

## Glossary

### **Abiotic**

Refers to nonliving things.

### **Adaptation**

Evolutionary adjustments in structure, form, or function that help individuals, populations, or species fit in their environment.

### **Assimilation**

The incorporation of energy and nutrients into the bodies of plants or animals.

### **Biodiversity**

The variety and complexity of life on Earth.

### **Biofuel**

A fuel produced from organic matter available on a renewable basis: includes trees, agricultural crops and residues, wood wastes and residues, aquatic plants, animal wastes, and municipal wastes.

### **Biotic**

Refers to living things.

### **Board Foot**

Measurement used to describe wood volume in the U.S.; volume equal to one foot by one foot by one inch.

### **Carbon Sequestration**

The capture and storage of carbon dioxide from the atmosphere into biotic (e.g., trees) or abiotic (e.g., coal) pools of carbon.

### **Circular Flow**

A simplified economic model that illustrates the relationships between households, businesses, and government.

### **Clearcutting**

Harvesting all the trees in a given area at the same time. This is sometimes used as a management technique to encourage species that do not tolerate shade during regeneration.

### **Clinker**

A hard mass of fused material produced in furnaces by the burning of coal.

### **Coke**

Coal from which most of the gases have been removed; burns with intense heat and little smoke and is often used as an industrial fuel.

### **Community**

A group of plants and animals interacting with one another in a given area.

### **Competition (A)**

The struggle that exists among organisms to acquire finite resources (e.g., light, space, nutrients, water).

### **Competition (B)**

An attempt by two or more individuals to buy or sell the same goods or services; competition exists between buyers and between sellers.

### **Composition**

The species that constitute a plant community.

### **Concrete**

A hard, compact building material formed from a mixture of cement, sand, gravel, and water.

### **Concrete Milling**

A concrete manufacturing process in which mined material is mixed to the proper percentages of sand, limestone, iron, and bauxite, then heated and ground.

### **Concrete Mining**

Involves the open pit extraction of sand, gravel, and limestone.

### **Coniferous**

A tree that bears cones and has needles.

### **Consumer**

The buyer of goods and services.

### **Cost of Production**

The price paid by businesses to produce goods and services and get them to consumer markets.

**Cycling of Matter**

An ecosystem function in which elements are deposited, used by organisms, and stored or exported.

**Deciduous**

A tree that sheds its leaves for part of each year.

**Decomposition**

The breakdown of organic matter (through a number of interrelated processes) into simple compounds available for use by plants.

**Demand**

The quantity of a good or service that consumers are willing and able to buy at a specific price.

**Detritivores**

Scavengers (e.g., millipedes, wood lice, slugs, snails, springtails, beetles) that feed on dead plants and animals or their waste; essential for the cycling of nutrients.

**Disturbance**

A natural or human action that causes change in forest ecosystems by damaging or killing some existing plants (e.g., fire, flooding, logging, insect infestation, wind).

**Ecosystem**

An area that contains organisms (e.g., plants, animals, bacteria) interacting with one another and their nonliving environment (e.g., climate, soil, topography).

**Ecosystem Diversity**

The variety of biologic communities or ecosystems in a given area over time.

**Ecosystem Functions**

Functions that support life including the fixation of energy, the cycling of matter, and the flow of energy through food webs.

**Engineered Wood Product**

A product made from wood and wood waste; examples include laminated veneer lumber, medium density fiberboard, oriented strand board (OSB), particleboard, and plywood.

**Environmental Conditions**

The climatic, soil, and landscape characteristics of a forested area.

**Environmental Impact**

The effect that an activity has on the environment; limited environmental impact estimates include energy consumption and pollution emissions, while more comprehensive estimates can include elements such as land cover change and biodiversity.

**Erosion**

The wearing away of the land surface by water, wind, ice, gravity, or other natural or human forces.

**Even-aged Management**

A set of forest management techniques used to maintain a stand with trees of uniform age and size; often associated with red pine plantations and aspen stands.

**Events**

Social or environmental influences that affect disturbance patterns and cause regional changes (e.g., glacial advance, human migrations, social policies).

**Extirpation**

The extinction of a species from a specific area.

**Fixation of Energy**

An ecosystem function in which solar energy is changed into chemical energy (photosynthesis) and assimilated in plants.

**Flow of Energy**

An ecosystem function in which chemical energy (found in carbohydrates, protein, and fats) is moved through the food webs of an ecosystem.

**Forest Certification**

The verification, by a third party, that a forest is being managed by a predetermined set of standards designed to ensure that social, ecological, and economic values of a forest are maintained for current and future generations.

**Forest Composition**

The tree species within a forest.

**Forest Ecosystem**

An ecosystem characterized by a dominance of tree cover.

**Forest Management**

The use of techniques (e.g., planting, harvesting) to promote, conserve, or alter forests to meet desired outcomes.

**Forest Modeling**

A digital representation of a forest that is used to simulate a process and predict an outcome.

**Forest Product**

An object produced from forest resources for sale to a consumer.

**Forest Regeneration**

The process of renewing forest cover through natural or human establishment of trees.

**Forest Services**

The social and environmental benefits that forests provide humans.

**Forest Structure**

The vertical and horizontal spacing of trees in a forest. Vertical layers are the overstory and the understory. Horizontal spacing is the density of tree cover across the landscape.

**Forest Values**

Social, economic, and ecologic worth given to forests.

**Free Market**

A general term for all the monetary exchanges that take place in a society; each exchange is undertaken as a voluntary (free) agreement between two people.

**Function (material)**

The practical use of a material; depends on the material's characteristics and the application for which the material is needed.

**Genetic Diversity**

Genetic variation within a population or species.

**Genetic Engineering (bioengineering, biotechnology)**

The directed modification of an organism's gene sequence to produce a new inheritable trait; accomplished by splicing a specific gene, usually from another organism, into an individual's DNA sequence.

**Genotype**

An organism's hereditary (genetic) makeup.

**Geographic Information System (GIS)**

A computerized system that gives resource managers the ability to organize and access information (e.g., soil type, watershed, population density) about a specific area.

**Glacial Outwash**

Rock material composed mostly of sand-sized particles; transported by a glacier and deposited by meltwater as the glacier retreated.

**Glacial Till**

Rock material composed of larger rocks and boulders; transported by a glacier and deposited directly by the ice.

**Glaciation**

The advance over land of large ice masses from the poles of Earth; occurs in cycles as global temperatures cool.

**Global Positioning System (GPS)**

A handheld device that collects data from satellites to provide users with the coordinates of their location on the surface of earth.

**Government**

An elected body of officials and their appointees that works to ensure the economic, social, and environmental welfare of a community; referred to as the public sector.

**Grade**

The classification of logs and lumber according to their quality of form, uniformity, soundness, and appearance.

**Greenhouse Gas**

Atmospheric gases that capture heat that is reflected back from earth; include carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), and chlorofluorocarbons (CFCs).

**Hardwood**

Refers to broadleaf deciduous trees used for wood production (e.g., ash, aspen, basswood, beech, cherry, maple, oak, hickory, walnut).

**Hemlock Woolly Adelgid (*Adelges tsugae*)**

An introduced species of insect similar to an aphid that is native to Asia. Adult and nymph adelgids damage eastern hemlock trees by sucking sap from twigs, causing the tree to lose its needles.

**Herbivory**

The consumption of living plant material by plant-eating animals (herbivores and omnivores).

**Hybridization**

The natural or controlled reproduction of two individuals with a different genetic makeup.

**Ice Age**

The last geologic period, the Quaternary Period, which started 1.8 million years ago and is characterized by the cyclical advance and retreat of glaciers in North America.

**Income**

The amount of money made by an individual; commonly measured as per capita income which describes the average annual income per person in a specific region.

**Individual**

A single organism.

**Interconnectivity**

The relationships that exist between ecosystems.

**Interdependence**

A situation in which decisions made by a group of people in one part of the world affect decisions made by groups in other parts of the world; as regions specialize, they become more dependent on other regions to meet their needs and wants.

**Large-scale Forces**

Broad social trends or environmental forces that shape events and cause widespread change on the landscape (e.g., climate change, mountain formation, evolution, industrialization, human population growth and expansion).

**Life Cycle Analysis (LCA)**

A detailed accounting of the energy use and pollution outputs caused by the extraction, manufacture, transportation, use, and disposal of materials used to create a consumer product.

**Location**

The latitude, longitude, and altitude of a forested landscape.

**Log Scanning**

A technique that uses lasers, cameras, and X-rays to examine a log that enters a mill.

**Longevity**

The length of time a material lasts before it needs to be replaced.

**Melting and Metallurgy**

A steel manufacturing process in which iron is separated from iron ore and mixed with small percentages of other metals to form steel.

