

Native and Invasive Aquatic Plant Responses to Amphipod and Snail Grazing

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Abstract

Invasive species can negatively affect biodiversity and may be connected to plant chemical defenses. However, the extent to which small grazers affect growth and chemical defenses in native and invasive aquatic plants is not well understood. The effect of amphipod (mostly *Hyaella azteca*) and snail (*Physella* sp.) grazing on growth and phenolic content was compared in a native aquatic plant (coontail, *Ceratophyllum demersum*) and an invasive aquatic plant (Eurasian watermilfoil, *Myriophyllum spicatum*) in two laboratory experiments. In each experiment, growth of each plant was measured as changed in wet mass, and at the end of the experiments each plant was freeze-dried and ground in liquid nitrogen before running Folin-Denis assay for total phenolics. Neither amphipods nor snails had a significant effect on either coontail or milfoil growth. In both experiments (amphipods and snails) milfoil consistently grew more than coontail, and milfoil contained higher levels of phenolics than coontail in the amphipod experiment. However, phenolics were not affected by amphipod grazing itself. Phenolic results are still underway for the snail experiment. The data suggest that although invasive milfoil is more chemically defended than native coontail, grazing by small herbivores did not affect plant growth or induce phenolic production.