



PondScapes Atlanta



GREEN WATER

The seemingly universal problem: Green Water. The mystery problem in so many ponds and always the ever-present danger. In reality green water isn't so bad. It is mostly our perception and the aesthetic issues that are the problem. There are many reasons why it happens, and many solutions available. It is also important to understand green water can take quite a while to fix correctly. Just remember, while it may look bad, it doesn't hurt the fish at all. However, green water is a symptom of a larger problem; if you don't fix the problem, the symptom (green water) will quickly reappear. Here is some background info, and long term solutions.

The natural processes in nature usually keep algae in check. But think about it, how many bodies of water can you think of locally that have a green cast to them (besides your pond)? Well Lake Lanier does, the Chattahoochee River does too. And all the farm and subdivision ponds I can think of also have a green look to the water. You can see green water is a common element in many bodies of water. So what is going on you ask; well here it is.

Green water is green because of the millions of algae cells floating around in the water. This is actually called phytoplankton. Phytoplankton needs nutrients and light to live, the more the better. When the algae get really out of control it is often called an algae bloom. In the natural environment, this phytoplankton is the base of the food chain, so more algae is better. However, in our pond the food chain is derived from our hands in the form of fish food. The food chain stops with the fish with no room for anything else. Algae is not a significant part of the food chain in ornamental ponds. So how do we keep the algae out of our pond? It starts with limiting what they need, nutrients and light, the two growth factors of algae.

Limiting light is easy in theory, more shade from plants and trees, etc. In practice, this is not easily accomplished. In early spring the pond starts to wake up, and we see the plants start to bud. But the algae gets started at a slightly cooler temperature, so it's already cranking away when the plants start. If the plants (water lilies, parrots feather, etc) don't cover the water quickly, the algae takes over and whamo! problems begin. To prevent this we generally recommend giving the plants a head start by adding more plants till about 25% of the water is covered. Ideally 40% to 80% is much better, but that can be cost prohibitive for many larger ponds. It may be better to let the plants grow into that 40%.

Another great thing some plants can do that helps reduce the algae is to consume the other thing algae needs - nutrients. Nutrient limitation can be accomplished several different ways. The easiest is in the biological filter. The bacteria that metabolize the fish wastes will also help remove the algae producing nutrients. If there are enough bacteria, we theoretically don't even

need plants. But that's no fun, and lots of bacteria means lots of filtration and water movement not present or feasible in most ponds. Another practical double duty way to remove the nutrients is with floating plants. The plants not only shade the water, but they have their roots in the water sucking out nutrients. These guys can out-compete the algae very effectively. However, if none of these natural things work we can add chemicals and use other products that can help too.

PondScapes Atlanta is a big believer in fixing problems using natural methods. If your pond is still green with all these natural solutions in effect, than something is wrong. Sometimes the algae gets established and can be very difficult to get rid of. Sometimes we think we are doing it right, but we're actually not. Sometimes there are just too many fish. In these situations it may be easier or more practical, and even cheaper to do something 'unnatural.'

As we said earlier green water is a symptom of a larger problem, too much light or nutrients. Often fixing the larger problem gets to be too difficult or even undesirable. In these cases, we can fix just the symptom (the green water). It's similar to taking aspirin for a headache. The aspirin just masks the pain. The problem (pain) is still there; we just can't feel it anymore.

So what to do? We can add chemicals, most of which are short term, can be toxic to fish and plants and are expensive (not our favorite option). We can add bacterial products, which are expensive and also short term (but, at least not toxic). We can do water changes, which work for a few days and are stressful to the fish. Or we can turn to UV sterilization. This is an excellent alternative. UV sterilizers are easy to install, and in the long term they are less expensive than the other options. Also, they are consistent, you don't have to run out and throw a scoop of chemical in the water every time it turns green!

UV sterilizers work by disrupting the DNA of microscopic organisms. All sterilizers work on the same principle, some are more cost effective than others, but they all work in the same way. Basically, there is a sleeve or tube where the light is kept dry. The light is a similar to the lights you would find in a tanning bed. Water is pumped around the sleeve, and exposed to the ultraviolet light. Algae are particularly sensitive to this light, which is why it works so well. To a lesser extent UV sterilizers can kill lots of free water parasites too. So all you have to do is pump some water through the sterilizer and back to the pond. Very simple. It is a very safe option for both plants and fish. Only free-floating microorganisms (algae & parasites) are effected.

Every pond is different, and some ponds will need a larger UV unit than others, and sometimes this really isn't the best option. Now that you understand the principles and some of the possible solutions, you should be in a better position to make some educated decisions. Some of these solutions are cheap and others are very expensive. It is a good idea to discuss your particular situation with a professional before you make any costly purchases that may be avoidable. Please feel free to contact us to setup a consultation.

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