

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 zebra 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 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 1970's were acidified by pollutants from coal power plants. In some lakes the water became so acidic that almost all of the fish died.

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

Insect life: Mayflies, caddis flies and stoneflies have very low tolerance for pollution – they are a sign that your lake is healthy. More pollution tolerant but still positive indicators and crane flies, 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.

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

NOTE: This is one in a series of articles sponsored by OCLRA (www.oclra.org) and will be made available to you on this website over the next ten months... with a new article appearing approximately every two weeks. OCLRA encourages the use and distribution of this material by lake associations, their members and other parties concerned about water quality.