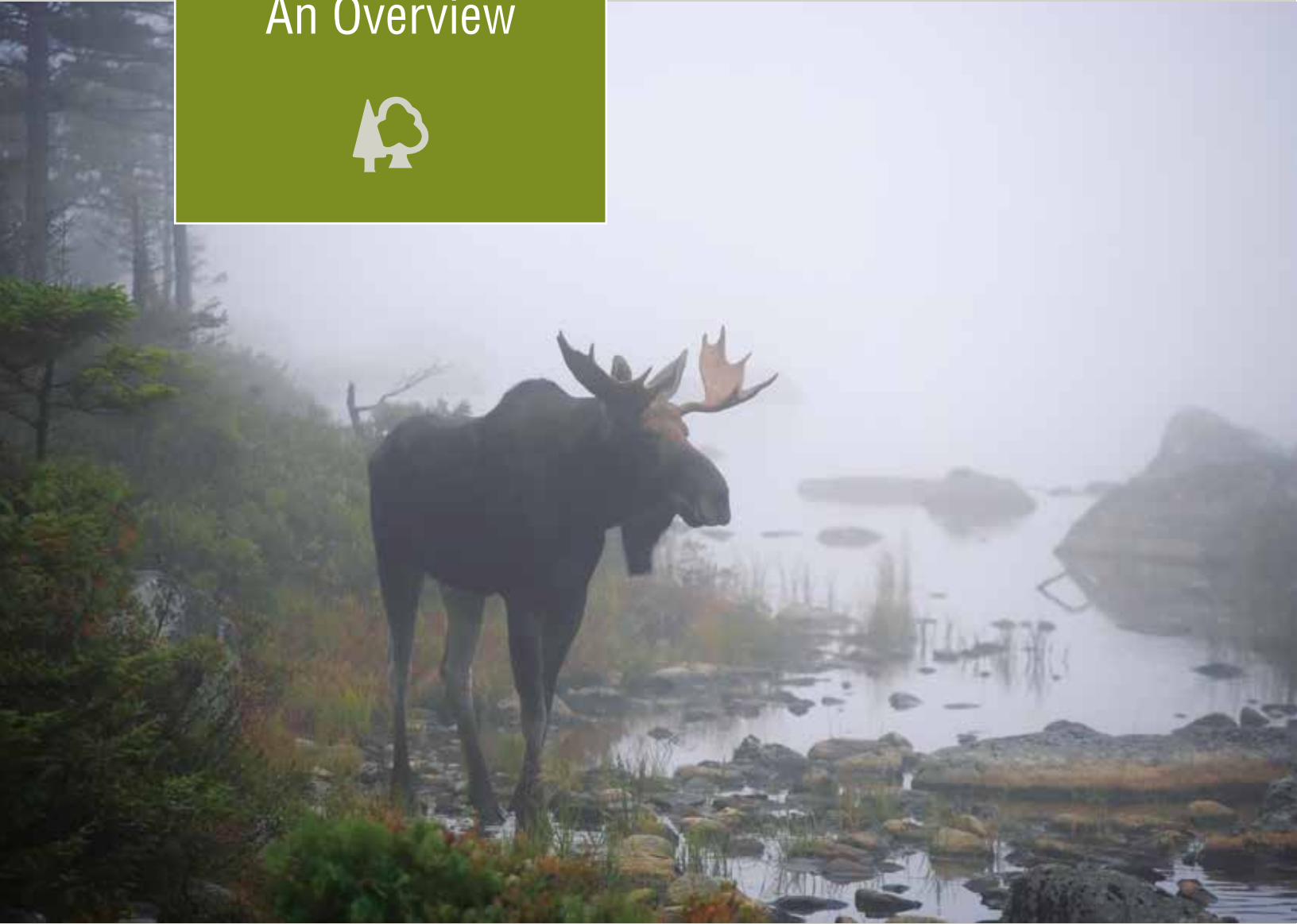


PART ONE:
Habitat
Planning Process:
An Overview



1. CONSIDERATIONS BEFORE YOU DEVELOP A PLAN

People own and value land for many reasons. Timber, firewood, bird watching, hiking, hunting, and many other values are realized from people owning land. To be sure, Vermont has a strong history and tradition associated with a rural working landscape that includes forest product economies, tourism and recreation, hunting, fishing, maple sugaring, farming, and more. This working landscape is what makes Vermont the special place it is.

