

WATERWHEEL

NATIONAL INVASIVE SPECIES AWARENESS WEEK 2017



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Waterwheel is a rootless, submersed aquatic plant that is carnivorous. Typically the stems are less than 20cm in length with 6-8 whorls of 7-11cm long leaves. The leaves have flattened petioles with clam-like 'traps' at the terminus. The traps have bristles which may serve to funnel prey towards the trap. Under ideal conditions lateral branches are produced at several locations along the stem. Flowering in temperate regions can be rare, but when it occurs it only lasts for a few hours. Small solitary white flowers occur above the water on short peduncles that arise from the leaf whorl axes. From a distance waterwheel resembles another invasive aquatic plant hydrilla, *Hydrilla verticillata*, which is common in Delaware. There is a potential for waterwheel to be overlooked in areas where hydrilla occurs, however, once the plant is in-hand it is fairly easy to identify.

Waterwheel is native to Africa, Asia, Australia, Europe, Japan and Korea. It is the only extant species in the genus *Aldrovanda* and is listed as endangered or threatened in some parts of the world. In the mid-Atlantic region this species is consid-

ered invasive. Although not yet documented in Delaware, waterwheel has been confirmed in New Jersey, New York, and Virginia, thus early detection and a rapid response is especially important for preventing it from spreading.

The dense vegetative mats formed by this species can impede water based recreation such as boating and fishing. In optimal conditions the plant can grow rapidly, producing one or more new whorls per day. A high percentage of dense aquatic vegetation can result in unbalanced fish populations as predatory fish find it difficult to cull prey that is hiding in the vegetation. The carnivorous nature of this plant is also of concern because it not only traps and 'consumes' aquatic invertebrates, but also larval fish as seen in the photo to the right. The trigger hairs on the trap can activate it to close in as little as 0.01 seconds, making it one of the fastest moving plants! If you imagine the potential number of 'traps' in a dense mat of this plant, you can appreciate the potential impact it could have on the aquatic food web.



Waterwheel can be difficult to eradicate once it becomes established, and like hydrilla, can survive cold winters via bud like turions (shown at the right). The best defense is prevention such as implementing best management practices when leaving a water body—remove visible mud and plants from your boat or equipment before transporting; clean and dry anything that comes into contact with the water—go to www.protectyourwaters.net for more information. If you encounter this plant in Delaware, please report it to the Division of Fish and Wildlife at Edna.Stetzar@state.de.us or at (302) 735-8654.



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