



Glossary

Abiotic The nonliving components of an ecosystem such as light, soil chemistry, geographic setting, and weather that affect ecological functions.

Adaptation An anatomical structure, physiological process, or behavioral trait of an organism that has evolved over a period of time by the process of natural selection such that it increases the expected long-term reproductive success of the organism.

Albedo A measure of the reflectivity or intrinsic brightness of an object. A white, perfectly reflecting surface would have an albedo of 1.0; a black perfectly absorbing surface would have an albedo of 0.0.

Atmosphere The layer of gases surrounding Earth, held in place by the force of gravity.

Anthropogenic Human-induced or resulting from human activities.

Biogeoclimatic Zone A large geographic area with a broadly homogenous macroclimate. Each zone is named after one or more of the dominant climax species of the ecosystems in the zone, and a geographic or climatic modifier. British Columbia has 14 biogeoclimatic zones.

Biotic The living components of an ecosystem, such as plants, animals, fungi, and micro-organisms that affect ecological functions.

Carbohydrates Organic compounds of carbon, hydrogen, and oxygen, which include sugars, starches, and cellulose; a product of photosynthesis.

Carbon (C) The 12th element in the periodic table, found in all organic molecules. Carbon is one of the most versatile elements and combines with many other elements to form a huge variety of compounds.

Carbon Cycle The global carbon cycle refers to the flow of carbon through Earth's atmosphere, oceans, rocks, and soil as well as terrestrial, aquatic, and marine ecosystems.

Carbon Dioxide (CO₂) A greenhouse gas, produced during the process of burning (combustion), including the burning of fossil fuels, and produced during the process of cellular respiration.

Carnivore An animal that eats meat in the form of other animals.

Climate Average weather patterns over long periods of time, generally tens to thousands of years.

Climate Change A change in the average weather patterns regionally or globally.

Consumer An organism that cannot produce its own food and must, therefore, get its energy by eating, or consuming, other organisms.

Combustion Burning, or rapid oxidation, accompanied by release of energy in the form of heat and light. The combustion of carbohydrates in wood and fossil fuels releases energy; the by-products of this process are carbon dioxide and water.

Compound A substance made up of two or more elements that are combined chemically.

Conservation The protection, improvement, and wise use of natural resources to provide the greatest social and economic value for the present and future.

Decomposer An organism that feeds on and breaks down dead plant or animal matter, thus making organic nutrients available to the ecosystem.

Drought A period of abnormally dry weather sufficiently long enough to cause serious effects on agriculture and natural ecosystems in the affected area.



Glossary

Economy The system of human activities related to the production, distribution, exchange, and consumption of goods and services of a country or other area.

Ecosystem A community of living organisms (biotic components) and the environment in which they live (abiotic components), interacting to form a whole functional system.

Electromagnetic Spectrum The complete range of electromagnetic radiation, from radio waves to gamma rays, including the visible light spectrum. All types of electromagnetic radiation are basically the same phenomenon, differing only by wavelength, and all move at the speed of light.

Element A pure substance that cannot be broken down into simpler substances by ordinary chemical means. Examples include carbon, oxygen, calcium, and gold.

Energy In simple terms, energy is the capacity to do work, or the ability to move an object. Energy can occur in a number of forms including electrical, thermal (heat), chemical, radiant (solar), and mechanical energy.

Energy Flow The movement of energy through a community via feeding relationships (food webs).

Endangered Species A species at risk of becoming extirpated or extinct.

Extinction The dying out of a species of any living thing; the complete disappearance of a species from Earth, forever.

Extirpation The elimination of a species or subspecies from a particular area, but not from its entire range.

Erosion The wearing away of Earth's surface by running water, wind, ice, or other geological agents.

Food Chain The transfer of food energy from plants (producers) to one or more animals (consumers); a series of plants and animals linked by their food relationships.

Food Web A complex network of many interconnected food chains and feeding interactions.

Gas One of the three physical phases in which matter can exist; gaseous matter conforms to the shape and volume of its container.

Global Climate System The result of complex interactions between energy from the sun and many of Earth's systems. Together, these interactions form a life-sustaining system on Earth.

Greenhouse Effect The warming of the atmosphere by greenhouse gases trapping infrared radiation (heat energy; a form of longwave radiation) from Earth.

Greenhouse Gas A gas that absorbs and re-emits infrared radiation, warming Earth's atmosphere and surface. Greenhouse gases include the naturally occurring carbon dioxide, methane, nitrous oxide, water vapour, as well as human made gases such as hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulfur hexafluoride (SF₆).

Greenhouse Gas Emissions The release of greenhouse gases into the atmosphere, causing climate change.

