

# Long Range Management Planning Support Documentation

*Vermont Agency of Natural Resources*  
Department Forests, Parks and Recreation  
Fish and Wildlife Department



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## Authorization to Plan and Manage

### Statutory Authority

The Vermont General Assembly has authorized the Agency of Natural Resources and its Departments to acquire lands, hold interests in lands, and conduct land management activities. Authority is vested in several statutes that collectively empower the Agency, upon approval of the Governor or General Assembly, to acquire lands, accept donations of lands or interests in lands, exchange or sell lands or interests in lands for public benefit, and to manage those lands for a variety of public purposes.

Specific authorizing statutes are:

- **Title 3, Chapter 51, Section 2825:** The primary duties of the secretary are to coordinate the activities of the various departments and divisions of the agency for the proper development, management and preservation of Vermont's natural resources, to develop policies for the proper and beneficial development, management, and preservation of resources in harmony with the state comprehensive planning program and to promote the effective application of these policies by the departments and divisions affected.
- **Title 10, Chapter 83, Section 2601:** Establishes the general purposes and policies to acquire and manage state lands and authorizes the Department of Forests, Parks & Recreation to undertake such activities.
- **Title 10, Chapter 83, Section 2603:** Establishes the general powers and duties of the commissioner of the Department of Forests, Parks & Recreation to manage state lands.
- **Title 10, Chapter 103, Section 4144:** Authorizes the Department of Fish & Wildlife to acquire state lands.
- **Title 10, Chapter 103, Section 4147:** Authorizes the Department of Fish & Wildlife to exchange, sell, or lease lands.
- **Title 10, Chapter 37, Section 905b:** Authorizes the Department of Environmental Conservation to acquire and manage lands and the rights to protect the state's water resources.
- **Title 10, Chapter 155, Section 6301-5:** Authorizes acquisition of rights less than fee of real property.

## **Overview of Lands Management Vermont Agency of Natural Resources**

### ***Purposes of Land Ownership***

On behalf of the State of Vermont, the Agency of Natural Resources manages state-owned land for a variety of purposes, ranging from the protection of important natural resources to public uses of the land in appropriate places.

*Natural resources* include, but are not limited to, the following: biodiversity, wildlife habitat, natural communities, water bodies, wetlands, undeveloped land, scenery, and aesthetic values.

*Public uses* include, but are not limited to, the following: recreation, access to state lands or waters, environment-related businesses, flood control, education, research, and sustainable use of renewable resources such as hunting, fishing, trapping, and forest management.

### ***Outcome of Long-Range Management Plans***

The Vermont Agency of Natural Resources manages state lands in a sustainable manner by considering all aspects of the ecosystem and all uses of the natural resources.

(Agency Strategic Plan 2001-2005)

The agency has a mandate to serve as the principal land steward for properties owned or managed by its three departments--Environmental Conservation; Fish and Wildlife; and Forests, Parks and Recreation.

The development of long-range management plans (LRMP) for agency lands represents a key step in providing responsible stewardship of these valued public assets. Each LRMP identifies areas where different uses are to be allowed and describes how these uses will be managed to ensure protection of natural resources. The following over-arching management standards further both agency and department missions and are applied to the development of long-range management plans for all ANR lands:

**Biological Diversity:** Agency lands are managed to both maintain and enhance the variety and abundance of plants, animals and other life forms at scales ranging from local to regional.

**Ecosystem Health:** Agency lands are managed to ensure ecosystem functions, health, and sustainability. Threats and stresses are monitored, evaluated, and reported regularly.

**Legal Constraints:** Agency lands are managed in accordance with the purposes for which they were acquired. Many agency lands were purchased with federal funds that require management to be directed for specific purposes. These requirements and other legal restrictions, such as conservation easements, are supported in all planning and management activities.

**Natural Resource Science:** The foundation for management decisions on agency land consists of comprehensive ecological assessments as developed and documented in long-range management plans.

**Wildlife Management:** Wildlife management activities are directed at protecting and enhancing wildlife habitat for species needing to be conserved as well as those of public interest and utilization.

