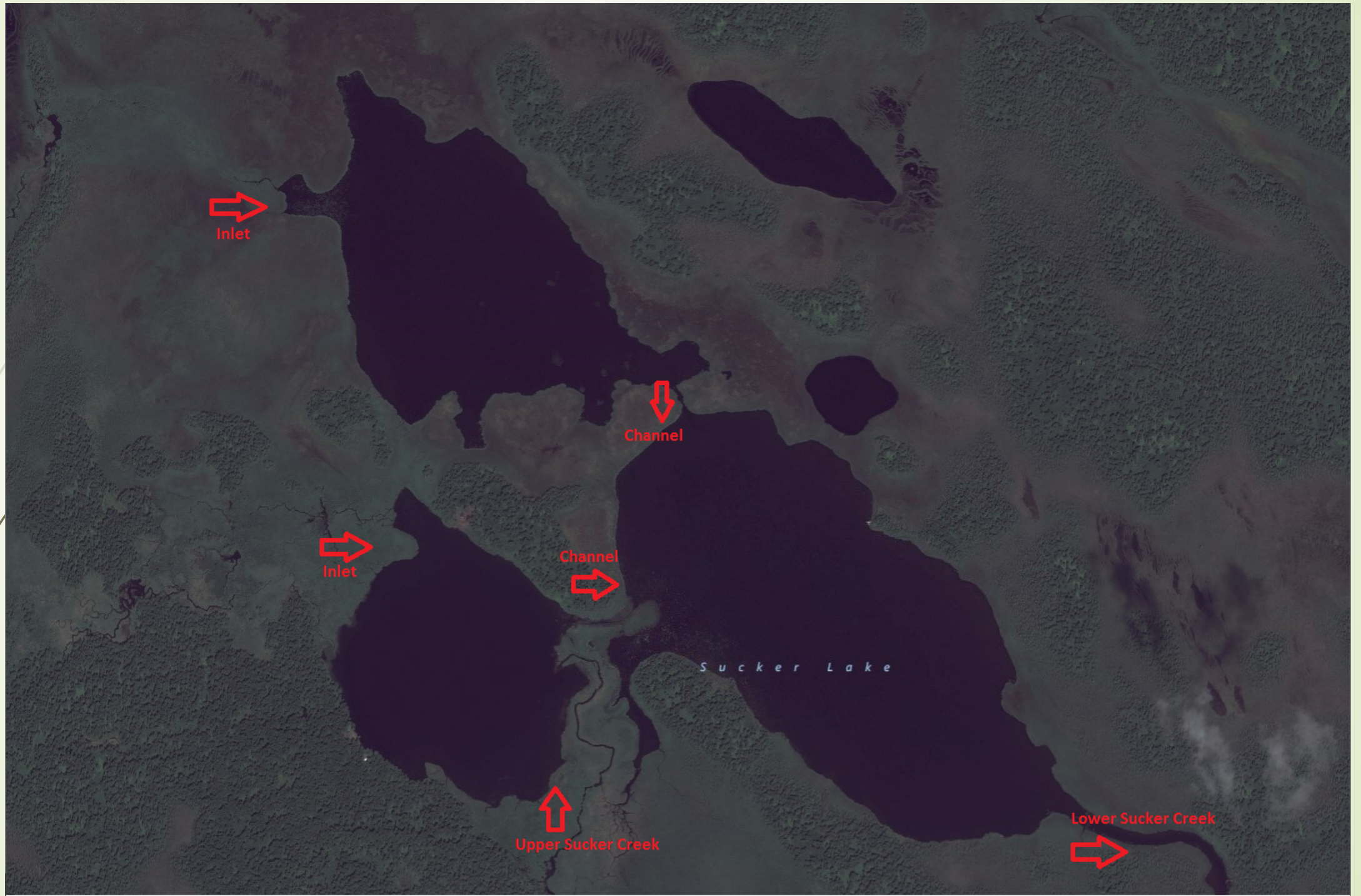






# Sucker Lake System

- ▶ Hosts 5 species of Pacific salmon
  - ▶ Rearing habitat for Chinook, coho, and sockeye
  - ▶ Elodea infestation reported in Spring 2017 by ADF&G
  - ▶ Dynamic system
    - ▶ 3 Lakes connected by channels
    - ▶ Three inlets
    - ▶ One outlet
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Inlet

Channel

Inlet

Channel


Upper Sucker Creek

Lower Sucker Creek

Sucker Lake



# Sucker Lake Elodea Survey

- ▶ October 16, 2017
  - ▶ Perimeter Survey
    - ▶ All three lakes
  - ▶ Elodea found throughout all three lakes
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# Where do we go from here?

- ▶ Previous herbicide treatments ineffective
  - ▶ Calculated and strategic approach
  - ▶ Smaller doses at higher frequencies
  - ▶ Alternative methods of application
  - ▶ Close monitoring and sampling
  - ▶ Additional herbicide products
    - ▶ Sonar genesis
    - ▶ Diquat
  - ▶ Outside Input – Collaboration – Partnerships
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