



Would you jump into this...

OR THIS!



The Purpose of Algae in the Aquatic Environment

Leif Willey, Aquatic Specialist, SePRO Corporation

This question is often overlooked, and the answer has a large impact on whether we as users of the aquatic environment view algae as a good or bad thing. Algae in our ponds can be found in a wide range of sizes, appearances and colors. Algae can be long, stringy and hair-like, clumpy or nearly microscopic and suspended within the water column. Algae are always present in our ponds even when we may not see them.

Millions of us around the country will take to the water this year for recreational purposes, namely fishing. We seldom realize what is happening for each body of water to produce healthy fish.

Healthy fish production actually begins with algae. Algae are tiny photosynthetic plants that produce much of the oxygen in the water for fish to breathe. They also are the base of the food chain. Microscopic animals in the water known as zooplankton consume certain types of algae and not others.

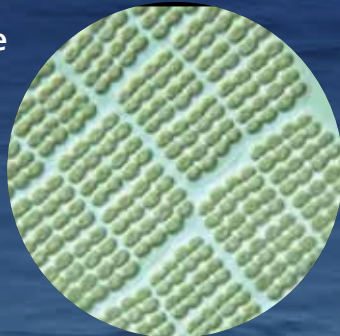
continued on page 2...



Daphnia, a common type of zooplankton in freshwater ponds.

What is the Purpose of Algae in the Aquatic Environment? (continued from page 1)

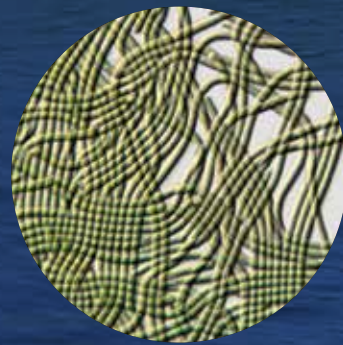
Zooplankton feed on the algae that are called green algae and the result is a healthy aquatic ecosystem. Unfortunately, overtime, many bodies of water have begun to grow a different type of algae called **blue-green algae or cyanobacteria**. These blue-green algae break the food chain of a lake or pond by out producing the green algae. Blue-green algae are not able to be consumed by beneficial zooplankton called daphnia, because the cells typically clump together or form filaments that are **too large for the daphnia to feed on**.



Merismopedia, a type of cyanobacteria that forms colonies too large for zooplankton to consume

Imagine if our food was 100 times larger than our mouths, it would make it very difficult to feed and grow. The algae are simply too large for the daphnia and zooplankton to feed on and the daphnia are unable to grow and reproduce (see pictures). As a result, insects are

unable to feed and grow on the zooplankton, small forage fish like minnows are unable to feed and the larger fish are unable to feed on the smaller fish as much as they need to. This ends in stunted, unhealthy and skinny fish that we catch. Over time we notice this as our favorite fishing spots become less and less productive. In addition to breaking the food chain, blue-green algae can also create toxins in the water that are harmful to fish.



Lyngbya, a filament forming cyanobacteria

Some algae growth is necessary to support a productive, sustainable fishery. We must all do our part to help keep our waters balanced where green algae can continue to support the ecosystem. **We as the users must make the decision to protect our most precious natural resource for generations to come.** The next time you are at your pond, remember this: It is always more fun to catch a big fish than to tell a big fish story!

A New Problem in Our Waters: The Threat of Hydrilla's Northern Expansion

Carter L. Bailey, Aquatic Biologist, AQUA DOC Inc.

Hydrilla (*Hydrilla verticillata*), which was originally imported to Florida in the 1960's for use as an ornamental aquarium plant has rapidly spread wild throughout the southern United States over the past 50 years and now poses a threat to the Great Lakes and many other northern inland waters. **Listed as a Federal Noxious Weed**, hydrilla is accompanied by a laundry list of overall negative impacts to water resources:

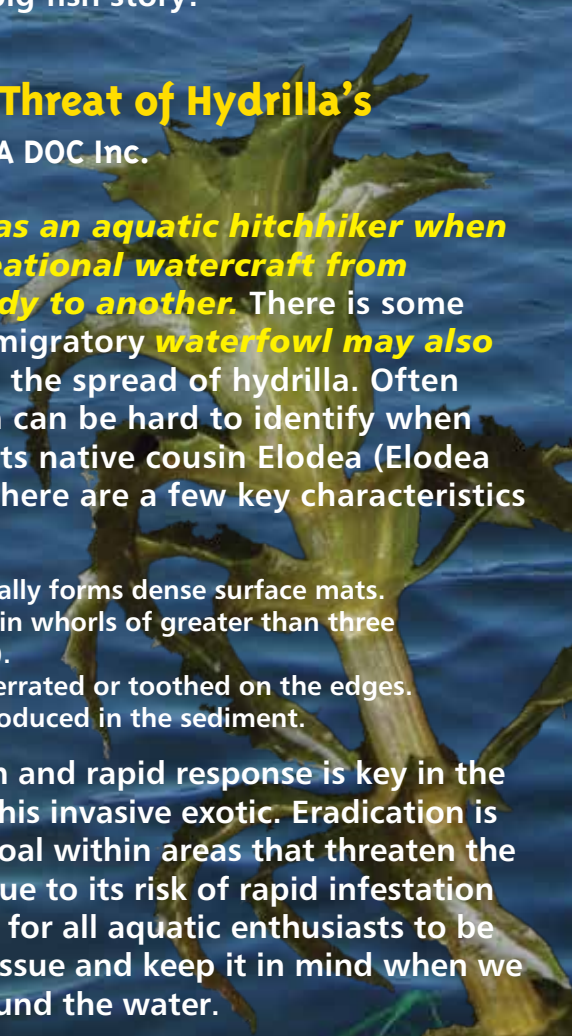
- Obstructs navigation and fishing access.
- Displaces native plants and game fish.
- Blocks irrigation and drainage canals.
- Impairs public and commercial water supplies.
- Depresses shoreline property values.
- Harbors carriers of human and animal disease.
- Overgrows docks, marinas, boat launching sites.
- Increases the threat of entanglement and drowning, making activities such as swimming, boating, waterskiing, and sport fishing more dangerous.

Infestations of the plant have spread as far north as Wisconsin, Ohio, Pennsylvania, New York, and Maine. **The plant is readily**

transported as an aquatic hitchhiker when moving recreational watercraft from one waterbody to another. There is some concern that migratory **waterfowl may also play a role** in the spread of hydrilla. Often times, hydrilla can be hard to identify when compared to its native cousin Elodea (*Elodea canadensis*). There are a few key characteristics to look for:

- Hydrilla typically forms dense surface mats.
- Leaves occur in whorls of greater than three (typically 4-8).
- Each leaf is serrated or toothed on the edges.
- Tubers are produced in the sediment.

Early detection and rapid response is key in the fight against this invasive exotic. Eradication is the ultimate goal within areas that threaten the Great Lakes. Due to its risk of rapid infestation it is important for all aquatic enthusiasts to be aware of this issue and keep it in mind when we are in and around the water.



Enjoy YOUR lake or pond... THIS YEAR!



BEFORE MANAGEMENT



AFTER MANAGEMENT

AQUA DOC® Can Help!

Fountain Installation
& Repair

Invasive
Plant Control

Bottom Diffused
Aeration

Fish Stocking

Algae & Aquatic
Weed Control

Lake Study
Consultation

ASK THE
DOG!



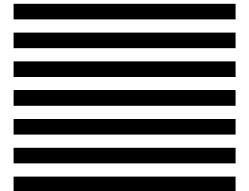
NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

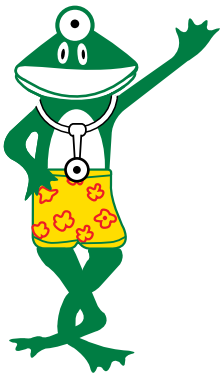
BUSINESS REPLY MAIL

FIRST-CLASS MAIL PERMIT NO. 174 CHESTERLAND OH

POSTAGE WILL BE PAID BY ADDRESSEE

AQUA DOC
PO BOX 625
CHESTERLAND OH 44026-9905





AQUA DOC®

LAKE & POND MANAGEMENT

10779 Mayfield Road
Chardon, Ohio 44024

440.286.POND (7663)



Your AQUA DOC team consistently works to stay informed on all things new regarding our shared resource (water), we are on top of it!

If you have a Lake or Pond **PROBLEM...** Aqua Doc has the **SOLUTION!**



FREE ASSESSMENT/CONSULTATION!

Please schedule my FREE lake/pond consultation!

- | | |
|---|---|
| <input type="checkbox"/> Algae or weed control | <input type="checkbox"/> Fish Stocking |
| <input type="checkbox"/> Lake Studies | <input type="checkbox"/> Fish Population Survey |
| <input type="checkbox"/> Floating Fountains | <input type="checkbox"/> Water Quality Analysis |
| <input type="checkbox"/> Lake/Pond Aeration System | <input type="checkbox"/> Cattail / Lily Control |
| <input type="checkbox"/> Please send me a FREE catalog of pond supplies | |

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Phone: _____ Email: _____ Date: _____

For all your
Pond Supplies,
call AQUA DOC!
1-800-689-LAKE (5253)

VISIT OUR WEBSITE!
aquadocinc.com