This guide is intended to assist you as a landowner who is particularly interested in managing your land to benefit wildlife. That is not to say that by managing your land for wildlife you are deciding not to manage it for timber or hiking trails; indeed, many of these goals are compatible, if not complementary. Managing your land to enhance its value for wildlife requires careful attention to the species of plants and animals currently using the land as well as those desired from your management. This guide will help you, the landowner, forester, biologist, or other land manager, understand how to recognize various wildlife habitats and how to manage them for the future.

All good land management begins by creating a management plan to guide decisions and actions. Similar to developing a forest management plan, when managing your land for wildlife, the planning process should involve five steps: (1) evaluate the conditions and capabilities of the land; (2) set management goals based on your evaluation of the land and your desired outcomes; (3) consider management alternatives to be sure that your actions are the most effective to achieve your interests; (4) write a plan; and (5) implement the plan, monitor the results, and adjust your management strategies based on those results. Inherent in this process is the development of a map or maps that depict existing and desired conditions on your property.

This chapter introduces the overall habitat management planning process.



This guide is intended to assist those landowners who are particularly interested in managing their land to benefit wildlife.

Four habitat components are needed for wildlife to survive: food, water, cover, and space.

DEFINING WILDLIFE HABITAT

Before the planning process begins, you should be familiar with the concept of habitat in a broad sense. Four habitat components are needed for wildlife to survive: food, water, cover, and space. Even though all species need these habitat components, the amount and type of each required differs depending upon the species. Knowing the specific needs of each species (e.g., ruffed grouse), or group of species (e.g., grassland birds) will allow you to provide the correct habitat components to meet their needs and your interests. For more information on specific species, refer to **Part Seven: Habitat Management for Games Species** or **Part Eight: Habitat Management for Nongame Species**.

Relatedly, the term “carrying capacity” refers to the ability of a habitat to support a certain population (number of individuals) of a given species of wildlife. For instance, a limited supply of one type of habitat (e.g., habitat that provides an important source of food) will control how many of a given species of wildlife the habitat will support (e.g., acres of interior forest habitat and hermit thrush, or white-tailed deer and suitable softwood cover for winter habitat). Land managers can affect carrying capacity by providing or limiting important habitats, thus increasing or reducing wildlife populations.

PLANNING PROCESS

Evaluate the Land: Before you can effectively manage land for wildlife, you need to understand what wildlife live on the land and what habitat they require. In addition, a critical element to the planning process is to inventory and identify the habitat types and conditions on the land, and if possible, on surrounding lands owned by your neighbors. If you own forest land in Vermont, you can contact your local county forester with the Vermont Department of Forests, Parks and Recreation. That person will visit your land, free of charge, and help you evaluate the forested habitat conditions on your land. In addition, the Vermont Fish and Wildlife Department (VFWD) and the U.S. Department of Agriculture’s Natural Resources Conservation Service (NRCS) provide advice and planning services to Vermont landowners. You will see links to VFWD and NRCS in **Resources** sections throughout this guide.

By examining the land at different times of year, you can get a sense of the extent and diversity of habitat conditions (e.g., mast production by American beech or red oak trees in autumn). As explained in more detail in subsequent chapters, this includes identifying and assessing the number of snags (standing dead and dying trees) and the acreage and condition of a hemlock forest used as winter habitat by white-tailed deer, as two examples. Make a list of all the plants and animals you can easily identify on the land. Also, look for physical changes on the land that may vary by season. For example, look for how an opening in the forest gets shade during the growing season because this will influence how quickly it may regenerate to young forest, and look for areas that are seasonally wet and support standing water because they may be used by breeding amphibians for spawning and as sources of water for black bear and other wildlife. Examine what happens to the land and how the wildlife respond after a rain or snowstorm (e.g., deer may congregate in an area of softwood cover during winter, and mallard ducks may feed in seasonally flooded fields).



In addition, think about how your property fits into the local landscape. For example, how do your woods connect with your neighbors' lands? Do fencerows or stream corridors connect your land to other properties? What land use practices are occurring on the land around you, and what impact do they appear to have on local wildlife? Finding answers to these questions will help you to decide how to manage your property for wildlife, among other things, and whether or not your goals are realistic. In all of these larger, landscape considerations an important over-riding principle to keep in mind is, how are the habitats connected to one another, and how can those connections be maintained? Fragmenting those connections is one of the most significant impacts to many wildlife because it affects their ability to move, access important habitats, find mates to successfully reproduce, and to disperse and maintain their populations.

