

Glossary

Access route: A temporary access or permanent road connecting the most remote parts of the forest to existing public roads. Forest roads provide access to forestlands for timber management, fish and wildlife habitat improvement, fire control, and a variety of recreational activities. See also *Forest road*.

Acre: An area of land containing 43,560 square feet, roughly the size of a football field, or a square that is 208 feet on a side. A “forty” of land contains 40 acres and a “section” of land contains 640 acres.

Age class: An interval, commonly 10 years, into which the age range of trees or forest stands is divided for classification or use.

Age-class distribution: The proportionate amount of various age classes of a forest or forest cover type within a defined geographic area (e.g., ECS subsection).

All-aged: An uneven-aged stand that represents all ages or age classes from seedlings to mature trees.

Animal aggregations: A concentration of animals (of rare or common species or a mixture of rare and common) that occurs during part or all of the species’ life cycle, such that when these animals are in these aggregations, they are highly vulnerable to disturbance. Examples are colonial water bird nesting sites, bat hibernacula, and mussel beds.

Annual stand examination list: A list of stands selected from the 10-year stand examination list to be considered for treatment in a particular year. Treatment may include harvest, thinning, regeneration, prescribed burning, re-inventory, etc.

Annual work plan: The annual work responsibilities at the area (i.e., Division of Forestry administrative boundary) documented for the fiscal year.

Area forest resource management plan (AFRMP): Successor to timber management planning (TMP), recognizing that TMP discussions and decisions affected or included a lot more than the decision to harvest. This should not be confused with the comprehensive FRMPs developed for a number of areas in the mid-to late-1980s.

Artificial regeneration: Renewal of a forest stand by planting seedlings or sowing seeds.

Assessment: A compilation of information about the trends and conditions related to natural and socioeconomic resources and factors. The initial round of SFRMPs will focus primarily on trends and conditions of forest resources. The standard core assessment information sources and products are defined in the SFRMP Guidebook.

Basal area: The cross-sectional area of a tree at 4.5 feet above the ground. Basal area is often used to measure and describe the density of trees within an geographic area using an estimate of the sum of the basal area of all trees per unit of land area (e.g., basal area per acre).

Biodiversity (biological diversity): The variety and abundance of species, their genetic composition, and the communities and landscapes in which they occur, including the ecological structures, functions, and processes occurring at all of these levels.

Biodiversity significance: The relative value, in terms of size, condition, and quality, of native biological diversity for a given area of land or water. The following definition is adapted from Guidelines for MCBS Statewide Biodiversity Significance Rank: The Minnesota County Biological Survey uses a statewide ranking system to evaluate and communicate the biodiversity significance of surveyed areas (MCBS sites) to natural resource professionals, state and local government officials, and the public. MCBS sites are ranked according to several factors, including the quality and types of element occurrences, the size and quality of native plant communities, and the size and condition of the landscape within the site. Sites are ranked as outstanding, high, moderate, or below the minimum threshold for statewide biodiversity significance. (*Draft definition 3/24/2004*)

Outstanding Sites: Those containing the best occurrences of the rarest species, the most outstanding examples of the rarest native plant communities, and/or the largest, most intact functional landscapes present in the state.

High Sites: Those containing the "best of the rest", such as sites with very good quality occurrences of the rarest species, high-quality examples of the rarest native plant communities, and/or important functional landscapes.

Moderate Sites: Those containing significant occurrences of rare species and/or moderately disturbed native plant communities and landscapes that have a strong potential for recovery.

Sites Below the Minimum Threshold: Those lacking significant populations of rare species and/or natural features that meet MCBS minimum standards for size and condition. These include areas of conservation value at the local level, such as habitat for native plants and animals, corridors for animal movements, buffers surrounding higher quality natural areas, and open space areas.

Board foot: A unit of measuring wood volumes equaling 144 cubic inches. A board foot is commonly used to measure and express the amount of wood in a tree, sawlog, veneer log, or individual piece of lumber. For example, a 16-inch diameter at breast height (DBH) standing tree that is 80 feet tall contains approximately 250 board feet of wood, and a tree with a 30-inch DBH and 80 feet tall contains about 1,000 board feet (1 MBF). The amount of wood in an unfinished board that is 1-inch thick by 1-foot long by 1-foot wide contains 1 board foot of lumber.

Browse: (n) Portions of woody plants, including twigs, shoots, and leaves, used as food by animals such as deer and rabbits. (v) To feed on leaves, young shoots, and other vegetation.

Carr: Deciduous woodland or scrub on a permanently wet, organic soil. A carr develops from a North Shore Highlands, Toimi Uplands, and Laurentian Uplands Subsections

bog, fen, or swamp.

Clearcut: The removal of all or most trees during harvest to permit the reestablishment of an even-aged forest. This harvest method is used to regenerate shade-intolerant species, such as aspen and jack pine.

Coarse filter: Management of lands from a local to landscape scale that addresses the needs of all or most species, communities, environments, and ecological processes. A coarse filter approach assumes that a broad range of habitats will meet the needs of most species and their populations will remain viable on the landscape.

Coarse woody debris: Stumps and fallen tree trunks or limbs of more than 6-inch diameter at the large end.

Cohort: A group of trees developing after a single disturbance, commonly consisting of trees of similar age.

Collaboration: A group in which members identify with the group and seriously consider the group's overall charge. Group members assume collective responsibility for outcomes, are interdependent, and have a joint ownership of decisions.

Common forest inventory: Also known as common cooperative stand assessment (CCSA). Forest inventory stand data compiled by the Minnesota Interagency Information Cooperative in 2001 from public agencies including the DNR, Superior and Chippewa national forests, and county land departments. The common format contains the common attributes found in state, federal, and county forest inventories.

Competition: The struggle between trees to obtain sunlight, nutrients, water, and growing space. Every part of the tree, from the roots to the crown, competes for space and food.

Comprehensive DNR subsection plans: Management plans that address DNR programs and activities within the subsection. The plans involve programs and activities of multiple DNR divisions, not just the Division of Forestry.

Comprehensive Division of Forestry SFRMPs: Management plans that address other aspects (e.g., recreation, land acquisition/sales, fire management, private forest management) of forest resource management on DNR Forestry lands.

Connectivity: An element of spatial patterning in which patches of vegetation such as forest types, native plant communities, or wildlife habitats are connected to allow the flow of organisms and processes between them.

Conversion: A change through forest management from one tree species to another within a forest stand or site.

Cooperative stand assessment (CSA): The forest stand mapping and information system used by the DNR to inventory the approximately 5 million acres (7,800 square miles) owned and
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administered by the state. The spatial information and stand attributes are maintained in the FIM.

