

Water Quality: What Is it Exactly?

How good is your lake's water quality? The answer isn't as simple as it might seem. You can judge water quality reasonably well just by looking, but for a full assessment you have to look much deeper. Let's look at the key components of water quality.

Clarity. In general, clear lakes have good water quality, but that isn't always true. For example Lake Michigan is very clear these days, but largely because invasive mussels filter out the algae that form the base of the food chain. As a result, certain fish populations are collapsing. Clear as Lake Michigan may be, it is far from healthy.

Dissolved oxygen (DO). The more molecular oxygen (O₂) in the water, the more life the lake can sustain. High DO supports fish like trout and smallmouth bass. Low DO may limit fish life to rough species like bullheads and carp.

pH. This is a measure of how acidic or alkaline the water is. Fish and other organisms can live only within certain pH ranges. A lesson here comes from lakes that in the 1970s were acidified by pollutants from coal power plants. In some lakes the water became so acidic that almost all fish died.

Nutrients. Excessive nitrogen and phosphorus from farm runoff, excess lawn fertilization, failing septic systems and other sources can cause rampant weed and algae growth. The result is reduced water clarity and DO, among other impacts.

Insect life. Mayflies, caddisflies and stoneflies have low tolerance for pollution – they are a sign that your lake is healthy. More pollution tolerant but still positive indicators are craneflies, dragonflies, damselflies and whirligig beetles.

Plankton. A healthy lake has strong numbers and good diversity of algae, one-celled diatoms, and the many small creatures we collectively call zooplankton.

So, the water quality in a lake isn't always clear cut. What is clear cut is the need to protect it.

One in a series of articles sponsored by the Oneida County Lakes and Rivers Association (www.oclra.org). For more information, contact Bob Martini at 715-282-5896 or email to webmaster@oclra.org. OCLRA encourages the use and distribution of this material by lake associations, their members, and other parties concerned about water quality.

Did you know?

Tiny amounts of mercury in lakes can accumulate in fish, making some species possibly unhealthy for some people to eat.

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