GLOSSARY

Abiotic – (adj.) Not relating to, or caused by, living organisms.

Abscisic acid – (n) One of five classes of plant hormone that inhibits shoot growth, closes stomata, and induces and maintains seed dormancy.

Abscission – (n) The natural separation of flowers, fruit, or leaves from a plant at a special separation layer of cells called an ***abscission layer.***

Anthocyanin – (n) Any of various pigments producing blue to red coloring in flowers and plants.

Biome – (n) A major ecological community type (as tropical rain forest, grassland, or desert). Ecologists refer to biomes as ***provinces.***

Biotic – (adj.) Relating to, or caused by, living organisms.

Board foot – (n) The amount of wood in a board that is 1 inch thick, 12 inches long, and 12 inches wide or 144 cubic inches.

Boreal – (adj.) Of, relating to, or located in northern regions.

Broadleaf – (n) A tree with flat leaves that are not scaly or needlelike.

Cambium – (n) The layer of cells between the xylem layer and inner bark that function to create new growth in the tree.

Canopy – (n) The ceiling of a forest created by branches and leaves from several trees. Forests with dense canopies allow less sunlight to reach the ground than forests with open canopies.

Carotenoid – (n) Any of various usually yellow and red pigments found widely in plants and animals.

Catkin – (n) A cluster of tiny flowers or fruits, usually fuzzy and caterpillar shaped

Certification – (n) A process in which independent, qualified inspectors verify that land and forests are being managed sustainably. Wood and timber that are produced from these forests are labeled ***"certified."***

Chlorophyll – (n) The green photosynthetic pigment found in chloroplasts of plants and trees.

Chloroplast – (n) A plastid (cell) that contains chlorophyll and is the site of photosynthesis.

Climax community – (n) A relatively stable ecological stage or community especially of plants that is achieved through successful adaptation to an environment; especially the final stage in ecological succession.

Clone – (n) A sapling that is genetically the same as the parent tree. Saplings that sprout from stumps or roots (suckers) are clones.

Conifer – (n) A tree that bears its seeds in cones. ***Coniferous*** (adj.)

Consumer – (n) An organism that consume producers and other consumers.

Crown – (n) The top of the tree where the branches and leaves grow.

Deciduous – (adj.) A type of tree that sheds leaves annually in the fall.

Decomposer – (n) An organism that consumers producers and consumers, and produce (recycle) energy.

Decreaser – (n) A plant or animal that decreases in population when a habitat is stressed. For example, goblin ferns decrease when earthworms move into a forested area and consume the duff.

Dendrochronology (n) – The study of tree-ring patterns; annual variations in climatic conditions which produce differential growth can be used both as a measure of environmental change and as the basis for a chronology.

Dichotomous key – (n) A method for the identification of organisms based on a series of choices between alternative characters.

Dioecious – (adj.) Having staminate (male) or pistillate (female) flowers on different individuals

Duff – (n) The partly decayed matter on the forest floor.

Ecological Classification – (n) A system that identifies, describes, and maps units of land with different capabilities to support natural resources. This is done by integrating climatic, geologic, hydrologic, topographic, soil, and vegetation data.

Ecosystem – (n) The complex of a community of organisms and its environment functioning as an ecological unit.

Embryo – (n) A minute rudimentary plant contained within a seed.

Endosperm – (n) A nutritive tissue in seed plants formed within the embryo sac by division of the endosperm nucleus.

Esker – (n) String of long, low hills created as melting rivers of water beneath glaciers deposit soil.

Extracellular freezing – (n) A process in which liquids within cells seep out into the spaces between the cells, where they can freeze without harming plant tissue.

Forbs – (n) Herbaceous, flowering plants that are not graminoids (grasses, sedges, rushes).

Forest floor – (n) The layer in the forest that consists of soil and decomposers.

Generalist – (n) An organism that can thrive on unspecialized food or habitat. For example, raccoons are at home in both rural and urban areas because of their diverse diet and habitat requirements.

Germinate – (v) To sprout or develop.

Glacial erratic – (n) A rock and boulder of distant origin deposited by glaciers.