Cord: A pile of wood 4 feet high, 4 feet wide, and 8 feet long, measuring 128 cubic feet, including bark and air space. Actual volume of solid wood may vary from 60 to 100 cubic feet, depending on the size of individual pieces and how tightly the wood is stacked. In the lake states, pulpwood cords are usually 4 feet by 4 feet by 100 inches and contain 133 cubic feet. Pulpwood volume of standing trees is estimated in cords. For example, a 10-inch DBH tree that is 70 feet tall contains about 0.20 cords; five trees of this size would equal 1 cord of wood.

Corridor: A defined tract of land connecting two or more areas of similar habitat type through which wildlife species can travel.

Cover type: A description of a forest stand, expressed as the tree species having the greatest presence (volume for older stands or number of trees for younger stands). A stand in which the major species is aspen would be called an aspen cover type.

Cover type distribution: The location and/or proportionate representation of cover types in a forest or a given geographic area.

Critical habitat: Habitat or habitat elements that must be present and properly functioning to assure the continued existence of the species in question.

Crop tree: A tree selected or retained to be a component of a future commercial harvest.

Cruise: (v) A survey of forestland to locate timber and estimate its quantity by species, products, size, quality, or other characteristics. (n) An estimate derived from such a survey.

Cubic foot: A wood volume measurement containing 1,728 cubic inches, such as a piece of wood measuring one foot on each side. A cubic foot of wood contains approximately six to 10 usable board feet of wood. A cord of wood equals 128 cubic feet.

Cultural resource: An archaeological site, cemetery, historic structure, historic area, or traditional use area that is of cultural or scientific value.

Desired future forest composition (DFFC): Broad vision of landscape vegetation conditions in the distant future. For the purposes of the initial round of subsection planning, DFFCs focus on future desired forest composition looking ahead 50 years. DFFCs may include aspects such as 1) the amount of various forest cover types within the subsection, 2) age-class distribution of forest cover types, 3) the geographic distribution of these across the subsection and the related level of management for even-aged forest, and 4) extended rotation forest.

Disturbance: Any event, either natural or human induced, that alters the structure, composition, or functions of an ecosystem. Examples include forest fires, insect infestation, windstorms, and timber harvesting.

Disturbance regime: Natural or human-caused pattern of periodic disturbances, such as fire, North Shore Highlands, Toimi Uplands, and Laurentian Uplands Subsections
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wind, insect infestations, or timber harvest.

Dominant trees: Trees that are in the upper layer of the forest canopy, larger than the average trees in the stand.

Early successional forest: The forest community that develops immediately following removal or destruction of vegetation. Plant succession is the progression of plants from bare ground (e.g., after a forest fire or timber harvest) to mature forest consisting primarily of long-lived species such as sugar maple and white pine. Succession consists of a gradual change of plant and animal communities over time. Early successional forests commonly depend on and develop first following disturbance events (e.g., fire, windstorms, timber harvest). Examples of early successional forest tree species are aspen, paper birch, and jack pine. Each stage of succession provides different benefits for a variety of species.

Ecological classification system (ECS): A method to identify, describe, and map units of land with different capabilities to support natural resources. This is done by integrating climatic, geologic, hydrologic, topographic, soil, and vegetation data. (See Appendix A.)

Ecological evaluation: A concise report containing descriptions of the significant natural features of a site, such as the flora, fauna, rare features, geology, soils, and any other factors that provide interpretation of the site's history, present state, and biodiversity significance. Management and protection recommendations are often included in these reports. Evaluations are produced by the MCBS at the completion of MCBS work in a given county or ECS subsection, and are generally reserved for sites with the highest biodiversity significance in a geographic region, regardless of ownership.

Ecological integrity: In general, ecological integrity refers to the degree to which the elements of biodiversity and the processes that link them together and sustain the entire system are complete and capable of performing desired functions. Exact definitions of integrity are relative and may differ depending on the type of ecosystem being described.

Ecologically important lowland conifers (EILC): Includes stands of black spruce, tamarack, and cedar (including stagnant lowland conifer stands) that are high-quality examples of the lowland conifer NPCs found in the subsections. Designated EILC stands will be reserved from treatment during this 10-year planning period. Future management/designation of these stands is yet to be determined.

Ecosystem-based management: The collaborative process of sustaining the integrity of ecosystems through partnerships and interdisciplinary teamwork. Ecosystem-based management seeks to sustain ecological health while meeting social and economic needs.

Element occurrence (EO): An area of land and/or water in which a rare feature (plant, animal, natural community, geologic feature, animal aggregation) is or was present. An EO rank provides a succinct assessment of estimated viability or probability of persistence (based on condition, size, and landscape context) of occurrences of a given element. An EO record is the locational and supporting data associated with a particular EO. EO records for the state of

Minnesota are managed as part of the rare features database by the Natural Heritage and Nongame Research Program. (Draft definition 3/24/2004, Adapted from Biotics EO Standards: Chapter 2)

Endangered species: A plant or animal species that is threatened with extinction throughout all or a significant portion of its range in Minnesota.

Endemic population: A disease or insect constantly infecting a few plants throughout an area, occurring regularly in a locality or region but in low to moderate severity only.

Epidemic population: A disease or insect sporadically infecting a large number of plants in an area and causing considerable loss (e.g., an outbreak of an insect or disease).

Even-aged forest: A forest stand composed of trees of primarily the same age or age class. A stand is considered even aged if the difference in age between the youngest and oldest trees does not exceed 20 percent of the rotation age (e.g., for a stand with a rotation age of 50 years, the difference in age between the youngest and oldest trees should be 10 years).

Evenflow: Providing a relatively consistent amount of timber (or other products) in successive management periods.

Exotic species: Any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to an ecosystem, and whose introduction does or is likely to cause economic or environmental harm or harm to human health.

Extended rotation forests (ERF): Forest stands for which the harvest age is extended beyond the normal or economic harvest age. ERF provides large trees, old forest wildlife habitat, and other nontimber values. Additional detail regarding management of ERF on DNR-administered lands is contained in the DNR extended rotation forest guidelines (1994). *Prescribed ERF* is the cover type acreage designated for management as ERF. Stands designated as ERF are held beyond the recommended normal rotation (harvest) age to the established ERF rotation age(s). A stand of any age can be prescribed as ERF. *Effective ERF* is the portion of the prescribed ERF acreage that is over the normal rotation age for the cover type at any one time.

Extirpated species: A species no longer found in a specified portion of its historical range.

Fen: Peatlands that receive water from both precipitation and ground water that has percolated through mineral soil. The water in a fen is only slightly acidic or nearly neutral, and it carries minerals and other nutrients. Fens look like watery meadows, with sedges, reeds, grasslike plants, occasional shrubs, and scattered, stunted trees.