**Recreational Uses and Needs:** Agency lands are managed to create, maintain, and enhance sustainable recreational uses. Permitted or allowed activities are dependent upon site capabilities and public need. Wildlife management areas continue to give priority to wildlife dependent activities.

**Sustainable Forestry:** Agency lands are managed to ensure forest health and sustainability. Vegetation management and utilization strategies based on natural communities and appropriate silvicultural guidelines ensure that trees, forests, and forest ecosystems remain healthy.

**Public Involvement:** State lands are a public resource. The public is involved in all aspects of decision-making on state lands, including acquisition, policy development, management planning, and the implementation of policies, plans, and regulations. In developing long-range plans, the agency considers interests outlined in local, regional, and state plans, including town plans, regional plans, watershed plans, and species recovery and management plans, and works to resolve conflicts between plans as may be appropriate or necessary.

**Historical/Cultural and Scenic Values:** Agency lands are managed to be sensitive to historical, cultural, and scenic values. Due to protection under state law and federal regulations, sites of archaeological or historical significance are equal in status to any other legal constraints applicable to the lands.

**Best Management Practices:** Lands under agency management serve as exemplary stewardship models for the public and private sectors in Vermont. Whenever possible, best management practices that are utilized are visible and easy to understand.

**Regional Availability of Resources and Activities:** Because every parcel of agency land cannot accommodate all the uses that the public might want, the agency works to ensure that the following uses are made available on a regional basis: sustainable forest harvest; sustainable recreational activities; wildlife-oriented activities; protection of biodiversity and natural communities; and activities that reflect historical and cultural values.

*August, 2001*

## **Summary of Policies and Guidelines**

Some of the highlights of the many policies and guidelines used in managing Vermont Agency of Natural Resources lands are listed below. In general, these were in effect at the start of this long range management planning process. If more information is needed, refer to current policies and guidelines which can be made available upon request. The information is grouped into some general categories to make this document easier to use.

### **Acquisition of Land**

*Lands Conservation Plan: A Land Acquisition Strategy for the Agency of Natural Resources*, October, 1999 – Standards and procedures for the Agency of Natural Resources to acquire lands.

### **Fish and Wildlife**

Vermont hunting, fishing and trapping regulations.

Wildlife Management Areas Operational Procedures Manual, Vermont Department of Fish and Wildlife – Standards for management of wildlife management areas.

*Management Guide for Deer Wintering Areas in Vermont*, Fish and Wildlife, 1990 – Standards for managing deer wintering areas.

*Landowner's Guide to Wildlife Habitat Management*, Fish and Wildlife, Fish and Wildlife, 1995 – Standards for managing a variety of wildlife species on state and private land.

*Native Vegetation for Lakeshores, Streamsides, and Wetland Buffers*, Environmental Conservation, 1994 – Standards for buffer strips along lakes, streams and wetlands in Vermont.

Rare and Endangered Species – Listing of species protected under state regulations.

### **Gravel Pits**

Forests, Parks and Recreation Policy #3, 1991 – Standards for use of gravel pits on Forests, Parks and Recreation lands.

### **Historic and Archeological Resources**

State of Vermont laws, rules and guidelines applicable to historic and archeological resources, especially 22 V.S.A. 14 and Division for Historic Preservation's *Guidelines for Conducting Archeology in Vermont*, as well as federal laws that apply.

### **Land Use Development**

Act 250 – Law governing plans for land use and development in Vermont.

### **Mountain Top Communications Facilities**

*Siting, Use and Management of Electronic Communication Facilities on Properties Owned by the State of Vermont*, Agency of Administration, 1998.

### **Natural Area Designation**

Natural Areas Law and Forests, Parks and Recreation Policy #7 – Standards and guidelines for designation of Natural Areas on state forest and park lands.

### **Pesticide Use**

Forests, Parks and Recreation Policy #9 – Regulations on the use of pesticides on state forest and park lands.

### **Prescribed Fire**

Prescribed Burn Directive, Vermont Department of Forests, Parks and Recreation, 1989 – Procedures for planning and execution of prescribed burns.

### **Recreation**

Use of State Lands, Agency of Natural Resources Policy, 1999 – Criteria for appropriate uses when permits and licenses are not required.

