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# HYDRILLA

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## One of the World's Worst Aquatic Invasive Plants, Now Found in Our Waters



Photo by Robert L. Johnson

### *History of Hydrilla verticillata*

*Hydrilla verticillata* is an invasive submerged perennial plant, closely resembling the native waterweed elodea, and is considered the world's worst aquatic invasive plant. Hydrilla, which is native to Australia, Asia, and parts of Africa, was introduced to the United States in the 1950s, when it was found infesting waterways in Florida. Since then it has been discovered in many other states, including New York. Hydrilla can be found in many NY lakes and ponds, as well as bigger bodies of water including the Cayuga Inlet, the Erie Canal, and most recently, the Croton River.

### Identification

- Leaves occur in whorls around main stem
- Whorls contain 3-8 leaves (usually 5)
- Leaf margins are visibly serrated
- Turions (overwintering buds) found along the stem of mature plants
- Tubers (small, potato-like structures) found 3-12 inches below the sediment at the end of the underground stem

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### Means of Spread

- Fragmentation – single fragments of hydrilla can root and form new populations
- Turion Production – overwintering buds flow downstream and start new populations
- Tuber Production – tubers can remain dormant for years until water conditions become favorable

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### Ecological Impacts

- Blocks sunlight and displaces native plants below its dense mats
- Stratifies the water column, decreasing dissolved oxygen levels – leads to fish kills
- Can cause algae blooms, leading to Avian Vacuolar Myelinopathy (AVM), a disease that attacks the nervous system of birds

### Economic Impacts

- Dense mats impede boating, swimming, and fishing, which hampers the tourism economy
  - Waterfront property values decrease significantly
  - Weight and size of sportfish can be reduced when open water and natural vegetation are limited
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## Description

There are two types of hydrilla, monoecious (found in the northern states) and dioecious (found in the southern states). Hydrilla can tolerate a wide range of environmental conditions including nutrient deficit and nutrient rich waters, salinity, stagnant and running waters, and tidal waters. The monoecious biotype grows horizontally along the bottom of the waterbed. Once the water gets warm enough, it grows vertically and mats the entire surface of the water, blocking out sunlight for native species. Hydrilla can survive ice cover, freezing, drying, and ingestion.

## Spread Prevention

One of the biggest pathways of aquatic invasive species is hitchhikers on boats. Using **clean boating practices** helps to mitigate this pathway. So remember to follow these steps before entering and after exiting any body of water:

- **Clean** – remove all visible mud, plants, fish/animals to prevent transporting potential hitchhikers
- **Drain** – eliminate water from all equipment (motors, boats, waders, bilges, etc.)
- **Dry** – dry anything that came into contact with water (boats, trailers, equipment, etc.)

## Management Options

- **Physical** – benthic barrier mats can be placed on the bottom of waterbodies to block out all light, killing plants beneath it
- **Mechanical** – dredging can be done to remove sediment (and tubers) from the waterbody. Hand-removing, as well as suction assisted diving is also an option if done carefully
- **Chemical** – herbicides (both contact and systemic) have been very successful in hydrilla eradication, but treatments need to be continued for up to 10 years to guarantee no tubers remain viable
- **Biological** – grass carp stocking has been used, but containment has proven difficult

## Hydrilla in the Croton River

Hydrilla was discovered in the Croton Bay (Croton-on-Hudson, NY) in August 2013 during a rare plant survey conducted by David Werier. In 2014 the Lower Hudson Partnership for Regional Invasive Species Management (PRISM) funded Allied Biological, Inc. to do a delineation survey of the entire Croton River to determine how far the plant has spread.

Hydrilla was found rooted as far north as the New Croton Dam, and as far south as the Croton Bay. Floating fragments were found past the railroad tracks, but no rooted plants were found.