**Migration**

The repeated movement of a population of organisms from one ecosystem to another.

**Mineralization**

The conversion of an element from an organic (containing carbon) to an inorganic form; combustion, the act of burning, is a very rapid form of mineralization.

**Natural Process**

A specific biological, chemical, and physical interaction that occurs between the components of an ecosystem (e.g., erosion, decomposition, photosynthesis, predation).

**Nitrogen Fixation**

The process by which atmospheric nitrogen is made available for use by plants in an ecosystem.

**Northern Hardwood Forest**

A type of forest found across much of the north-central and northeastern U.S.; consists of mostly broadleaf, deciduous trees including aspen, birch, basswood, beech, and sugar maple.

**Nutrient**

The chemical elements that contribute to the growth and development of an organism.

**Odyssey**

An extended wandering or journey.

**Photosynthesis**

The process by which plants convert the electromagnetic energy of the sun into chemical energy usable by other organisms.

**Planing (wood lumber)**

A sawmill process in which the surface of a board is shaved straight and smooth after sawing and kiln drying.

**Poletimber**

A tree of a size between a sapling and a mature tree with a minimum diameter at breast height of five inches.

**Pollution**

Harmful substances emitted to the environment that can negatively affect living organisms.

**Population**

A group of individuals of the same species that share the same reproductive gene pool.

**Prescribed Fire**

The controlled application of fire to a predetermined area in attempt to modify the ecosystem to meet management objectives.

**Primary Succession**

The establishment of vegetation in an area that lacks biologic communities, soil, and immediate sources for plant reproduction.

**Primary Wood Product**

A minimally processed consumer good that comes from a tree (e.g., lumber, wood chips).

**Profit**

The money earned when a good or service is sold; determined by subtracting investment and cost of production from the money made during sales.

**Progressive Harvesting**

A tree removal technique in which the landing, the area where logs are processed and stacked for transportation, is moved with the harvest. The technique reduces damage to forest soils, minimizing effects on surface water and vegetation.

**Protection (forest or tree)**

The variety of techniques used to reduce damage to trees or forested areas; techniques include prescribed fire, pesticide application, fertilization, pruning, and thinning.

**Refugia**

Areas untouched by glaciers that held the plants, animals, and other organisms native to the region before glaciation.

**Renewability**

The ability of a resource to regenerate, grow back, or produce more.

**Reproduction**

The process by which organisms produce offspring.

**Respiration (plant)**

A process involving the assimilation of carbon from the atmosphere.

**Sale Price**

The amount of money paid by a consumer for a good or service.

**Sawtimber**

A tree that contains at least one sound, straight log that measures eight feet in length, with the smallest end measuring at least nine inches in diameter.

**Secondary Succession**

The establishment of vegetation in an area that has some plant remnants capable of reproduction.

**Secondary Wood Product**

A consumer good manufactured from a primary wood product (e.g., door, table).

**Selection Cut**

A management technique in which specific trees in an area are chosen and cut.

**Self-interest**

To benefit oneself; motivation for entering into a monetary exchange in the free market.

**Service**

An activity performed to satisfy the wants and needs of consumers.

**Slag**

An inert solid material containing sulfur and oxides that is formed as a byproduct of steel manufacturing; can be sent to landfills or used for road construction, concrete products, or mineral wool.

**Softwood**

A reference to coniferous trees used for wood production (e.g., cedar, fir, pine, spruce, tamarack).

**Specialization**

A situation in which a nation or business produces only the goods for which their natural and human resources are best suited.

**Species**

A group of similar individuals that can produce fertile offspring.

**Species Diversity**

The variety of different species in a given area.

**Steel**

A hard, tough metal made from iron alloyed with small percentages of carbon, nickel, chromium, and manganese.

**Steel Casting**

A steel manufacturing process in which liquid steel alloy is formed and hardened into a near finished product.

**Steel Mining**

Involves the open pit extraction of iron ore.

**Steel Treating/Finishing**

The final steel manufacturing process in which steel is cold rolled or galvanized (plated with zinc) to strengthen and protect the exterior of the product.

**Stress**

An environmental factor that gradually weakens organisms (e.g., air pollution, water pollution).

**Structure**

The horizontal and vertical distribution of layers in a forest, including height, diameter, and species present.

**Succession**

The change from one biologic community to another over time.

**Supply**

The amount of a good or service that businesses are willing to sell at a given price.

