# Glossary of Permaculture Terms

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<https://cascadiapermaculture.com/>

**- Agroecology** The science of applying ecological concepts and principles to the design and management of sustainable agroecosystems.

**- Alley Cropping** - Rows of trees separating bands of crops.

**- Appropriate technology -** Technological choices and applications that are small scale, energy efficient, environmentally sound, locally controlled, and benefit the whole system.

**- Agroforestry** The practice of including trees in crop- or animal-production agroecosystems

**- Allelopathy** An interference interaction in which a plant releases into the environment a compound that inhibits or stimulates the growth or development of other plants.

**- Alluvium** Soil that has been transported to its present location by water flow (alluvial soil).

**- Aquaculture**  Food production using water as the medium.

**- Beneficial insects** Beneficial insects are predators, parasites, or competitors of insect pests, helping to regulate pest populations without harm to crops.

**- Biochar/Terra Preta** Charcoal created by the burning of biomass (without oxygen), and differs from charcoal only in the sense that its primary use is not for fuel, but for long-term carbon sequestration in the soil.

**- Biomass** Plant derived fuels such as logging waste, that is burned to create energy. Biomass is considered by many to be carbon neutral because it in it's only as much carbon dioxide as the plants absorbed from the atmosphere when they grew.

**- Biomimicry** (from bios, meaning life, and mimesis, meaning to imitate) studies nature, its models, systems, processes and elements and then imitates or takes creative inspiration from them to solve human problems sustainably.

**- Bioremediation -** the use of microorganism metabolism to remove pollutants.

**- Buffer zone** A less-intensively-managed and less-disturbed area at the margins of an agroecosystem that protects the adjacent natural system from the potential negative impacts of agricultural activities and management

**- Capillary water** The water that fills the micropores of the soil and is held to soil particles with a force between 0.3 and 31 bars of suction. Much of this water (that portion held to particles with less than 15 bars of suction) is readily available to plant roots.

**- Carbon-Nitrogen ratio** - Ratio of C to N in organic matter, useful in composting.

**- Carbon footprint:** the amount of carbon dioxide that a person is responsible for emitting into the atmosphere to driving, having a house built, or other consumption that entails burning of fossil fuels.

**- Carbon sequestration**: uptake and long-term storage of carbon typically by trees and other plants as they grow

**- Carbon sink** A place or process that takes in more carbon that it gives out forests and oceans are large carbon sinks.

**- Cellulose** The chief component of the cell walls of plants, composed of a long chain of repeating glucose units.  Cellulose can only be digested by bacteria, which often grow symbiotically in the guts of animals like ruminants and termites.

**- Chelation** A reaction between a metallic ion and an organic compound that removes the metallic ion from solution.  Chelation is a natural reaction in most soils and is enhanced by organic matter, especially humus.  Chelation is similar to cation exchange, except that it usually is more stable in holding ions.  Most of the trace cation nutrients are held in soil by chelation (copper, iron, manganese).

**- Chicken tractor** A portable, fenced pen structure that holds small numbers of poultry or other animals.

**- Climax** In classical ecological theory, the end point of the successional process; today, we refer instead to the stage of maturity reached when successional development shifts to dynamic change around an equilibrium point.

**- Chinampa**  Series of channels of water between fingers of land, useful in aquaculture.

**- Cold air drainage** The flow of cold air down a slope at night, when re-radiation of heat (and therefore cooling of air) occurs more rapidly at higher elevations.

**- Community** All the organisms living together in a particular location.

**- Community Supported Agriculture** (**CSA**) A nationwide movement linking local consumers and farmers into communities.  Typical CSA's consist of a group of consumer shareholders that pay a sum in advance in exchange for a regular selection (weekly, biweekly) of in-season crops produced by a farm.

**- Companion plants** - Plants which are beneficial to others nearby by repelling pests, attractin beneficial insects and providing nutrients, etc.

**- Compost** A mixture of decaying plant & animal material with available nutrients useful for fertilizer.

**- Contours** Lines that measure equal levels of elevation on a map or landscape. They are used to design swales and to understand the gradients of elevation on topographic maps.

**- Coppicing** Chopping trees down at stump level, where respouting occurs via branches or root suckers.

**- Cover crops** Plants grown to protect soil from erosion & to provide organic material.

**- Cross-pollination** The fertilization of a flower by pollen from the flower of another individual of the same species.

**- Decomposer** A fungal or bacterial organism that obtains its nutrients and food energy by breaking down dead organic and fecal matter and absorbing some of its nutrient content.

**- Dew point** The temperature at which relative humidity reaches 100% and water vapor is able to condense into water droplets. The dew point varies depending on the absolute water vapor content of the air.

**- Dynamic equilibrium** A condition characterized by an overall balance in the processes of change in an ecosystem, made possible by the system’s resiliency, and resulting in relative stability of structure and function despite constant change and small-scale disturbance

**- Earthworks** engineering works created through the moving of massive quantities of soil or unformed rock with the intention of creating a regenerative pattern on the landscape.

**- Ecological diversity** The degree of heterogeneity of an ecosystem’s or agroecosystem’s species makeup, genetic potential, vertical spatial structure, horizontal spatial structure, trophic structure, ecological functioning, and change over time.

**- Ecovillage** -People who live in community with buildings designed to be energy efficient, have a low impact on the environment and where the practice right livilhood.

**- Ecotone** A zone of gradual transition between two distinct ecosystems, communities, or habitats.

**- Ecotype** A population of a species that differs genetically from other populations of the same species because local conditions have selected for certain unique physiological or morphological characteristics.

**- Edge** The phenomenon of an edge community, or ecotone, having greater ecological diversity than the neighboring communities. The junction/zone that lies between two media or landscape forms; a border where materials or resources accumulate. I.E. area where forest and meadow meet.

**- Emergent property** A characteristic of a system that derives from the interaction of its parts and is not observable or inherent in the parts considered separately.

**- Espalier** Trees, usually fruit, which are pruned & trained to grow flat against a wall, fence or trellis. Pruned to have shallow depth.

**- Evapotranspiration** All forms of evaporation of liquid water from the earth’s surface, including the evaporation of bodies of water and soil moisture and the evaporation from leaf surfaces that occurs as part of transpiration.

**- Field capacity** The amount of water the soil can hold once gravitational water has drained away; this water is mostly capillary water held to soil particles with at least 0.3 bars of suction.

**- Food demand** The amount of food needed to support a given population or individual for a given amount of time.

**- Food system**  The interconnected meta-system of agroecosystems, their economic, social, cultural, and technological support systems, and systems of food distribution and consumption.

**- Food security**  Can be defined as the "state in which all persons obtain a nutritionally adequate, culturally acceptable diet at all times through local non-emergency sources."

**- Forb**   A non-grass, herbaceous species (generally legumes and composites)

**- Forest gardening** A food production and land management system based on replicating woodland ecosystems, but substituting trees (such as fruit or nut trees), bushes, shrubs, herbs and vegetables .. yields directly useful to humans and wildlife.

**- Fossil fuel** Fuels derived from underground deposits of carbon, typically oiled cold gas, oil shale and tar sands. When burned, they emit carbon dioxide and other gases into the atmosphere.

**- Gene** The basic unit of inheritance comprising a specific sequence of nucleotides on a DNA chain that has a specific function and occupies a specific locus on a chromosome.

**- Genetic engineering** Transfer, by biotechnological methods, of genetic material from one organism to another.

**- Genotype** An organism’s genetic information, considered as a whole.

**- Glacial soil** Soil that has been transported to its current location by the movement of glaciers.

**- Gravitational water** That portion of water in the soil not held strongly enough by adhesion to soil particles to resist the downward pull of gravity.

**- Green manure** Organic matter added to the soil when a cover crop (often leguminous) is tilled in.

**- Greenhouse gases:** carbon dioxide, water vapor, and other gases that are believed by many scientists to trap heat in the atmosphere. Greenhouse gases generated by human activity include carbon dioxide, methane and nitrous oxide.

**- Green Manure** - Plants are turned into the soil to enhance fertility; mostly legumes.

**- Greywater** - All waste water, except toilet water, reused for other purposes.

**- Guild** - An assembly of elements like plants, animals, & inorganic matter that are mutually beneficial. I.E. A group of acid loving plants: blue, straw & lingon berries.

**- Habitat** The particular environment, characterized by a specific set of environmental conditions, in which a given species occurs

**- Hedgerow –** A long and narrow planting that serves a multitude of functions.

**- Herbaceous** Non-woodyplant

**- Herbivore** An animal that feeds exclusively or mainly on plants. Herbivores convert plant biomass into animal biomass.

**- Horizons** Visually distinguishable layers in the soil profile.

**- Host** An organism that provides food or shelter for another organism.

**- Hydrological cycle** The process encompassing the evaporation of water from the earth’s surface, its condensation in the atmosphere, and its return to the surface through precipitation.

