

APPENDIX A

Glossary of Terms

Bacteria – Microorganisms which can cause infections or diseases in plants and animals. Bacteria form the base of food webs by transforming inorganic materials into complex organic compounds, and breaking complex organic compounds into inorganic materials. By constantly shifting matter back and forth between simple and complex forms, bacteria make food available for other organisms.

Benthic – Pertaining to the bottom surfaces of aquatic environments.

Chloride (Cl) – Chloride is a negatively charged chlorine ion present in waters in areas with limestone deposits. Chloride does not affect plant and algae growth. Chloride is important in osmotic salinity balance and ion exchange of aquatic organisms. External sources of chloride include septic systems, animal waste, potassium chloride fertilizer, and drainage from road-salting chemicals.

Chlorophyll a (Ch a) – Green pigment present in all plant life necessary for photosynthesis. The amount present in lake water depends on the amount of algae in the water. Chlorophyll a is commonly used as an indicator of water quality.

Conductivity – Measure of the ability of water to conduct an electric current. Conductivity is dependent on the number of dissolved ions in solutions. Observed conductivities are largely a function of geology and soils in the watershed. Conductivity varies with temperature and to a lesser extent the nature of the individual ions present.

Current – Water flow expressed as distance traveled per unit time (e.g., feet per second).

Discharge – Water flow expressed as volume per unit time (e.g., cubic feet per second).

Dissolved Oxygen (DO) – Concentration of dissolved oxygen molecules in water. DO is supplied to a water body through the diffusion of atmospheric oxygen in the water and the photosynthetic production of oxygen by algae and aquatic plants. Respiratory processes, oxidation of inorganic wastes, and the decomposition of organic matter decrease oxygen concentrations in water.

E.coli (Escherichia coli) – A bacterium common to the human intestinal tract.

Fecal coliform bacteria – Indicator organism that typically inhabits the intestinal tracts of vertebrates, such as cattle, pigs, waterfowl and humans. Fecal coliform is generally assumed to be an indicator of septic tank contamination.

Freshwater – An aquatic environments such as streams, river, and lakes where there is little dissolved mineral matter and which results directly from precipitation. Freshwater is a finite resource.

Groundwater – The water stored in the open spaces within underground rocks and unconsolidated material.

Invertebrate – Organisms without an internal skeletal structure such as insects, mollusks and crayfish.

Limestone – Biochemical sedimentary rock whose main component is calcite (CaCO₃). Most limestones have a large component of calcite that was originally extracted from sweater by organisms such as corals, clams, and snails.

Macroinvertebrates – Diverse group of organisms that include aquatic insects, worms and snails, clams, decapods (crayfish), etc. These organisms are benthic, meaning they are associated with the water-sediment bottom interface and inhabit lake edges, streams and estuaries. Dissolved oxygen concentrations and the proper habitat are two of the most important environmental components that account for the distribution, abundance and diversity of these organisms in a water body.

Nitrogen – The five major forms of nitrogen in freshwater are elemental nitrogen (N₂), organic nitrogen, ammonia (NH₃), nitrate (NO₃), and nitrite (NO₂). NH₃, NO₃, and NO₂ are readily available to aquatic plants and algae for metabolic uptake.

Nitrate-nitrogen (NO₃-N) – Is readily utilized by algae and aquatic plants; however, it must be reduced before it can be metabolically used. Therefore, most algae and aquatic plants prefer ammonia to nitrate. The amount of NO₃ in a water body at any given time is a function of the extent of metabolism in the water body. NO₃ concentrations are usually low in water bodies with high metabolic rates due to uptake and utilization by algae and aquatic plants.

Nitrite-nitrogen (NO₂-N) – Is typically present in water bodies at low concentrations. High concentrations of NO₂ may be indicative of inputs from septic systems or sewage treatment plants.

Nutrient – Any material that organisms take in and assimilate for growth and maintenance. In water, nutrients can act as fertilizing compounds and stimulate and sustain growth and development of aquatic plants and algae. Nitrogen and phosphorus compounds are the two most important nutrients.

Organic compounds – Compounds are those which contain carbon-carbon (C-C) bonds or carbon-hydrogen (C-H) bonds. All life is based on a complex interrelationship of thousands of organic substances from simple compounds such as sugars, amino acids, and fats to vastly more complex ones, such as enzymes that catalyze biochemical reactions and the DNA molecules which carry genetic information.

Secchi Depth – Depth at which a secchi disk is visible when lowered into a lake. Correlates with transparency.

Total Phosphorus (TP) – Represents the sum of all phosphorus forms, including dissolved, and particulate organic phosphates from algae and other organisms, inorganic particulate phosphorus from soil particles and other solids, polyphosphates from detergents, and dissolved orthophosphates.

Total Suspended Solids (TSS) – Measure of the amount of particulate material, both organic and inorganic, present in the water column. Suspended solids include both organic matter, such as various microorganisms, algae, plant material and inorganic material, including sand, silt, and clay particles. The amount of suspended solids present in a lake can affect water temperature and density. In general, waters with TSS concentrations in excess of 25 mg/L are turbid.

Watershed – Area that carries surface runoff directly or indirectly, through streams and river, to the oceans.

Water Temperature – Measurement of the amount of heat contained in water. The temperature of a water body is a function of the ambient air temperatures and the morphometry and setting of the water body.