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## Glossary from Landslide Ecology

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## Glossary

- Abiotic** Pertaining to non-living factors such as wind, temperature, erosion.
- Actinorhizal** Plants with a symbiosis with the nitrogen fixing actinobacteria *Frankia*.
- Allelopathy** Form of competitive inhibition based on the release of chemicals.
- Anthropogenic** Created or influenced by humans.
- Avalanche** Sudden flow of snow down a slope. A “dirty” avalanche includes soil and rock.
- Biodiversity** Number and proportional distribution of species in a specified location.
- Bioerosion** The erosion of hard ocean substrate including coral by living organisms such as worms, mollusks, and fish.
- Biomass** Mass of all organisms (living or dead) at a site.
- Biotic** Pertaining to living factors.
- Bryophyte** A non-vascular land plant that is a moss, hornwort, or liverwort.
- Check dam** A small dam built to reduce erosion and allow sediments to settle in drainage areas.
- Chronosequence** Space-for-time substitution that allows study of long-term succession.
- Chute** Often elongated region in the middle of the landslide through which material is transported from the slip face to the deposition zone. Also called zone of depletion or flow track.
- Clay** Very fine-grained sediment (< 0.002 mm diameter).
- Collembola** Springtails, an abundant and primitive group of wingless, insect-like arthropods.
- Colluvium** Gravity-transported sediments deposited at the base of a slope.
- Competition** Negative effect of two species on each other.
- Creep** Very slow form of mass wasting.

**Crown** Upper boundary of the slip face.

**Debris** Unconsolidated, mostly coarse ( $> 2$  mm diameter), weathered rock and soil; regolith. Also can include branches, logs, and other loose vegetation remnants of any size.

**Deposition zone** Terminus of transported material. Also called the foot.

**Disturbance** Relatively abrupt event that causes a loss of biomass, ecosystem structure, or ecosystem function.

**Driving forces** Those forces that tend to make earth material slide.

**Epiphyte** Plant growing on another plant or surface without direct contact with the soil.

**Evapotranspiration** Transfer of water to the atmosphere by evaporation from humid surfaces plus transpiration by plants.

**Facilitation** Positive effect of one species on another, often in a successional context.

**Fall** Downward and outward movement of rocks or soil with exposed faces.

**Fault** A geological fracture with movement along either side.

**Fjord** Glacially eroded valley inundated by the ocean.

**Floodplain** The flat topography adjacent to a river produced by over-bank flow and lateral migration of meanders.

**Flow** Movement of rock or soil influenced by gravity (see mass movement).

**Fluvial** Pertaining to rivers and streams.

**Food web** Set of connections among species based on which species are eaten by which other species.

**Foot** See deposition zone.

**Forb** Any broad-leaved, herbaceous seed plant that is not a grass or grass-like.

**Frugivorous** Fruit-eating.

**Gabion** Rock-filled wire cage used to stabilize slopes.

**Gap specialist** Species adapted to recently disturbed, high-light environments.

**Gravel** Unconsolidated, generally rounded fragments of rocks and minerals ( $> 2$  mm diameter)

**Hummocky terrain** Land characterized by many small hills ( $< 15$  m tall).

**Hydrophytic** A plant that grows partly or wholly in water.

**Indeterminate growth** Growth that continues throughout the lifespan of the organism.

- Inhibition** Competition, often in a successional context.
- Jevon's paradox** Increased efficiency of use of a resource increases rather than decreases the rate of consumption of that resource.
- Landslide** In the strictest sense, a sliding movement of a mass of rock, debris (loose rock or regolith), or earth (finer sediments with or without organic material) down a slope. In the broader sense used in this book, all types of slope failures or mass wasting that include slides, falls, flows, or combinations of these three types of movements and the habitats that are created.
- Legacy** Biological legacy is any life that survives a disturbance, e.g., buried seeds.
- Liquefaction** Fluid-like properties of clay-rich soils upon losing their shear strength.
- Mass movement** Movement of rock or soil influenced by gravity (see **Flow**); also called mass wasting.
- Mass transport** Movement of rock or soil by a transporting medium such as water, air, or ice.
- Microsite** Small-scale habitat; the immediate environmental conditions affecting an organism.
- Macrosite** Large-scale habitat; the broader environmental conditions affecting an organism.
- Mycorrhizae** Fungi that typically live in or on the surface of roots and aid plants in the absorption of water and nutrients in exchange for carbohydrates.
- Nitrogen fixation** Process of converting atmospheric nitrogen into forms usable by organisms.
- Overland flow** Flow of water on the surface of the earth not confined to channels. Results when precipitation rates exceed infiltration rates.
- Permafrost** Permanently frozen ground.
- Pore pressure** Pressure of ground water held in the pore spaces of soil or rock. Also called pore water pressure or pore fluid pressure.
- Propagule** Any reproductive unit adapted to dispersal, e.g., seed, spore, or vegetative part of a plant.
- Rachis** Central midrib of a fern leaf.
- Regolith** Loose rock and soil above bedrock.
- Restoration** Actions that reverse degradation and lead to partial (*sensu lato*) or full (*sensu stricto*) recovery of pre-disturbance structure and function. See Table 6.3 for associated terms.

- Retrogressive landslide** Landslide that continues to erode a slope, gradually moving further into and up the slope with each re-sliding.
- Retrogressive succession** Loss of complexity or function in latter stages of succession, often due to severe leaching of nutrients from surface soils.
- Rhizome** Horizontal or ascending stem growing at or below the soil surface.
- Sand** Grains of sediment 0.06–2 mm in diameter.
- Saprolite** Highly chemically weathered, “rotten” rock.
- Scar** New habitat created by a landslide as delineated by the surface of rupture (see Fig. 1.1).
- Scarification** Mechanical or chemical abrasion of a seed coat, which may promote germination.
- Scarp** See slip face.
- Scrambling fern** A fern with indeterminate growth that spreads across the soil or other vegetation.
- Sediment** Fine-grained material (mostly < 2 mm diameter) at the surface of the regolith.
- Seed rain** Aerially dispersed seeds.
- Sere** Sequence of successional stages.
- Senescence** Aging of organisms with reduction in function.
- Shear strength** Magnitude of stress that a soil can sustain without sliding.
- Silt** Fine sediments 0.002–0.06 mm in diameter.
- Slide** Landslide that moves by slumping or along a plane (translational slide).
- Slip face** Upper zone of landslide detachment, also called scarp or failure scar.
- Slip plane** Weakness plane in below-ground substrate where landslides occur when driving forces exceed resisting forces.
- Slump** Landslide that undergoes a rotation as it descends.
- Soil** Earth material so modified by biological, chemical, and physical processes that the material will support rooted plants.
- Solifluction** Soil movement down slope due to freeze – thaw cycles.
- Spread** Lateral expansion of a cohesive soil or rock mass.
- Springtails** See **Collembola**.
- Stochastic** Unpredictable.
- Stolon** Elongated, horizontal stem that forms new shoots at its end.
- Submarine landslide** A landslide that occurs in the ocean.

- Succession** Change in community structure and composition over time following a severe disturbance that removes most soil and organic matter (primary) or a less severe disturbance that leaves some soil and organic matter intact (secondary).
- Swale pond** Small body of water formed by in-filling of a depression or swale.
- Talus** Collection of rocks fallen from a slope.
- Tectonic** Referring to rock deformation.
- Tension crack** Crack formed by gravitational movement of a surface plane.
- Terraform** To reshape the geometry of a slope.
- Toe** Lower end of the deposition zone.
- Trajectory** Sequence of communities during succession.
- Translational** *See Slide.*
- Tsunami** Tidal wave.
- Turbidity current** Dense current of suspended sediments. Also called turbulent flow.
- Watershed** Land area that contributes water to a particular river system.
- Weathering** Breakdown of rocks due to biological, chemical, and physical processes.