Fine filter: Management that focuses on the welfare of a single or only a few species rather than the broader habitat or ecosystem. For example, individual nests, colonies, and habitats are emphasized. A fine filter approach considers the specific habitat needs of selected individual species that may not be met by the broader coarse filter approach.

Forest inventory and analysis (FIA): A statewide forest survey of timber lands jointly North Shore Highlands, Toimi Uplands, and Laurentian Uplands Subsections 10-Year Stand Selection Results and New Access Needs Document

conducted by the DNR and USFS that periodically, through a system of permanent plots, assesses the current status of, and monitors recent trends in, forest area, volume, growth, and removals.

Forest inventory module (FIM): A database and application through which field foresters can maintain an integrated and centralized inventory of the forests on publicly owned lands managed by the Division of Forestry and other divisions. In the field, foresters collect raw plot and tree data. Those data are summarized in stand-level data that are linked to a spatial representation of stand boundaries. FIM is part of FORIST.

Forest land: All lands included in a forest inventory, from aspen and pine cover types to stagnant conifers, muskeg, lowland brush, and lakes.

Forest management: The practical application of biological, physical, quantitative, managerial, economic, social, and policy principles to the regeneration, management, utilization, and conservation of forests to meet specified goals and objectives while maintaining the productivity of the forest. Forest management includes management for aesthetics, fish, recreation, urban values, water, wilderness, wildlife, wood products, and other forest resource values.

From: The Dictionary of Forestry. 1998. The Society of American Foresters. J.A. Helms, ed.

Forest road: A temporary or permanent road connecting remote parts of a forest to public roads. Forest roads provide access to public land for timber management, fish and wildlife habitat improvement, fire control, and recreation. The Division of Forestry has three classifications for roads and access routes:

System roads: These roads are the major roads in the forest that provide forest management and recreational access. They may be connected to state, county, or township public road systems. System roads are used at least weekly and often daily. The roads should be graveled and maintained to allow travel by highway vehicles, and road bonding money can be used to fund their construction and reconstruction. The level and frequency of maintenance is at the discretion of the area forester and as budgets allow.

Minimum maintenance roads: These roads are used for forest management access on an intermittent, as-need basis. Recreational users may use them, but the roads are not promoted or maintained for recreation. Minimum maintenance roads are open to all motorized vehicles but not maintained to the level where low-clearance licensed highway vehicles can travel routinely on them. The roads are graded and graveled as needed for forest management purposes. Major damage such as culvert washouts or other conditions that may pose a safety hazard to the public are repaired as reported and budgets allow.

Temporary access: If the access route does not fit into one of the first two options, the access route has to be abandoned and the site reclaimed so that evidence of a travel route is minimized. The level of effort to effectively abandon temporary accesses will vary from site to site depending on location of the access (e.g., swamp/winter vs. upland route), remoteness, and recreational use pressures.

Forest stand: A group of trees occupying a given area and sufficiently uniform in species composition, age, structure, site quality, and condition so as to be distinguishable from the forest on adjoining areas.

FORestry Information SysTem (FORIST): A collection of integrated spatial applications and data sets supporting day-to-day operations across the Division of Forestry. The first two parts of the system, the forest inventory module (FIM) and the silviculture and roads module (SRM), are in operation. A timber sales module (TSM) is scheduled to be operational in 2006.

Fragmentation: Breaking up of large and contiguous ecosystems into patches separated from each other by different ecosystem types, or breaking up of a contiguous or homogeneous natural habitat through conversion to different vegetation types, age classes, or uses. *Forest fragmentation* occurs in landscapes with distinct contrasts between land uses, such as between woodlots and farms. *Habitat fragmentation* occurs where a contiguous or homogeneous forest area of a similar cover type and age is broken up into smaller, dissimilar units. For example, a conifer-dominated forest (or portion of it) is fragmented by clearcutting if it is converted to another type, such as an aspen-dominated forest.

Fully stocked stand: A forest stand in which all the growing space is effectively occupied but that has ample space for development of the crop trees.

Game Species: In this plan, terrestrial species that are hunted and trapped.

Gap: The space occurring in forest stands due to individual tree or groups of trees mortality or blowdown. *Gap management* uses timber harvest to create gaps.

Geographic information system (GIS): Computer software used to manipulate, analyze, and visually display inventory and other data and prepare maps of those data.

Group selection: A process of harvesting patches of selected trees to create openings in the forest canopy and encourage reproduction of uneven-aged stands.

Growth stages: As presented in the *Field Guide to the Native Plant Communities of Minnesota: The Laurentian Mixed Forest Province*, periods of stand maturation in native plant communities in which the mixture of trees in the canopy is stable. Growth stages are separated by periods of transition in which tree mortality is high and differs among species, usually involving the death of early successional species and replacement by shade-tolerant or longer-lived species.

Habitat: An area in which a specific plant or animal normally lives, grows, and reproduces; the area that provides a plant or animal with adequate food, water, shelter, and living space.

Herbivory: Plant communities resulting from the browsing and grazing of wildlife; a plant–animal interaction whereby an animal eats some or all of a plant and the plant responds immediately (stress, decline or death) or over time (evolutionary adaptation). Herbivory occurs both above and below ground. As defined for the issues concerned with herbivory in the plan, the influence by dominant herbivores on forest composition, structure, dynamics, and spatial

patterns. Dominant herbivores include beaver, deer, moose, hares, rabbits, small mammals, and forest tent caterpillars.

High-quality native plant community: A community that has experienced relatively little human disturbance, has few exotic species, and supports the appropriate mix of native plant species for that community. A high-quality native plant community may be unique or have a limited occurrence in the subsection, have a known association with rare species, or be an exemplary representative of the native plant community diversity prior to European settlement.

High-risk, low-volume (HRLV) stands: Stands characterized by one or more of the following: 1) coded as high risk in CSA forest inventory, 2) significant insect or disease damage to the main species in the stand, 3) over normal rotation age at time of survey with total stand volume eight cords per acre (low volume), 4) very old age (e.g., aspen over 80 years old).

Intensive management: Intensity of management refers to the degree of disturbance associated with silvicultural treatments. In this plan, references to it range from less intensive to more intensive management. Examples of more intensive management are: 1) Site preparation techniques such as rock-raking that disrupt the soil profile and leave coarse woody debris in piles; 2) broadcast herbicide use that eliminates or dramatically reduces herbaceous plant and shrub diversity; 3) Conversions of mixed forest stands through clearcutting and/or site preparation that result in the establishment of a more simplified monotypic stand such as mostly pure aspen regeneration or high-density pine plantations. Examples of situations in which more intensive management may be needed are to regenerate a site successfully to a desired species, to control insect or disease problems, and to manage wildlife habitat (e.g., maintain wildlife openings).

