

Willamette and Columbia River Aquatic Plant Surveys

Rich Miller and Dr. Mark Sytsma

Center for Lakes and Reservoirs, Portland State University

CRB Meeting • December 6-7, 2016

Funding provided by:



Oregon
Department
of Agriculture



Washington
State Department of
Agriculture

Collaborators:

Willamette Aquatic Invasives Network

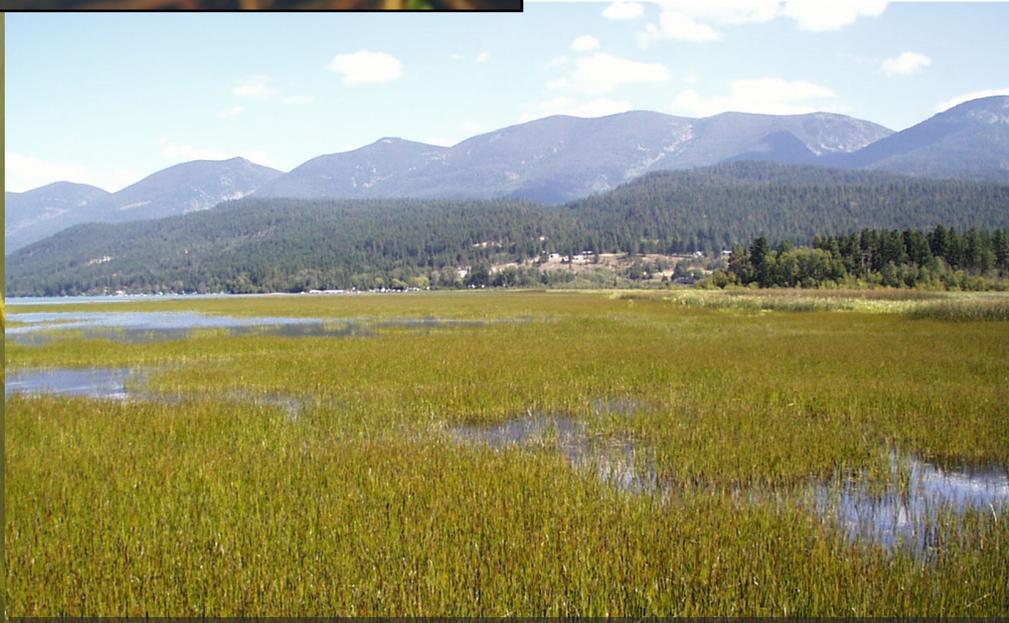
Willamette Riverkeeper



Primarily dispersed by rhizomes

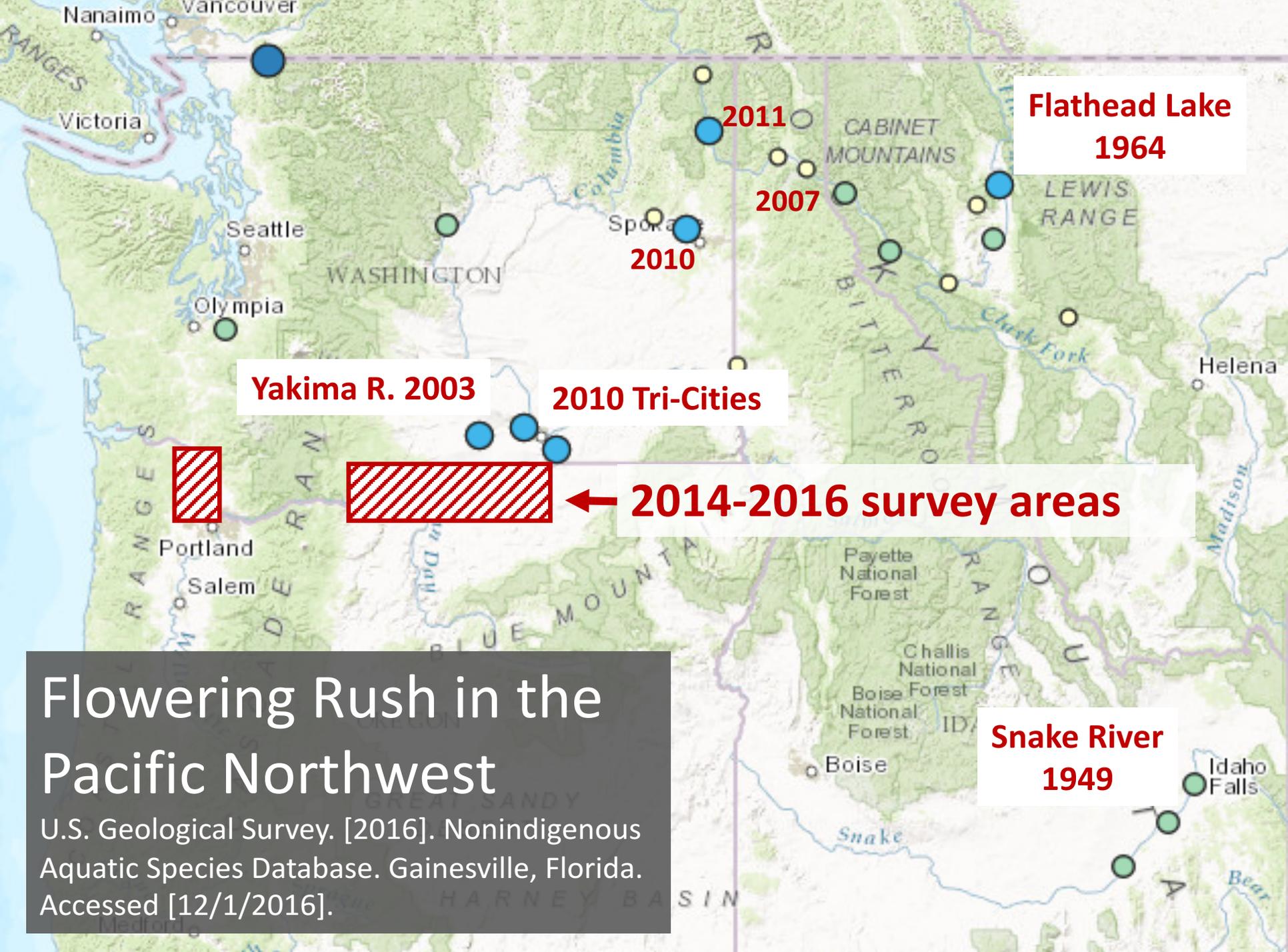


Submersed phenotype to ~ 7m depth



East Bay, Flathead Lake, MT

Well established flowering rush (*Butomus umbellatus*) infestation
Photo by Alvin Mitchell, Salish Kootenay College



**Flathead Lake
1964**

**2011
2007**

2010

Yakima R. 2003

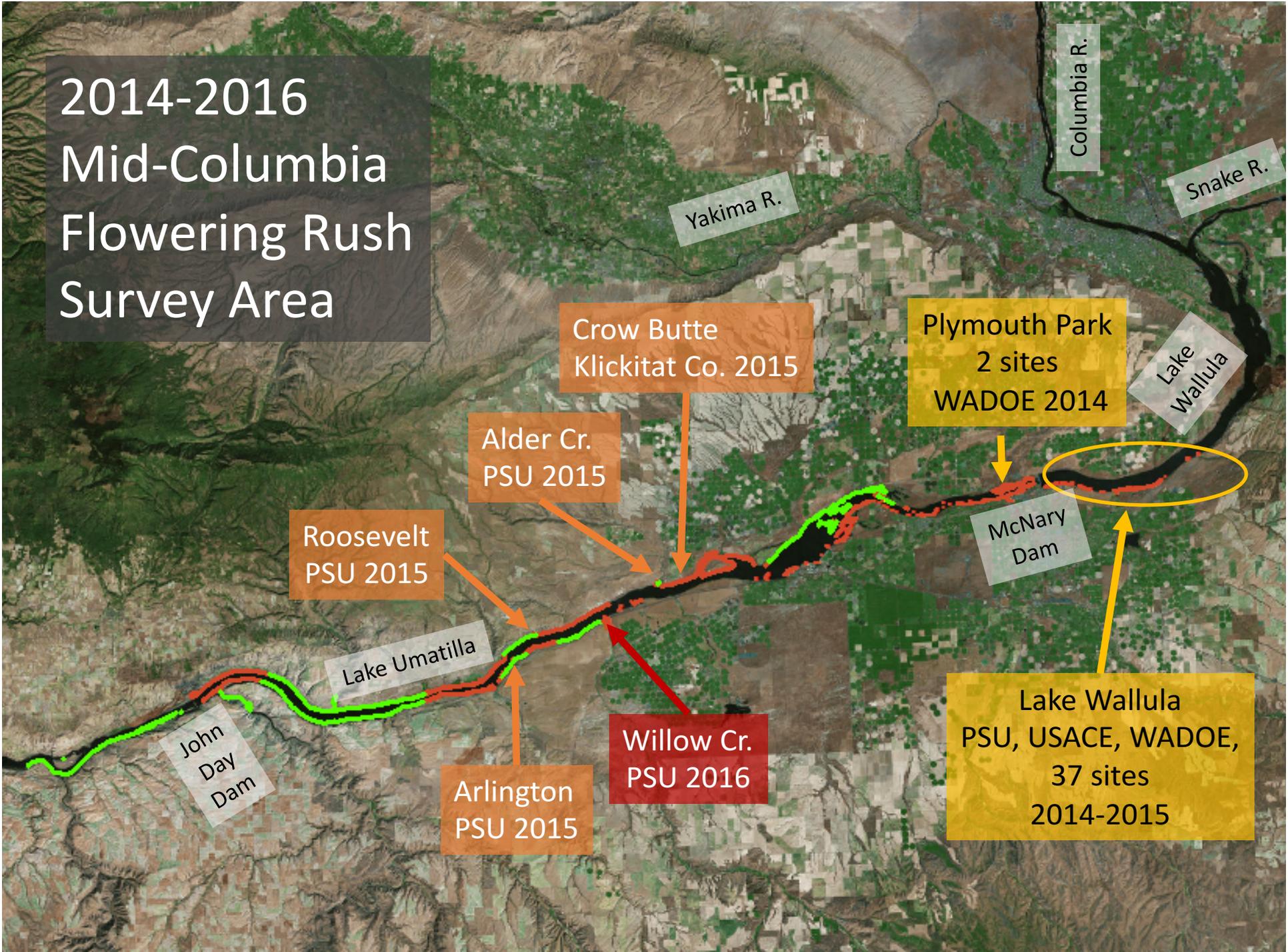
2010 Tri-Cities

← 2014-2016 survey areas

**Snake River
1949**

**Flowering Rush in the
Pacific Northwest**
U.S. Geological Survey. [2016]. Nonindigenous
Aquatic Species Database. Gainesville, Florida.
Accessed [12/1/2016].

2014-2016 Mid-Columbia Flowering Rush Survey Area



Typical infestation in Lake Umatilla

2015



2016





Hand removal of shoreline plant from Lake Umatilla near Plymouth Park September 2016
photo by Mark Porter, ODA



Hand removal of shallow water plants
from Lake Umatilla near Crow Butte
September 2016 photo by Mark Porter, ODA

