

What do we do?

Wapato Revival is a group that seeks to bring together multiple stakeholders to protect the Willamette River Basin and all of its bounties.

Wapato Revival works with the Willamette Aquatic Invasive Network (WAIN) to collaboratively and strategically address the issue of aquatic invasive species to restore our freshwater habitats in the Willamette River Basin.





Land acknowledgement

We acknowledge with respect and gratitude that the land on which we live, work, and gather as a community is the traditional land of the many Indigenous Tribes of the Willamette Valley, past and present. We must recognize the mistreatment of Indigenous peoples that have occurred and the inequalities that continue in order to reconcile the injustices. We commit ourselves to continuing to understand and respect the land that we inhabit.



Photo: Volunteers hand pull Ludwigia in a paddle and pull event on Muddy Creek, a Willamette River tributary in Corvallis, OR. Photo Credit: Fred Joe (above) & Holly Crosson (below).

What are aquatic invasive species (AIS)?

Invasive species are defined as organisms that are non-native to an ecosystem and whose introduction causes, or is likely to cause, economic or environmental harm or harm to human health. Wapato Revival specifically focuses on invasive species that are plants, which depend on aquatic and riparian habitats.

Major Invaders in the Willamette Basin: Floating Mat Aquatic Invasives

Water Primrose (Ludwigia hexapetala & peploides)

Yellow Floating Heart (Nymphoides peltata)



Photo Credit: Willamette Riverkeeper

Water primrose, or *Ludwigia*, is a non-native, invasive, aquatic plant that is quickly spreading and causing problems throughout the Willamette Basin.

What does it look like? Ludwigia can be identified by its bright, yellow flowers and alternating "willow-like" leaves. This organism can quickly dominate a wetland, forming a dense monoculture that is harmful to wildlife and impedes recreational activity.



Photo Credit: Karel Jakubec (bottom) & Chris Gladis (above)

Yellow Floating Heart is another AIS that threatens the health of our wetlands. It is not as widespread in Northern Oregon, but if you suspect you have found it, call it in!

What does it look like?

Yellow Floating Hearts often have 2 to 5 bright yellow, fivepetaled, fringed flowers that are 2 - 4 cm in diameter. Stamens grow on stalks just above the water's surface. Leaves are yellowish-green and can be 3 - 12 cm across. They

are either circular or heartshaped, resembling lily pads.

Other Common AIS



How do floating mat AIS establish?

Floating mat AIS possess a few uncommon traits that give them a competitive advantage over many native aquatic plant species, and make them highly adaptable to a wide range of

environmental conditions. So, what makes them so successful?

- They're early establishers meaning they begin to grow earlier in the growing season than most native aquatic plants. This gives them access to sunlight and critical nutrients needed for growth before the native flora has a chance to begin growing.
 Their ability to spread
 - through **fragmentation**. Once a piece of the plant gets broken off, it can reroot and continue spreading.

Why Should We Care?

Floating Mat AIS can:

Form dense, monoculture mats on streambanks and over the water's surface in slow-moving, backwater areas

Photo Credit: Willamette Riverkeeper

Photo Credit: WA Dept of Ecology (top), UNICEF (bottom)

- Clog pipes and drains used for irrigation or stormwater runoff
- Hinder recreation activities like swimming, boating and kayaking
- Reduce woody, stream bank vegetation that's important for providing shade and nutrients to the Willamette River
- Accelerate sediment build-up in the streambed
- Alter water temperatures to be either too cold or too warm for important, native fish and invertebrates
- Reduce dissolved oxygen concentrations that fish like salmon need to survive
- Pollute waterways with an overabundance of nutrients like nitrogen and phosphorus
- Physically impede salmon stocks from reaching crucial spawning grounds



Beginning in 2012, there has been an ongoing effort to reduce the spread of these pesky, nonnative, floating mat plants in the Blue Heron Wetland in Northeast Portland. Through the hard work and collaboration of students, community members, and environmental contractors, the AIS were removed and replaced with native wetland plant species. This effort will provide critical habitat for the return of native wildlife like Great Blue Heron.

The Willamette River Basin is a treasured, natural resource we all rely on - for recreation, drinking water, aesthetic beauty, and support for native wildlife. It is important that we keep it clean and free of invasive species.

Projects like these are always ongoing and their success hinges on the continued efforts of DILIGENT RIVERKEEPERS LIKE **YOU**. So...

What Can YOU Do To Help?

- Report invasive species to the ODA at 1-866-invader (468-2337)
- DO NOT release aquarium plants/animals into the wild
- Purchase native and non-invasive plants
- Participate in the Clean, Drain, Dry your boat program
- Get involved in an invasive plant removal program
- Check out our website to find out more!

www.willamette-riverkeeper.org





Photo Credit: Alexander Staunch

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COLLABORATIVE WILLAMETTE RIVER'S

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Major Invaders in the Willamette Basin: **Floating Mat Aquatic Invasives**

How do they establish?

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- Their ability to spread through fragmentation. Once a piece of the plant gets broken off, it can re-root and continue spreading.





Photos: Parrot's Feather (left) © Clifton Ladd, Purple Loosestrife (left-center) © Andreas Rockstein, Yellow Flag Iris (right-center) © Nicolas Olejnik, Japanese Knotweed (right) © Stew Stryker

Water Primrose (Ludwigia hexapetala & peploides)

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Photo: N. peltata pads and flowers

(above) & N. peltata flower (below) Photo Credit: Chris Gladis (above) &

Karel Jakubec (below).



Water Primrose flower (above) and floating mat (below) Photo Credit: Willamette Riverkeeper

Yellow Floating Heart

(Nymphoides peltata)

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Crosson (right). (above) & Holly Credit: Fred Joe Corvallis, OR. Photo River tributary in Creek, a Willamette event on Muddy lluq bne elbbeq e ni eigiwbuj lluq bred



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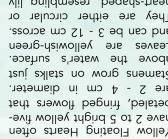


Willamette Riverkeeper floating mat (below) Photo Credit: Water Primrose flower (above) and

(etetleq sebiodqmyN) Yellow Floating Heart

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Jakubec (below). Photo Credit: Chris Gladis (above) & Karel & N. peltata flower (below) Photo: N. peltata pads and flowers (above)

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OTHER COMMON AQUATIC INVASIVE SPECIES INVASIVE SPECIES WaterPrimrose Yellow Floating Heart Ludwigia spp. It is identified by its bright, (Nymphoides peltata) Japanese Knotweed Parrtot's Feather yellow flowers and alternating "willow-like" leaves. Yellow Floating Hearts often have 2 to 5 bright Ludwigia spreads via yellow five-petaled, fringed flowers. Leaves are fragments, forming dense yellowish-green and are either circular or heartmats over the water's surface. shaped, resembling lily pads. These mats are harmful to It is not as widespread in Northern Oregon as the other wildlife and impedes Water Primrose but has similar affects to the recreational activities environment

Purple Loosestrife

💥 Yellow Flag Iris

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