Help Protect Oregon's Native Turtles from Invading Aquatic Plant Species!

Oregon has two native turtles: the western pond turtle (*Actinemys marmorata*) and the western painted turtle (*Chrysemys picta bellii*). Both species depend on open water areas in riparian, wetland, and pond habitats to complete their life cycle. They use these open water habitats for foraging and basking, and use shallower open water areas for rearing of hatchlings and juveniles.

Top: western pond turtle (*Actinemys marmorata*) adults. Bottom: western painted turtle (*Chrysemys picta bellii*) adult and juvenile. Photos courtesy of Gary Nafis and CaliforniaHerps.com.

Oregon's native turtles need your help. Aggressive non-native aquatic weeds, such as Uruguayan water primrose (*Ludwigia hexapetala*), creeping water primrose (*Ludwigia peploides*), and yellow floating heart (*Nymphoides peltata*) are invading the Willamette River Basin. These aquatic weeds are spreading to shallow, slow moving water bodies along the Willamette River and its tributaries including sloughs, channels, alcoves, and nearby ponds.

Uruguayan water primrose (*Ludwigia hexapetala*): left photo is plant form over water, right photo is plant form on land. The invasive water primrose species have alternate leaves. No wetland native plant has showy yellow flowers like this. Please note the look-alike: The native water purselane (*Ludwigia palustris*) has inconspicuous green flowers and opposite leaves.

Yellow floating heart (*Nymphoides peltata*): plant leaves in left photo; flowering plant in right photo. (Photo on left courtesy of Holly Crosson, Benton SWCD.) Please note the look-alikes: The native yellow pond-lily (*Nuphar polysepala*) has ball-shaped yellow flowers and large, heart-shaped leaves that are held out of the water as the water recedes. The native watershield (*Brasenia schreberi*) has oval leaves with no slit, stem attached at the center of the leaf, and lower leaf surface and stem covered in a slippery gelatinous substance.

Why are these Invading Aquatic Plant Species a Problem?

Invasive water primrose and yellow-floating heart grow rapidly and form dense monoculture mats of vegetation that crowd out native plant species and other vegetation. The mats extend below the water surface, across the surface, and extend to the immediate shoreline. These plants have the ability to completely take over shallow, slow moving water, and the dense mats that form severely reduce habitat for species that depend on open water, such as native turtles.

Native turtles and other wildlife species (beavers, muskrats, mink and river otters) have a hard time swimming through or utilizing waters infested with these invasive aquatic plants, which limits the habitat native turtles have available to use. Aquatic animals such as fish and amphibians are also impacted by these invasive aquatic plants; the thick mats of vegetation limit these animals' ability to navigate, feed and reproduce.

Other impacts of the invasive water primrose and yellow-floating heart include:

- Thick floating mats reduce recreational activities (e.g., swimming, canoeing, kayaking)
- Mats reduce oxygen exchange and levels in water bodies, disrupting aquatic food chain
- Mats stagnate water; stagnate water is favorable to mosquitos
- Mats shade and limit native bottom vegetation
- Dominance of these plants reduce species diversity and exclude native species
- Traps sediment which reduces deep water habitats
- Potential negative impacts on property values

Photo monitoring Uruguayan primrose-willow (*Ludwigia hexapetala*) in open marsh habitat on the Willamette River (pre-treatment on left (July 2014); before third year of treatment at same site on right (June 2016). It takes many years of control treatments to even begin to see the return of open water habitat.

How do these Invading Aquatic Species Spread?

It's possible these plants were originally introduced to the basin from one or multiple persons dumping the contents of a fresh-water aquarium into local waterways. Once introduced, invasive water primrose and yellow floating heart easily spread by plant fragments (such as leaves, stems) and by seed over great distances throughout watersheds. Waterfowl and recreationists can also accidentally and unknowingly spread the plants from existing invasion sites to new areas.

How can you Help Prevent the Spread of these Invading Aquatic Species?

- Follow noxious weed laws and quarantines.
- Never put non-native plants or aquarium contents into a natural water body.
- Choose non-invasive species for gardens.
- Clean boats, trailers, boots, and other equipment before moving between water bodies.
- Properly dispose of noxious weeds. Do not add these plants to compost piles or yard waste where seeds can still spread to new sites.
- In Benton County, contact Benton SWCD if you are unsure what to do.
- Report invasive aquatic weeds to the OregonInvasivesHotline.org or 1-866-INVADER.
- To learn more about aquatic plants and invasive aquatic weeds, please see the Guide to Aquatic Weeds for Benton County and the Oregon Department of Agriculture's Noxious Weed Profiles.

What are we doing to Prevent and Control the Spread of these Invading Aquatic Species?

We are working with local landowners, organizations, and volunteers to raise awareness about invasive aquatic plants and address aquatic weed control priorities. More information on this effort can be found at the **Willamette Mainstem Cooperative** webpage: https://www.bentonswcd.org/programs/willamette-main-stem/.

Resources for Additional Information

Benton Soil & Water Conservation District Invasive Plants Database, www.bentonswcd.org/programs/invasive-species/weed-profiles/

King County Noxious Weed Control Program, www.kingcounty.gov/weeds

On The Lookout for Aquatic Invaders: Identification Guide by Oregon Sea Grant, http://seagrant.oregonstate.edu/sgpubs/H14001-on-the-lookout

Oregon Department of Agriculture Noxious Weed Control Program, www.oregon.gov/ODA/PLANT/WEEDS/Pages/index.aspx

Oregon Invasive Species Council, http://www.oregoninvasivespeciescouncil.org/

Washington State Department of Ecology, Aquatic Plants, Algae and Lakes, http://wdfw.wa.gov/licensing/aquatic_plant_removal

Washington State Department of Fish and Wildlife: Aquatic Plants and Fish, http://wdfw.wa.gov/publications/00713/wdfw00713.pdf

Center for Aquatic and Invasive Plants, University of Florida, http://plants.ifas.ufl.edu/

An Aquatic Plant Identification Manual for Washington's Freshwater Plants, Washington State Department of Ecology, June 2001, Publication 01-10-032, www.ecy.wa.gov/programs/wq/plants/plantid2/

A Field Guide to the Common Wetland Plants of Western Washington and Northwestern Oregon, Sarah Spear Cooke, Editor, Seattle Audubon Society, 1997.

Aquatic and Riparian Weeds of the West, Joseph M. DiTomaso and Evelyn A. Healy, University of California Agriculture and Natural Resources, 2003, Publication 3421.