Lake Checkups – Water Quality Tests

Lake Papakeechie Sustainability Initiative – LaPSI – Spring 2014

Lakes, like people, can be healthy or unhealthy. When people get medical checkups, things like heart rate, body temperature, body weight, and blood pressure are measured because they are good indicators of human state of health. Lakes are no different, except for the indicators used. What are the major indicators of lake health and what do they tell us about lake health?

Turbidity. Turbidity is a measurement of water clarity. It is affected by the amount of particles suspended in the water. Turbidity values can be used to determine the Trophic State Index (TSI) of a lake, which is a standard measure of health.

Nitrogen and Phosphorus. Nitrogen (N) and phosphorus (P) are required nutrients for all living organisms. However, excessive amounts of N and P in lake water can cause the explosive growth of certain organisms that can greatly impair water quality. Primary sources of excess N and P include agricultural and residential use of fertilizers.

Bacteria. Lakes containing high levels of bacteria cannot be used safely for human activities. *E. coli* contamination is commonly caused by pollution from poorly functioning septic systems. The state of Indiana has standards to determine if a lake is impaired by bacteria.

Dissolved Oxygen. Many living organisms require oxygen to live. The availability of oxygen in lakes determines the kinds of organisms that can grow there. The shape of a DO *versus* lake depth graph is a strong indicator of lake health. DO, like turbidity, can be used to calculate TSI values.

See the PPA web site at http://lakepapakeechie.org for more information about these and other water tests, and how you can participate in water testing at Lake Papakeechie.