Although it is possible to plan and implement some habitat management practices on your own, gaining assistance from professional foresters and wildlife biologists is invaluable for realizing success and achieving your goals. Contact a regional Vermont Agency of Natural Resources (ANR) office for assistance and lists of natural resource experts (see **Resources** for contact information). Experts can provide valuable information and advice on what habitats may be present and how to best manage and enhance them. Local county foresters are an excellent source of guidance and information for developing habitat management plans and, in many instances, can guide you through how to update an existing forest management plan to include wildlife habitat. Additional information that may help in managing your land is available from many sources, including chapters in this guide, local libraries, videos and television programs, adult education courses, and individual experts.

Set and Prioritize Goals: Setting management goals is an exciting part of the planning process; this is when you decide what measurable differences to implement that will benefit wildlife. For example, your goal might be to increase the number of woodpeckers, squirrels, cavity nesting birds, and bats throughout the property. This goal might be achieved by increasing the number of snags (dead and dying trees) in a range of size classes in order to benefit those species that rely on such habitat. Another example might be to create young forest habitat to increase certain species of songbirds and ruffed grouse that rely on that habitat condition. It is important to be realistic when setting habitat management goals and base them on a thorough and thoughtful evaluation of the existing conditions of the landscape. For example, the desire to attract grassland birds is not realistic if the land you wish to manage is a 40-acre woodlot. You should become familiar with the habitat needs of the desired species, and be realistic in your appraisal of whether you can meet those needs. Think about the values you ascribe to your land as well as the health of the forest overall and how to ensure it remains healthy. Do you want it to produce income, provide hunting or other recreation, or are you more interested in aesthetic returns such as creating natural beauty, providing wildlife habitat for viewing pleasure, or protecting rare species? Through careful planning, many of these goals can be complimentary and not mutually exclusive.

Once you have established habitat management goals for the property, the next step is to develop management objectives (objectives are measurable outcomes that help meet the larger goals). Following the development of habitat objectives, another step is to identify management strategies or actions that describe what actions or mechanisms will be used or employed to manipulate or otherwise manage the habitat. Actions are task-oriented and designed to be directly implemented by



Figure 1.1 Statewide contiguous habitat map

Maps are an essential part of an effective management plan and should be detailed enough to understand existing conditions and constraints, as well as goals and objectives (desired conditions) — a picture is worth a thousand words. The ANR Natural Resources Atlas (<http://anrmaps.vermont.gov/websites/anra/>) is an excellent GIS tool to develop useful forest and habitat management plans.

Prioritizing your goals is a way to view the “big picture” in small, organized parts. This will help you to plan accordingly and complete the most important goals first.



the landowner or resource professional to achieve a certain outcome (e.g., pruning apple trees, delineating a buffer zone to a stream, or controlling invasive plants through hand pulling or use of herbicides). This framework of goals, objectives and strategies is commonly used for developing forest and habitat management plans and is merely a progression of how to describe what you hope to achieve and how you plan to achieve it.

As an example, you may have a goal to attract bluebirds to your property. A review of your property suggests nesting structures and foraging habitat are lacking. One objective might be to install six nest structures to attract at least three nesting pairs within three years. The action needed to achieve that objective may include constructing and placing six nest boxes in suitable locations within the next two years. A second objective might be to provide 2 acres of high-quality foraging habitat within three years. Specific actions, such as mowing a portion of an old field, might be used to achieve the objective.



Once your goals are set, prioritize their importance and determine whether they can be realistically achieved. Prioritizing your goals is a way to view the “big picture” in small, organized parts. This will help you to plan accordingly and complete the most important goals first. Employing the services of a professional wildlife biologist or forester is a useful way to ensure that your goals, objectives and actions are appropriate and realistic given the circumstances of the land and your interests and abilities.

Consider Alternatives to Meet the Goal: Usually, a goal can be achieved in more than one way, and foresters, wildlife managers and landowners often have to sort through many options to find the best method. Every decision made will affect wildlife and wildlife habitat in some way, but some impacts may be beneficial to your goal while others may be harmful. The successful manager is one who tries to anticipate how each decision will make a difference and which decision is the best one to meet the goal.

There may be many alternatives to choose from. Once alternatives have been identified you can select those goals, objectives and strategies that are most appropriate to best meet your interests. Keep in mind that many goals can be achieved by using the same strategies. For instance, growing healthy trees for saw timber and fire wood can be done in a way that is also compatible with developing healthy habitat for forest songbirds, small mammals, raptors, and deer, as just one example. Before choosing an alternative, be sure to consider cost, time involved, and impacts on other forms of wildlife as well as impacts to neighboring landowners. Choosing alternatives with the least amount of trade-offs is usually the best option. Some important considerations include: how much time and money are required, available options for technical and financial assistance (e.g., federal Farm Bill programs like the Environmental Quality Incentive Program) and what kind of equipment is needed. Equally important are the potential impacts of management decisions on neighboring landowners and the local landscape, and the costs and benefits to a wide array of wildlife. You should also remain mindful of the economic benefits of managing forested habitat. Harvesting timber produces income for the landowner and supports a state and regional forest products economy which ultimately helps keep land in an undeveloped condition. Timber harvest activities can be designed to benefit wildlife and the income generated from the timber harvest can offset the investment for habitat management.