Intermediate cut: The removal of immature trees from the forest sometime between establishment and major harvest with the primary objective of improving the quality of the remaining forest stand.

Issue: A natural resource-related concern or conflict that is directly affected by, or directly affects, decisions about the management of vegetation on lands administered by DNR divisions of Forestry and Fish and Wildlife. Relevant issues will likely be defined by current, anticipated, or desired resource conditions and trends, threats to resources, and vegetation management opportunities. The key factor in determining the importance of issues for the SFRMP is whether vegetation management can address the issue in whole or substantial part on DNR-administered lands.

Landform: Any physical, recognizable form or feature of the earth's surface having a characteristic shape and produced by natural causes. Examples of major landforms are plains, plateaus, and mountains. Examples of minor landforms are hills, valleys, slopes, eskers, and dunes. Together, landforms make up the surface configuration of the earth. The landform concept involves both empirical description of a terrain (land-surface form) class and interpretation of genetic factors (natural causes).

Landscape: A general term referring to geographic areas that are usually based on some sort of natural feature or combination of natural features. They can range in scale from very large to

very small. Examples include watersheds (from large to small), the many levels of the ECS, and MFRC regional landscapes. The issue being addressed usually defines the type and size of landscape to be used.

Landscape region: A geographic region that is defined by similar landforms, soils, climatic factors, and potential native vegetation. The landscape region used for this planning effort is the subsection level of the ECS.

Landscape study area (LSA): A large geographic area identified by the MCBS as a core area for the MCBS survey process in northern Minnesota. The LSA is intended to represent some of the landscapes within an ecological subsection (a unit in Minnesota's ECS). A LSA 1) generally captures the range of environmental gradients and ecological conditions found in large landscapes, 2) generally encompasses the range of native plant community complexes that exhibit repeatable patterns at the landform or ecological LTA scale, 3) exhibits the potential for landscape-level processes to occur, 4) contains intact representative NPCs, and 5) often contains habitat for rare species. An LSA is typically thousands of acres and contains two to several MCBS sites. An LSA may encompass portions of one or more ecological LTAs and lie in more than one county. LSAs are identified in advance of MCBS field surveys and boundaries are modified during the survey process. At the completion of the MCBS surveys, an LSA becomes a macrosite, two or more sites, or a combination of macrosites and sites. In some cases an LSA is eliminated from further survey consideration during the MCBS survey process.

Leave trees: Live trees selected to remain on a site to provide present and future benefits, such as shelter, resting sites, cavities, perches, nest sites, foraging sites, mast, and coarse woody debris.

Legacy patch: An area within a harvest unit that is excluded from harvest; this area is representative of the site and is to maintain a source area for recolonization, gene pool maintenance, and establishment of microhabitats for organisms that can persist in small patches of mature forest.

Macrosite: A large area, generally thousands of acres, containing two or more sites that have some geographical and ecological connection relevant to conservation planning. MCBS sites within a macrosite are generally close to one another but are not necessarily contiguous. Thus, macrosites may contain some disturbed areas. In northern Minnesota, MCBS macrosites correspond to the final (post-field-evaluation) boundaries of LSAs. (Areas less than 2,000 acres formerly labeled "preserve designs" are also macrosites.)

Managed acres: Timberland acres that are available for timber management purposes.

Management pool: In this plan, managed acres minus inoperable acres that are not HRLV.

Marketable timber: Merchantable timber that is accessible now.

Mast: Nuts, seeds, catkins, flower buds, and fruits of woody plants that provide food for wildlife.

Mature tree: A tree that has reached the desired size or age for its intended use. Size or age at maturity varies considerably depending on the species and the intended use.

Maximum rotation age: In this plan, the maximum age at which a forest cover type retains its biological ability to regenerate to the same cover type and remain commercially viable as a marketable timber sale.

Mean annual increment (MAI): Average annual growth of a stand up to a particular age. It is calculated by dividing yield at that age by the age (e.g., the mean annual increment for a stand at age 50 with 25 cords per acre total volume is $25/50 = 0.5$ cords per year).

Merchantable timber: Trees or stands having the size, quality, and condition suitable for marketing under a given economic condition, even if not immediately accessible for logging.

Mesic: Moderately moist.

Minnesota County Biological Survey (MCBS) sites: Areas of land ranging from tens to thousands of acres in size, selected by MCBS staff for survey because they are likely to contain intact native plant communities, large populations and/or concentrations of rare species, and/or critical animal habitat. The MCBS site provides a geographic framework for recording and storing data and compiling descriptive summaries.

Minnesota forest resources plan (MFRP): Statewide DNR strategic forest resources plan that includes statewide vision, mission, preferred future, goals, strategies, and objectives for each of the division's programs.

Minnesota TAXA: Minnesota taxonomy database maintained by the Division of Ecological Services.

Minnesota wildlife resource assessment project (MNWRAP): A wildlife species database and related information system that provides the overall data management, framework, analysis functions, and long-term support for statewide, landscape, and site-level wildlife resource assessment. MNWRAP covers the total spectrum of wildlife diversity and habitat associations in Minnesota.

Mixed forest or stand: A forest or stand composed of two or more prominent species.

Mixed forest conditions: In this plan, refers to vegetative composition and structure that is moving toward the mix and relative proportion (e.g., dominated by, common, occasional, or scattered) of species found in the native plant community for that site. Tree species mix and proportion depends not only on the targeted growth stage (based on the rotation age for the desired cover type) but also on species found in older growth stages.

Mortality: Death or destruction of forest trees as a result of competition, disease, insect damage, drought, wind, fire, or other factors.

Multi-aged stand: A stand with two or more age classes.

Multiple use: Using and managing a forested area to provide more than one benefit simultaneously. Common uses may include wildlife, timber, recreation, and watershed.

Native plant community (NPC): A group of native plants that interact with each other and with their environment in ways not greatly altered by modern human activity or by introduced organisms. NPCs form recognizable units, such as an oak forest, prairie, or marsh, that tend to reoccur over space and time. NPCs are classified and described by physiognomy, hydrology, landforms, soils, and natural disturbance regimes (e.g., wildfires, windstorms, normal flood cycles).