Glucose – (n) A simple sugar that is a major energy source for all cellular functions. Cells use it as a source of energy and metabolic intermediate. Glucose is one of the main products of photosynthesis.

Habitat – (n) The place or environment where a plant or animal naturally or normally lives and grows.

Hardening – (n) In plants, to become gradually acclimatized to unfavorable conditions.

Heartwood – (n) The inner layers of wood in growing trees that have ceased to contain living xylem cells. Heartwood is generally darker than sapwood, but the two are not always clearly differentiated. Also called ***inner wood.***

Herb layer – (n) The layer in the forest that consists of seedlings and nonwoody plants.

Humus – (n) A brown or black complex variable material resulting from partial decomposition of plant or animal matter and forming the organic portion of soil.

Increaser – (n) A plant or animal that increases in population when habitat is stressed. For example, ragweed increases as soil disturbance increases.

Inner bark – (n) The layer of live phloem cells growing just outside the cambium layer of living wood.

Inner wood – (n) The wood within the tree that is composed of aging sapwood or xylem. Inner wood gives structure and strength to the tree. Also called ***heartwood.***

Intermediate species – (n) The plants and animals being or occurring at the middle place or stage in an ecological cycle.

Invasive – (adj) An invasive tree spreads prolifically. A tree that does not spread prolifically is ***noninvasive.***

Kame – (n) A hill that formed as rivers of meltwater shot water and rocks off the edge of a glacier, depositing piles of soil as if a giant dump truck tipped out its contents all in one spot.

Kettle lake – (n) Lakes that formed as giant chunks of glacial ice rested on the land to melt, form depressions in the soil, and fill with groundwater. Also called ***pothole.***

Layering – (v) The process of sprouting a new seedling from live tree branches that come in contact with the soil.

Loam – (n) Soil consisting of a crumbling mixture of varying proportions of clay, silt, and sand.

Mesic – (adj.) Characterized by, relating to, or requiring a moderate amount of moisture

Monoecious – (adj.) Having staminate (male) or pistillate (female) flowers on the same plant.

Moraine – (n) An accumulation of earth and stones carried and finally deposited by a glacier. ***Lateral moraines*** form along the side of a glacier; ***terminal*** (or "end") ***moraines*** form at the end of a glacier when it stops growing, pauses, and then retreats. ***Ground moraines*** are piles of rock dropped along the general path of the glacier.

Native – (adj.) Originating in a particular place or in the vicinity. Trees originating from a distant place are called ***nonnative.***

Native plant community – (n) A natural association of plants dominated by one or more prominent native plant species growing in its natural habitat.

Natural Heritage Information System – (n) A system that provides information on Minnesota's rare plants, animals, native plant communities, and other rare features. The NHIS is continually updated as new information becomes available, and is the most complete source of data on Minnesota's rare or otherwise significant species, native plant communities, and other natural features. www.dnr.state.mn.us/eco/nhnrp.

Noninvasive – (adj.) A noninvasive tree does not spread prolifically. A tree that spreads prolifically is ***invasive.***

Nonnative – (adj.) Originating in a different region and acclimated to a new environment.

Old growth – (n) A forest characterized by the presence of large old trees, numerous snags and woody debris, and a multilayered canopy and that is usually in a late stage of ecological succession.

Oriented strand board (OSB) – (n) Building material composed of rectangular-shaped wood strands arranged in layers at right angles to one another, laid up into mats that form a panel, and bonded with waterproof adhesives.

Outer bark – (n) The layer of dead outer phloem cells that protect inner tissues from disease and drying.

Ovule – (n) The structure within the ovary that will become the seed after fertilization.

Phloem – (n) The layer of wood directly under the bark of the tree that transports sugars and water up and down the tree. Also called ***inner bark.***

Photosynthesis – (v) The process by which plants create energy and sugar from sunlight, water and carbon dioxide.

Pioneer species – (n) The plants or animals capable of establishing in a bare, barren, or open area and initiating an ecological cycle.

Pistillate – (adj.) The part of the flower that contains female portions of flowers, or the pistils.

Plumule – (n) The shoot that rises out of a sprouting seed toward the sun.