2016 Lower Columbia Flowering Rush Survey Area - *No FR found*

Longview

Vancouver

Portland



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

 *Lythrum salicaria*
 *Iris pseudacorus*

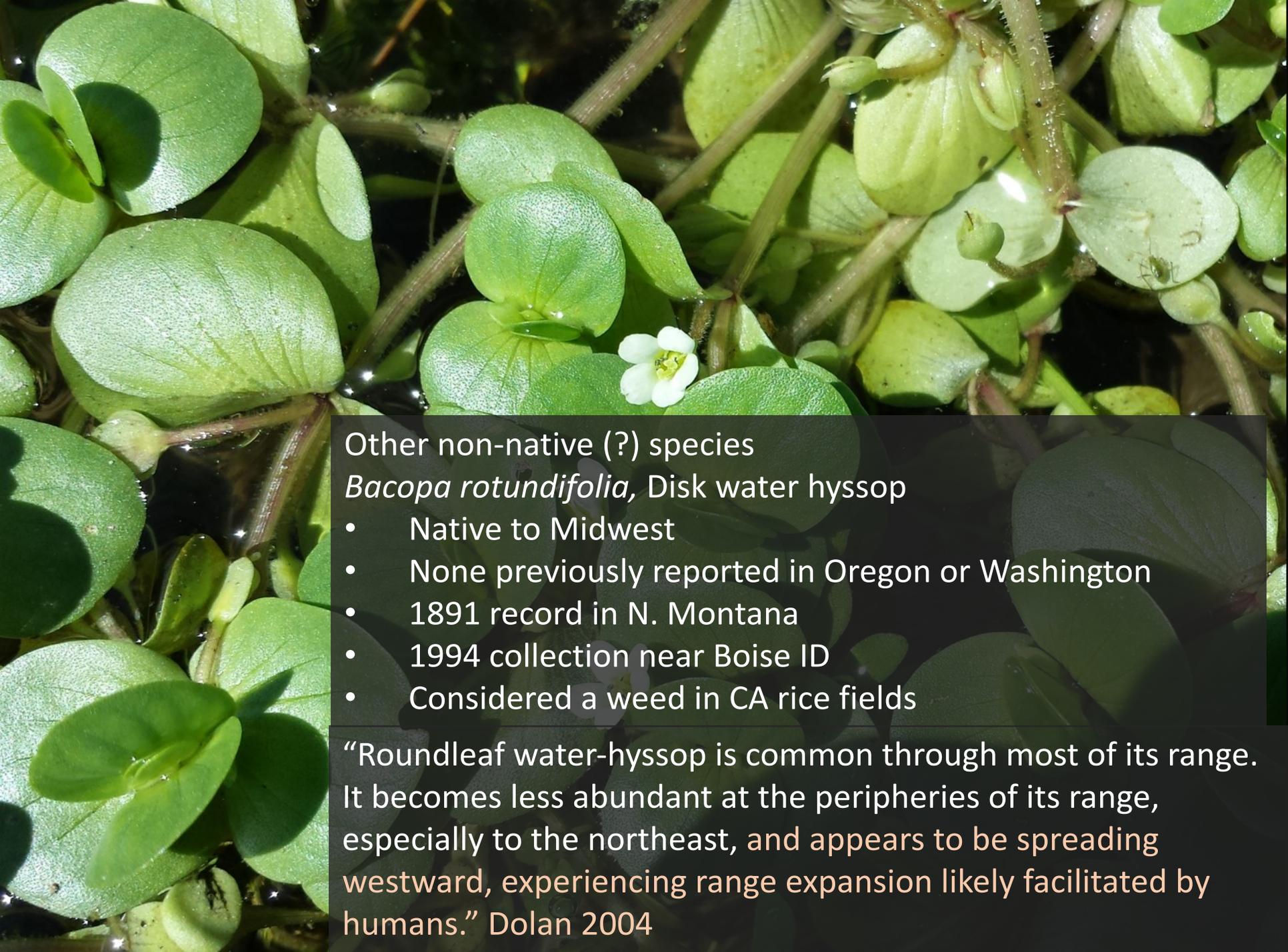


Other Noxious Weeds detected

Species name	Common name	Growth Form	Noxious Weed Classification	Distribution Notes
<i>Butomus umbellatus</i>	flowering rush	Emergent	A – targeted for prevention and control	Limited to small populations in Lake Umatilla and Lake Wallula
<i>Amorpha fruticosa</i>	false indigo bush	Shoreline	B	Widespread throughout
<i>Lythrum salicaria</i>	purple loosestrife	Shoreline	B - targeted for biocontrol	Widespread but limited in Mid-Columbia
<i>Myriophyllum spicatum</i> and/or hybrids with <i>M. sibiricum</i>	Eurasian watermilfoil and/or hybrids with northern watermilfoil	Submerged	B	Widespread. Genetic ID required to determine hybrids
<i>Phragmites australis</i> ssp. <i>australis</i> and/or hybrids with <i>P. australis</i> ssp. <i>americanus</i>	common reed	Shoreline	B	Widespread
<i>Iris pseudacorus</i>	yellow flag iris	Shoreline	B	Widespread
