Glossary

Aquiclude: a relatively impermeable geologic formation that may contain water but cannot transmit it in any significant quantity.

Aquifer: a geologic formation of porous rock or loose material that can hold and transmit significant quantities of water.

Aquifuge: an impervious geologic formation that cannot hold or transmit water.

Aquitard: a low permeability geologic formation of rock or sediment that transmits groundwater very slowly.

Artesian well: a well drilled into a confined aquifer that fills to the level of the potentiometric surface, which is above the upper boundary of the aquifer.

Base flow: the portion of flow in a stream that is fed by groundwater rather than surface runoff.

Biomagnification: the process by which higher concentrations of substances like pollutants are found in species higher in the food chain due to the accumulation of these substances when predators consume prey.

Canopy interception: the process in which precipitation is intercepted by the forest canopy and evaporates before dripping to the ground.

Capillary fringe: the layer directly above the water table in which pore spaces are filled with water that has seeped up from the water table by capillary action and held in place by adhesive forces.

Catchment area: the extent of land where all water from precipitation or snowmelt drains into a common stream, river system or other body of water, (also called a drainage basin)

Cone of depression: the drawdown of the water table around a pumping well that is greatest close to the well and gets smaller in all directions as the distance from the well increases.

Confined aquifer: an aquifer that exists between confining beds and consequently contains groundwater that is under pressure, (also called an artesian or pressure aquifer).

Confining bed: a geologic formation that overlies or underlies an aquifer and impedes the flow of groundwater. A confining bed can be an aquitard, aquiclude or aquifuge.

Conservation tillage: a series of agricultural practices that attempt to prevent soil degradation by reducing or eliminating the ploughing of the soil before sowing.

Cover crops: vegetation that is planted on bare soils during seasons when no crops are grown in order to reduce wind and water erosion.

Critical recharge area: an area of land that allows particularly high rates of infiltration and thus is very important to the process of recharge in the underlying aquifer(s).

Discharge: the process by which water leaves an aquifer

Discharge area: an area where groundwater flows to the surface of the land. Discharge areas occur where the water table intersects the surface of the land.

Ecotone: a transition zone between two adjacent ecological communities.

Estuary: the thin zone along a coastline (such as bays, lagoons, sounds or sloughs) where freshwater systems and rivers meet and mix with salty ocean water

Flowing artesian well: an artesian well in which the top of the well is below the level of the potentiometric surface, in other words, the potentiometric surface is above ground level. As a result, the well produces a continuous flow of water at the surface.

Gaining stream: a stream that is fed by the discharge of groundwater, (also called an effluent stream).

Groundwater: water occurring in the saturated zone that is free to flow between soil pores or through cracks in rock; the only water available to supply wells and springs.

Groundwater dependent ecosystems: ecosystems that rely directly or indirectly on groundwater for their functioning.

Groundwater divide: an imaginary line on either side of which groundwater flows in opposite directions.

Groundwater hydrology: the branch of hydrology that considers the occurrence, distribution, movement, and quality of groundwater.

Hard water: water with relatively high concentrations of dissolved calcium and magnesium.

Hydraulic gradient: the slope produced by measuring the change in hydraulic head over a given horizontal distance within an aquifer. The hydraulic gradient is represented by the slope of the water table in an unconfined aquifer, and the slope of the potentiometric surface in a confined aquifer.

Hydraulic head: is the sum of the elevation and water pressure at a particular point in an aquifer and represents the total energy of the groundwater at that point. Hydraulic head is

represented by the level of the water table in an unconfined aquifer, and the level of the potentiometric surface in a confined aquifer.

Hydrologic regime: the quantity, timing, location and duration of water delivery to an ecosystem.

Hyporheic zone: the zone of interaction between groundwater and surface water in the substrate of streams or other surface water bodies.

Infiltration: the process where water on the surface of the ground enters into the soil.

Integrated resource management: resource management that aims to protect and conserve a whole range of economic, social and ecological values.

Losing stream: a stream that recharges groundwater by seepage through the stream bed, (also called an influent stream).

Non-point source contaminants: contaminants that are spread out over a relatively large area.

Perched aquifer: an unconfined aquifer which occurs 'perched' within the unsaturated zone above a small confining bed; often seasonal.

Percolation: the process of water slowly seeping downward through the soil under the force of gravity.

Permeability: a measure of water's ability to flow through a geologic deposit. It is determined by the porosity of the deposit as well as the shape of the pores and their degree of interconnection, (also called hydraulic conductivity).

Piezometer: a small diameter observation well or tube used to measure the hydraulic head at any point in an aquifer by measuring the height to which water rises in the tube.

Point source contaminants: contaminants that are concentrated or stored in one spot.

Porosity: the ratio of the total volume of open pore space in a geologic deposit to the total volume of the deposit.

Potable water: water that is safe to drink.

Potentiometric surface: the surface to which water rises in all the wells tapping a particular confined aquifer. It is typically not flat, but curved to reflect variations in pressure and elevation within the aquifer.

Recharge: the process by which the supply of groundwater in an aquifer is replenished.

Recharge area: an area of land where water can infiltrate into the soil column and percolate down to an aquifer to recharge its supply of groundwater.

Redundancy: occurs when there is more than one species that performs the same or similar functions in an ecosystem.

Retention time: the amount of time that it takes for groundwater to flow underground from recharge areas to discharge areas.

Saturated zone: the subsurface region in which all pore spaces in the soil, sediment or rock are completely filled with water, (also called the phreatic zone).

Soil moisture: water occurring in the unsaturated zone that is bound to soil particles by adhesive forces.

Subsurface water: all water that is found beneath the surface of the ground, occupying the cracks and porous spaces in rocks and between soil and sediment particles.

Surface runoff: precipitation or snowmelt that flows over the surface of the land rather than infiltrating into the soil.

Surface water: all water found on the surface of the earth that is naturally open to the atmosphere.

Unconfined aquifer: an aquifer whose upper boundary is formed by the water table. An unconfined aquifer lacks an overlying confining bed and thus is exposed to atmospheric pressure, (also called a phreatic or water table aquifer).

Unsaturated zone: the subsurface region occurring between the zone of saturation and the surface of the land; water in this zone only partially fills soil pore spaces, which also contain air, (also called the zone of aeration, or the vadose zone).

Watershed: the entire geographical area drained by a river and its tributaries.

Water balance: an account of the water entering an aquifer through recharge and underground flow, the amount that leaves the aquifer through pumping or underground flow, and the amount that remains in the aquifer.

Water table: marks the upper boundary of the zone of saturation. The water table may be below, at, or above the surface of the land, (also called the phreatic surface).

Water table well: a well drilled into an unconfined aquifer that will fill up to the level of the water table.