AQUATIC PLANTS AND ALGAE IN PENNSYLVANIA—

The Good, the Bad, and the Ugly

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Aquatic plants and algae play important roles in aquatic ecosystems, providing food for aquatic herbivores and omnivores such as crayfish, turtles, waterfowl, and fish. However, some aquatic plants and algae are considered aquatic invasive species and may pose threats to aquatic recreation and aquatic ecosystems in Pennsylvania.

Pennsylvania's waters are home to a vast number of native aquatic plants. One common species in lakes, ponds, rivers, and streams is American waterweed (*Elodea canadensi),* sometimes also called common waterweed. American waterweed is a simple stalked aquatic plant with leaves arranged in "whorls" of three leaves. It often grows in clumps immersed in the water but will produce small white or purple flowers during the summer that emerge from the water. While many other aquatic plants die back in the winter, American waterweed persists and provides habitat for fish during the winter months.

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American waterweed (Elodea canadensi) *with cross section of a single whorl with three leaves.*

photo-Brian Pilarcik

Hydrilla (Hydrilla verticillata) *showing toothed leaves.*

Similar in look to native American waterweed, the non-native hydrilla (*Hydrilla verticillata*), sometimes also called waterthyme, is native to parts of India and Eurasia and was introduced into parts of North America decades ago, likely from the aquarium trade. Hydrilla can be distinguished from American waterweed, because it has four to eight leaves per whorl unlike the three leaves in American waterweed and has small serrations or spines on the leaves. Hydrilla is considered an aquatic invasive species in Pennsylvania and can grow to major nuisance levels in lakes and ponds. During the warmer months, hydrilla can create dense mats, which may preclude infested areas from boating activities. It grows aggressively, sometimes several inches per day, and may also impact habitat for native species, reducing the breeding habitat and foraging habitat for sportfish. Scientific studies have shown that abundance and quality of fish such as Largemouth Bass and Bluegills may be reduced when hydrilla takes over an aquatic habitat. Unfortunately, hydrilla can be easily spread to other waterways on uncleaned boats, trailers, and fishing gear. Even a small fragment of hydrilla, if introduced into a new waterway, can grow a new colony.

Algae species are abundant in Pennsylvania. Algae are a group of organisms separate from plants that make food through photosynthesis using green chloroplasts in their cells. Most algae will grow in the form of thin layers of "slime" on submerged surfaces such as mud, stones, and aquatic plants, or form scum at the water's surface. One unusual species of alga in Pennsylvania is the didymo (*Didymosphenia geminata*) or "rock snot." Long considered an aquatic invasive species, didymo was recently found to be native to some parts of eastern North America, such as New York. However, it is presently unknown if didymo is a

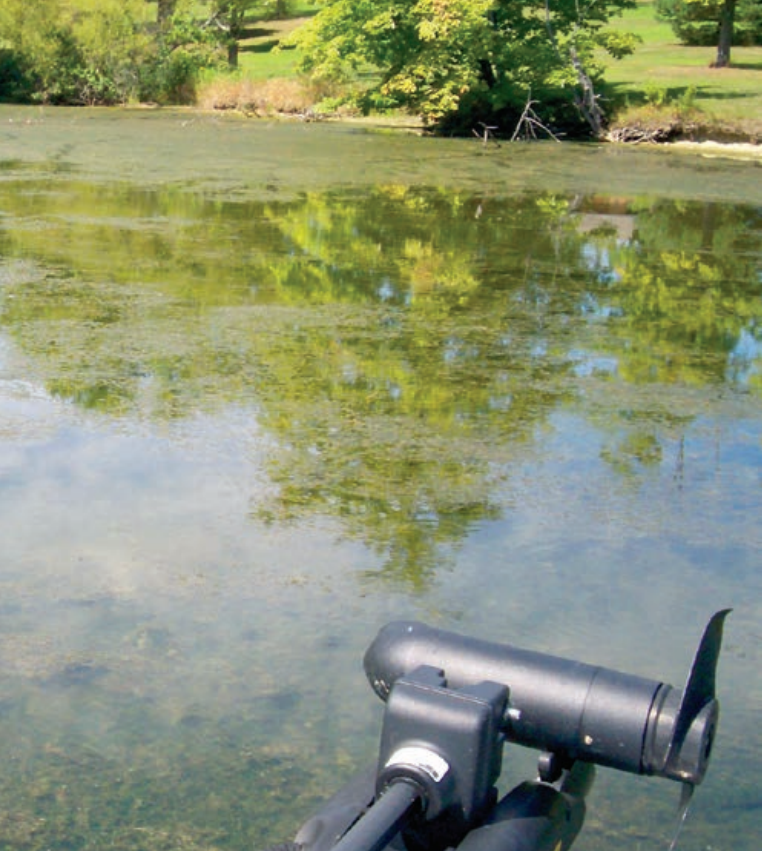

photo-Brian Pilarcik

Hydrilla and other aquatic invasive plants have a high risk of being introduced into new waterways by fragments on uncleaned boats or trailers.

native "nuisance" species or a non-native species in Pennsylvania. When nutrients in streams are low, didymo will form "nuisance blooms" consisting of long, hairlike algal filaments, sometimes several inches thick, which can cover a stream bottom. Didymo blooms are often temporary and may "slough" off during heavy rain events. Recent research suggests that didymo blooms may not have major impacts towards other aquatic life, and didymo is not harmful to humans. Unlike many other algae species in Pennsylvania, didymo can feel "rough" or "gritty" to the touch (similar to wool) instead of slimy. Didymo appears to prefer cool or coldwater stream and river environments.

Making sure boats, trailers, and fishing gear are clean before their next use can prevent further spread of aquatic invasive species. Simple measures such as checking boats, trailers, and gear to remove mud, debris, and aquatic life before transporting, draining water from gear, live wells, motors, and bilges, and either drying for at least five days or cleaning with hot water can prevent the spread of most aquatic invasive species. For more information on aquatic invasive species, how to report them, and how to clean boats, trailers, and gear, visit **fishandboat.com/Conservation/AIS**.

photo-Tim Daley, PA DEP

Clump of didymo (Didymosphenia geminata) *nuisance bloom.*