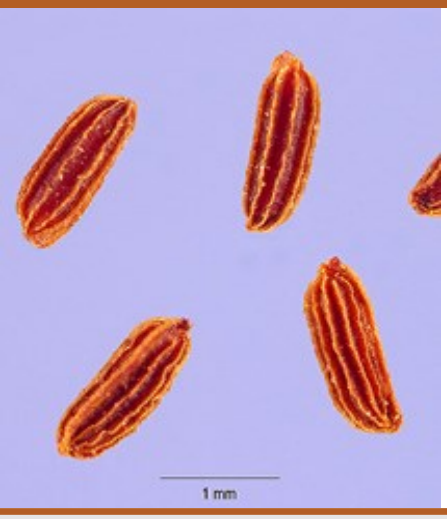
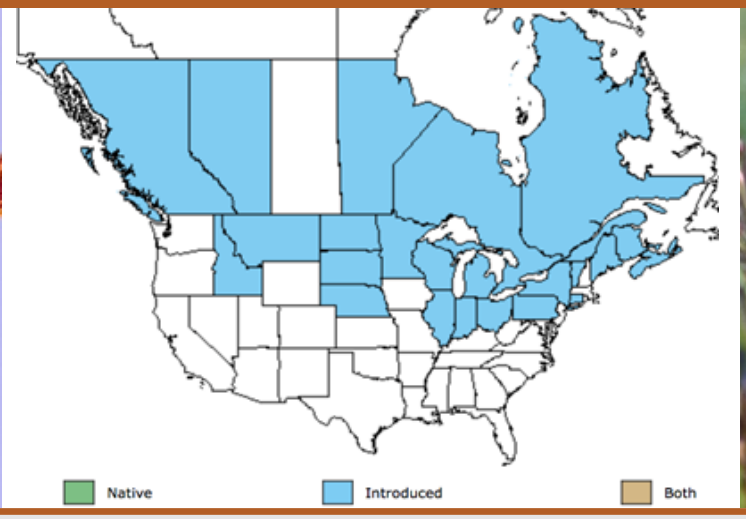
USACE Invasive Plant Species
Best Management Practices

Flowering Rush (*Butomus umbellatus*) - Butomaceae (Flowering Rush)





Habitat & Life History

Native to Eurasia – Perennial forb/herb – Temperature tolerant – OBL – Spreads by rhizomes and bulbils

Integrated Management Strategy Selections

Prevention **Chemical** **Biological** **Mechanical** **Cultural**

PREVENTION

- Mitigate shoreline disturbance & establish competitive native vegetation

CHEMICAL CONTROL

- Herbicides—diquat, glyphosate, imazapyr, imazamox, penoxsulam
- Use-pattern—foliar spray (glyphosate & imazapyr); most effective if applied in low water levels
- Application to submerged vegetation—excluding glyphosate & imazapyr—may be useful, but not for killing rhizomes

*Refer to product label for specific instructions on rate & use-pattern

BIOLOGICAL CONTROL

- Potential biological agents—*Bagous nodulosus* (weevil), *Phytoliriomyza ornata* (agromyzid fly), *Doassansia niesslii* (smut)

MECHANICAL CONTROL

- Hand pull, dig roots, remove floating plants
- Cut below water surface to reduce growth rate

CULTURAL CONTROL

- Benthic barriers; protect native vegetation populations & revegetate disturbed areas; manipulate drawdown periods to late summer rather than winter & early spring

MANAGEMENT SEQUENCING

- Timing of control methods—best option is to perform mechanical methods in the summer, then apply chemical treatment during drawdown periods
- Monitoring—monitoring & mapping is recommended to detect infestations early
- Niche-filling/Restoration—plant native wetland emergent aquatic vegetation

COMMENTS

- Mechanical control can contribute to spread via bulbils, buds, & plant fragments.
- The western population is more problematic, sterile, & occurs in deeper water, while the eastern population is less problematic, produces seeds, & occurs in shallower water.

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Contributors, data sources, documentation @ apcrp.el.erdc.dren.mil