

Part Four

Resources and Contacts

Additional Resources

The Essential Reference

Comprehensive Planning: A Manual for Maine Communities. Maine State Planning Office. November, 1992. The manual for creating or updating a Comprehensive Land Use Plan in Maine. Free. For more information, contact the State Planning Office. (207) 287-3261. Website: <http://janus.state.me.us/spo>.

Economics of Land Use

The Cost of Sprawl. Maine State Planning Office. May, 1997. Covers the economics of standard residential development with some surprising and thought provoking data. Available from (207) 287-3261 or download the publication from www.state.me.us/spo.

Open Land, Development, Land Conservation and Property Taxes in Maine's Organized Municipalities. Brighton, D. for Maine Coast Heritage Trust. January, 1997. Looks at impact of land conservation and development on local property taxes with examples from Vinalhaven, Mount Desert and Freeport. Available from Maine Coast Heritage Trust, One Main Street, Topsham ME 04086. (207) 729-7366.

The Positive Economics of Conservation: Technical Bulletin No. 112. Maine Coast Heritage Trust. Assesses the cumulative costs of development and suggests why communities should assess their own development costs and benefits. Provides a list of additional resources, (including a com-

puter program to compute the fiscal cost of development from American Farmland Trust). Available from Maine Coast Heritage Trust. One Main Street, Topsham ME 04086. (207) 729-7366.

Forest Fire Prevention

Common Sense Fire Protection Standards for Real Estate Development in Rural Maine. Winter 1991. Fire Control Division of Maine Forest Service, Department of Conservation. Available from Fire Control Division of Maine Forest Service. 1-800-750-9777.

Wildfire is the Enemy of Your Forest Home. Fire Control Division of Maine Forest Service, Department of Conservation. Available from Fire Control Division of Maine Forest Service. 1-800-750-9777.

Forestry and Forest Management

Community Forestry

Community Forestry and Urban Growth: A Toolbox for Incorporating Urban Forestry Elements Into Community Plans. McFarland, K. 1994. Olympia, Washington. Available from Washington State Department of Natural Resources. (360) 902-1000.

Biodiversity

Wildlife Habitat/Hazard Tree Decision Model. Informative pamphlet that shows you how to decide whether it is best to keep a tree for wildlife purposes or cut it down for safety reasons. Available from USDA Forest Service,

Northeastern Area State and Private Forestry. (603) 868-7600. Also available from the Maine Forest Service. 1-800-367-0223.

Biodiversity in the Forests of Maine: Guidelines for Land Management. Flatbo, G., C. R. Foss and S. K. Pelletier. 1999. UMCE Bulletin 7147. \$25.00. Describes characteristics that influence biological diversity and recommends voluntary forestry practices that can help maintain forest biodiversity in Maine. Available from University of Maine Cooperative Extension. 1-800-287-0274.

Forest Management

A Guide To Logging Aesthetics: Practical Tips for Loggers, Foresters and Landowners. Jones, Geoffrey T. 1993. Fifty color photographs and text describe cost-effective and proven practices that minimize negative impacts during and immediately after the harvest while enhancing the wildlife, recreational and aesthetic qualities of the woodlot. Bulletin #123NRAES60. \$7.00. Available from Cornell Cooperative Extension. (607) 255-2080. Website: <http://www.cce.cornell.edu/publications/natural-resources.html>.

Landowner's Guide to Forest Stewardship Practices. A series on the ecology, stewardship and management of small woodlands. Funded by the Stewardship Incentive Program, which assists owners of more than ten acres. Provides good background information specific to Maine for anyone who wants to know more about the forest in general and their property in particular.

Available from the Department of Conservation, Maine Forest Service. 1-800-367-0223.

Seeking Professional Forestry Assistance. Bulletin #7071.

Available from the University of Maine Cooperative Extension. 1-800-287-0274. Website: <http://www.umext.maine.edu>.

Selecting a Logger. (Brochure).

Gives options for choosing a logger. Available from the Department of Conservation, Maine Forest Service. 1-800-367-0223.

Timber Sales Contract. Bulletin #7074.

University of Maine Cooperative Extension. 1-800-287-0274. Website: <http://www.umext.maine>.

The Woods in Your Backyard: A Landowner's Guide. Parrish, Christine R., July, 1999.

Introduces how the woods work in Maine backyards and woodlots including basic forest ecology, wildlife habitat, critical areas and non-timber forest products. Family projects show how to get the whole family and neighborhood interested in the backyard woods while having fun. Non-technical. Available from Department of Conservation, Maine Forest Service, 22 State House Station, Augusta ME 04333. 1-800-367-0223.

Working with Your Woodland: A Landowner's Guide. Beattie, Mollie et al. 1993.

Hanover, NH: University Press of New England. \$22.00. A comprehensive and easy to understand guide for landowners (including municipalities) interested in sound conservation

forest management and timber harvesting. Order from your local bookstore or purchase on-line at Amazon.com.

Citizens Guides to Comprehensive Land Use Planning

Getting Involved: A Citizen's Guide to Local Planning.

Natural Resources Council of Maine. An introduction of how citizen's can get involved in the land use planning process for their town and practical suggestions of how to proceed through the comprehensive planning process. Out of print, but photocopies available from NRCM, 271 State Street, Augusta ME 04330-6900. (207) 622-4343.

Where We Live: A Citizen's Guide to Conducting a Community Environmental Inventory.

Harker, Donald F. and Elizabeth Ungar Natter. 1995. Washington, DC Island Press. \$18.65. A practical workbook to help citizens find information concerning their local environment and to use that information to further their community land use goals. Order from your local bookstore. Also available from Acorn Naturalists. 1-800-422-8886.

Land Conservation & Open Space Planning

American Farmland Trust. Works at the local and federal level to conserve working farmland. The tools and techniques section of this website will help farmers, public officials, conservationists and other citizens understand how to protect precious agricultural land and landscapes, including forest

land. Website: www.farmland.org. ***Conservation Options: A Guide for Maine Landowners.*** Schauffler, F. M. 1994.

Brunswick, Maine: The book explains how to protect land in ways that make good financial sense for the all involved. Available from Maine Coast Heritage Trust. (207) 729-7366.

Conservation Works.

National Park Service. 1996. A booklet on creating trails, enhancing waterways and developing open spaces in towns and cities. The Androscoggin Greenways are used as an example. Website: <http://www.cr.nps.gov/rta/rta-home.html>.

Creating Open Space Networks Through Conservation Subdivision Design. (Video)

Arendt, Randall. A step-by-step introduction to combining natural resource conservation and subdivision design in an economically advantageous way. Available on loan from the Maine Forest Service. Contact the Natural Science Educator. (207) 287-4988.

Forest Legacy: Protecting America's Private Forest Heritage.

A brochure explaining the Forest Legacy Program and conservation easements. American Forestry Association. Available from the Maine Forest Service, Department of Conservation. 1-800-367-0223.

Land for Maine's Future Program.

A voter approved state program to acquire lands of state significance from willing sellers. Handles purchases and conservation easements of lands for the purposes of public access, natural resource conservation and historical value. Municipalities may manage prop-

erties under LMF guidelines. Anyone may submit a proposal for consideration. For more information, contact Maine State Planning Office (207)287-1487. Website: www.state.me.us/spo.lmf.

Land Trust Alliance. Promotes voluntary land conservation and strengthens the land trust movement by providing the leadership, information, skills and resources land trusts need to conserve land for the benefit of communities and natural systems. Offers descriptions and examples of land protection options. Website: <http://www.lta.org>.

Lincoln Institute of Land Policy. A nonprofit educational institution established to study and teach land policy and taxation. Three program areas: taxation of land and buildings; land markets; and land as common property. Their goal is to make knowledge about these subjects easy to understand for citizens, policy makers and scholars in order to improve public and private decision making. 113 Brattle Street, Cambridge, MA 02138-3400. (617) 661-3016. Website: www.lincolnst.edu.

Maine Coast Heritage Trust. Provides conservation advisory services to landowners, local land trusts and state and community officials free of charge. One Main Street, Topsham ME 04086. (207) 729-7366. Or P.O. Box 426, Northeast Harbor, ME 04662. (207) 276-5156. Website: www.mcht.org.

Maine Land Trust Network. A Maine Coast Heritage Trust sponsored network of statewide land trusts. Contact the Maine Coast

Heritage Trust or the Website: www.mltn.org.

Open Space Planning: A Guide for Preserving Your Community's Natural Resources and Quality of Life. Available from the Maine Department of Conservation, Grants and Community Recreation Division, Bureau of Parks and Lands. (207) 287-4905.

What Do Trees Have To Do With It? Forestry, Natural Resources and Comprehensive Planning (Video). Maine Forest Service. Edited video of conference is a good introduction for comprehensive planning committees and conservation commissions on how forests and natural resources fit into the planning process. Free. Contact the Natural Science Educator (207) 287-4988.

Land Use Ordinance and Zoning Guidelines

Effects of Traditional Zoning

The Hidden Design in Land Use Ordinances: Assessing the Visual Impact of Dimensions Used for Town Planning in Maine Landscapes. Craighead, Paula M. March, 1991. MAC/USM Design Arts Project. New England Studies Program, University of Southern Maine. \$9.95. Shows the common result of land use ordinances that were put in place to "preserve the rural character of our town" and failed to do just that. Illustrates why common zoning practices failed and shows how to better reach the goal of maintaining a real "rural" town. Available from USM/New England Studies, 11 Granite Street, Portland ME 04203.

Sprawl Web Page. Maine Real Estate and Development Association. For more background on sprawl dialogue in Maine and around the country, visit this page for links on specific topics associated with sprawl. Website: www/mereda.org/sprawl.htm.

Working Landscapes: Are We Zoning Our Farmland, Forest Land and Wildlife Habitat Out of Existence? This booklet argues for functional minimum lot sizes for working farm and forest land and wildlife habitat conservation based on research and analysis. Available from Natural Resources Council of Maine. 271 State Street, Augusta ME 04330-6900. (207) 622-4343.

Forestry

Forestry Ordinances: Legal Definitions. Maine Forest Service, 1990. Augusta, Maine. Terms (and associated definitions) that must be used in municipal forestry ordinances. 1-800-367-0223.

Forestry Ordinances: Guidelines. Maine Forest Service, 1990. Augusta, Maine. Basic guidelines for writing municipal forestry ordinances. 1-800-367-0223.

Municipal Tree Ordinances

How to Write a Municipal Tree Ordinance. The National Arbor Day Foundation. Tree City Bulletin No. 9. Contact the Maine Forest Service Community Forester for more information. 1-800-367-0223.

Models and Standards for Municipal Tree Ordinances. Offers examples of tree ordinance provisions and methods for monitoring and managing trees. Also provides practical information on how to address the public's attitude about trees. Website: <http://www.isa-arbor.com/tree-ord.ordintro.htm>.

Subdivision Ordinances

Growing Greener: Putting Conservation into Local Plans and Ordinances. Arendt, Randall. 1999. Washington, DC Island Press. \$42.50. A practical, thorough and easy to use workbook on designing subdivision ordinances, comprehensive plans and zoning ordinance changes that are economical and environmentally sound. Model ordinances and Maine examples included. Available from the publisher. 1-800-828-1302.

Model Subdivision Ordinance. Available from the Maine State Planning Office. (207) 287-3261 Website: <http://janus.state.me.us/spo>.

Maine Forestry Laws

A Field Guide to Laws Pertaining to Timber Harvesting in Organized Areas of Maine. Maine Department of Environmental Protection, 1998. Augusta, Maine. This booklet describes the five state laws that impact timber harvesting in Maine's organized municipalities. An easy to follow guide that cuts through the extensive text of these laws and regulations and provides a simpler, easy to understand version. Available from Maine DEP. 1-800-452-1942.

Maine Forest Practices Act. Maine Forest Service, 1999. Augusta, Maine. Describes the Forest Practices Act which governs timber harvesting activity in the state of Maine, specifically Title 12: Conservation, Part 11: Forestry, Chapter 805: Cooperative Forestry Management, Subchapter III-A Forest Practices. Available from Maine Forest Service. 1-800-367-0223.

Maine Forest Service Rules-Chapter 20: Forest Regeneration & Clearcutting Standards. Available from the Maine Forest Service, 1999. Augusta, Maine. 1-800-367-0223.

Maine Shoreland Zoning: A Handbook for Shoreland Owners. Maine Department of Environmental Protection, 1998. Augusta, Maine. This booklet describes the state's Shoreland Zoning Law and Guidelines, in words and picture, for shoreland owners. Available from Maine DEP. 1-800-452-1942.

Maine Forest Statistics & Forest Conditions

Forest-Land Owners of Maine, 1982. Birch, T. W., 1986. USDA Forest Service, Northeast Station, Resource Bulletin NE-90. A statistical analysis of parcel sizes and related land use in the state. Available free from USDA Forest Service, Publications Distribution, 359 Main Road, Delaware, OH 43015.

Private Forest-land Owners of the Northern United States. 1994. Birch, T. W., 1996. USDA Forest Service, Northeastern Forest Experiment Station, Resource

Bulletin NE-136. A statistical analysis of parcel sizes, land use and land use trends in New England. Available from USDA Forest Service, Publications Distribution, 359 Main Road, Delaware, OH 43015

Some Facts About Maine's Forestry Sector. Field, D.B. 1999. Orono, Maine. A historical and contemporary review, supported by research, of land use, wood products and forest economics. Available free from the University of Maine. (207) 581-2856.

The State of the Forest and Recommendations for Forest Sustainability Standards: Final Report to the Joint Standing Committee of the 119th Legislature on Agriculture, Conservation and Forestry. Maine Forest Service, 1999. Augusta, Maine. The State of the Forest report discusses major forest issues, with greater detail and analysis on key issues. The Maine Forest Service is required to report on the State of the Forest biannually. Available free. 1-800-367-0223.

Water Quality Protection and Management

Best Management Practices: Field Handbook. 1998. Augusta, Maine. A practical, easy to read pocket handbook that describes BMP's, and how they work in minimizing erosion. Available free from the Maine Forest Service. 1-800-367-0223.

Riparian Forest Buffers: Function and Design for Protection and Enhancement of Water Resources. Welsch, D. J. 1991. NA-PR-07-91. Radnor, PA \$2.00. Available

from the USDA Forest Service, Northeastern Area State and Private Forestry, Forest Resources Management. (202) 512-1800.

Protecting Maine Lakes from Phosphorus Pollution: A new planning guide for cities and towns.

Maine Department of Environmental Protection. Augusta, Maine. A practical, step-by-step procedure for protecting lakes from phosphorus pollution. Available from the Maine DEP. 1-800-452-1942.

Protecting Water Quality During Trail or Road Construction in Forested Areas. Personal Contact: Morten Moesswilde, Water Quality Coordinator, Maine Forest Service. (207) 287-8430 E:mail: morten_moesswilde@state.me.us.

The Importance of Streamside Buffers: A Guide for Landowners and Land-Use Decision Makers. (Brochure). 1997. The benefits of streamside buffers on water quality are discussed. Available from the Rivers Alliance of Connecticut. (860) 693-1602

Streams. Augusta, Maine. An easy to read brochure on streams, their functions and ecology. Available from the Maine Department of Environmental Protection. 1-800-452-1942.

Regional Planning Councils

Regional Councils assist town planning boards, comprehensive planning committees, conservation commissions and others with information, technical expertise and advice. They are a useful regional resource for anyone involved in planning. Contact individual councils to find out more about the services they offer.

Androscoggin Valley Council of Governments

125 Manley Road
Auburn, ME 04210
Telephone: (207) 783-9186
E-mail: avcog@avcog.eddmaine.org

Greater Portland Council of Governments

233 Oxford Street
Portland, ME 04101
Telephone: (207) 774-9891
E-mail: rseeley@server.eddmaine.org

Hancock County Planning Commission

RR 4, Box 22
Ellsworth, ME 04605
Telephone: (207) 667-7131
E-mail: hcpc@acadia.net

Kennebec Valley Council of Governments

17 Main Street
Fairfield, ME 04937
Telephone: (207) 453-4258
E-mail: kvkog@kvkog.eddmaine.org

Merrymeeting Council of Governments

8 Lincoln Street
Brunswick, ME 04011
Telephone: (207) 729-0144
E-mail: mcbd@zwi.net

Mid-Coast Regional Planning Commission

218 Main Street, Suite 15
PO Box 1315
Rockland, ME 04841
Telephone: (207) 594-2299
E-mail: planning@midcoast.com

Northern Maine Development Commission

PO Box 779
Caribou, ME 04736
Telephone: (207) 498-8736
or 1-800-427-8736
E-mail: nmdc@nmdc.org

Penobscot Valley Council of Governments

1 Cumberland Plaza, Suite 300
PO Box 2579
Bangor, ME 04401-2579
Telephone: (207) 942-6389
E-mail: dbennett@emdc.org

Southern Maine Regional Planning Commission

255 Main Street
PO Box Q
Sanford, ME 04073-1325
Telephone: (207) 324-2952
E-mail: smrpc@ime.net

Washington County Regional Planning Commission

63 Main Street
Machias, ME 04654
Telephone: (207) 255-8686
E-mail: dbennett@emdc.org

Designing Municipal Ordinances that Work

While towns will want to consider a range of regulatory and non-regulatory strategies for implementing the vision supplied by the comprehensive plan, well crafted ordinances can be a powerful tool used to conserve working forests and farms, preserve scenic views, protect water quality and wildlife habitat, provide recreational opportunities and reduce municipal expense. Possible ordinances that a town may consider include:

- ▶ Timber harvesting (*must be approved by the Maine Forest Service*)
- ▶ Town trees
- ▶ Trees adjacent to Right of Way's
- ▶ Town forests
- ▶ Sub-divisions
- ▶ Trees and shrub plantings in new developments
- ▶ Shoreland zoning (*in excess of state minimums*)
- ▶ Scenic view protection
- ▶ Wildfire prevention

During the crafting of an ordinance, planners should take care that the regulation actually achieves the desired goal. Unintended consequences are all too common, since regulations set the floor for minimum acceptable performance. They do not necessarily promote excellence and may serve as a disincentive to landowners. For example, a restrictive timber harvesting ordinance may have the unintended consequence of either encouraging landowners to cut their most valuable timber

(*high-grading or liquidation harvesting*), or getting out of forest management altogether and selling the land for development. Likewise, a subdivision ordinance with a large minimum lot size enacted in an attempt to preserve the rural character of a municipality actually does the reverse; it encourages residential development to spread further and further across the forested landscape.

Given these precautions, well designed municipal ordinances are effective at protecting natural resource values. Municipalities may also amend existing ordinances to protect those values. For example, a town may require a wider setback zone than is required by the state shoreland zoning in order to protect the water quality of a lake that supplies town water. Or a town may amend a subdivision ordinance to enhance open space by basing the number of housing units on density rather than on minimum lot sizes.

While a comprehensive plan guides the decision on whether an ordinance should be considered as a tool to reach planning goals, all ordinances should be written so they are easy to understand. They should also include the following basic information:

- ▶ Why the town needs the ordinance
- ▶ Who is affected by it
- ▶ Who enforces it
- ▶ How it may be appealed
- ▶ Where (*geographically*) it applies

A municipal ordinance needs to be practical, reasonable, legal and enforceable. That is, it should

not be vindictive nor deprive a landowner of all economic use of a property and it should advance a legitimate governmental interest. Landowners should also be provided with a clear avenue of appeal through an escape clause in the ordinance.

Model ordinances can be useful when drafting an ordinance, but must be tailored to the specific municipality. While the comprehensive plan serves as the overarching guide, model ordinances provide insight into the format, legal language and specifics to consider when drafting an ordinance. But there is no one-size-fits-all ordinance, since municipalities in Maine range from small rural villages to well populated cities and suburban towns. Many of the concerns facing these municipalities, such as rapid growth in residential areas and the increasing costs of municipal services, are the same, but the appropriate course of action may be quite different from one town to the next. Given this variety, it is important to adapt model ordinances as appropriate.

Municipalities should seek out the help and advice of planners experienced in crafting ordinances. See the list of Regional Planning Councils to contact your closest office for assistance and refer to the *Additional Resources* list in this publication to find guidelines for crafting specific ordinances. The Maine State Planning Office can also be of assistance: their *Municipal Handbook of Model Smart Growth Ordinances and Policies* is due out in 2001.

Glossary of Common Forestry Terms

Acre A unit of land measurement of 43,560 square feet; a square parcel of land approximately 208.5 feet on each side. A parcel of land 1 mile on each side contains 40 acres.

Aspect Direction towards which a slope faces; orientation of a slope face.

Available Water Capacity The capacity of a soil to hold water in a form available to plants.

Basal Area Area in square feet of the cross section of a tree trunk at breast height most commonly used as an indicator of stand density and expressed as square feet per acre. A tree with a 14" diameter has a basal area of just over one square foot.

Best Management Practices (BMPs) Guidelines for the reduction of erosion and sedimentation of water bodies (*streams, ponds, lakes, rivers, etc.*) from logging activities. A practice or combination of practices determined to be the most effective and practicable means of preventing negative impacts of silvicultural activities. Usually associated with erosion control measures and water quality practices.

Blaze To remove a spot of bark from a tree, usually with an axe, to make a semi-permanent mark. Commonly painted to indicate boundary lines.

Board Foot A unit of measure 1 foot long, 1 foot wide, and 1 inch

thick. Usually used for sawlog material only. A common symbol is MBF, which designates one thousand board feet. The average conversion commonly used is 2 cords = one thousand board feet.

Browse Leaves, buds and woody stems used as food by woodland mammals such as deer, moose and snowshoe hare.

Buffer Strip Vegetation left along a stream, lake, or wetland to protect aquatic life and water quality. Buffer strips filter sediment, provide food, maintain cool water temperatures and may increase diversity within a landscape.

Canopy The cover of branches and foliage formed by the tree crown. The size varies from species to species and covers a much larger area of the forest floor than basal area.

Clearcut A forest harvesting practice in which most or all trees are removed from a site. Clearcuts are used for immediate commercial purposes and for regeneration of future forests.

Coniferous Commonly called softwoods or evergreens. Although there are exceptions, most coniferous trees have cones and keep their needles through the winter.

Commercial Thinning Harvests which are aimed primarily at controlling the growth of stands through adjustment in stand density. Trees removed are useful and of value for some purpose. Income from the sale or use of products produced exceeds all costs associated with harvesting and removing timber.

Cord A unit of volume used in measuring wood products. A standard cord occupies 128 cubic feet of space and contains approximately 85 cubic feet of wood. It is commonly described as a close piled stack of wood 4 feet high, 8 feet long, with sticks 4 feet in length.

Crop Tree Those trees in a stand destined to form the final crop, usually the highest quality and value of all the trees in a stand. Crop trees may be selected from an immature stand and carried through until the final harvest.

Crown Upper portion of a tree which includes the limbs, branches, buds and leaves.

Cruise An organized survey of forest land to locate timber and estimate quantity by species, products, or other information; the estimate obtained in such a survey.

Deciduous Commonly referred to as hardwoods or broadleaved trees. In most cases they lose their leaves in the fall.

Density A measurement of a stand in terms of square feet of basal area, number of trees, or volume per acres. It reflects the degree of crowding of the stems within the stand. Expressed as basal area, it is a measure of the portion of an area occupied by trees. Expressed as a percentage of crown closure, it is an estimate of the extent the site is occupied.

Diameter Breast Height (DBH) The diameter of a tree (*outside bark*) at a point 4 feet above the ground.

Dominant Trees with crowns extending above the general level of the crown cover and receiving full light from above and partly from the side. Dominant trees are generally larger than average trees in the stand, with crowns well developed and partially crowded on the sides.

Even-aged Management

Managing a forest or forest stand to produce a forest of trees of the same relative age. Even-aged management techniques include intermediate treatments, clearcuts, patch clearcuts and shelterwood cuts.

Even-aged Stand A stand of trees in which relatively small age differences exist. A stand is considered even-aged if the difference in age between the oldest and the youngest trees do not exceed twenty percent of the length of the rotation. Stands stocked with two distinct age classes are considered even-aged.

Forest Ecosystem All the plants, animals and chemical and physical processes which interact to sustain the forest. Trees and other organisms interact with each other and with the chemical and physical environment in complex ways.

Forest Management The application of sound forestry principles and practices to the operation of the woodlands.

Forest Type A group of trees, occupying a specific area and uniform in composition, species, age arrangement and condition, as to be distinguished from other adjoining forested areas.

Forester A person who has been professionally educated in forestry and in some states required to possess a license in order to practice. Licensing is required in Maine.

Hardwood Used to designate all broadleaved or deciduous trees as a class. This would include maples, birches, ashes, oaks, aspens, cherries, beech and other broadleaved trees.

Hardwood Type A forest in which hardwood tree species comprise at least 75% of the stand.

Height Class Used in defining a stand of trees. Height classes are usually divided into trees of less than 35 feet in height, trees from 35 feet to 64 feet and trees greater than 65 feet in height.

Highgrading Selective removal of the most economically valuable trees without improvements in the remaining forest.

Intolerance The inability of a tree to develop and grow in the shade of and in competition with other trees.

Landing A place where logs and pulp are assembled for loading and transportation to a mill

Mast Any nut, seed, or fruit produced by woody plants and consumed by wildlife.

Merchantable Refers to forest products which can be harvested and sold; trees of commercial value.

Natural Regeneration Seedlings from natural seeding or sprouts and other plants representing vegetative reproduction.

Patch Cut/ Patch Clearcut

Removal of all trees within designated small areas in the harvest area. Areas are larger than those cut in a group selection method harvest. An even-aged management technique.

Pole Size A DBH size class representing trees that are usually more than 4 inches in DBH and less than 10 inches DBH; generally over 20 feet in height.

Precommercial Thinning

Cuttings which are aimed primarily at controlling the growth of stands through adjustments in stand density. Income from the sale or use of products produced do not exceed costs associated with harvesting and removing timber.

Pulpwood Wood cut primarily for the manufacture of paper, usually the lower quality portions of a tree.

Residual Stand Those trees remaining uncut (*and hopefully undamaged*) following a cutting operation.

Release The process by which young stands of desirable trees, not past the sapling stage, are freed from the competition of undesirable trees that threaten to suppress them.

Rotation Age The age at which the timber stand is considered ready for harvesting under the approved plan of management.

Sanitation Cut Removal of diseased, damaged, overmature, or undesirable stems from a stand.

Sapling A young tree less than 4 inches DBH. The minimum size of saplings is usually placed at 1 inch DBH. Saplings are generally 3 to 20 feet tall.

Sawlog/ Sawtimber A log large enough to permit production of lumber or other products by sawing. Size and cull percent permitted must be specified in any contract and will vary with local practice. Usually greater than 10 inches DBH for softwoods and 12 inches DBH for hardwoods.

Seed Tree Harvest Removing trees in a mature stand so as to effect permanent opening of its canopy and so provide conditions for securing regeneration from the seed of trees retained for that purpose. An even-aged management technique.

Seedling Trees that are less than 3 feet tall.

Selection Harvest The removal of trees either as single scattered individuals or in small groups, at relatively short intervals repeated indefinitely so that the continuous establishment of regeneration is encouraged and an uneven-aged stand is maintained.

Shelterwood A system of management requiring the removal of the mature timber in a series of cuttings over a period of time which establishes essentially even-aged regeneration under the partial shelter of seed trees.

Silviculture The theory and practice of controlling forest establishment, composition and growth.

Site Index A measure of site quality (*productivity*) for a given tree species or group of tree species. The site index is the average height of a tree species or group of species at a standard age (*usually 50 years*).

Snags Dead standing trees, often with tops broken off, which serve as perches, lookouts, foraging and home sites for wildlife.

Softwood Used to designate all coniferous (*cone bearing*) species as a class. This would include spruces, pines, balsam fir, hemlock, cedar, larch or hackmatack and other cone bearing species.

Softwood Type A forest in which softwood tree species comprise at least 75% of the stocking.

Stand See Forest Type

Stocking Density of tree growth in the stand (*forest*), expressed in terms of trees per acre, basal area per acre, volume per acre, or percent crown closure.

Stumpage Value of standing, uncut trees.

Timber Stand Improvement (TSI) Precommercial or non-commercial activity designed to improve tree and stand quality and/or release the potential crop trees in a stand. May include thinning, weeding and pruning.

Thinning Removal of some trees in a stand to increase growing space thereby improving growth rate and/or quality in the remaining trees.

Uneven-aged Management Managing a forest or forest stand to produce three or more distinct age classes of trees.

Uneven-aged Stand A forest or stand composed of intermingling trees that differ markedly in age.

Vernal Pool An ephemeral body of water that fills in the spring, holds water for at least 10 days and dries up by fall some or all years and that does not contain fish.

Wildlife Habitat Four basic components of habitat are food, water, cover and space. Specific requirements for each of these components will vary with species, season of year and the age and sex of the animal.

Windfirm The ability of the root system of a tree to withstand wind pressure and keep the tree upright.