

WHAT IS THAT STUFF IN THE WATER?

A SIMPLE KEY TO “STUFF” TYPICALLY SEEN IN LAKES AND PONDS¹

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Sometimes it is very difficult to figure out just what exactly is floating in your lake or pond. If improvements in water quality are to be realized, management decisions must be based on the proper identification of this material. In response to this need, Princeton Hydro has developed this simple key to allow the homeowner or lake member to properly identify the “stuff” in your lake or pond. Although the homeowner or lake association should contact a water quality professional for guidance in the short and long-term management of their lake or pond, this key will serve as a means of identify a specific water quality problem. This key is by no means total inclusions of all visual water quality problems, nor is it totally fool proof. However, it should provide the layperson with a general idea of what is in their lake or pond.

1. **Does the stuff color the water or is it a visible mass of material?**
 - 1a. The stuff colors the water.....2.
 - 1b. The stuff is a visible mass of material.....3.
2. **What color is the water?**
 - 2a. The stuff gives the waterbody a greenish color.....4.
 - 2b. The stuff gives the waterbody a brownish or golden color.....5.
3. **3. The stuff is a visible mass of material**
 - 3a. If it is on the surface and a awispy bright green mass and is the water cold or cool it is likely a *Spirogyra* bloom (see 7 below)
 - 3.b If it is on the surface and more of a fibrous darker green or yellowish mass and the water is warm it is likely a filamentous algae bloom (*Pithophora*, *Cladophora* or *Hydrodictyon*, see 7 below)
 - 3.c If it is below the surface.....6.

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4. **The stuff gives the waterbody a greenish color**

- 4a. Is the color a bright green?.....An algal bloom.
If the bloom is in the spring, it is probably a bloom of green algae or of the alga *Euglena*.
If the bloom is in the summer or fall, it is probably a bloom of blue-green algae.
- 4b. Is the color a darker or greyish green color?.....An algal bloom.
If the bloom is a darker or greyish green color it is more than likely that the organism is a species of blue-green algae.

5. **The stuff gives the waterbody a brownish or golden color**

5a. There was a storm event within the last 1 to 2 days.....The turbid or brown color is the result of suspended solids. If the waterbody is shallow these solids may have been re-suspended from the sediments. If the shoreline is exposed, these solids may be the result of shoreline erosion. If the waterbody has a relatively large and developed watershed, stormwater is probably transporting soil particles and solids to the waterbody.

5b. There was no storm event within the last 2 days.....If a waterbody has a brown or golden color, in spite of the absence of a significant storm event over the last few days, it is probably the result of an algal bloom. This is especially the case in the spring or early summer seasons. Some groups of alga that can give a waterbody a brownish or golden color include diatoms, chrysophytes and a few genera of blue-green algae.

6. **The stuff is under the water's surface**

- 6a. The stuff is green in color.....go back to 3 or to 7.
- 6b. The stuff is not green in color.....8.

7. **The stuff is green in color**

7a. The stuff is bright green and slimy.....This stuff is probably the green alga *Spirogyra*. This alga is especially common from the early spring through early summer. It will commonly growth as a column from the sediments to the water's surface and may even form surface mats.

7b. The stuff is a darker green and typically not slimy.....This stuff can be either green or blue-green algae. Instead of being slimy, most of these algae will have a course feel. These algae also growth as a column and can form surface mats, however, in their submerged form they tend to look like green cotton candy. Some of the more common green mat algae include *Cladophora* and *Pithophora*. A common blue-green mat alga is *Lyngbya*.

8. The stuff is not green in color

8a. The stuff is brown in color.....Thin brownish mats on rocks or the sediments are probably the result of high rates of diatom or chrysophyte growth. Both of these algae typically have a brown or golden color.

8b. The stuff is not brown in color but clear and gelatinous.....If the material looks like a clear jelly with a series of black dots and is slimy to the touch, it is most likely a mass of frog's eggs. If the material is brown, firm rough to the touch, but still appears to be gelatinous, it is probably a colony of bryozoans (commonly called moss animals). These plant-like animals individually appear as delicate threads, however, as a colony they can form large, jelly-like colonies the size of a basketball.

8c. It is neither described by 8a or 8b.....9

9. The stuff is floating on the water's surface

9a. The stuff is yellow in color.....If the stuff is floating on the water's surface, has a yellow color and has a grainy feel, it is most likely pollen. Such conditions are usually observed in the spring and is commonly mistaken for an algal bloom.

9b. The stuff is not yellow in color.....10.

10. The stuff not yellow in color

10a. The stuff is brown in color.....If the stuff is floating on the water's surface and is brown in color, it is probably the filamentous blue-green alga *Oscillatoria*. While its defined as a blue-green alga, *Oscillatoria* usually has a brown color. It can be observed any time of the year and is quite tolerate of colder water temperatures.

10b. The stuff is not brown in color.....11.

11. The stuff not brown in color

11a. The stuff is green, floating on the water's surface and upon closer examination is looks like tiny leaves.....This material is a small, floating plant called *Lemna* (commonly known as duckweed). From a distance this small floating plant looks like an alga, but it is a plant and thus should be managed as such.

11b. The stuff is green, floating on the water's surface but does not look like tiny leaves.....12.

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12. Stuff floats on the water's surface, is green and does not look like tiny leaves

12a. The stuff is green, floating on the water's surface and upon closer examination is looks like tiny balls and feels coarse.....This material is actually the world's smallest floating plant and is called *Wolffia* (also known as watermeal). Similar to duckweed, this plant looks like an alga from a distance.

12b. The stuff is green, floating on the water's surface but does not look like tiny balls nor does it feel coarse.....13.

13. Stuff floats on the water's surface, is green and does not look like tiny balls nor does it feel coarse

13a. The stuff is floating on the water's surface and looks like a bright green paint.....This stuff is most likely one of the more notorious blue-green algae such as *Microcystis* or *Anabaena*. Such blooms typically occur during the summer and early fall.

13b. The stuff is green, floating on the water's surface but does not look bright green paint.....14.

14. Stuff floats on the water's surface, is green and does not look bright green paint

14a. The stuff floats on the water's surface and upon closer examination looks like tiny pinpoints, dark green or grey green in color.....The colonial blue-green alga *Coelosphaerium*. While this blue-green alga is typically common during the summer months, it is tolerate of cooler water temperatures and can be identified any time of the year.

14b. The stuff is green, floating on the water's surface but does not look like tiny pinpoints. Instead the stuff looks like grass clippings floating in the water.....The filamentous blue-green alga *Aphanizomenon*. While this alga is typically common during the summer months, it is tolerate of cooler water temperatures and can be found in the open waters in spring and fall.