Pothole – (n) Lakes that formed when giant chunks of glacial ice rested on the land to melt, form depressions in the soil, and fill with melting water. Also called ***kettle lake.***

Prescribed burn – (n) The controlled application of fire to naturally occurring vegetative fuels, under specified environmental conditions and following appropriate precautionary measures, to achieve specific objectives, such as controlling brush, producing high quality browse, or reducing fuel hazards.

Producer – (n) An organism that produces energy from sunlight.

Province – (n) A major ecological community type (as tropical rain forest, grassland, or desert). Also called a ***biome.***

Radicle – (n) The shoot that extends out of a sprouting seed toward the ground.

Renewable resource – (adj) A resource that can be regenerated or re-grown by natural ecological cycles or sound management practices.

Respire – (v) To take up oxygen and produce carbon dioxide through oxidation.

Root – (n) The usually underground organ that lacks buds or leaves or nodes; absorbs water and mineral salts; usually it anchors the plant to the soil.

Sapling – (n) A young tree not more than 4 inches in diameter at breast height.

Sapwood – (n) The live layers of secondary xylem cells in older woody plants; visible as the outer lighter areas in the cross section of a tree trunk. Sapwood is usually lighter in color than the heartwood.

Savanna – (n) A temperate grassland with scattered trees (as oaks).

Seedling – (n) A young plant grown from a seed.

Serotinous – (adj.) Remaining closed on the tree with seed dissemination delayed or occurring gradually. For example, the cones of jack pine are serotinous.

Shade tolerance – (adj.) In plants, the level of tolerance to shade a species favors. Trees that thrive in shady areas are ***shade-tolerant.*** Trees that thrive in sunny areas are ***shade-intolerant.*** Trees that thrive in either condition are ***intermediately shade-tolerant.***

Shelterbelt – (n) A barrier of trees and shrubs that protects (as crops) from wind and storm and lessens erosion.

Shrub layer – (n) A layer in the forest that consists of saplings and smaller woody plants.

Slash – (n) An open tract in a forest strewn with debris (as from logging) or the debris in such a tract.

Specialist – (n) An organism specialized especially for a food or habitat. For example, pileated woodpeckers are specialists because they require habitat that consists of undisturbed forests with standing dead trees.

Spring wood – (n) The wood created by xylem cells in the spring. Trees create the most xylem in spring, resulting in a layer of xylem that is thicker and lighter in color than other rings.

Staminate – (adj.) Having or producing stamens, that is, the pollen-producing male organ of a flower that consists of an anther and a filament.

Stoma – (n) One of the minute openings in the surface of a leaf or stem through which gaseous interchange takes place. The plural of stoma is ***stomata.***

Stump sprouting – (v) The process of sprouting a new young tree from the stump of a tree.

Succession – (v) The unidirectional change in the composition of an ecosystem as the available competing organisms and plants respond to and modify the environment. Succession is part of the ecological cycle.

Suckering – (v) The process of sprouting a new young tree, called a sucker, from the root of another tree. The new tree that grows from the roots of another tree is called a ***sucker*** (n).

Summer wood – (n) The wood created by xylem cells in the summer. Trees create less xylem in the summer than in the spring, resulting in a layer of xylem that is thinner and darker in color than the other rings.

Supercooling – (v) To cool below the freezing point without solidification or crystallization.

System – (n.) A regularly interacting or interdependent group of items forming a unified whole.

Taproot – (n) The central root of a tree. Not all trees have a taproot.

Timber – (n) Wood other than fuelwood, potentially usable for lumber.

Timberland – (n) Wooded land especially with marketable timber.

Tree – (n) A woody plant that is 15 feet or taller at maturity, with a distinct branched-out area at the top, and usually a single stem.

Trunk – (n) The main stem of a tree.

Windbreak – (n) A growth of trees or shrubs serving to break the force of wind.

Understory – The vegetative layer of trees and shrubs between the forest canopy and the ground cover.

Xylem – (n) The cells that create wood. Xylem transports water and sugar from the leaves to the roots and vice versa. Trees put on a layer of xylem each year. People count the rings of xylem to determine a tree's age. Also called ***sapwood.***