

## Avian Vacuolar Myelinopathy & Hydrilla

Avian vacuolar myelinopathy (AVM) is an unusual neurological disease which has killed at least 99 bald eagles and thousands of American coots since 1994. While the cause of the disease is unknown, it has been linked to bodies of water with large infestations of hydrilla.

Birds affected with AVM lack muscle coordination and have difficulty flying and swimming. Birds that have died from AVM typically appear to be in good health, with the exception of a lesion on the brain and spinal cord.



Photo Credit: [www.Wikipedia.com](http://www.Wikipedia.com)

AVM has been found in bald eagles and American coots from Texas to North Carolina. It is the cause of the largest undiagnosed eagle mortality in U.S. history, with a die-off of 30%-65% of all eagles wintering at DeGray Lake, Arkansas, the location of the first recognized cases. The disease has also afflicted numerous other waterbird species, including geese, mallards, killdeer, and ring-necked ducks.

Studies have shown that hydrilla and associated epiphytic cyanobacteria species are linked to AVM. The cyanobacteria thought to cause AVM grows densely on aquatic plant species (primarily hydrilla). Coots, mallards, geese, and other waterbird species consume the affected vegetation and become sick or die from ingesting the toxin. Eventually, the toxin works its way up the food chain and affects bald eagles.

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Hydrilla has been found covering a large percentage of the waterbodies surfaces at sites where AVM is present. Surveys of freshwater reservoirs, lakes, and ponds throughout the southeastern U.S. showed a potentially toxic cyanobacteria present on the hydrilla leaves and stems of hydrilla at all sites where AVM was found, but rare in areas where AVM was not observed. **Fortunately, there have been no reports of AVM in the Lower Hudson Region.**

## What is Hydrilla?

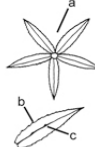
Hydrilla is an invasive submerged perennial plant that is considered the world's worst aquatic invasive species. It was recently discovered in the Croton River (2013), which empties into the Hudson River. Hydrilla has been found in many NY lakes and ponds, as well as larger bodies of water including the Cayuga Inlet and the Erie Canal.

Hydrilla can be identified by these key characteristics:

### HYDRILLA



- Leaves in a whorl around the main stem
- 3-8 (usually 5) leaves per whorl
- Leaves have visibly serrated/toothed edges
- Tubers (potato-like structures) found 3-12" below sediment



- a. 4 or 5 leaves encircle the stem  
 b. Leaves are "toothed"  
 c. Leaf vein has small spines

Hydrilla is easily fragmented, and each fragment can root and form its own population. These fragments also spread from waterbody to waterbody via hitchhiking on boats, which is why **clean boating practices** are so important. So remember, before entering and upon exiting a body of water: **clean** off all visible mud, plants, fish/animals from your boat, **drain** water from all equipment, and **dry** anything that comes into contact with water.

Photo Credit: University of Florida, Center for Aquatic and Invasive Plants



**LOWER HUDSON PRISM**



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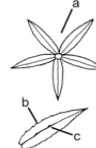
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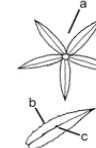
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