

## Glossary

**Aerobic:** describes life or process that requires the presence of molecular oxygen (see anoxic).

**Algae:** simple plants found in water and elsewhere, having no roots, flowers, or seeds; frequently microscopic and may grow in simple colonies, singular: *alga*

**Anaerobic:** describes processes that occur in the absence of molecular oxygen.

**Anoxic:** describes no oxygen in the water. Often occurs near the bottom of eutrophic lakes in summer and under the ice in winter.

**Aquifer:** saturated permeable geologic unit(s) that can transmit significant quantities of water under ordinary hydraulic gradients.

**Artesian:** an aquifer in which the water is under sufficient head to cause it rise above the zone of saturation at that place if opportunity were afforded to do so.

**Bathymetric map:** a map showing the bottom contours and depth of a lake. Can be used to calculate lake volume.

**Bedrock aquifer:** one or more saturated geologic units composed of sedimentary, metamorphic, or igneous rock that can transmit significant quantities of water under ordinary hydraulic gradients.

**Bed load:** the part of the stream's sediment load that is rolling and sliding along because it is too heavy to be carried by suspension.

**Benthic:** describes stream and lake bottoms.

**Benthic aquatic invertebrates:** insects and simple animals that live near stream and lake bottoms.

**Blooms:** sudden abundant growth of algae, usually consisting of one or a few species, which has the effect of greatly reducing transparency.

**Braided stream:** a stream with complex, anastomosing multiple channels rather than a single larger channel.

**Chlorophyll *a*:** green pigment in plants essential to photosynthesis.

**Conductance:** conductivity, the indirect measure of electrolytes in water; the reciprocal of resistance; an electromotive force of 1 volt between two points is 1 mho or 1 siemens(S); specific conductance, usually the electron flow between two cm<sup>2</sup>-electrodes, set 1 cm apart.

**Deleterious:** having a harmful effect.

**Dimictic:** describes lakes with two mixing periods, typically in spring and fall.

**Discharge:** the volume of stream flow passing a point during some period of time; often expressed as cfs or cubic feet/second.

**Ecology:** scientific study of relationships among animals, plants, other organisms, and their environments.

**Ecoregion:** an environmental area characterized by a specific land use, soil types, land surface form, and potential natural vegetation.

**Ecosystem:** a system of interrelated organisms and their physical-chemical environment.

**Epilimnion:** upper, warm layer of a lake during summer thermal stratification.

**Erosion:** wearing away of the lands or structures by running water, glaciers, winds, and waves.

**Euphotic zone:** upper region of lake where photosynthesis occurs because of adequate amounts of light and nourishment.

**Eutrophic:** Gr. “well-nourished”; describes a lake of high photosynthetic productivity.

**Eutrophication:** the process of physical, chemical, and biological changes associated with nutrient, organic matter, and silt enrichment and sediment of a lake or reservoir. If the process is accelerated by human influences it is cultural eutrophication.

**Export coefficient:** an estimate of the expected annual amount of a nutrient transported from its source to a lake. Expressed in terms of mass per area per unit of time.

**External loading:** nutrients or pollutants arriving at a body of water via external routes, for example, influent streams.

**Flood profile:** a set of elevations established along a stream or riparian to a lake that results from the storage of surface water runoff.

**Floodplain:** an area defined to be used for the storage of surface water runoff.

**Geology:** the science which treats of the origin, history, and structure of the earth, as recorded in the rocks; together with the forces and processes now operating to modify rocks.

**Glacial drift:** poorly sorted, permeable sediment which was deposited by glaciers.

**Groundwater:** water found beneath the soil surface and saturating the strata at which it is located; often connected to lakes.

**Groundwater sensitivity:** a qualitative or semiquantitative measure of the vulnerability of an aquifer to contamination.

**Hydrology:** the applied science concerned with the waters of the earth in all its states—their occurrences, distribution, and circulation through the unending hydrologic cycle of: precipitation; consequent runoff, stream flow, infiltration, and storage; eventual evaporation; and reprecipitation.

**Hydrologic cycle:** process of water falling to the earth as rain or snow, flowing across or under the ground into rivers and to the ocean, and evaporating back into the air.

**Hypolimnion:** lower, cooler layer of a lake during summer thermal stratification.

**Infiltration:** the entrance of water into the soil or other porous material through the interstices or pores of a soil or other porous medium.

**Internal loading:** nutrients or pollutants recycled to a body of water from its sediments.

**Internal nutrient cycling:** transformation of nutrients such as nitrogen or phosphorus from biological to inorganic forms through decomposition, occurring within the lake itself.

**Isothermal:** the same temperature throughout.

**Lake management:** a process that involves study, assessment or problems, and decisions affecting the maintenance of lakes as thriving ecosystems.

**Land use:** type of development and use of a land area; urban and agriculture are land uses.

**Land cover:** undeveloped area of landscape with a distinct type of vegetation. Forests and wetlands are land covers.

**Limnetic:** open area of a lake, from the edge of the littoral zone to the center of the lake. Also known as pelagic.

**Limnology:** scientific study of fresh water, especially the history, geology, biology, physics, and chemistry of lakes.

**Littoral:** portion of a water body extending from the shoreline lakeward to the greatest depth occupied by rooted plants.

**Loading rate:** See export coefficient.

**Macrophyte:** “large plant”; rooted, seed-producing plants in lakes.

**Mesotrophic:** describes a lake of moderate photosynthetic productivity.

**Metalimnion:** thermocline; boundary layer of rapid temperature change between epilimnion and hypolimnion or a thermally-stratified lake.

**No net loss:** no reduction in the area and value of a wetland from existing conditions.

**Nonpoint source:** diffuse source of pollutants coming from contaminated underground flow, septic systems leakage, and overland runoff to streams and lakes.

**Nonpoint source pollution:** pollution originating at a variety of nonlocalized sources, such as street runoff, septic systems, atmospheric deposition, or groundwater.

**Nutrient:** element or chemical essential to life, including carbon, oxygen, nitrogen, phosphorus, and others.

**Nutrient budget:** measurement of amount of nutrients (usually phosphorus and nitrogen) coming into a lake or stream, flowing out, and staying in the water and bottom sediments.

**Oligotrophic:** “poorly nourished”; describes a lake of low photosynthetic productivity.

**Permeability:** a measure of a rock or soil’s ability to transmit water analogous to hydraulic conductivity.

**Porosity:** the void space in a rock or soil between fractures or grains.

**pH:** measure of the concentration of hydrogen ions of a substance. Specifically it is the negative logarithm of the molar concentration of hydrogen ions. It ranges from 1 = very acid (high concentration) to 14 = very alkaline (low concentration) of hydrogen ions.

**Photosynthesis:** biological process by which algae, higher plants, and some bacteria create organic matter from inorganic nutrients using energy captured from light by some pigment, e.g., chlorophyll.

**Point source:** well-defined source of pollutants, such as a pipe from a municipal wastewater treatment plant or industry.

**Pollution:** addition, by people or by their activities, of a substance or energy to the environment which causes undesirable effects.

**Precipitation:** the total measurable supply of water of all forms of falling moisture, including dew, rain, mist, snow, hail, and sleet; usually expressed as depth of liquid water on a horizontal surface in a day, month, or year, and designated as daily, monthly, or annual precipitation.

**Recharge:** the process whereby an aquifer receives water.

**Secchi disc:** a white disc about 20 cm in diameter, lowered into water to measure transparency on the basis of visibility.

**Stream order:** the position a section of a stream occupies in relation to the tributaries contributing to it; the higher the order the more tributaries it has.

**TDS:** total dissolved solids; filterable residue; usually expressed as g/liter or mg/liter following evaporation of a measured sample of filtered water.

**Thalweg, talweg:** German for the valley path; the longitudinal deepest channel in a stream bed.

**Thermocline:** a density gradient or pycnocline owed to changing temperatures; the planar thermocline is the imaginary plane at the depth where the rate of temperature change is the greatest in a vertical temperature profile.

**Topography:** the physical features of a district or region, such as are represented on maps, taken collectively; especially, the relief and contour of the land.

**Trophogenic zone:** a region in a body of water where synthesis of organic compounds is predominant; usually refers to the photosynthetic region.

**Wellhead protection:** the process of mitigating the potential for contamination of a well or well field by instituting controls on land use in the area where the well receives its groundwater.

**Zooplankton:** the fraction of the plankton community composed of animals; the individual is a zooplankter.