<i>Phalaris arundinacea</i>	reed canarygrass	Shoreline	C (WA listed)	More abundant to west
<i>Potamogeton crispus</i>	curly leaf pondweed	Submerged	C (WA listed)	Widespread
<i>Typha angustifolia</i>	narrow-leaf cattail	Shoreline	C (WA listed)	Common in Mid-Columbia
<i>Typha glauca</i> (<i>angustifolia</i> x <i>latifolia</i>)	hybrid cattail	Shoreline	C (WA listed)	Common in Mid-Columbia



Bacopa rotundifolia



Other non-native (?) species

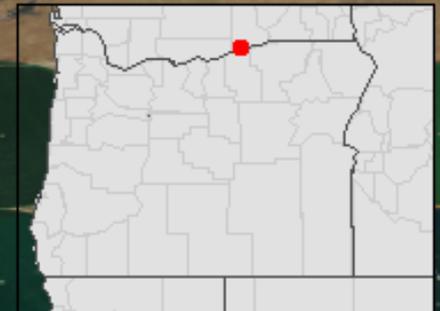
Bacopa rotundifolia, Disk water hyssop

- Native to Midwest
- None previously reported in Oregon or Washington
- 1891 record in N. Montana
- 1994 collection near Boise ID
- Considered a weed in CA rice fields

“Roundleaf water-hyssop is common through most of its range. It becomes less abundant at the peripheries of its range, especially to the northeast, and appears to be spreading westward, experiencing range expansion likely facilitated by humans.” Dolan 2004

Bacopa rotundifolia

~1.5 acres of *B. rotundiflora* scattered to dense in Umatilla National Wildlife Refuge

