

How long do shoot fragments of hydrilla (*Hydrilla verticillata*) and Eurasian watermilfoil (*Myriophyllum spicatum*) remain buoyant?

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pp. 76-82

Eurasian watermilfoil (*Myriophyllum spicatum* L.) and monoecious hydrilla [*Hydrilla verticillata* (L.f.) Royle] are aggressive submersed aquatic invasive plants that continue to spread into northern tier states. Although floating fragments have been identified as a key pathway for intra- and interlake dispersal of several submersed invasive species, the length of time these fragments remain buoyant has not been reported. Through a series of small-scale greenhouse trials, we evaluated the time required for monoecious and dioecious hydrilla, and Eurasian watermilfoil fragments to sink to the bottom of the container. We evaluated multiple-sized fragments (4 to 20 cm) and found slight differences in settling times for increasing fragment sizes across all three species. Fragments remained buoyant for monoecious hydrilla between 1 and 2 d, Eurasian watermilfoil between 2 and 4 d, and dioecious hydrilla between 2 and 6 d. Exposure of 12-cm monoecious hydrilla fragments to minimal aeration designed to break the water surface tension increased buoyancy (3 d) when compared to static conditions (2 d). Combining multiple intertwined fragments (12 cm) to create a small mat did not change settling times. Results suggest species differences in buoyancy/settling times, yet fragments of monoecious hydrilla and Eurasian watermilfoil did not remain buoyant beyond 3 d. Root formation was noted within 3 to 6 d of monoecious hydrilla settling to the bottom. Future trials to evaluate fragment success in establishing in different sediment and light conditions are recommended. The current results can be of use in dispersal models and provide additional information for risk assessments.