

Flowering Rush Survey and Management Lessons

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Identifying Flowering Rush

- Umbel shaped clusters of about 30 flowers on a stout stalk, round in cross section and usually half again to twice as tall as leaves.
- 3 whitish pink petals
- 3 similar sepals
- Viable seed production is low; however, flower heads and roots produce reproductive bulbils.
- Emerged leaves are mostly green with a coppery undertone, rigid, triangular in cross section and the tips may be spirally twisted.
- Submerged leaves are mostly brownish-green, flat and float limply with the current.
- Root system is strongly rhizomatous and produces bulbils that readily break off, spreading the plant.



Identifying Flowering Rush

Picking it out of the background vegetation.

🌊 In the water

🌊 On shore

🌊 In bad light



Find the Flowering Rush

Easy



Find the Flowering Rush

Not so easy



Find the Flowering Rush Clues



Find the Purple Loosestrife

Easy



Not so easy



Survey and Management Obstacles

Where it lodges

🌊 Eddies

🌊 Current obstacle

🌊 Docks

Timing



Survey and Management Obstacles

Access

- 🌊 Boat size, draft and speed
- 🌊 Extreme shallow water
- 🌊 Deep and soft sediment



Management Obstacles

Substrates

⚡ Rocky

⚡ Hard clay

⚡ Soft sediment



Management Obstacles

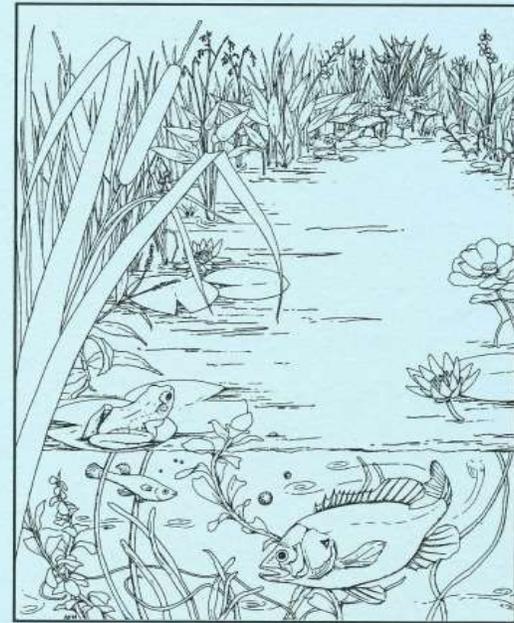
Permitting

⚡ US ACoE - HPA

⚡ WDFW - Blue Book

⚡ WDNR - Encroachment Permit

Aquatic Plants and Fish



publication # APF-11-97

Management Options

Bottom Barriers

Size

Duration

Edge and seam integrity -
follow-up pulling is necessary

Damage to benthic habitat



Management Options

Bottom Barriers

- ⚡ You have to get in the water to install
- ⚡ Flowering rush is ideal habitat for great pond snails, *Lymnaea stagnalis*
- ⚡ Host for swimmer's itch, schistosome cercarial dermatitis
- ⚡ Trematode parasite, *Trichobilharzia ocellata*



Management Options

Diver Assisted Suction

- 🌊 Fragmentation containment
- 🌊 Equipment limitations
- 🌊 Sediment type
- 🌊 Water depth



Management Options

Herbicide

⚡ Aminopyralid + Metsulfuron methyl

⚡ Glyphosate

⚡ TEA + Metsulfuron methyl

⚡ Diquat bromide



Management Options

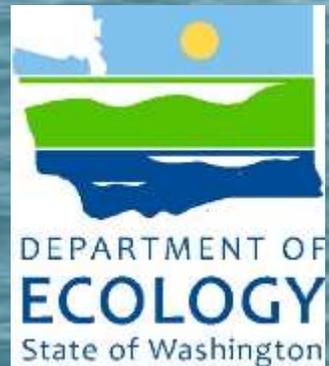
Biocontrol

- ⚡ Very preliminary stage
- ⚡ Mining weevils, *Bagous nodulosus*, rearing population, *B. validus*, very rare, haven't been able to find for rearing
- ⚡ Agromyzid fly, *Phytolirimyza ornata*, a handful collected so far, not enough for rearing
- ⚡ Ephydrid fly, *Hydrellia concolor*, not enough collected for rearing



Pend Oreille River Weed Projects Interactive Map

[Pend Oreille County River Weed Project](#)



Knowing where the weeds are

New tools for weed surveys



Rheno Prajadipta tests out a drone he helped build with Yakima Valley Community College classmates. The drone will survey the health of TNC forest land. The hope is that drones will speed up restoration efforts and save some money.



Old Weed
Surveyors
Never Die...

... no driving in
the ditch, Boss!