

Flowering Rush Washington Update

Jenifer Parsons

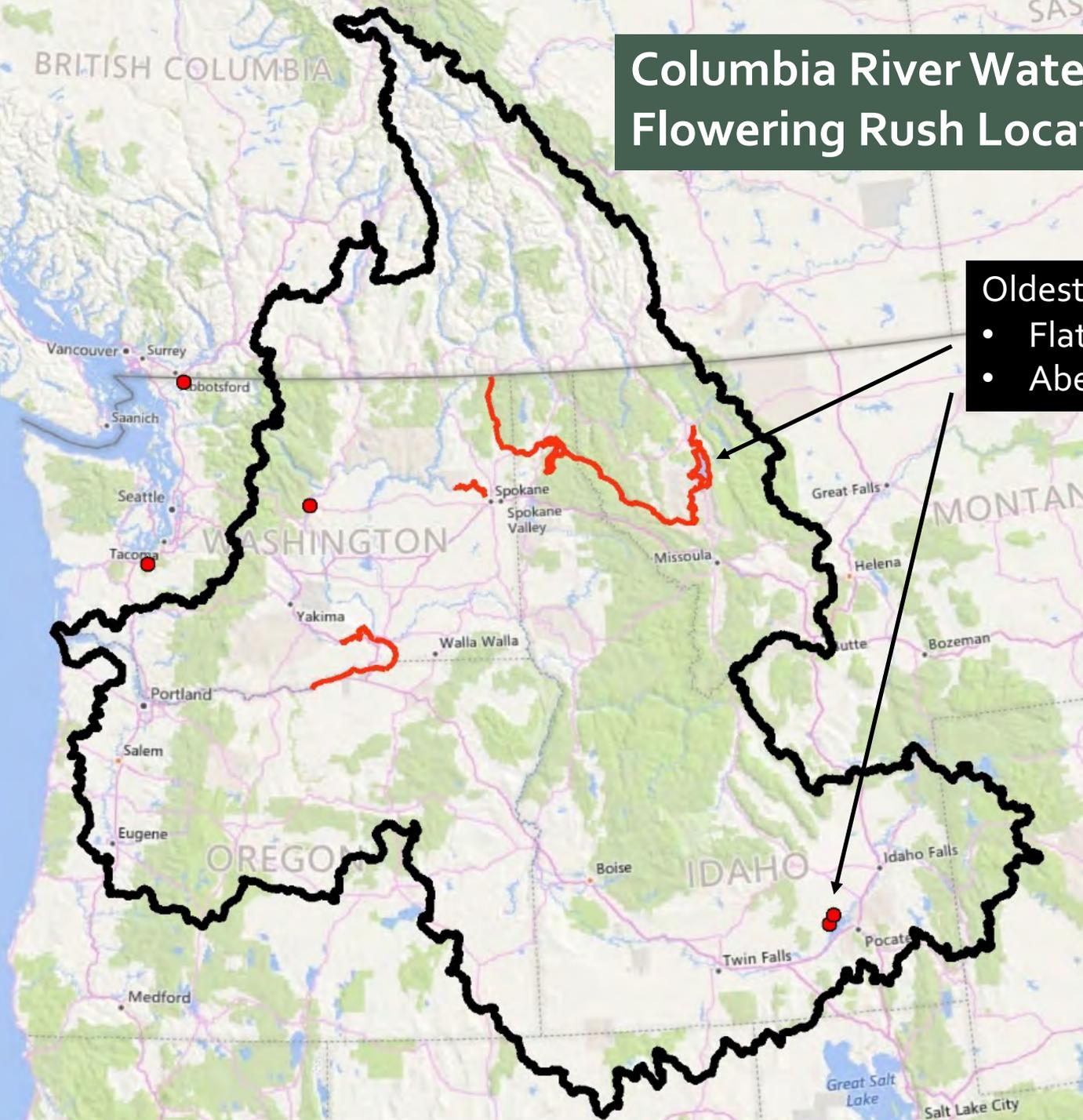


Columbia Basin Team Meeting, Dec 2016

Columbia River Watershed Flowering Rush Locations

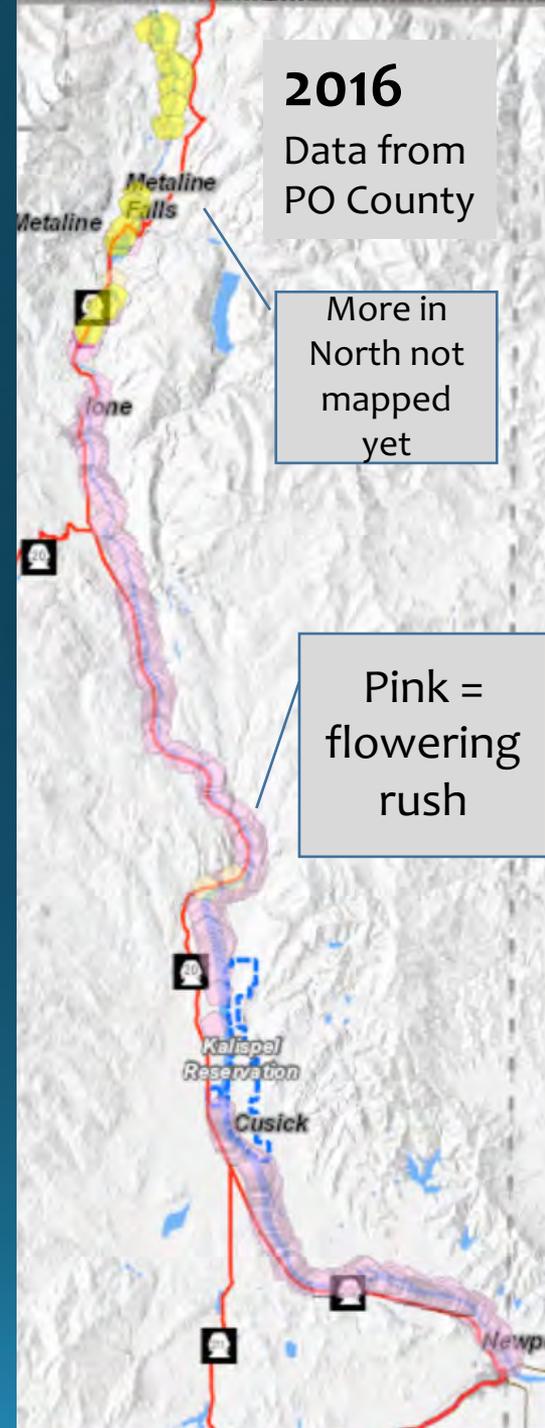
Oldest, well established in

- Flathead Lake
- Aberdeen area canals



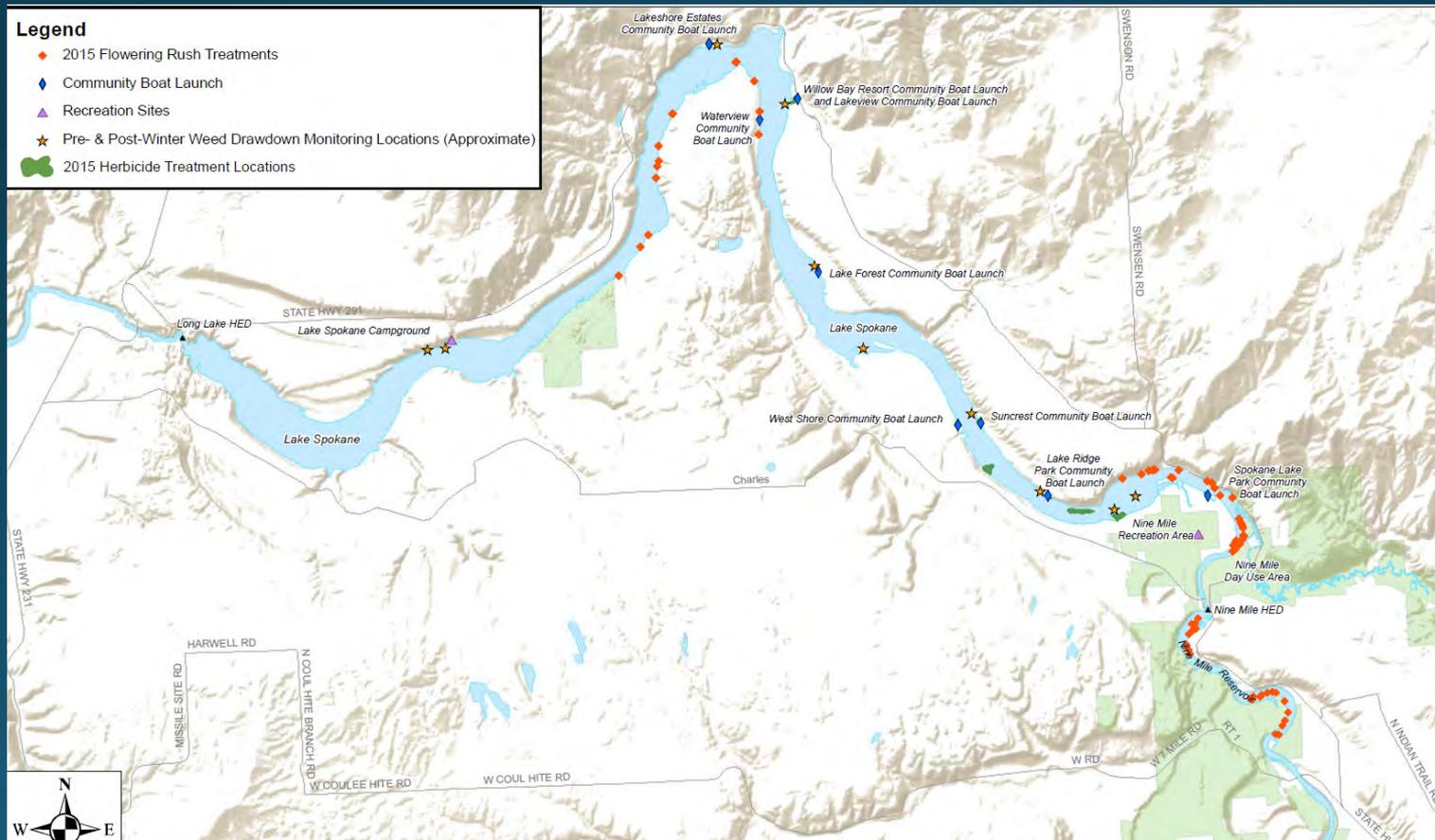
2016 Survey and Control Pend Oreille River

- Sharon Sorby, County weed coordinator
- Surveyed the river's length
- Hand pulled about 4.5 tons from 12 miles
- Sprayed all emergent growth



2016 Survey and Control Spokane River

- Avista supporting control in parts of Spokane & 9-Mile
- Down-river populations not being controlled



2016 Survey and Control Yakima River

- Sprayed emergent growth, glyphosate 1.5% tank mix, surfactant and dye
- ~25 River miles in 4+ days in July and Sep



2016 Survey and Control Yakima River



Sep 2015



Sep 2016

2016 Survey and Control Columbia River – Tricities area

- Corps district and Oregon Dept of Ag surveyed much of Lake Wallula (up-river of McNary Dam)
- Found many new sites, some large (5 acre estimate)
- Covered 6 patches at the down-river end, Oregon side



Survey Results 2016

Flowering Rush Surveys 2016
Lake Wallula



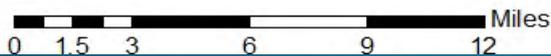
Legend

FloweringRushLocations

year_sited

- 2013
- 2014T
- 2015
- 2015T
- 2016

Survey by Corps District and Oregon Dept Ag



2016 Survey and Control Columbia River

Orondo (near Wenatchee)

- Plants found in same area
- Diver hand pulling, covered
- Surveyed a few miles of river in the area, no plants
- Applying for grant funding for additional survey