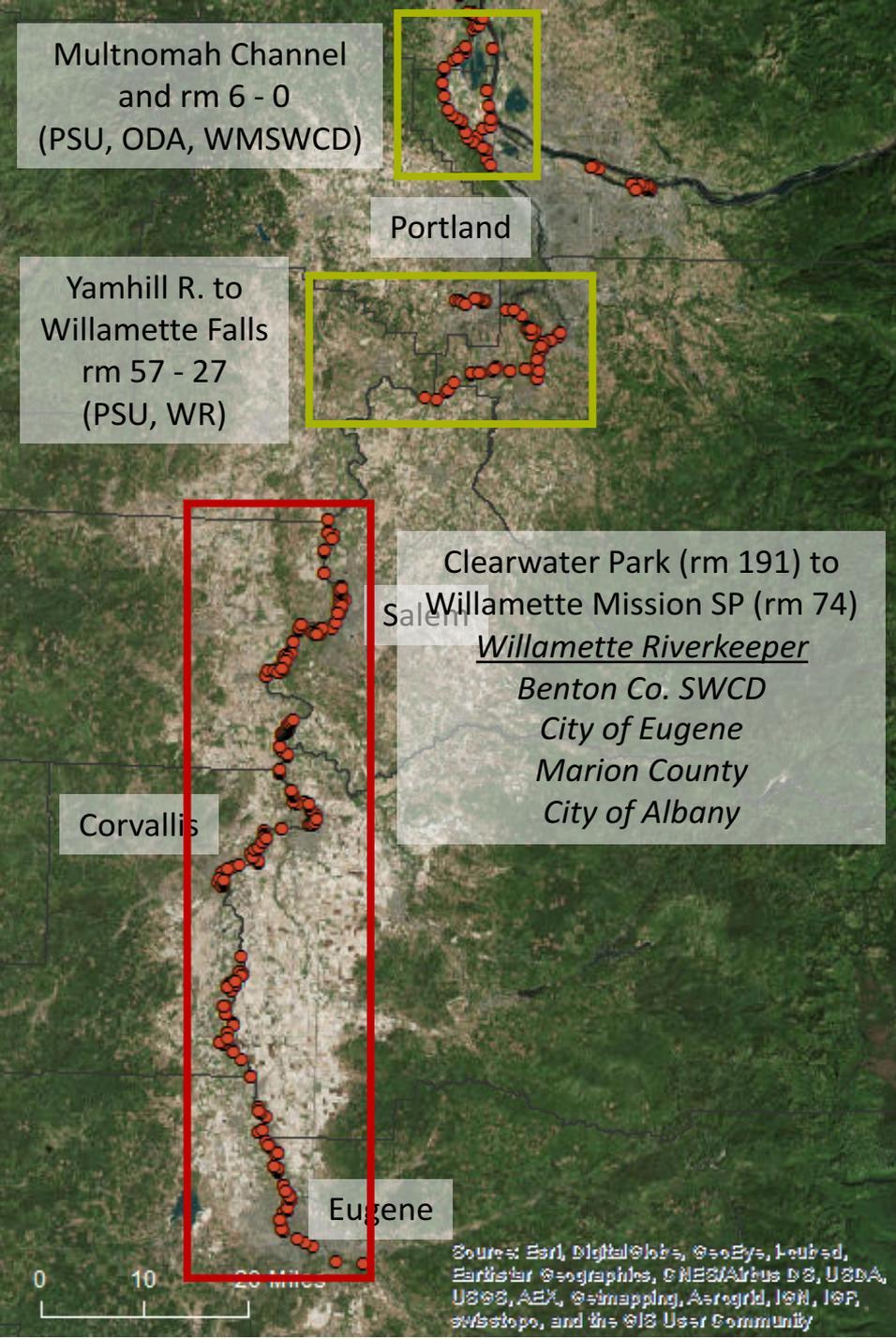




Habitat for *Limnosella aquatica* (water mudwort)
rare sp. in Washington

Willamette Surveys

- 2015-2016
- Survey data feeds in to prioritization of asset based management
Willamette Aquatic Invasives Network (WAIN)





Pistia stratiodes and Eichhornia crassipes collected from lower Tualatin River in 2016



Michele Delephine (WMSWCD) and Glenn Miller (ODA) treating *Phragmites australis* ssp. *australis* in the Multnomah Channel September, 2016



East Bay, Flathead Lake, MT

Well established flowering rush (*Butomus umbellatus*) infestation

Photo by Alvin Mitchell, Salish Kootenay College