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Glossary

Algae – Simple plants, chiefly aquatic, that are the basis of the aquatic food web for fish and other aquatic animals.

Allocation – Permission for water to be redirected for other than domestic purposes. Agriculture, industry and municipal water users apply to Alberta Environment for a licence to use a set allocation of water. This water licence outlines the volume, rate and timing of the diversion of water.

Aquatic – The components of the environment related to, living in or located in water bodies or their bed and shores, including all organic and inorganic material, plants and animals and their habitat.

Aquifer – An underground water-bearing formation capable of yielding water.

Assimilative Capacity – The ability of a water body to purify or remove contaminants from wastewater.

Baseflow – The groundwater component of a stream's flow.

Baseline – Conditions occurring before and/or during the reference period that serve as a comparison for measurement.

Benthic – The bed or bottom of a water body and associated organisms.

Bio-available – The ability of a compound to be absorbed or interact in the metabolism of an organism.

Bio-solids – The semi-solid waste generated by wastewater and water treatment systems.

Braided – The pattern of two or more shallow, interconnected stream channels.

Channelize – The straightening and deepening of a stream so that water will move faster.

Climate change – A significant change from one climatic condition to another, often used to describe global warming, which is the warming predicted to occur as a result of increased emissions of greenhouse gases.

Confluence – The point at which a tributary merges with the mainstem of a river.

Consumption – The amount of water a licence holder is permitted to divert that is not entirely or directly returned to the water body; also, the difference between the amount of water diverted and the amount of return flow to the system, or the water losses from the system.

Culvert – A pipe used to carry water beneath or through a built structure or embankment.

Cutblock – A specific area of land identified on a forest development plan licence to cut, within which timber is can be or has been harvested.

Dam – A barrier that obstructs the flow of water and is used for water diversion or water storage.

Deciduous – Perennial plants that shed their leaves at some time of the year.

Deposition – Localized accumulation of particles transported by a stream.

Discharge – The volume of water passing a particular point over a specified period of time. Also called *rate of flow* or *flow*.

Dissolved oxygen – The concentration of oxygen available for plants and animals in the water.

Diversity – The variability among living organisms and the complexity of their habitats.

Diversion – The impoundment, storage, consumption, taking or removal of water. Also called *withdrawal*.

Drainage Basin – The area of land drained by a river and all its tributaries. Also called the *catchbasin* or *watershed*.

Ecosystem – A community of inter-dependent organisms together with the environment they inhabit and with which they interact.

Effluent – The liquid waste of municipalities, industries or agricultural operations that is usually released from a wastewater treatment process.

Endemic – A species that is native to or confined to a certain region.

Extirpated – A species that no longer exists in a given part of its former range, but still exists in another area.

Environmentally Significant Area – A landscape or place that is vital to the long-term maintenance of biological diversity, soil, water, or other natural processes, both on-site and in a regional context.

Erosion – The wearing away of the land surface by wind or water. Erosion may be intensified by land-clearing practices.

Eutrophic – Waters with high nutrient concentrations that result in increased biological productivity of the system, including excessive algal growth.

Evapo-transpiration – Loss of water due to evaporation to the atmosphere and transpiration from growing plants.

Fecal coliforms – Bacteria found in the intestinal tracts of mammals. Their presence in water is an indicator of pollution and possible contamination by pathogens.

Feedlot – A confined area for the controlled feeding of livestock.

First-in-time, first-in-right – The principle used to prioritize water rights in Alberta. In existence since 1894, it means the older the licence, the higher the user is on the priority list, regardless of the use made of the water.

Floodplain – The land adjacent to a stream that becomes inundated when flows exceed the capacity of the channel. The size of the floodplain is often defined as the 1-in-100 year floodplain, that is land with a 1% chance of being flooded in any year.

Footprint – The area of the earth taken up by a certain land use, activity or object.

Forb – A non-grass or grass-like plant with a soft, rather than permanent woody stem.

Forage – Grasses, herbs and small shrubs used as feed for livestock or wildlife.

Freshet – Seasonal increase in streamflow due to spring runoff and/or meltwater.

Glacier – A large mass of land ice that is subject to slow movement through growth or recession.

Greenhouse Gas – A gas, such as carbon dioxide or methane, which contributes to potential climate change.

Groundwater – Sub-surface water trapped between rock and saturated soil. The upper limit of the groundwater is the water table.

Habitat – The physical and biological environment in which a plant or animal lives, which provides essential ingredients for survival: food, shelter and water.

Headwaters – The source and upper tributaries of a stream.

Headworks – All structures and associated facilities located at the start or head of a water management project, including the structure for diverting water from a river (dam or weir) and facilities for carrying and storing water (canals or reservoirs).

Hybrid – The offspring of two different varieties or of two different species.

Hydrocarbon – Chemical compounds that consist entirely of carbon and hydrogen, including oil, gasoline and methane.

Hydroelectric – The generation of electricity using waterpower.

Hydrograph – The graphic representation of a stream's discharge or stage over time.

Hydrologic regime – The distribution over time of water in a watershed, including: soil moisture, precipitation, groundwater storage, surface storage, evaporation, and runoff.

Hydrology – Scientific study of the Earth's water resources, especially water quantity.

Hydro-peaking – Rapid and variable daily streamflow fluctuations resulting from quick release of water downstream of a hydro-electric facility, to meet peak power needs.

Impoundment – Artificial storage of water.

Influent – Water or drainage flowing into a reservoir, basin, or treatment plant.

Inorganic – Chemical substances of mineral origin, rather than carbon structure.

Instream Flow – The rate of flow in a river.

Instream Flow Needs – The quantities of water and water quality conditions needed to sustain riverine processes and associated ecosystems over the long term.

Instream Objective – Instream flows targeted by a water system authority. IOs for parts of the Bow River offer some protection of the aquatic environment and may place restrictions on licence holders. This term is expected to fall out of use once Water Conservation Objectives are established.

Invasive – Weed species, classified as noxious or restricted, that have the potential to infest native plant areas.

Invertebrates – Animals without backbones, such as aquatic insects.

Ion – An electrically charged atom or group of atoms.

Levee – An elongated ridge or embankment of loose river sediment deposited along a stream channel.

Licence – Formal permission from a regulatory authority to divert water, catch fish, etc. A licence is required before water can be diverted or used, except for house-hold purposes or residential gardening.

Linear Disturbance – Pipelines, roads, seismic lines, and other uses of land that involve a relatively narrow corridor.

Littoral Zone – The portion of a water body that extends from the shoreline to the limit of where rooted plants can grow.

Mainstem – The primary channel of a river or the primary river in a drainage basin.

Meander – The sinuous bends of a narrow, slow-flowing stream in a wide floodplain.

Mixing Zone – A limited area downstream from a point of effluent discharge, where the initial dilution of the discharge occurs.

Mouth – The area where a stream enters a larger body of water.

Native – Organisms indigenous to a particular habitat, water body or region.

Natural Flow – In a regulated river, the flow that would exist in the absence of human influences; a calculated value based on stream gauge readings, diversions, etc.

No Till – A method of planting crops without prior seedbed preparation, Seed is placed in existing cover crops, sod, or crop residues, thus eliminating tillage operations.

Non-native – Organisms foreign to a particular habitat, water body or region.

Non-point source – Runoff from diffuse sources such as fields and roads.

Oligotrophic – Waters that have low concentrations of nutrients, resulting in low biological productivity of the system.

Oilfield injection – The addition of water into an oil-bearing formation to increase the amount of oil that can be extracted.

Organic – Naturally occurring, carbon containing compounds that form the basis of living organisms.

Outfall – The place where a pipe or channel discharges to a water body, or the material being discharged at that place.

Pathogen – A virus, bacteria or other life form that produces or is capable of producing disease.

Phytoplankton – Tiny plants, including algae, that live in water.

Point Source – Runoff that enters a water body via a pipeline, outfall or other specific source.

Pollutant – A substance that, in sufficient concentration, will render water, land or another system unusable or harmful.

Primary Treatment – The first stage of wastewater cleaning; removal of floating material and solids that settle out.

Reach – A portion of a stream, often uniform with respect to discharge, size, slope, etc. In this report, it also refers to the watershed surrounding the reach.

Recharge – The process by which water is added to saturated soil, such as an aquifer, usually by percolation from the soil surface.

Recorded Flow – Actual flows measured at a stream's hydrometric monitoring station.

Reservoir – A pond, lake or basin, either natural or artificial, for the storage, regulation and control of water.

Return Flow – Water that has been withdrawn from a river that is returned unused or after use, including treated wastewater discharges or water from irrigation canals that is not used on crops. Sometimes water is withdrawn from one stream, but returned to another.

Riparian – Adjacent to streams, lakes or wetlands, where water and land interact. The land beyond the bank of a water body is referred to as the *riparian zone*.

Runoff – The part of precipitation, snowmelt, or irrigation water that runs off the land into streams or other surface water.

Run-of-river – Hydroelectric facilities that do not have reservoirs. The water is passed through the generation plant as soon as it arrives from upstream.

Salinity – The percentage of salt in water.

Salinization – The precipitation of soluble salts within the soil or the evaporation of mineral-rich water from the soil that leaves salts behind.

Secondary Treatment – The second stage of treatment for cleaning wastewater; designed to reduce organic material and suspended solids to acceptable levels.

Sediment – Very small particles of mineral or organic materials.

Sedimentation – The process of material settling out of water.

Spawning – Laying eggs (refers to fish, in particular).

Spring Groundwater that seeps out of the earth, where the water table intersects the ground surface.

Staging area – A temporary gathering place for migrating birds to rest and feed.

Stormwater – Surface runoff resulting from precipitation in an urban area.

Streambank – The portion of the channel cross-section that restricts lateral movement of water at normal water levels.

Streambed – The bottom of the stream, below the water.

Sub-basin – A part of a river basin drained by a tributary.

Suspended solids – Ultra-fine particles held buoyant in a stream or other water body.

Synoptic survey – An overview of water quality in a water body. Water quality samples are taken from many sites to provide a snapshot of conditions.

Terrestrial – Elements of the environment related to, living in or located on land, including plants, animals and their habitat.

Tertiary Treatment – The third stage of treatment for cleaning wastewater, including disinfection and removal of nutrients.

Tributary – A smaller stream that joins with a larger stream.

Turbidity – A cloudy condition in water, due to suspended solids.

Ungulate – A hoofed, grazing mammal.

Wastewater – Unwanted materials that are dissolved, suspended or carried in water.

Water Conservation Objective – The amount and quality of water necessary for protection of a water body and its aquatic environment, or for recreational, transportation or waste assimilation uses, or management of fish and wildlife, or the water necessary to maintain a rate of flow or water level requirements.

Water Quality Index – A method of summarizing large amounts of water quality data into simple terms for reporting in a consistent manner.

Water Quality Guideline – A numerical concentration or narrative statement recommended to support or maintain a designated water use.

Watercourse – A natural channel through which water runs.

Watershed – The area of land drained by a river and all its tributaries. Also called the *catchbasin* or *drainage basin*.

Weir – A structure over which water flows that serves to regulate water level, divert water or, in some cases, measure flow.

Wetland – An area covered permanently, occasionally or periodically by shallow water, for a sufficient period to support aquatic life. Wetlands include marshes, bogs, sloughs, fens, swamps, muskeg, and ponds, but not rivers or lakes.

Withdrawal – The impoundment, storage, consumption, taking or removal of water. Also called *diversion*.

Notes