Forests, Parks and Recreation Policies and Procedures Manual, 1990-1999 – Procedures and standards for administering recreational activities on state forests and parks lands.

State Park Ranger's Manual, Forests, Parks and Recreation, 1999- Operating procedures, rules, regulations, and standards for recreational activity on state forest and parks lands.

### **Scientific Research**

Forests, Parks and Recreation policy #8 – Standards and guidelines for research on state lands.

### **Silviculture**

Silvicultural References Manual, Forests, Parks and Recreation, 1997 – Guidelines for the Intent to Heavy Cut notification process.

Acceptable Management Practices (AM) Guidelines, 1987 – Practices for maintaining water quality on logging jobs.

Wetlands Regulations, 1990 – Regulations which outline practices for logging around wetlands in Vermont.

*Native Vegetation for Lakeshores, Streambanks and Wetland Buffers*, Environmental Conservation, 1994 – Standards for buffer strips along lakes, streams and wetlands in Vermont.

*Vermont Handbook for Soil Erosion and Sediment Control on Construction Sites*, Vermont Department of Environmental Conservation, revised September, 1983.

*Vermont Streambank Conservation Manual*, Agency of Natural Resources, 1982 – Guidelines for construction around streams.

### **Water Resources**

Acceptable Management Practices (AMP) Guidelines, 1987 – Practices for maintaining water quality on logging jobs in Vermont.

Long Trail Construction and Maintenance Standards, Green Mountain Club, 1995 – Trail construction standards for public and private land.

*Native Vegetation for Lakeshores, Streamsides, and Wetland Buffers*, Environmental Conservation, 1994 – Standards for buffer strips along lakes, streams and wetlands.

*Vermont Streambank Conservation Manual*, Agency of Natural Resources, 1982 – Guidelines for construction around streams.

*Vermont Water Quality Standards*, Vermont Water Resources Board, 7/2/00.

*Vermont Wetland Rules*, Vermont Water Resources Board, 1/1/02.



## **Overview of Wildlife Management Areas Vermont Agency of Natural Resources Vermont Fish and Wildlife Department**

The Vermont Fish and Wildlife Department (VFWD) administers and manages Wildlife Management Areas (WMAs) as an important part of meeting its mission. Management of these areas emphasizes the conservation of fish, wildlife and their habitats and provides the public with opportunities to enjoy these resources through fish and wildlife-based activities.

### **Management and Administration of Wildlife Management Areas**

The VFWD administers and manages over 85 WMAs throughout Vermont. The administration and management of WMAs is funded predominantly through the Federal Aid in Wildlife Restoration Program. This program was initiated in 1937 through the Federal Aid in Wildlife Restoration Act in which taxes are paid on firearms, ammunition and archery equipment by the public. Today, this excise tax generates over one hundred million dollars each year that is dedicated to state wildlife restoration and management projects across the United States. These excise tax dollars, coupled with state hunting license fees and revenues generated from timber associated with habitat management have been the predominate sources of funding for the acquisition, administration and management of Vermont's WMAs.



WMAs are distributed throughout the state and range in size from 50 acres to 25,000 acres. They are managed by VFWD wildlife biologists to promote science-based wildlife habitat management principles. WMAs are managed for a wide array of fish, wildlife, habitats and public uses ranging from wetland habitat management - to - early successional habitat - to - mast tree production. Wild turkey, ruffed grouse, white-tailed deer, bobcat and 100s of other wildlife benefit from, and are the focus of, VFWD management activities on WMAs.

Wildlife-based activities including hunting, fishing, trapping, viewing and photography are important cultural elements of life in Vermont. Based on a 2006 survey of residents involved in wildlife-based activities, Vermont ranked third in the nation in participation by residents. The U.S. Fish and Wildlife Service (2006) estimates that wildlife-based activities contribute roughly \$400 million dollars to Vermont's economy each year. This ranks wildlife-based expenditures including hunting, fishing, trapping, and viewing as one of the top 5 economic contributors to the state of Vermont's economy. In fact, a survey by the Vermont Department of Tourism (2000) found that average Vermont household expenditures for various outdoor activities ranked fishing and hunting as number one, above skiing, snowmobiling, biking and other related activities (e.g., \$2,096 per household for hunting/fishing versus \$1558 for downhill skiing). Over 545,000 residents and non-residents

participated in wildlife-based activities in 2006. Clearly, fish and wildlife resources, and the lands and waters that support them, are critically important to the quality of life for those who live in and visit Vermont.