**- Hugelkulture –** the process of building soil and raised beds by burying large amounts of biomass under the existing top soil.

**- Human caused global warming**: the process of the Earth's atmosphere heating because of increased greenhouse gas emissions caused by humans. Many scientists believe humans are contributing to global warming, but others argue that is unproven or untrue

**- Humus** The fraction of organic matter in the soil resulting from decomposition and mineralization of organic material.

**- Inoculum** The initial organism or organisms that establish a new colony or population; breeding stock.   The term is commonly applied to the application of small amounts of microrganisms to establish new populations in soils or composts, for example, Rhizobium bacteria are commonly applied as an inoculum to legume seeds at planting time

**- Integrated Pest Management (IPM)** is a pest control strategy that uses a variety of complementary strategies including: mechanical, physical, biological, and cultural management. These methods are done via prevention, observation, and intervention.

**- Intercropping** Planting more than one crop in a field using a regular pattern that interleaves each crop in some pattern.  A form of polyculture.

**- Integrated Pest Management** Pest control using an array of complementary approaches including natural predators, parasites, pest-resistant varieties, pesticides, and other biological and environmental control practices.

**- Invisible structures –** The inner workings of organizations like co-ops and banks, trusts, non-profit and for-profit organizations, conventional and alternative currency systems, etc., which provide (or claim to provide) valuable services to a community.

**- Keyhole bed** - A garden bed designed in a keyhole shape for efficient access to plantings with out stepping on beds, which would compact the soil.

**- Keyline** - System of water conservation developed by P A Yeoman’s using underground channels to recharge groundwater supplies.

**- Landscape ecology** The study of environmental factors and interactions at a scale that encompasses more than one ecosystem at a time.

**- Legume** - Plant which can manufacture its own Nitrogen with the help of bacteria living in the plant roots. Pea family is an example Leguminosae (Fabaceae) family.   Most species in this family can fix nitrogen.

**- Light compensation point** The level of light intensity needed for a plant to produce an amount of photosynthate equal to the amount it uses for respiration.

**- LET’S** Local Exchange (or Economic) Trading System. No federal money transacted.

**- Lignin** an amorphous polymer related to cellulose that cements cell walls, helping them stay rigid.  Lignin is highly resistant to decomposition.

**- Right Livelihood** -. An occupation that follows the Pc principles: Care for Earth & People (Buddhist concept)

**- Macronutrient** A nutrient plants need in large quantities; the macronutrients include carbon, nitrogen, oxygen, phosphorus, sulfur, and water.

**- Maritime influence** The moderating effect of a nearby large body of water, such as an ocean, on the weather and climate of an area.

**- Microclimate** - Local climate differences that occur in a confined or small area.

**- Micronutrient** A nutrient necessary for plant survival but needed in relatively small quantities.

**- Mineralization** The process by which organic residues in the soil are broken down to release mineral nutrients that can be utilized by plants.

**- Monoculture** - Growing only one type of crop on a particular area of land.

**- Mulch** - Natural or artificially applied protective covering to the soil with many functions.

**- Multistory** - A mixture of plant species comprising a rhizomes, ground covers, vines, shrubs, & trees of varying heights.

**- Mycorrhizae** Symbiotic fungal connections with plant roots through which a fungal organism provides water and nutrients to a plant and the plant provides sugars to the fungi.

**- Natural building** Any building system, which minimizes the environmental impact of our housing and other building needs while providing healthy, beautiful, comfortable and spiritually-uplifting homes for everyone. Natural builders emphasize simple, easy-to-learn techniques based on locally-available, renewable resources.

**- Natural selection** The process by which adaptive traits increase in frequency in a population due to the differential reproductive success of the individuals that possess the traits.

**- Niche diversity** Differences in the resource-use patterns of similar species that allow them to coexist successfully in the same environment.

**- Nurse plants** - Pioneer species used to provide green manure, nutrient, or shade for succeeding crops or trees.

**- Open pollination** The natural dispersal of pollen among all the members of a cross-pollinating crop population, resulting in the maximum degree of genetic mixing and diversity.