Natural area: An area of land with significant native biodiversity where a primary goal is to protect, enhance or restore ecological processes and NPC composition and structure. An MCBS site of outstanding or high biodiversity significance is often recommended for nomination as a natural area. For such MCBS sites, an MCBS ecological evaluation is written to characterize the ecological significance of the MCBS site as a whole and to serve as a guide for conservation by the various landowners. MCBS sites (or portions of MCBS sites) that are recommended as natural areas may be identified by the landowner or land management agency for conservation activities such as designation as a (city, county, state, private) park, non-motorized recreation area, SNA, or reserve, or for special vegetation management (e.g., natural disturbance based forest management for maintenance of mature growth stage). (Draft definition 3/24/2004)

Natural area registry (NAR) agreement: A memorandum of understanding between the Division of Ecological Services and another governmental unit. The other governmental unit can be the Division of Forestry, the Division of Fish and Wildlife, the Division of Parks and Recreation, or city, county, tribal, or federal government, depending on who administers the land in question. The NAR generally identifies the site, explains its significance, sets a proposed management direction, and states that before any management contrary to that direction occurs, the parties will get together and talk about it first. It is not a binding agreement. Examples of NARs: an old-growth yellow birch stand in Crosby-Manitou State Park; the South Fowl Lake cliff community on Division of Forestry land in Cook County; and a ramshead orchid site on Hubbard County land.

Natural disturbances: Disruption of existing conditions by natural events such as wildfires, windstorms, drought, flooding, insects, and disease. Natural disturbances may range in scale from one tree to thousands of acres.

Natural regeneration: The growth of new trees 1) from seeds naturally dropped from trees or carried by wind or animals, 2) from seeds stored on the forest floor, or 3) from stumps that sprout or roots that sucker.

Natural spatial patterns: Refers to the size, shape, and arrangement of patches in forested landscapes as determined primarily by natural disturbance and physical factors.

Non-forestland: Land that has never supported forests, and land formerly forested where use for timber management is precluded by uses such as crops, improved pasture, housing, city parks, improved roads, and power lines.

Nongame species: In this plan, nongame species include amphibians, reptiles, and mammal and bird species that are not hunted or trapped.

Non-timber forest products: Also known as special forest products, it includes all nontimber vegetation in forests with, or potentially with, commercial or cultural value. They can be categorized into five general areas: foods, herbs, medicinals, decoratives and specialty items. Non-timber forest products might include berries, mushrooms, boughs, bark, Christmas trees, lycopodium, rose hips and blossoms, diamond willow, birch tops, highbush cranberries, burls, conks, Labrador tea, seedlings, cones, nuts, aromatic oils, extractives.

Normal rotation age: For even-aged managed cover types, the rotation age set by the SFRMP team for non-ERF timberland acres. It is based on the culmination of mean annual increment (CMAI), other available data related to forest productivity that also consider wood quality, and local knowledge.

Old forest: A forest stand is considered old forest when its age exceeds the normal rotation age established by the landscape team for that cover type. In this plan, it does not include designated old-growth or state park land.

Old forest conditions: Forest that has the age and structural conditions typically found in mature to very old forests, such as large-diameter trees, large snags, downed logs, mixed species composition, and high structural diversity. Old forest conditions typically develop at stand ages greater than the normal rotation ages identified for even-aged managed cover types.

Old forest management complex (OFMC): An area of land made up of several to many stands that are managed for old growth, SMZ, and ERF in the vicinity of designated old-growth stands.

Old-growth forests: Forests defined by age, structural characteristics, and relative lack of human disturbance. These forests are essentially free from catastrophic disturbances, contain old trees (generally over 120 years old), large snags, and downed trees. Additional details on the management of old-growth forests on DNR-administered lands are contained in old-growth forests guidelines (1994) and amendments.

Operational planning: Planning specific actions (projects, programs, etc.) to move toward the desired future established in the strategic direction. Examples include stand examination lists, road projects, recreational trail/facilities projects, staffing, and annual work plan targets. Operational planning is also referred to as tactical planning.

Overmature: A tree or even-aged stand that has reached an age where it is declining in vigor and health and reaching the end of its natural life span, resulting in a reduced commercial value because of size, age, decay, and other factors.

Overstocked: The situation in which trees are so closely spaced that they compete for resources, resulting in less than full growth potential for individual trees.

Overstory: The canopy in a stand of trees.

Partial cut: A cutting or harvest of trees in which only some of the trees in a stand are removed.

Patch: An area of forest that is relatively homogeneous in structure, primarily in height and stand density, and differs from the surrounding forest. It may be one stand or a group of stands.

Plantation: A stand composed primarily of trees established by planting or artificial seeding.

Prescribe burn: To deliberately burn wildlands (e.g., forests, prairie, savanna) in their natural or modified state and under specified conditions within a predetermined area to meet management objectives for the site; a fire ignited under known conditions of fuel, weather, and topography to achieve specific objectives.

Prescription: A planned treatment (clearcut, selective harvest, thin, reforest, reserve, etc.) designed to change current stand structure to one that meets management goals. Also, a written statement that specifies the practices to be implemented in a forest stand to meet management objectives. These specifications reflect the desired future condition at the site and landscape level and incorporate knowledge of the special attributes of the site.

Pulpwood: Wood cut or prepared primarily for manufacture into wood pulp or chips, for subsequent manufacture into paper, fiberboard, or chip board. Generally, trees five to 12 inches diameter at breast height are used.

Pure forest or stand: A stand composed principally of one species, conventionally at least 80 percent based on numbers, basal areas, or volumes.

Range of natural variation (RNV): The expected range of conditions (ecosystem structure and composition) to be found under naturally functioning ecosystem processes (natural climatic fluctuations and disturbance cycles such as fire and windstorms). RNV provides a benchmark (range of reference conditions) to compare with current and potential future ecosystem conditions.

Rare features database: A database maintained by the Natural Heritage and Nongame Research Program composed of locational records of the following features:

- *Rare plants:* All species listed as federally endangered or threatened or as candidates for federal listing; all species that are state-listed as endangered, threatened, or special concern. Several rare species are also tracked that currently have no legal status but need further monitoring to determine their status.
- *Rare animals:* All animal species that are listed as federally endangered or threatened (except the gray wolf), as well as all birds, small mammals, reptiles, amphibians,

mussels, and butterflies that are listed as state endangered, threatened, or special concern species.

- *Natural communities*: Functional units of landscape that are characterized and defined by their most prominent habitat features—a combination of vegetation, hydrology, landform, soil, and natural disturbance cycles. Although natural communities have no legal protection in Minnesota, the Natural Heritage and Nongame Research Program and the MCBS have evaluated and ranked community types according to their relative rarity and endangerment throughout their range. Locations of high quality examples are tracked in the rare features database.
- *Geologic features*: Noteworthy examples of geologic features throughout Minnesota if they are unique or rare, extraordinarily well preserved, widely documented, highly representative of a certain period of geologic history, or very useful in regional geologic correlation.
- *Animal aggregations*: Certain types of animal aggregations, such as nesting colonies of water birds (herons, egrets, grebes, gulls, and terns), bat hibernacula, prairie chicken booming grounds, and winter bald eagle roosts, regardless of the legal status of the species that comprise them. The tendency to aggregate makes these species vulnerable because a single catastrophic event could result in the loss of many individuals.