### **Guiding the Management of WMAs**

The following sections reference various VFWD and other wildlife conservation plans that influence the administration and management of WMAs. The Vermont Agency of Natural Resources, through its departments, manages state lands in a sustainable manner by considering all aspects of the ecosystem and all uses of the natural resources (Agency Strategic Plan 2001-2005).

#### **a. VDFW Strategic Plan:**

The VFWD's Strategic Plan identifies its mission as: *"the conservation of all species of fish, wildlife and plants and their habitats for the people of Vermont. To accomplish this mission, the integrity, diversity, and vitality of their natural systems must be protected."* The VFWD's Strategic Plan provides guidance, support and direction for the acquisition and management of lands for fish and wildlife conservation and public use and enjoyment of those resources.

Goals established within this plan that pertain to the Department's responsibilities for WMA management include:

- GOAL A: Conserve, enhance and restore Vermont's natural communities, habitats, and plant and wildlife species along with the ecological processes that sustain them.
- GOAL B: Provide a diversity of safe and ethical fish and wildlife-based activities and opportunities that allow hunting, fishing, trapping, viewing, and the utilization of fish, plants and wildlife resources consistent with the North American Model of fish and wildlife conservation.
- GOAL C: Maintain safe fish and wildlife-based activities and limit harmful human encounters with fish and wildlife species, and provide general public safety service incidental to our primary fish and wildlife duties.
- GOAL D: Efficient operations and effective management of the Fish and Wildlife Department.

#### **b. Vermont Wildlife Action Plan:**

Vermont's Wildlife Action Plan was adopted in 2005 and is a requirement of all states in accordance with the federal State Wildlife Grants Program. This plan is intended to conserve rare, threatened and endangered species as well as keep common species common. A blueprint for comprehensive fish and wildlife conservation, this plan serves to guide the VFWD's conservation projects including its land acquisition and management efforts. There are many benefits associated with land acquisition and ownership by the VFWD, ranging

from WMAs to lands conserved by conservation easements, to streamside properties, to achieving the conservation objectives of the Wildlife Action Plan. Long range management plans developed by the VFWD with the assistance of other organizations, notably the Vermont Department of Forests, Parks and Recreation, set out conservation management goals and objectives that take into account all of the VFWD's responsibilities as set forth in the Department's Strategic Plan, Wildlife Action Plan, and others.

**c. Regional and National Wildlife Conservation Plans:**

VFWD acquisition, administration and management of WMAs is also integral to achieving broad, regional and national fish and wildlife management and conservation goals. The North American Waterfowl Management Plan, the Woodcock Initiative, recovery and delisting of federally endangered species like the bald eagle, Atlantic Coast and Brook Trout Joint Ventures, and numerous others are all tied to effective and strategic WMA acquisition and management. National, regional and state-based climate change adaptation plans and strategies focused on fish and wildlife conservation are also important sources of information and guidance for WMA acquisition and management.

**Principle Considerations for the Management of WMAs:**

The following information identifies important principles that help guide and direct the administration and management of WMAs.

**a. Wildlife Habitat Management:**

Wildlife management activities are directed toward managing the diversity, abundance, and distribution of fish, wildlife and their habitats. These activities are designed either to sustain or alter physical, chemical, and/or biological conditions to create, protect, or enhance specific habitats. Species, habitats, natural communities and ecosystems where there is special conservation or public concern, are prioritized for management. WMAs are managed to maintain, restore, and control the diversity, abundance, and distribution of plants, fish and wildlife, and other life forms within natural habitats, communities, ecosystems, and biophysical regions.

Management practices on WMAs are used to maintain, enhance, and restore habitat conditions associated with forest and vegetative characteristics, water regimes, and other structures and habitat elements that are required to meet the management needs and interests of a specific area. WMAs are managed to provide for various habitat requirements for many species of fish and wildlife. To obtain desired wildlife habitat age class and species composition, forested habitat may be managed using commercial timber sales or non commercial management. Revenues generated from any commercial timber sale on WMAs are applied to the operations and management of WMAs. Wetland habitats may be manipulated through a variety of techniques for selected wetland water regimes or for various moist soil management conditions to benefit fish, wildlife and public interests.

**b. Public Use of WMAs:**

WMAs are managed to create, maintain, and enhance fish and wildlife dependent activities that are consistent with legal constraints and that do not threaten the overall value and sustainability of the natural resources. Specifically, WMAs provide unique and important

opportunities for hunting, fishing, trapping, viewing and wildlife photography. Recreational uses that have been conducted on the properties prior to VFWD ownership, may be allowed to continue if they do not degrade the habitat or natural resources and are compatible with the fish and wildlife-based uses which serve as the basis for the ownership.

**c. Legal Considerations and Requirements:**

WMAs are managed in accordance with the purposes for which they were acquired. Many WMAs were purchased with federal funds that require management for specific purposes and may require or restrict certain activities. These legal requirements are addressed during planning and management activities on WMAs.

**d. Species, Habitat and Other Resource Inventories:**

The procedure for making management decisions on Department and Agency lands includes comprehensive inventories and assessments of fish, wildlife, habitats, natural communities and other important natural resources. Inventory and assessment information is used to develop Long-range Management Plans to guide the management and use of the WMAs. These plans set forth management objectives and strategies for implementation of various management practices. VFWD works to monitor changes in species and habitat conditions, distribution and abundance on WMAs and adapt management activities to those changes.

**e. Public Involvement:**

State lands are a public resource. The public is involved in a variety of decisions on state lands, including acquisition, policy development, management planning, and the implementation of management actions. The Department and Agency have a rigorous process for including and incorporating public input and interests into the development of Long-range Management Plans for WMAs. These processes include public hearings, public meetings, and public open houses. The Department and Agency coordinate with various organizations with interests in public land management and use, including hunting, fishing, trapping and other fish and wildlife-based organizations.

**f. Historical/Cultural and Scenic Values:**

State lands are managed in a manner that is sensitive to historical, cultural, and scenic values. Archaeological and historical sites are protected under State and Federal Law equal in status to other legal constraints.

February, 2004, revised in 2006

Revised again in August 2010

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## Glossary

The following is a series of key words and their definitions used in the development of Long Range Management Plans for Vermont Agency of Natural Resource lands.

**Acceptable management practices (AMPs).** In this plan, a series of erosion control measures for timber harvesting operations, as identified in state statutes. The AMPs are the proper method for the control and dispersal of water collecting on logging roads, skid trails, and log landings to minimize erosion and reduce sediment and temperature changes in streams.

**All-aged (Uneven-aged) system.** Timber management which produces a stand or forest composed of a variety of ages and sizes. Regeneration cutting methods in this system include single tree selection and group selection.

**Basal area.** A measure of the density of trees on an area. It is determined by estimating the total cross-sectional area of all trees measured at breast height (4.5 feet) expressed in square feet per acre.

**Best management practices.** A practice or combination of practices determined to be the most effective and practicable means of preventing negative impacts of silvicultural activities.

**Biodiversity.** The variety of plants and animals, their genetic variability, their interrelationships, and the biological and physical systems, communities, and landscapes in which they exist.

**Biophysical region.** A region with shared characteristics of climate, geology, soils, and natural vegetation. There are currently eight biophysical regions recognized in Vermont.

**Block.** A land management planning unit.

**Browse.** The part of leaf and twig growth of shrubs, vines, and trees available for animal consumption.

**Buffer (Riparian Buffer Zone).** The width of land adjacent to streams or lakes between the top of the bank or top of slope or mean water level and the edge of other land uses. Riparian buffer zones are typically undisturbed areas, consisting of trees, shrubs, groundcover plants, duff layer, and a naturally vegetated uneven ground surface, that protect the water body and the adjacent riparian corridor ecosystem from the impact of these land uses.

**Canopy.** The more or less continuous cover of branches and foliage formed collectively by the crowns of adjacent trees and other woody growth.

**Capability.** The potential of an area to produce resources, supply goods and services, and allow resource uses under an assumed set of management practices and at a given level of management intensity. Capability depends on current conditions and site conditions such as climate, slope, landform, soils, and geology as well as the application of management practices such as silvicultural protection from fire, insects, and disease.

**Cleaning (Weeding).** Regulating the composition of a young stand by eliminating some trees and encouraging others, and also freeing seedlings or saplings from competition with ground vegetation, vines, and shrubs.

**Clearcutting.** A cut which removes all trees from a designated area at one time, for the purpose of creating a new, even-aged stand.

**Commercial forest land.** Land declared suitable for producing timber crops and not withdrawn from timber production by statute or administrative regulation.

**Conservation.** The careful protection, planned management, and use of natural resources to prevent their depletion, destruction, or waste.

**Conservation easement.** Acquisition of some rights on a parcel of land designed to keep the property undeveloped in perpetuity.

**Cover.** Vegetation which provides concealment and protection to wild animals.

**Cultural operation.** The manipulation of vegetation to control stand composition or structure, such as site improvement, forest tree improvement, increased regeneration, increased growth, or measures to control insects or disease. Examples of methods used are timber stand improvement, cleaning or weeding, release, and site preparation.

**DBH (diameter at breast height).** The diameter of the stem of the tree measured at breast height (4.5 feet or 1.37 meters) from the ground.

**Deer wintering area.** Forest area with at least 70 percent conifer that provides suitable, stable habitat to meet deer needs during the winter.

**Den tree.** A live tree at least 15 inches DBH (diameter at breast height) containing a natural cavity used by wildlife for nesting, brood rearing, hibernating, daily or seasonal shelter, and escape from predators.

**Developed (or intensive) recreation.** Activities associated with man-made structures and facilities that result in concentrated use of an area. Examples are campgrounds and ski areas.

**Diameter at breast height (DBH).** The diameter of the stem of the tree measured at breast height (4.5 feet or 1.37 meters) from the ground.

**Dispersed recreation.** Outdoor recreation activities requiring few, if any, support facilities.

**Ecological processes.** The relationships between living organisms and their environment. Among these processes are natural disturbances such as periodic fire, flooding, or beaver activity; natural stresses such as disease or insects; catastrophic weather-related events such as severe storms or lightning strikes; or more subtle ongoing processes such as succession, hydrology, and nutrient cycling.

**Ecological reserve.** An area of land managed primarily for long-term conservation of biodiversity.

**Ecosystem.** A complex array of organisms, their natural environment, the interactions between them, the home of all living things, including humans, and the ecological processes that sustain the system.

**Ecosystem management.** The careful and skillful use of ecological, economic, social, and managerial principles in managing ecosystems to produce, restore, or sustain ecosystem integrity, uses, products, and services over the long-term.

**Endangered species.** A species listed on the current state or Federal endangered species list (VSA Title 10, chapter 123). Endangered species are those which are in danger of becoming extinct within the foreseeable future throughout all or a significant portion of their range.

**Even-aged system.** Timber management that produces a forest or stand composed of trees having relatively small differences in age. Regeneration cutting methods in this system include clearcutting, seed tree (seed cut) method, and shelterwood method.

**Forest health.** Condition in which forest ecosystems sustain their complexity, diversity, resiliency, and productivity.

**Forest type.** A natural group or association of different species of trees which commonly occur together over a large area. Forest types are defined and named after the one or more dominant species of trees, such as the spruce-fir and the birch-beech-maple types.

**Forestry.** The art and science of growing and managing forests and forest lands for the continuing use of their resources.

**Fragmentation.** Division of a large forested area into smaller patches separated by areas converted to a different land use.

**Game species.** Animals habitually hunted for food, particular products, sport, or trophies.

**Geographic Information Systems.** A computer-based means of mapping lands and resources and communicating values associated with them (GIS).

**Green certification.** A process, sponsored by several international organizations, that promotes sustainable forest management practices, providing a marketplace identify for forest products certified to have been grown and manufactured in a sustainable manner.

**Group Selection.** The removal of small groups of trees to meet a predetermined goal of size, distribution, and species.

**Habitat.** A place that provides seasonal or year round food, water, shelter, or other environmental conditions for an organism, community, or population of plants or animals.

**Hardwood.** A broad leaved, flowering tree, as distinguished from a conifer. Trees belonging to the botanical group of angiospermae.

**Healthy ecosystem.** An ecosystem in which structure and functions allow the maintenance of the desired conditions of biological diversity, biotic integrity, and ecological processes over time.

**Heritage Sites.** Sites identified by the Vermont Nongame and Natural Heritage Program of the Department of Fish and Wildlife, which have rare, threatened, or endangered species of plants or animals. Heritage sites are identified using a common standards-based methodology, which provides a scientific and universally applicable set of procedures for identifying, inventorying, and mapping these species.

**Intensive (or developed) recreation.** Outdoor recreation activities requiring major structures and facilities.

***Interior dependent species.*** Those wildlife species that depend on large unbroken tracts of forest land for breeding and long term survival. The term is also often used in conjunction with neotropical migratory bird species requiring large patches of fairly homogeneous habitat for population viability.

***Intermediate treatment.*** Any treatment or tending designed to enhance growth, quality vigor, and composition of the stand after its establishment or regeneration and prior to the final harvest.

***Land conservation.*** The acquisition or protection through easements of land for wildlife habitat, developed state parks, and working forests.

***Landscape.*** A heterogeneous area of land containing groups of natural communities and clusters of interacting ecosystems. These can be of widely varying scales but normally include a range of elevations, bedrock, and soils.

***Mast.*** The fruit (including nuts) of such plants as oaks, beech, hickories, dogwood, blueberry, and grape, used for food by certain wildlife species.

***Motorized use.*** Land uses requiring or largely dependent on motor vehicles and roads.

***Multiple-use forestry.*** Any practice of forestry fulfilling two or more objectives of management, more particularly in forest utilization (e.g. production of both wood products and deer browse).

***Multiple-use management.*** An onsite management strategy that encourages a complementary mix of several uses on a parcel of land or water within a larger geographic area.

***Native (species).*** A plant or animal indigenous to a particular locality.

***Natural Area.*** Limited areas of land, designated by Vermont statute, which have retained their wilderness character, although not necessarily completely natural and undisturbed, or have rare or vanishing species of plant or animal life or similar features of interest which are worthy of preservation for the use of present and future residents of the state. They may include unique ecological, geological, scenic, and contemplative recreational areas on state lands.

***Natural community.*** An assemblage of plants and animals that is found recurring across the landscape under similar environmental conditions, where natural processes, rather than human disturbances, prevail.

***Nongame species.*** Animal species that are not hunted, fished, or trapped in this state. This classification is determined by the state legislature.

***Northern hardwood.*** Primarily sugar maple, yellow birch, and beech. May include red maple, white ash, white birch, black cherry, red spruce, and hemlock.

***Old growth forest.*** A forest stand in which natural processes and succession have occurred over a long period of time relatively undisturbed by human intervention.

***Outdoor recreation.*** Leisure time activities that occur outdoors or utilize an outdoor area or facility.

***Overstory.*** That portion of the trees, in a forest of more than one story, forming the upper or upper-most canopy layer.

**Pole.** A tree of a size between a sapling and a mature tree.

**Pole timber.** As used in timber survey, a size class definition; trees 5.0 to 8.9 inches (varies by species) at DBH. As used in logging operations, trees from which pole products are produced, such as telephone poles, pilings, etc.

**Regeneration treatment (harvest cut).** Trees are removed from the stand to create conditions that will allow the forest to renew or reproduce itself. This is accomplished under either an even-aged management system or an uneven-aged management system. The four basic methods used to regenerate a forest are clearcutting, seed-tree, shelterwood, and selection (group selection or single tree selection).

**Regeneration methods.** Timber management practices employed to either regenerate a new stand (regeneration cutting) or to improve the composition and increase the growth of the existing forest (intermediate treatment).