Flowering rush growing out from under barrier

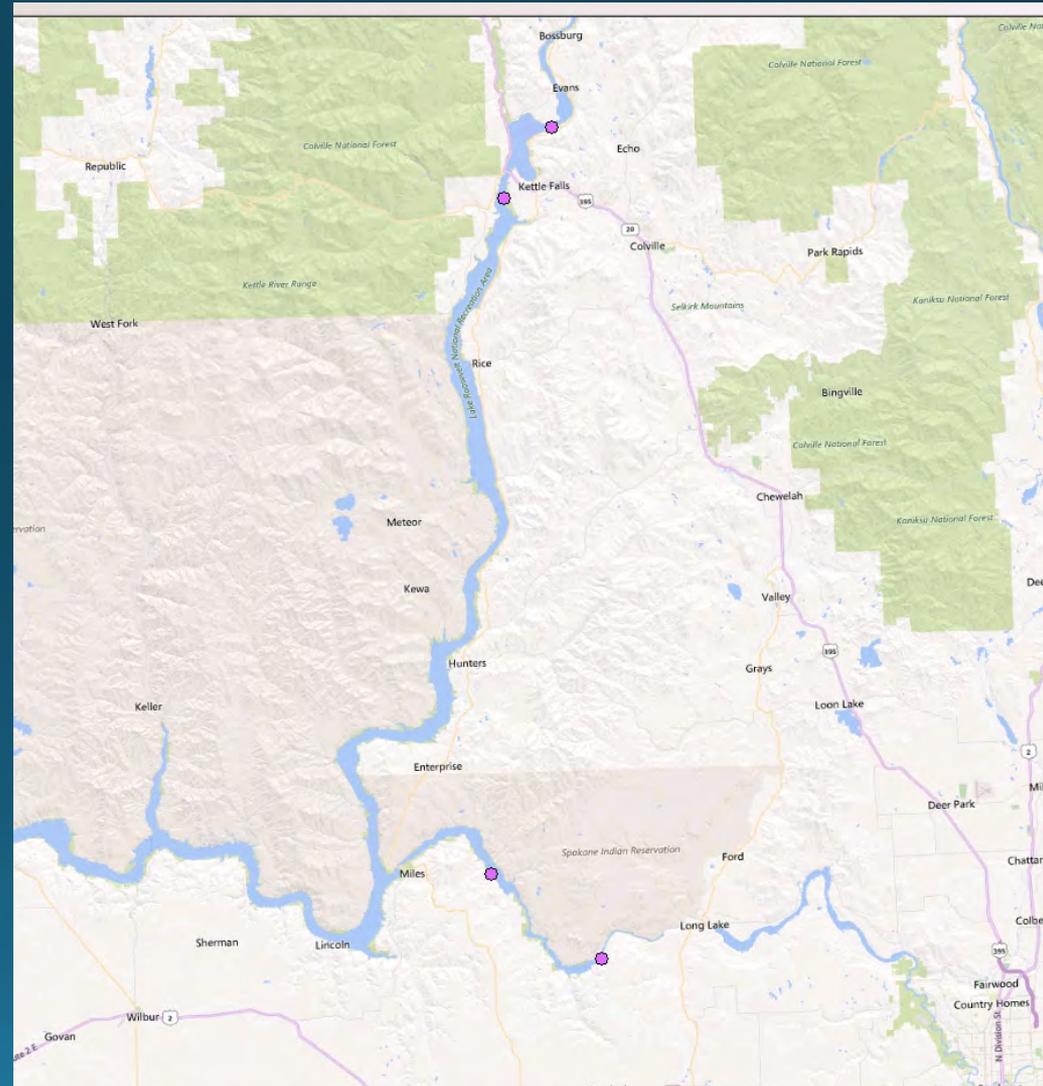


Sorby

Pend Oreille R

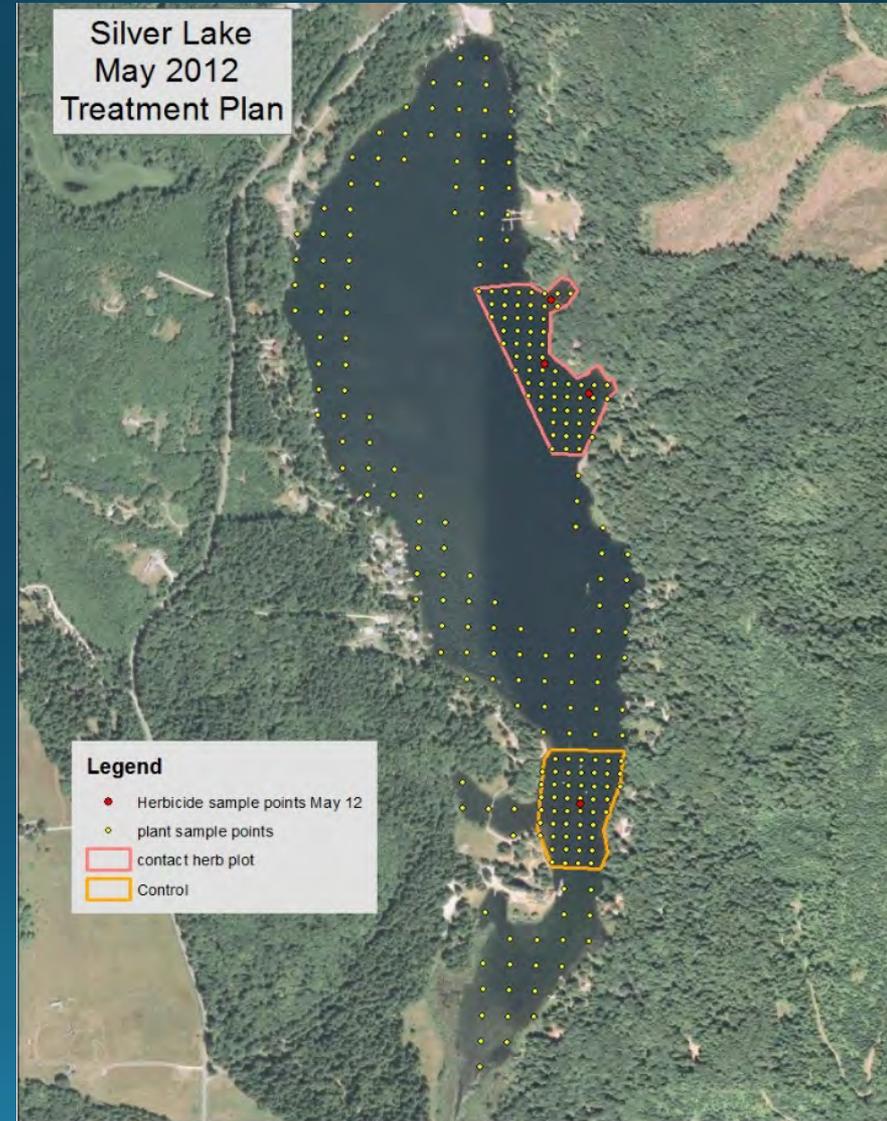
2016 Survey – Lk Roosevelt

- Surveyed between pink dots in Spokane Arm and Kettle Falls area.
- One day each
- No flowering rush found