**- Organic matter** Material containing molecules based on Carbon, usually referring to soil organic matter.

**- Organism** An individual of a species.

**- Oxidation** The loss of electrons from an atom that accompanies the change from a reduced to an oxidized state.

**- Parasite** An organism that uses another organism for food and thus harms the other organism.

**- Parasitism** An interaction in which one organism feeds on another organism, harming (but generally not killing) it.

**- Parasitoid** A parasite that feeds on predators or other parasites.

**- Percolation** Water movement through the soil due to the pull of gravity.

**- pH** The logarithm of the reciprocal of the concentration of hydrogen ions in a medium, like water or soil (log10{1/[H+]}).  pH values range from 0 to 14, giving the relative acidity or alkalinity of a medium, with a pH of 7 being neutral, and lower values being acidic, higher values, alkaline

**- Photosynthate** The simple-sugar end products of photosynthesis.

**- Polyculture** - Growing of different crops, plants or animals on a common area of land.

**- Predator** An animal that consumes other animals to satisfy its nutritive requirements.

**- Protein** A compound formed from a chain of amino acids.   Proteins are present in all living things, and are used for enzymes, hormones and other essential molecules.

**- Regeneration -** The process of renewal, restoration, and growth that goes beyond simply sustaining a system.

**- Renewable energy:** energy sources are, within a short timeframe, sustainable they include solar energy, hydropower and carbon neutral technologies such as biomass.

**- Renewable resources**  Resources that are capable of being regenerated or replaced by ecological processes on a time scale relevant to their use.  These resources, such as biomass or energy from animal traction, are contrasted with **non-renewable** resources, such as fossil fuels and mined products.

**- Rhizobium** A genus of heterotrophic soil bacteria capable of forming symbiotic nodules on the roots of legume plants to fix atmospheric nitrogen.

**- Rhizosphere** the narrow region of soil that is directly influenced by root secretions, soil microorganisms, and fungi.

**- Rotational Grazing** - Moving livestock from one paddock to another, usually with a specific timeframe.

**- Ruminant** An animal with a multiple stomach (polygastric) system of digestion capable of digesting cellulose.

**- Saturation point** The level of light intensity at which photosynthetic pigments are completely stimulated and unable to make use of additional light.

**- Sector** - What is already existing; the energies flowing from outside that travel through the site

**- Secondary succession** Succession on a site that was previously occupied by living organisms but that has undergone severe disturbance.

**- Seed bank** The total seed presence in the soil.

**- Self-pollination** The fertilization of the egg of a plant by its own pollen.

**- Sheet mulching** A technique of soil building where layers of manure (or other nitrogen source), mulch (carbon) & compost are used over the ground for planting beds.

**- Shelterbelt** Grouping of trees which protect stock as well as acting as windbreaks.

**- Slash and burn** A type of shifting cultivation that uses fire to clear fallow areas for cropping.

**- Stacking** The placing & layering of as many plantsas possible in a particular area.

**- Succession** Progressive change from one plant (& animal) community to another; pioneer to climax species. A process following an order of sequence over time.

**- Suntrap**  Semi-circular structure, usually as a clustering of plants, often a row of trees, which reflects sunlight & contains it to create a warmer microclimate.

**- Swale** Ditch dug on a contour so that runoff water can be held long enough to soak into the ground & be used by plants.

**- Thermophilic** Thermophilic ("heat loving") organisms grow well under high temperature conditions.  Thermophilic composting is the management of the composting process to maintain high temperature conditions, favoring the destruction of disease-causing organisms.

**- Tilth** The combination of the characteristics of soil crumb structure, porosity, and ease of tillage.

**- Transpiration** The evaporation of water through the stomata of a plant, which causes a flow of water from the soil through the plant and into the atmosphere.

**- Tillage** Agricultural preparation of the soil by digging, turning, hoeing, and plowing.

**- Topography** The surface shape or features on a landscape. Frequently used on maps to understand the changes in elevation.

**- Trophic level** A location in the hierarchy of feeding relationships within an ecosystem.

**- Trophic structure** The organization of feeding and energy-transfer relationships that determine the path of energy flow through a community or ecosystem.

**- Vermicomposting** Composting systems based on intensive management of worms, usually in specialized containers.

**- Vernalization** The process in which a seed is subjected to a period of cold, causing changes that allow germination to occur.

**- Wildcrafting** - the practice of harvesting plants from their natural, or "wild" habitat, for food, medicinal, or other purposes. It applies to uncultivated plants wherever they may be found. Ethical considerations are involved, such as protecting endangered species and not harvesting more than 1/16th of what is present.

**- Wildlife Corridors** - Belts of trees, marsh, or river forest connecting two or more larger habitat areas.

**- Zone** - What you bring to the site: best location for each element. Imaginary regions around a house, or other entity, indicating the location of elements in a design.

**Resources:**

http://www.agroecology.org/glossary.html#b