Rare species: A plant or animal species that is designated as endangered, threatened, or a species of special concern by the state of Minnesota (this includes all species designated as endangered or threatened at the federal level), or an uncommon species that does not (yet) have an official designation, but whose distribution and abundance need to be better understood.

Refuge/refugia: Area(s) where plants and animals can persist through a wind and/or fire event.

Regeneration: The act of renewing tree cover by establishing young trees naturally (e.g., stump sprouts, root suckers, natural seeding) or artificially (e.g., tree planting, seeding).

Regional landscapes: Eight subdivisions of Minnesota established by the MFRC based on ecological, socioeconomic, and administrative factors. These landscapes were established to undertake landscape based planning and coordination across all forest ownerships. The subsections included in this plan are in the Northeast Landscape Region.

Release: Freeing a tree, or group of trees, from overtopping or closely surrounding competition.

Releve': Vegetation survey plot data.

Research natural area (RNA): Area within national forests that the USFS has designated to be permanently protected and maintained in natural condition (e.g., unique ecosystems or ecological features, rare or sensitive species of plants and animals and their habitat, high-quality examples of widespread ecosystems). A CRNA is a candidate RNA.

Reserved forestland: Forestland withdrawn from timber utilization through statute, administrative regulation, or designation.

Riparian area: The area of land and water forming a transition from aquatic to terrestrial ecosystems along streams, lakes, and open-water wetlands.

Riparian management zone (RMZ): That portion of the riparian area where site conditions and landowner objectives are used to determine management activities that address riparian resource needs. It is the area where riparian guidelines apply.

Rotation age: The period of years between when a forest stand (primarily even-aged) is established (regenerated) and when it receives its final harvest. This period is an administrative decision based on economics, site condition, growth rates, and other factors.

Salvage cut: A harvest made to remove trees killed or damaged by fire, wind, insects, disease, or other injurious agents. The purpose of salvage cuts is to use available wood fiber before further deterioration occurs to recover value that otherwise would be lost.

Sanitation cut: A cutting made to remove trees killed or injured by fire, insects, disease, or other injurious agents (and sometimes trees susceptible to such injuries) for the purpose of preventing the spread of insects or disease.

Sapling: A tree that is 1 to 5 inches DBH.

Sawlog: A log large enough to produce lumber or other products that can be sawed. Its size and quality vary with the utilization practices of the region.

Sawtimber: Trees that yield logs suitable in size and quality for the production of lumber.

Scarify: To break up the forest floor and topsoil in preparation for natural regeneration or direct seeding.

Scientific and natural areas (SNAs): Areas established by the DNR Division of Ecological Services to preserve natural features and rare resources of exceptional scientific and educational value.

Seedbed: The soil or forest floor on which seed falls.

Seed tree: Any tree that bears seed; specifically, a tree left standing to provide the seed for natural regeneration.

Selective harvest: Removal of single scattered trees or small groups of trees at relatively short intervals. The continuous establishment of reproduction is encouraged and an all-aged stand is maintained. A management option used for shade-tolerant species.

Shade tolerance: Relative ability of a tree species to reproduce and grow under shade; the capacity to withstand low light intensities caused by shading from surrounding vegetation. Tolerant species tolerate shade, while intolerant species require full sunlight.

Shelterwood harvest: A harvest cutting in which trees on the harvest area are removed in a series of two or more cuttings to allow the establishment and early growth of new seedlings under partial shade and protection of older trees. Produces an even-aged forest.

Silviculture: The art and science of establishing, growing, and tending stands of trees. The theory and practice of controlling the establishment, composition, growth, and quality of forest stands to achieve certain desired conditions or management objectives.

Silviculture and roads module (SRM): The SRM provides a database and application through which field foresters can record planned and actual forest development prescriptions (e.g., site preparation, tree planting projects, timber harvest, road maintenance) and follow-up surveys. SRM supports the geographic description of the extent of a development project separate from FIM stand boundaries. A variety of maps and other reports can be generated by the development system. SRM also produces maps and reports that roll up forestry area data to the regional or statewide level. SRM is part of the DNR's FORIST.

Site index (SI): A species-specific measure of actual or potential forest productivity or site quality, expressed in terms of the average height of dominant trees at specific key ages, usually 50 years in the eastern United States.

Site preparation: Treatment of a site (e.g., hand or mechanical clearing, prescribed burning, or herbicide application) to prepare it for planting or seeding and to enhance the success of regeneration.

Site productivity: The relative capacity of a site to sustain a production level over time. Also, the rate at which biomass is produced per unit area (e.g., cords per acre growth of timber).

Size class: A category of trees based on diameter class. The DNR's forest inventory has size classes (e.g., Size Class 1 = 0–0.9 inch diameter; 2 = 1–2.9 inches diameter; 3 = 3–4.9 inches; 4 = 5–8.9 inches; 5 = 9–14.9 inches). Also, size class may be referred to as seedling, sapling, pole timber, and sawtimber.

Slash: The non-utilized and generally unmarketable accumulation of woody material in the forest, such as limbs, tops, cull logs, and stumps, that remain after timber harvesting.

Snag: A standing dead tree.

Soil productivity: The capacity of soils, in their normal environment, to support plant growth.

Special concern species: A plant or animal species that is extremely uncommon in Minnesota, or has a unique or highly specific habitat requirements, and deserves careful monitoring. Species on the periphery of their ranges may be included in this category, as well as species that were once threatened or endangered but now have increasing, or stable and protected, populations.

Special management zone (SMZ): A buffer immediately surrounding designated old-growth forest stands. It is intended to minimize edge effects and windthrow damage to old-growth

stands. Minimum width is 330 feet from the edge of the old-growth stand. Timber harvest is allowed in the SMZ, but there are limitations on how much may be clearcut at any given time.

Stand: A contiguous group of trees similar in age, species composition, and structure, and growing on a site of similar quality, to be a distinguishable forest unit. A forest is composed of many stands. A *pure stand* is composed of essentially a single species (e.g., a red pine plantation). A *mixed stand* is composed of a mixture of species (e.g. a northern hardwood stand consisting of maple, birch, basswood, and oak). An *even-aged stand* is one in which all of the trees present are essentially the same age, usually within 10 years of age for aspen and jack pine stands. An *uneven-aged stand* is one in which a variety of ages and sizes of trees are growing together on a uniform site (e.g., a northern hardwood stand with three or more age classes).

Stand age: In the DNR's forest inventory, the average age of the main species in a stand.

Stand density: The quantity of trees per unit area. Stand density usually is evaluated in terms of basal area, numbers of trees, volume, or percent crown cover.

Stand examination list: DNR forest stands to be considered for treatment (e.g., harvest, thinning, regeneration, prescribed burning, reinventory) over the planning period based on established criteria (e.g., rotation age, site index, basal area, desired future cover type composition). These stands will be assigned preliminary prescriptions and most will receive the prescribed treatment. However, based on field appraisal visit, prescriptions may change for some stands because of new information on the stand or its condition.

Stand selection criteria: Criteria used to help identify stands to be treated as determined by the subsection team. Criteria will likely be based on factors such as rotation ages, site index, basal area, stand composition, and location. Factors considered in developing stand selection criteria include 1) desired forest composition goals, 2) timber growth and harvesting, 3) old-growth forests, 4) extended and normal rotation forests, 5) riparian areas, 6) wildlife habitat, 7) age and cover type distributions, 8) regeneration, 9) thinning, and 10) prescribed burning needs.

State forest road: Any permanent road constructed, maintained, or administered by the DNR for accessing or traversing state forestlands.

Stocking: An indication of the number of trees in a stand compared to the desirable number for best growth and management; categories include well stocked, overstocked, and partially stocked. Also, a measure of the proportion of an area actually occupied by trees.

Strategic planning: A process to plan for desired future states. Strategic planning includes aspects of a plan or planning process that provide statements and guides for future direction. The geographic, programmatic, and policy focus can range from very broad and general to more specific in providing tiers/levels of direction. Strategic planning is usually long term (at least five years, often longer) and usually includes assessment of current trends and conditions (e.g., social, natural resource), opportunities, and threats; identification of key issues; and development of goals (e.g., desired future conditions), strategies, and objectives. Vision and mission statements may also be included.

Stumpage: The value of a tree as it stands in the forest uncut. Also, uncut trees standing in the forest.

Stumpage price: The value a timber appraiser assigns to standing trees or the price a logger or other purchaser is willing to pay for timber as it is in the forest.

Subsection: A subsection is one level within the ECS. From largest to smallest in terms of geographic area, the ECS is composed of the following levels: province, section, subsection, land-type association, land type, land-type phase. Subsection areas are generally 1 to 4 million acres in Minnesota, with an average of 2.25 million acres. Seventeen subsections are scheduled for the SFRMP process.

Subsection forest resource management plan (SFRMP): A DNR plan for vegetation management on forestlands administered by DNR divisions of Forestry and Fish and Wildlife that uses ECS subsections as the basic unit of delineation. Initial focus will be to identify forest stands and road access needs for the duration of the 10-year plan. There is potential to be more comprehensive in the future.

Succession: The natural replacement over time of one plant community with another.

Sucker: A shoot arising from a root below ground. Aspen regenerates from suckers.

Suppressed: The condition of a tree characterized by slow growth and low vigor due to competition from overtopping trees or shrubs.

Sustainability: The ability to protect and restore the natural environment while enhancing economic opportunity and community well-being. Sustainability addresses three related elements: the environment, the economy, and the community. The goal is to maintain all three elements indefinitely in a healthy state. Also, meeting the needs of the present without compromising the ability of future generations to meet their own needs.

Sustainable treatment level: A treatment level (e.g., harvest acres per year) that can be sustained over time at a given intensity of management without damaging the forest resource base or compromising the ability of future generations to meet their own needs. Treatment levels may need to be varied above or below the sustainable treatment level until the desired age-class structure or stocking level is reached.

Tactical planning: See *Operational planning*.

Temporary access: A route for short-term forest management activities that will not be needed for foreseeable future forest management activities. It is usually a short, temporary, dead-end access route.

Thermal cover: A habitat component (e.g., conifer stands such as white cedar, balsam fir, and jack pine) that protects wildlife from the cold in winter and heat in summer.

Also, vegetative cover used by animals against the weather.

Thinning: A silvicultural treatment made to reduce the density of trees within a forest stand primarily to improve growth, enhance forest health, or recover potential mortality. *Row thinning* is thinning in which selected rows are harvested (usually the first thinning), providing equipment operating room for future selective thinnings. *Selective thinning* is a thinning of individual trees that have been marked or specified (e.g., by diameter, spacing, or quality) for harvest. *Commercial thinning* is thinning after the trees are of merchantable size for timber markets. *Pre-commercial thinning* is done before the trees reach merchantable size, usually in overstocked (very high stems per acre) stands to provide more growing space for crop trees that will be harvested in future years.

Threatened species: A plant or animal species that is likely to become endangered within the foreseeable future throughout all or a significant portion of its range in Minnesota.

Timberland: Forestland capable of producing timber of a marketable size and volume at the normal harvest age for the cover type. It does not include lands withdrawn from timber utilization by statute (e.g., BWCAW) or administrative regulation such as designated old-growth forest and state parks. On state forestlands this includes stands that can produce at least three cords per acre of merchantable timber at the normal harvest age for that cover type. Timberland does not include sites of very low productivity such as stagnant spruce, stagnant tamarack, stagnant cedar, offsite aspen, or non-forestland (e.g., muskeg).

Timber management plan: If used with the SFRMP process, a timber management plan means the same thing as the vegetation management plan described below.

Timber management planning (TMP): Successor to the TMP information system (TMPIS). Recognizes the entire timber management planning process as being more than just the computerized system. TMP incorporates GIS technology and interaction with other resource managers.

Timber management planning information system (TMPIS): The original computerized system (circa mid-1980s) for developing 10-year stand treatment prescriptions by area.

Timber productivity: The quantity and quality of timber produced on a site; the rate at which timber volume is produced per unit area over a period of time (e.g., cords per acre per year); the relative capacity of a site to sustain a level of timber production over time.

Timber stand improvement (TSI): A practice in which the quality of a residual forest stand is improved by removing less desirable trees and large shrubs to achieve the desired stocking of the best quality trees or to improve the reproduction, composition, structure, condition, and volume growth of a stand.

Tolerant: A plant capable of becoming established and growing beneath overtopping vegetation. Also, a tree or seedling capable of growing in shaded conditions.

Two-aged stand: a stand with trees of two distinct age classes separated in age by more than 20 percent of the rotation age.

Underplant: The planting of seedlings under an existing canopy or overstory.