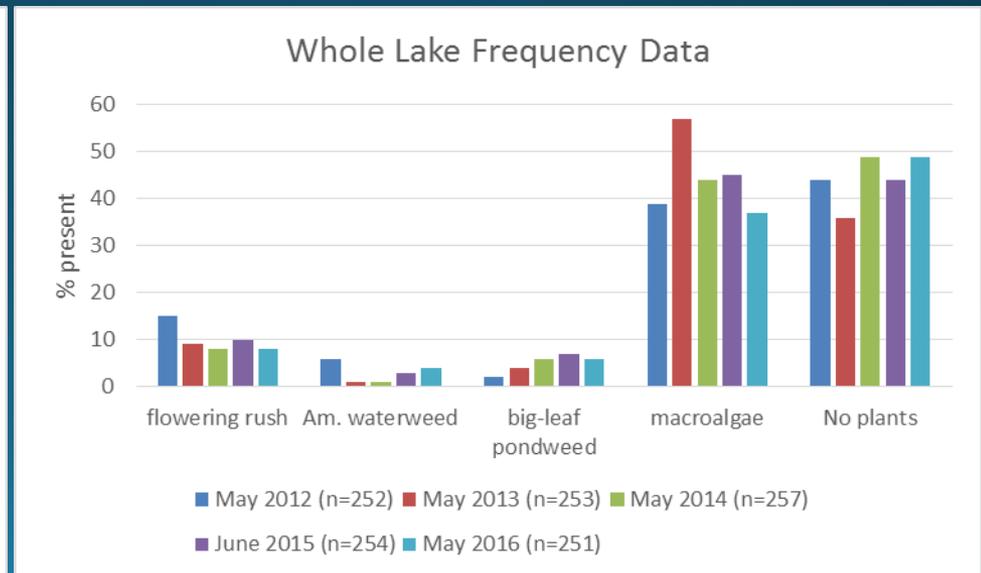
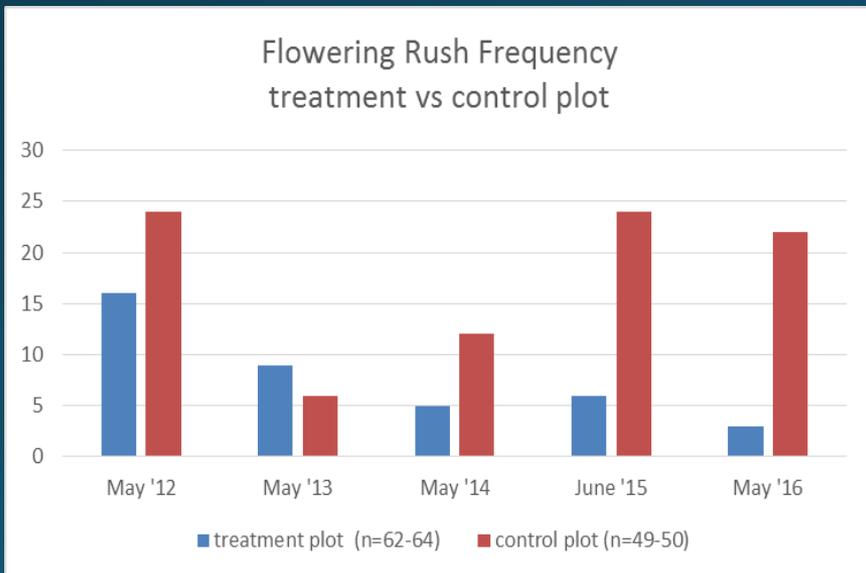
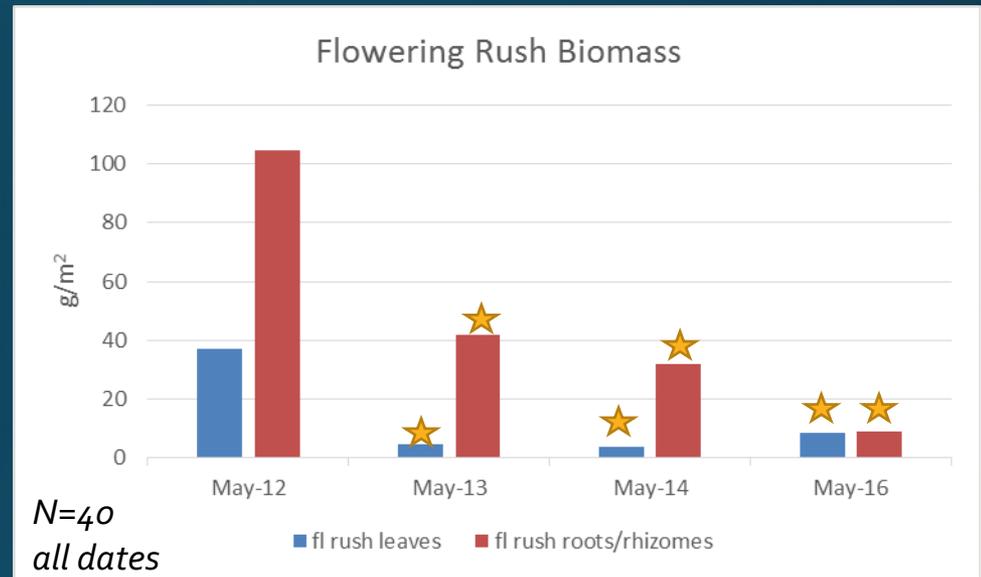
Silver Lake Diquat Trial Submersed Plants

- Treated same 10 acre plot
 - 2 x 2012, 2013
 - 1 x 2014-2016
- Presence/absence data at all points, biomass in plots