Write a Management Plan: After you have established habitat management goals based on a careful assessment of existing habitat and land conditions as well as an assessment of alternative management options, it's time to write a management plan. It's important to note that an assessment of land conditions includes both the physical and ecological conditions of the land, as previously addressed. Any management plan will need to address issues of topography, stone walls, streams and wetlands as they relate to access for logging equipment, as just one example. Experts who can assist you with this task, are noted in the sidebar below. The purpose of a management plan is to outline the steps needed to reach your goals. An essential first step includes developing a map that depicts the area to be managed, current physical conditions of the land (e.g., topography, roads, stone walls), ecological conditions (e.g., streams, seeps), and habitat conditions (meadows, snags, forest openings, mature forest stands), location of habitat management practices to be employed, location of structures, access roads, and other relevant information. There are many ways to create a map for purposes of planning habitat management projects. The Vermont Agency of Natural Resources offers a web-based GIS mapping tool known as the Vermont Natural Resources Atlas that is a valuable tool for this purpose. This tool provides access to important natural resource and wildlife data (e.g., deer wintering areas, rare and uncommon natural communities and species, wetlands, habitat connections, and more), aerial photography and more. It is easy to access and use and can be found at the link in **Resources**. If you already have a forest management plan through the UVA program, this can serve as an excellent opportunity to realize your wildlife habitat goals by working with your county forester and others to adjust them accordingly. In many cases, UVA plans already have been designed to meet wildlife habitat goals and serve as useful templates to neighboring landowners. Contact your county forester for more information. There are other tools and programs you can use to guide the development of a management plan such as The American Forest Foundation's "My Land Plan" program available at mylandplan.org.

APPENDIX A

SAMPLE TEMPLATE FOR HABITAT PLAN
FOREST & WILDLIFE HABITAT MANAGEMENT PLAN

TEMPLATE

While there are many ways to develop and format a forest and habitat management plan, how a plan is developed can be affected by the size of the property, the complexity and diversity of the habitat conditions, and the types of interests the landowners may have. Reasons for developing a plan, such as the Vermont UVA requirements for forest management plans, may also dictate the format used. Maps are also an important part of the planning process. Consider using the ANR Atlas (<http://atlas.vermont.gov/webatlas/atlas/>) to create yours. Note: This template is one example of how a habitat management plan could be constructed and organized, and should be used as a general guide.

I. Describe the Property

- Property name, location, and plan owner

- History of land use (agricultural use, past timber harvesting, old roads, recent development)

- Acres of the property _____
- Boundary descriptions (attach a map of the property boundaries)

- Infrastructure (access and roads, historic sites - cellar holes, stone walls, parking areas - these will need to be added to your plan map)

Figure 1.2 Sample Habitat Plan
Appendix A provides a template for how to construct and organize a habitat management plan.

WHAT TO KNOW ABOUT CONSULTING FORESTERS AND WILDLIFE BIOLOGISTS



Consulting foresters and wildlife biologists can assist Vermont landowners in developing effective forest and wildlife habitat management plans. These guidelines can help landowners decide on management goals and strategies, while consulting natural resource professionals can articulate and implement successful wildlife habitat management activities. Consulting foresters and biologists can assist with plan and map preparation for your needs, design and implement resource inventories of your land, and help you apply for federal management practices programs and Use Value Appraisal (Current Use) enrollment. In addition, these professionals provide a wealth of knowledge that they will pass along to you — the landowner. There are many consulting foresters and wildlife biologists in Vermont and New England. The Vermont Fish and Wildlife Department maintains a list of practicing

wildlife consultants that can be found at:
<http://www.anr.state.vt.us/FWD/Consultant.aspx>

Your County Forester maintains a list of consulting foresters working in your area. The Vermont Woodlands Association maintains a list of consulting foresters at:
<http://www.vermontwoodlands.org/documents/CFMembershipDirectory2014-15.pdf>

When selecting a consulting forester or biologist consider their level of experience, and request examples of other plans they have written. