

Glossary

ablation till: till carried on or near the surface of a glacial ice column and let down as the glacier melted and retreated.

alluvium: any mineral or detrital sediment that is transported and deposited by the flowing water of a river or stream. Riverbeds, floodplains, and deltas are all made up of alluvium.

backswamp: low-lying wet areas on river floodplains, located away from the active river channel.

basal till: till carried in the base of a glacial ice column and deposited under the glacier. Basal till is therefore very dense and typically forms a layer that impedes drainage.

biological diversity (biodiversity): the complexity of all life at all its levels of organization, including genetic variability within species, species and species interactions, ecological processes, and the distribution of species and natural communities across the landscape.

bog: an acidic, peat-accumulating wetland that is isolated from mineral-rich water sources by deep peat accumulation and therefore receives most of its water and nutrients from precipitation. Bogs are dominated by sphagnum moss and heath family shrubs.

boreal forest: a circumpolar band of northern forests bordered to the north by open tundra and to the south by more transitional forests. Boreal forests are characterized by species of pine, spruce, fir, tamarack, birch, and poplar that are adapted to the extreme cold of this region.

bryophyte: a division of plants including the mosses, liverworts, and hornworts.

calciphile: a plant that thrives in calcium-rich soils.

circumneutral: having a pH near 7.0 and therefore neither strongly acidic nor basic.

cliff: an exposed, steep face of rock. In this book, cliffs are defined as having slopes greater than 60 degrees.

coarse filter: an approach applied in conservation biology for conserving biological diversity in which it is hypothesized that by conserving multiple, viable examples of all natural community types in all their variety and in relatively natural landscapes, a majority of native species will be conserved.

delta: a typically fan-shaped deposit of water-borne sediments located at the mouth of a river or stream.

erratic: a rock fragment that was transported and deposited by a glacier and that differs from the local bedrock. Erratics are typically thought of as boulder-sized, but they may be smaller.

fen: a peat-accumulating open wetland that receives mineral-rich ground water that is weakly acidic to slightly basic. Fens are dominated by sedges and mosses.

fine filter: an approach for conserving biological diversity in which inventory and land protection is focused on the protection of individual species. In the field of conservation biology, the fine filter approach is usually applied as complementary to the coarse filter approach, thereby focusing conservation activity on those species that will most likely not be captured by the coarse filter.

floodplain: a flat area of land adjacent to rivers and streams that is flooded periodically by the stream and that is composed of alluvial (water-borne) soils. Floodplains are created by the lateral movement of streams and the deposition of alluvium.

forest: a community dominated by trees and other woody plants. In the community classification presented in this book, forests have a canopy cover of at least 60 percent.

glaciofluvial: the sediments, landforms, and processes that are associated with streams and rivers originating from glacial meltwater.

glaciolacustrine: the sediments, landforms, and processes that are associated with lakes originating from glacial melting or damming.

gleyed: a condition in mineral soils that are gray to occasionally bluish and resulting from the chemical reduction and loss of iron from the soil profile under conditions of permanent saturation.

groundwater: water located below the soil or bedrock surface in a zone of saturation.

hardpan: an impermeable subsoil layer formed by the cementation of fine soil particles with organic acids and/or oxides of iron or aluminum.

hardwood: a general term referring to all broad-leaved flowering trees.

herb: a plant with a fleshy stem and leaves that typically dies back at the end of each growing season.

hydrology: the study of water and its properties, distribution, and effects.

hypsthermal interval: a period of climatic warming from about 6,000 years ago to 4,000 years ago when oak and pine became common in Vermont.

kame: a mound or ridge of primarily sand or gravel deposited at or near the terminus of a glacier, either by a meltwater stream or let down onto the ground surface as the glacier melted.

kame terrace: a kame formed by a meltwater stream that deposits sand or gravel between the glacial ice and the adjacent valley wall.

kettlehole: depressions left in the ground from partially buried ice blocks that melted after the retreat of the glaciers.

klippe: a geologic feature in which older rock is found on top of younger rock, out of its original depositional sequence.

lagg: a narrow, wet, tall shrub-dominated zone surrounding a bog. Water accumulates in the lagg as a result of drainage from the surrounding uplands and the slightly raised surface of the bog. The water in the lagg may be stagnant or slowly moving, but it is enriched with dissolved minerals compared to the open bog.

large patch community: a natural community type that occurs in the landscape on a scale of 50 to 1,000 acres and is usually associated with a single dominant ecological process or environmental condition such as fire or hydrology.

lichen: a group of plants consisting of a symbiotic association of algae and fungi.

liverwort: small, non-vascular, spore-producing plants in the class Hepaticae. Thallose liverworts have gametophytes that are flat and ribbon-like, whereas leafy liverworts have distinct small leaves.

levee: a river floodplain feature that occurs at the top of the banks adjacent to the active channel. Levees are slightly raised above the adjacent floodplain and typically are composed of coarser soil particles that are deposited by floodwaters as they first rise out of the river channel.

marsh: a wetland dominated by herbaceous plants.

matrix community: a natural community type that is dominant in the landscape, occupying 1,000 to 100,000 contiguous acres. Matrix communities have broad ecological amplitude, occurring across a wide range of soil and bedrock types, slopes, slope aspects, and landscape positions. Regional scale processes such as climate typically determine their range and distribution.

mesic: a natural community or ecosystem in which there are adequate supplies of soil moisture and nutrients to support vigorous plant growth.

metasedimentary: sedimentary rocks that have undergone metamorphism.

mineral soil: a soil consisting primarily of mineral matter and having its properties determined primarily by this mineral matter. Hydric mineral soils have less than 16 inches of organic matter at the soil surface.

minerotrophic: a term referring to wetlands that receive minerals and nutrients through contact with either surface water or ground water sources. The chemical composition of these water sources varies considerably with the type of bedrock and surficial deposits through which the water has passed.

moss: small, non-vascular, spore-producing plants in the class Musci. Mosses include the “true” or “brown” mosses, as well as the peat mosses or sphagnum mosses.

mottle: distinct spots of color (typically rust-colored) that are different from the dominant color of the soil matrix. This condition results from alternation in chemical oxidation and reduction associated with a seasonally fluctuating water table.

muck: dark, well-decomposed organic soil in which few of the plant remains can be identified and most of the soil mass can be squeezed through the fingers when making a fist.

natural community: an interacting assemblage of organisms, their physical environment, and the natural processes that affect them. A natural community refers to an actual occurrence on the ground.

natural community type: an assemblage of plants and animals that is found recurring across the landscape under similar environmental conditions where natural processes, rather than human disturbances, prevail. A natural community type is a composite description summarizing the characteristics of all known examples of that type. This book describes the 80 natural community types currently recognized in Vermont.

old growth forest: a forest in which human disturbance has been minimal and natural disturbance has been limited to small-scale windthrow events or natural death of trees. Using this definition, forests that have seen large-scale natural disturbances such as hurricanes may be natural without being old growth.

oligotrophic: a term describing wetlands and aquatic systems that are poor in nutrients and consequently low in productivity.

ombrotrophic: a term describing wetlands that receive all or most of their water and nutrients from precipitation.

organic soil: a soil developed under prolonged anaerobic conditions associated with soil saturation or inundation and resulting in at least 16 inches of organic material in the upper part of the soil profile. Two types of organic soils are recognized based on the degree of decomposition, with a continuum of variation between the two types: peat is largely undecomposed and muck is well-decomposed.

orogeny: the process of mountain formation typically resulting from thrusting, folding, and fracturing in the outer layers of the earth’s crust.

outcrop: a portion of bedrock that is exposed and protruding through the soil layer.

outwash: sand and gravel that has been sorted and deposited by water originating from melting of glacial ice.

oxbow: abandoned river channels that have been cut off from the active channel by continual lateral migration of the active channel across the floodplain.

paludification: a process by which peatlands expand horizontally over time as peat accumulates and impedes drainage.

palustrine: of or pertaining to wetlands.

peat: brown, partially decomposed organic soil in which plant remains can be clearly identified and clear water is squeezed out when the soil is pressed in a fist.

percent cover: the vertical projection of plant crown or leaf area expressed as a percent of the reference area.

pH: a measure of the acidity or basicity of a solution. Values of pH correspond to hydrogen ion concentration in a solution and range from 0 (acid) to 14 (basic), with pure water being neutral and having a pH of 7.

pioneer species: a plant or animal species that colonizes a barren site or a site that has been disturbed. Pioneer species are usually early successional and shade intolerant species.

pluton: a body of intrusive igneous rock formed beneath the earth's surface, usually from domes of magma.

primary forest: forests that have never been cleared for agriculture but may have been logged.

secondary forest: forests that have developed in areas that were previously cleared for pasture, hay, or cropland.

shade intolerant (intolerant): a tree species that can survive and thrive only in the open or as a member of the forest canopy, and that will die out in the dense shade of a closed forest canopy.

shade tolerant (tolerant): a forest tree species that can survive and thrive in the shade of a forest canopy.

sbrub: a multiple-stemmed or low-branching woody plant generally less than 16 feet (5 meters) tall at maturity.

small patch community: a natural community that occurs in the landscape as small, discrete areas typically less than 50 acres, and for some types, consistently under an acre in size. Small patch communities occur where several ecological processes and environmental conditions come together in a very precise way.

softwood: a general term referring to all needle-leaved, cone-bearing trees.

spodosol: acidic, mainly coarse-textured, low fertility soils with a subsurface leached horizon and a horizon with accumulations of organic matter and compounds of iron and aluminum. Spodosols are typical of cool, moist climates, and are commonly associated with conifer forests.

succession: the natural changes in species composition within a community over time.

surficial geology: the study of alluvial and glacial deposits lying on top of bedrock or near the earth's surface. Surficial deposits are generally considered to be of recent origin, including glacial deposits such as till, and more recent alluvial and peat deposits.

swamp: wetlands dominated by woody plants, either trees or shrubs.

talus: a sloping accumulation of coarse rock at the base of cliffs. The size and stability of rock fragments in a talus slope varies considerably with the type of rock present.

terrace: a flat surface in a valley that is a remnant of a former river floodplain and that now stands above the active floodplain. Low terraces may occasionally be flooded while high terraces remain above the flood zone.

terrestrial: of or pertaining to the earth. In biological terms, terrestrial refers to plants and animals living or growing on land as compared to water. Wetlands with shallow water and rooted vascular vegetation are considered terrestrial ecosystems.

thrust fault: a break in the continuity of rock formations arising from compressive forces in the earth's crust and resulting in the sliding of rocks on top of one another that sometimes displaces them tens of miles from where they originally formed.

till: a layer of unsorted material that was deposited directly by glacial ice. Till may be composed of clay, silt, sand, gravel, or boulder sized fragments in any combination. These rock fragments are typically angular rather than rounded.

tree: a woody plant with generally a single stem and a height greater than 16 feet (5 meters) at maturity.

upland: an ecosystem or area of the landscape that has moist to well drained soils or exposed bedrock and that supports plants adapted to growing in moist to well drained soil.

water table: the level of water or completely saturated soil relative to the ground surface. Water tables fluctuate from season to season and year to year with climatic variations. Most uplands have water tables well below the ground surface, whereas in wetlands the water table is often at or above the ground surface.

wetland: an ecosystem or area of the landscape that is saturated or inundated with water for varying periods during the growing season, with soils that have developed under saturated conditions, and with vegetation that is adapted to life in saturated soils.

woodland: a community dominated by trees but with an open canopy of 25 to 60 percent cover.