Habitat The place or environment where a plant or animal naturally or normally lives; the habitat includes sources of food, water, and shelter.

Heat Energy Energy that pertains to the movement of molecules within a material or object. As heat is added to a material, the movement of molecules within the material increases.

Herbivore An animal which feeds on living plant material.

Infrared Radiation Radiation with wavelengths too long to be perceived by the human eye; also called longwave radiation or heat.





Glossary

Infrastructure The public-use improvements made to an area such as sewers, roads, bridges, and public utility installations.

Interdependence The idea that everything in nature is connected to everything else; what happens to one plant or animal also affects other plants and animals.

Longwave Radiation Infrared radiation emitted from Earth, with wavelengths usually greater than 5 micrometers.

Matter The substance of which physical objects are composed; anything that has mass and takes up space.

Methane (CH₄) A greenhouse gas, produced by the digestion process of some animals, including livestock, and anaerobic (without air) decomposition in landfills.

Micro-organisms Small or microscopic forms of life, including bacteria, yeasts, fungi, and moulds.

Mitigation (of global warming) Involves taking actions to reduce greenhouse gas emissions and to enhance the removal of greenhouse gases from the atmosphere so to decrease the extent of global warming.

Molecule The smallest particle of a substance that has all of the physical and chemical properties of that substance. Molecules are made up of one or more atoms.

Mortality The death rate, measured as the number of deaths per a certain population; may describe the population as a whole, or a specific group within a population.

Nitrous Oxide (NO₂) A greenhouse gas; the use of nitrogen based fertilizers in agriculture and livestock waste are the main sources of human-produced nitrous oxide.

Organism An individual living thing, such as an animal, a plant, a bacterium, or a fungus.

Oxidation A chemical reaction in which oxygen combines with another element to form an oxide.

Periodic Table A chart of all the known elements arranged according to their properties.

Photosynthesis The process by which green plants use energy in sunlight to carbon dioxide and water into food (carbohydrates such as sugars) and oxygen.

Population A group of organisms of one species, occupying a defined area and usually isolated from similar groups of the same species.

Precipitation Condensed water vapor that falls to Earth's surface. Most precipitation occurs as rain, but also includes snow, hail, fog and sleet.

Predator An animal that hunts other animals for food.

Predictability A technical term that describes how well we can predict the future seasonal climate in a particular region.

Prey An animal that is killed and eaten by other animals (predators).

Producer An organism, such as a plant or alga, which produces food (carbohydrates) for itself from carbon dioxide by photosynthesis; can be a source of food for other organisms.

Radiation Energy that is radiated or transmitted in the form of rays or waves or particles.

Regional Climates The result of interactions between air currents, local atmospheric, land and/or ocean conditions (e.g. temperature and humidity), and land topography.

Respiration The process that involves the transfer of oxygen to cells and the breakdown of food (mostly carbohydrates) to release energy. In complex animals, respiration involves the intake of oxygen and the discharge of carbon dioxide.





Glossary

Season A division of the year according to regularly recurrent phenomena, usually astronomical or climatic; for example, winter, spring, summer, and autumn.

Sedimentation All the processes whereby particles of material are accumulated to form sedimentary deposits on land or in water bodies.

Sequestered The permanent storage of carbon dioxide or other greenhouse gases so they will not be released to the atmosphere where they would contribute to the greenhouse gas effect.

Shortwave Radiation The radiation received from the sun with wavelengths less than 4 micrometers. It is also called ‘solar radiation’, and includes visible light and ultraviolet light.

Solar Energy Energy from the sun; wavelengths in the sun’s energy spectrum that include ultraviolet (UVA and UVB) to infrared.

Species In biology, a species is one of the basic units of biological classification – a group of animals or plants whose members can interbreed, and with features that distinguish it from others.

System Thinking A systems approach encourages the exploration of the relationships between social, environmental and economic interactions.

Temperature A measure of the energy in a substance. The more heat energy in the substance, the higher the temperature. In weather terminology, temperature is the degree of the warmth or coolness of the air.

Threatened Species Any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

Ultraviolet Radiation Radiation of shorter wavelength than visible radiation. Commonly referred to as “UV Rays”, consist of both UVA and UVB rays from the sun.

Visible Radiation (Light) Electromagnetic radiation (light) that is visible to the human eye. Visible light wavelengths are shorter than ultraviolet and longer than infrared.

Water Cycle The path water takes through various states - vapor, liquid and solid - as it moves throughout Earth’s systems (oceans, atmosphere, ground water, streams, lakes, etc.). Also known as the hydrologic cycle.

Weather Daily atmospheric conditions including temperature, precipitation, wind speed and direction, cloud cover and type, humidity, and air (barometric) pressure.