**Regulated Hunting/Fishing/Trapping.** The harvest of wildlife under regulations stipulating setting of seasons, time frame of lawful harvest, open and closed zones, methods of take, bag limits, possession limits, and reporting or tagging of species.

**Release (release operation).** The freeing of well-established cover trees, usually large seedlings or saplings, from closely surrounding growth.

**Removal cut.** The final cut of the shelterwood system that removes the remaining mature trees, completely releasing the young stand. An even-aged stand results.

**Salvage Cutting.** The removal of dead, dying, and damaged trees after a natural disaster such as fire, insect or disease attack, or wind or ice storm to utilize the wood before it rots.

**Sanitation cutting.** The removal of dead, damaged, or susceptible trees to improve stand health by stopping or reducing the spread of insects or disease.

**Sapling.** As used in timber surveys, a size class definition. A usually young tree larger than seedling but smaller than pole, often 1.0 to 4.9 inches at DBH.

**Seedling.** A very young plant that grew from a seed.

**Seed-Tree (Seed Cut) method.** The removal of most of the trees in one cut, leaving a few scattered trees of desired species to serve as a seed source to reforest the area.

**Shelterwood method.** A series of two or three cuttings which open the stand and stimulate natural reproduction. A two cutting series has a seed cut and a removal cut, while a three cutting series has a preparatory cut, a seed cut, and a removal cut.

**Silvicultural systems.** A management process whereby forests are tended, harvested, and replaced, resulting in a forest of distinctive form. Systems are classified according to the method of carrying out the fellings that remove the mature crop and provide for regeneration and according to the type of forest thereby produced.

**Single tree selection method.** Individual trees of all size classes are removed more or less uniformly throughout the stand to promote growth of remaining trees and to provide space for regeneration.

**Site Preparation.** Hand or mechanical manipulation of a site, designed to enhance the success of regeneration.

**Snag.** Includes standing dead or partially dead trees that are at least 6 inches in diameter at breast height (DBH) and 20 feet tall.

**Softwood.** A coniferous tree. Softwood trees belong to the botanical group gymnospermae, including balsam fir, red spruce, and hemlock.

**Stand improvement.** An intermediate treatment made to improve the composition, structure, condition, health, and growth of even or uneven-aged stands.

**Stewardship.** Caring for land and associated resources with consideration to future generations.

**Sustainability.** The production and use of resources to meet the needs of present generations without compromising the ability of future generations to meet their needs.

**Sustained yield.** The yield that a forest can produce continuously at a given intensity of management.

**Thinning.** Removing some of the trees in a dense immature stand primarily to improve the growth rate and form of the remaining trees and enhance forest health.

**Threatened species.** A species listed on the state or Federal threatened species list. Threatened species are those likely to become endangered within the foreseeable future throughout all or a significant portion of their range.

**Timber lands.** Properties that are managed primarily for the maximum production of forest products.

**Timber Stand Improvement.** Activities conducted in young stands of timber to improve growth rate and form of the remaining trees.

**Traditional uses.** Those uses of the forest that have characterized the general area in the recent past and present, including an integrated mix of timber and forest products harvesting, outdoor recreation, and recreation camps or residences.

**Uneven-aged (All-aged) system.** Timber management which produces a stand or forest composed of a variety of ages and sizes. Regeneration cutting methods in this system include single tree selection and group selection.

**Watershed.** The geographic area within which water drains into a particular river, stream, or body of water. A watershed includes both the land and the body of water into which the land drains.

**Weeding (cleaning).** Regulating the composition of a young stand by eliminating some trees and encouraging others, and also freeing seedlings or saplings from competition with ground vegetation, vines, and shrubs.

**Wilderness.** Areas having pristine and natural characteristics, typically roadless and often with some limits on uses. (This is not the federal definition of wilderness.)

**Wildlife habitat.** Lands supplying a critical habitat need for any species of wildlife, especially that which requires specific treatment and is of limited acreage.

**Working forest.** Land primarily used for forestry purposes but also available for recreation, usually where both managed land and land not presently being managed is present.

**Working landscape.** A landscape dominated by land used for agricultural and/or forestry purposes.