

Radicle seeds: Intraspecific variation in aquatic plant germination

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- What do we know?**
- It's common to sow native plant seeds in plant community restoration projects (e.g. wetlands¹).
 - Stakeholders want to restore invaded lakes, not just control invasives².
 - Sustained lake restoration from invasive plants is not feasible currently³.

What don't we know?

- Would sowing native aquatic plant seeds be an effective way of aiding native community assemblages to overcome invasive plant presence?

- What did we do?**
- Subjected native plant seeds to various treatments to determine if we could induce reasonably high germination rates

What do we know?

What did we do?



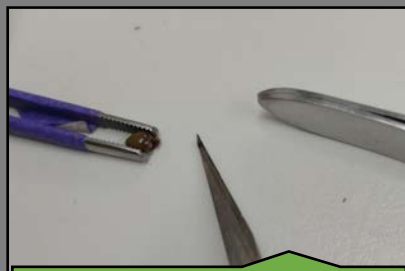
- Step 1: Seed Collection**
- Collected seeds from plants in autumn
 - Watershield, Yellow pond lily, Floating-leaf pondweed, Large-leaf pondweed



- Step 2: Seed Storage & Preparation**
- Overwintered seeds in a refrigerator to simulate winter conditions
 - Sorted seeds by species



- Step 3: Seed Massing & Photographing**
- Massed and photographed each seed individually to provide data for seed energetics/ecology hypotheses



- Step 4: Seed Treatment**
- Physical: removed a part of the seed coat (scarified)
 - Chemical: soaked seeds in acid that induces germination (Gibberellic acid)



- Step 5: Germination Trials**
- Monitored seeds frequently for the emergence of a radicle



- Step 6: Viability Trials**
- Treated seeds with dye (tetrazolium) that turns embryos red if they are alive.

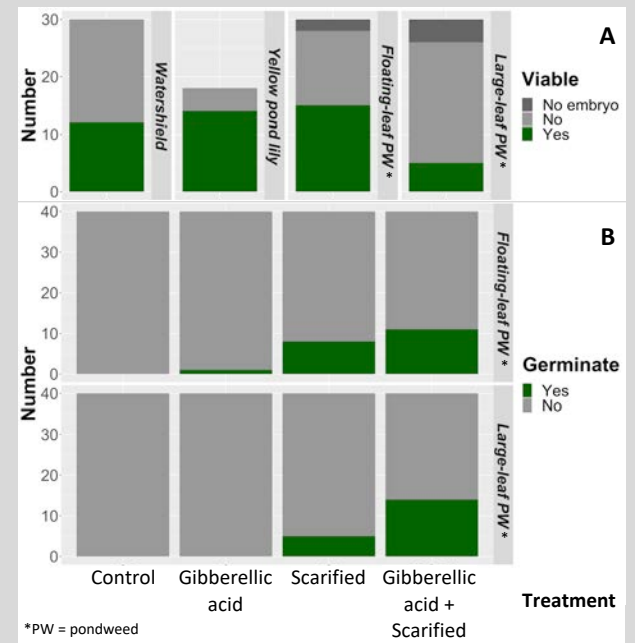


Fig A: Viable seeds by species. **Fig B:** Germination in 2 of the 4 spp.

Take-Home Message

- It is possible to collect large quantities of native aquatic plant seeds.
- Seeds were alive (Fig A), but germination was induced at variable levels depending on species and treatment (Fig B).
- Next steps include germination assays on other species, developing methods to make this work field-applicable, and studies of establishment success of these germinated seeds in the field.

* More figures, analysis, results, and implications at the presentation.