Understocked: A stand of trees so widely spaced that even with full growth potential realized, crown closure will not occur.

Understory: The shorter vegetation (shrubs, seedlings, saplings, small trees) in a forest stand that forms a layer between the overstory and the herbaceous plants of the forest floor.

Uneven-aged management: Forest management that results in forest stands composed of intermingling trees or small groups that have three or more distinct age classes; best suited for shade tolerant species.

Uneven-aged stand: A stand of trees of a variety of ages and sizes growing together on a uniform site. Also, a stand of trees having three or more distinct age classes.

Variable density: Thinning or planting in a clumped or dispersed pattern so that tree spacing more closely replicates patterns after natural disturbance (methods include using gap management, varying the residual density within a stand when thinning, and planting seedlings at various densities within a plantation).

Variable retention: A harvest system based on the retention of structural elements or biological legacies (e.g., tree species and diameters present at older growth stages, snags, large downed logs) from the harvested stand for integration into the new stand to achieve various ecological objectives. *Aggregate retention* retains these structural elements in small patches or clumps within the harvest unit. *Dispersed retention* retains these structural elements as individual trees scattered throughout the harvest unit.

Vegetation growth stage: The vegetative condition of an ecosystem resulting from natural succession and natural disturbance, expressed as vegetative composition, structure, and years since disturbance. The vegetation growth stage describes both the successional changes (i.e., the change in the presence of different tree species over time) and developmental changes (i.e., the change in stand structure overtime due to the regeneration, growth, and mortality of trees). Vegetation growth stages express themselves along the successional pathways for a particular ecosystem depending on the type and level of natural disturbance that has occurred. Forest tree and other vegetation composition, habitat features, and wildlife species use change through the various growth stages.

Vegetation management plan: A plan considering and proposing actions that affect the composition and structure of forest lands, such as timber harvesting, thinning, prescribed burning, and reforestation. In the process of developing the 10-year stand examination list, many decisions and considerations go beyond identifying what timber will be cut (i.e., broader than timber management). This includes designation of old-growth forests, ERF, EILC, patches, SMAs, and visually sensitive travel corridors, all of which are intended to address wildlife

habitat, biodiversity, aesthetic, and other concerns. Prescriptions assigned to stands reflect decisions based on these multiple considerations and are broader than decisions relative to final harvest (e.g., ERF designation, uneven-aged management, thinning, regeneration, underplanting, and prescribed burning).

Viable populations: The number of individuals of a species sufficient to ensure the long-term existence of the species in natural, self-sustaining populations that are adequately distributed throughout their range.

Volume: The amount of wood in a tree or stand according to some unit of measurement (board feet, cubic feet, cords), or some standard of use (pulpwood, sawtimber, etc.).

Well stocked: The situation in which a forest stand contains trees spaced widely enough to prevent competition yet closely enough to utilize the entire site.

Wildlife management areas (WMAs): Areas established by the DNR Section of Wildlife to manage, preserve, and restore natural communities, perpetuate wildlife populations, and provide recreational and educational opportunities.

Windthrow: A tree pushed over by the wind. Windthrows are most common among shallow-rooted species.

Acronyms

AFRMP	Area Forest Resource Management Plan
BA	Basal area
BG	Balm of Gilead
BMP	Best Management Practice
BWCAW	Boundary Waters Canoe Area Wilderness
CCSA	Common Cooperative Stand Assessment
CMAI	Culmination of Mean Annual Increment
CONES	Conifer Emphasis Areas
CRNA	Candidate Research Natural Area
CSA	Cooperative Stand Assessment
DBH	Diameter at Breast Height
DFC	Desired Future Condition
DFFC	Desired Future Forest Composition
DMT	Director's Management Team
DMU	Deer Management Unit
DNR	Department of Natural Resources

Glossary

DOQ	Digital Orthophoto Quadrangle
DRG	Digital Raster Graphics
ECS	Ecological Classification System
EILC	Ecologically Important Lowland Conifers
ELCP	Ecological Land Classification Program
EO	Element Occurrence
ERF	Extended Rotation Forest
ETS	Endangered, Threatened, or Special Concern
FIA	Forest Inventory and Analysis
FIM	Forest Inventory Module
FORIST	<i>Forest Information System</i>
FRIT	Forest Resource Issues Team
FRMA	Forest Resources Management Act
FSC	Forest Stewardship Council
GAP	Gap Analysis Program
GDS	General Direction Statement
GEIS	Generic Environmental Impact Statement
GIS	Geographic Information System
HRLV	High-risk, low-volume
LSA	Landscape Study Area
LTA	Land Type Association
LU	Laurentian Uplands
MAI	Mean Annual Increment
MBF	Thousand Board Foot
MCBS	Minnesota County Biological Survey
MDA	Minnesota Department of Agriculture
MFI	Minnesota Forest Industries
MFRC	Minnesota Forest Resources Council
MFRP	Minnesota Forest Resources Plan
MNAFS	Minnesota Chapter of the American Fisheries Society
MnTAXA	Minnesota Taxonomy Database
MNWRAP	Minnesota Wildlife Resource Assessment Project
MOA	Memorandum of Understanding
NAR	Natural Area Registry Agreement
NPC	Native Plant Community
NSH	North Shore Highlands
NTL	North Shore Highlands, Toimi Uplands, and Laurentian Uplands
OFMC	Old Forest Management Complex
OHV	Off-Highway Vehicle
OLMA	Open Landscape Management Area
NAPP	National Aerial Photography Program
NHNRP	Natural Heritage & Nongame Research Program
NLT	North Shore Highlands, Laurentian Uplands, and Toimi Uplands
NPC	Native Plant Community
NRRI	Natural Resources Research Institute
PSF	Permanent School Fund

Glossary

RGMA	Ruffed Grouse Management Area
RMT	Regional Management Team
RMZ	Riparian Management Zone
RNA	Research Natural Area
RNV	Range of Natural Variation
RSTC	Riparian Science Technical Committee
SFRMP	Subsection Forest Resource Management Plan
SI	Site Index
SFI	Sustainable Forestry Initiative
SL7B	Sand Lake – Seven Beavers Collaborative
SMA	Special Management Area
SMZ	Special Management Zone
SNA	Scientific and Natural Area
SNF	Superior National Forest
SNN	Shipstead-Newton-Nolan Act
SONAR	Statement of Need and Reasonableness
SRM	Silviculture and Roads Module
TMP	Timber Management Plan
TMPIS	Timber Management Plan Information System
tsi	Timber Stand Improvement
TSM	Timber Sales Module
TSRS	Timber Sales Reporting System
TU	Toimi Uplands
USFS	United States Forest Service
WMA	Wildlife Management Area