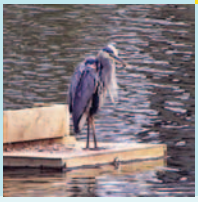
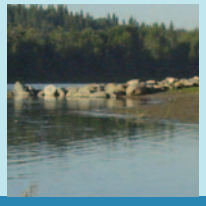


Chapter 9.0

Glossary






9.0 GLOSSARY

Aerobic: In freshwater systems, an environment that contains oxygen.

Anaerobic: In freshwater systems, an environment that is devoid of oxygen.

Anoxic: In freshwater systems, anoxic refers to a lack of dissolved oxygen. Bacterial decomposition of excessive organic matter under winter ice cover frequently causes anoxia.

Anthropogenic: Literally, "human origin", such as sewage inputs into a freshwater system.

Arable: Land fit to be cultivated as by plowing or tilling.

Benthic: Refers to the substrate at the bottom of aquatic habitats (e.g., lakes, oceans and rivers). Also describes the life strategy of organisms living in or on that substrate (e.g., clams and oligochaete worms) (CCME 1999).

Dissolved Oxygen (DO): A measurement of the amount of oxygen available to aquatic organisms. Temperature, salinity, organic matter present, BOD and COD affect DO solubility in water.

Ecological Integrity: See Environmental Integrity.

Ecosystem: An ecological system of an assemblage of plants, animals, bacteria and fungi that, in their natural environment are treated together as a functional unit.

Environmental Integrity: The degree to which all environmental (ecological) components and their interactions are represented and functioning.

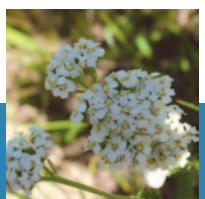
Ephemeral Wetland: A wetland that temporarily holds water for part of the year in some years. Using the Stewart and Kantrud (1971) classification these would be classes I – III, with class I being very temporary and often farmed right through in all but the wettest years and III containing typical emergent vegetation like cattail but drying up in mid summer.

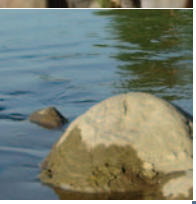
Eutrophic: Refers to aquatic environments that have abundant nutrients and high rates of productivity. In water bodies such as lakes, ponds and slow-moving rivers, oxygen levels below the surface layer may be depleted. Opposite of oligotrophic (CCME 1999).

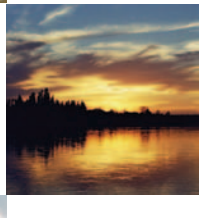
Eutrophication: The natural and/or anthropogenic processes by which the nutrient content of natural waters is increased, generally resulting in an increase of biotic productivity and biomass (CCME 1999).

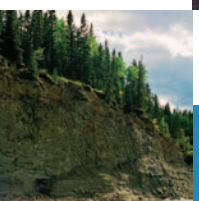
Fauna: Animals of a particular region, considered as a group.

Fecal Coliform: Refers to the group of bacteria associated with the feces of warm-blooded animals. They constitute one of three bacteria commonly used to measure possible contamination of water by human or animal wastes. The others are *Escherichia coli (E. coli)* and *Enterococcus spp*.







Five Year Running Average: The sum of the previous five years' quantities in a set divided by five. Expressing an average in this manner eliminates individual between year variation, making data easier to understand.

Forest Management Area (FMA): An agreement between the Alberta government and a company to enable that company to enter on forest land for the purpose of establishing, growing and harvesting timber in a manner designed to provide a perpetual sustained yield. Unlike timber quotas or timber permits, FMAs require long-term forest management planning and public consultation by the companies.

Forest Management Unit (FMU): The defined area of forest located in the Green Area designated by the Alberta government to be managed as a unit for wood fibre production and other renewable resources.

Gastroenteritis: Inflammation of the stomach lining membrane and intestines that is marked by flu-like symptoms including nausea, vomiting, diarrhea, and abdominal cramping and is typically caused by a virus (as the Norwalk virus) or a bacterium (as *E. coli*).

Glacial Flour: Finely ground rock particles produced by glacial abrasion.

Guidelines: Generic numerical concentrations or narrative statements that are recommended as upper limits to protect and maintain the specified uses of air, water, sediment, soil or wildlife. These values are not legally binding (CCME 1999).

Hardness: The concentration of all metallic cations, except those of the alkali metals, present in water. In general, hardness is a measure of the concentration of calcium and magnesium ions in water and is frequently expressed as mg/L calcium carbonate equivalent (CCME 1999).

Hummocking: Depressions in soil resulting from large animals walking through soft or moist soil.

Invasive Plant Species: Weed species classified as noxious or restricted by a municipality or county with the potential to infest riparian areas.

Macrophytes: Macroscopic (large) aquatic plants, which can be rooted, submersed, emergent or sessile.

Mass Loads: The mathematical weight of a pollutant in a waterbody. The load is the calculated product of the concentration of a pollutant in water multiplied by the water volume.

Mesotrophic: Refers to aquatic environments with adequate nutrients and sufficient rates of productivity to sustain aquatic life. (Meso = "middle").

Morphometry: The measurement of the shape of a lake, usually with depth contours.

Multi-Barrier Approach: An integrated system of procedures, processes and tools that collectively prevent or reduce the contamination of drinking water from source to tap in order to reduce risks to public health.

Nitrogen: A nutrient necessary for the growth and development of animals and plants. Typically nitrogen is the limiting nutrient in terrestrial systems.




Pathogen: An agent that causes disease, especially a living microorganism such as a bacterium or fungus (Webster's dictionary).

Permanent Wetland: a wetland that retains water for most of the year in most years. Using the Stewart & Kantrud classification, these would be class IV or V (lakes).

pH: A logarithmic scale used to measure the acidity of water.

Phosphorus: A nutrient necessary for the growth and development of animals and plants, which is typically the limiting nutrient of aquatic systems. It can be measured at several levels: total phosphorus (TP), total dissolved phosphorus (TDP) and soluble reactive phosphorus (SRP).

Polygon: A term used to describe a riparian inventory site area.

Pugging: Raised mounds in soil resulting from large animals walking through soft or moist soil.

Reach: A section of stream, river, lake or wetland with similar physical and vegetative features and similar management influences.

Riparian: The transitional zone between upland and aquatic habitat. Riparian areas perform important ecological functions, contain a diverse assemblage of plant and animal species, provide essential habitat for wildlife and are influenced by seasonal water levels.

Salinity: In fresh waters, the salinity is the sum of the ionic composition of the eight major cations (calcium, magnesium, sodium and potassium) and anions (carbonate, sulfate, chloride and nitrate) in mass or milliequivalents per litre (Wetzel 1975).

Secchi Disk: An 8-inch (20 cm) disk with 2 alternating black and white quadrants used to measure water transparency to light penetration. Transparency decreases as color, suspended sediments, or algal abundance increases.

Seismic: An exploration technique to identify oil and gas deposits by producing sound waves at the surface, recording how the waves are reflected from underlying features and interpreting these reflections to produce a computer model of subsurface geological structures.

Solids: Matter suspended or dissolved in water which may negatively affect water quality in terms of palatability, industrial use and aesthetics.

Soluble Reactive Phosphorus: A measure of the inorganic (dissolved) phosphorus in a solution.

Standard: A legally enforceable numerical limit or narrative statement, such as in regulation, statute, contract, or other legally binding document, that has been adopted from a criterion or objective (CCME 1999).

Stratigraphy: The study of rock, soil or lake sediment layers (strata), especially the distribution, deposition, and age of sedimentary rocks or lake sediments.

Taxa: In biology, a taxonomic category or group, such as a phylum, order, family, genus, or species.


Total Phosphorus: A measure of both organic (particulate) and inorganic (dissolved) forms of phosphorus in a solution.

Total Dissolved Solids (TDS): Portion of dissolved solids that passes through a 2.0 µm filter (Standard Methods 1998).

Total Coliforms: A group of closely related, mostly harmless bacteria that live in soil and water as well as the gut of animals. The extent to which total coliforms are present in the source water can indicate the general quality of that water and the likelihood that the water is fecally contaminated. Total coliforms are currently controlled in drinking water regulations, because their presence above the standard indicates problems in treatment or in the distribution system. If total coliforms are found, then the public water system must further analyze that total coliform-positive sample to determine if specific types of coliforms (i.e., fecal coliforms or *E. coli*) are present.

Total Kjeldahl Nitrogen (TKN): A measure of the sum of organic nitrogen and ammonia nitrogen (Standard Methods 1998).

Total Residue (TR): Material left behind after evaporation of a sample and oven drying (Standard Methods 1998).

Trophic: Refers to the nutrient availability and productivity status of a waterbody.

Total Suspended Solids (TSS): The portion of dissolved solids that are retained by a 2.0 µm filter (Standard Methods 1998).

Watershed: The area of land draining into a stream, lake, wetland or other waterbody. Wherever you are on the earth, you are in a watershed.