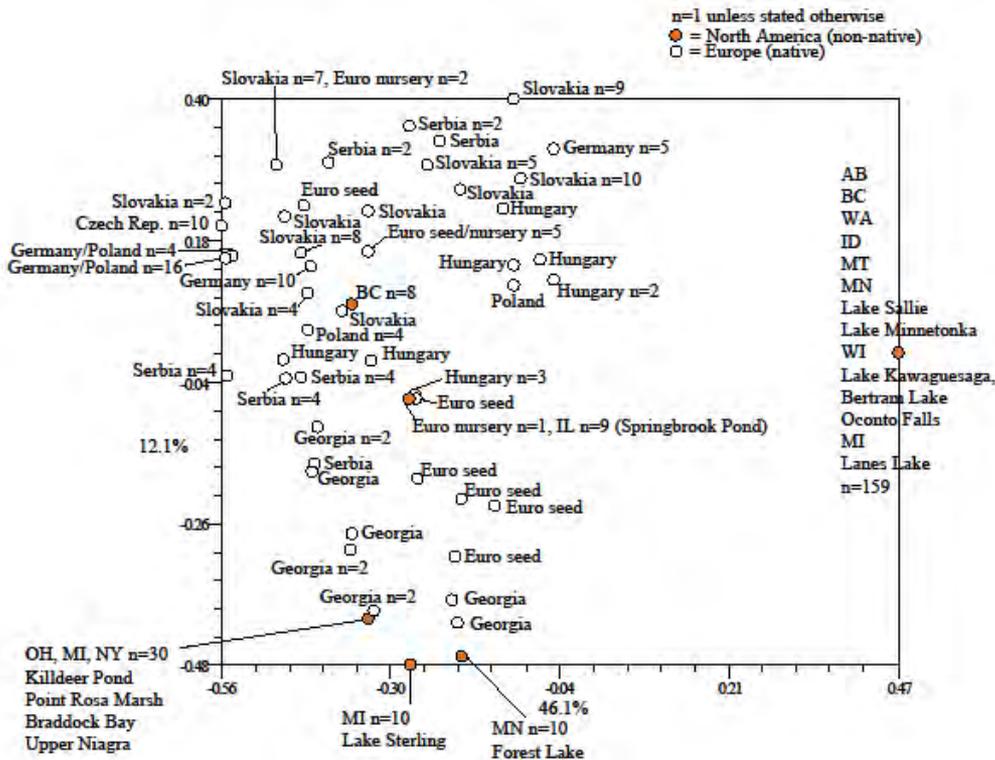


Silver Lk Diquat Trial con't

- Results: lake-wide decline in flowering rush occurrence and biomass
- Native plants - some species have declined, others have increased



Genetic Work

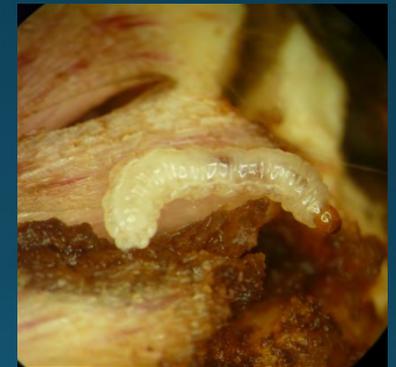
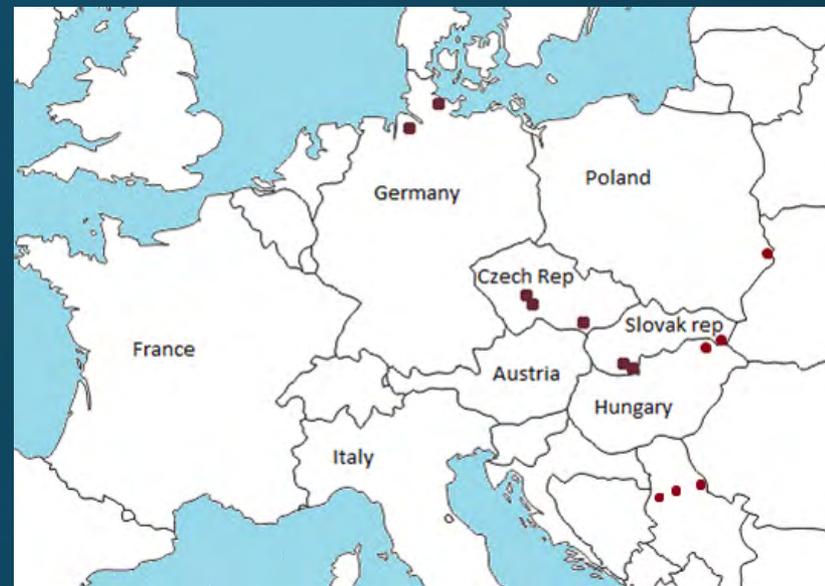


- John Gaskin – USDA-ARS
- All plants from Western US & Canada are genetically identical except for Bouchie Lk, BC
- Samples from Europe are genetically diverse, none (so far) match ours
- He is working on ploidy analysis this year

Biocontrol Research

- Consortium formed in 2012
- Multiple funding partners
- Contract with CABI Switzerland
- Most promising weevil so far *Bagous nodulosus*
 - Larvae mine rhizomes
 - Specific to flowering rush in all tests so far
- Additional research on another weevil, fly and pathogen

US ACE scientists have been searching for any native herbivores/pathogens



Photos from CABI

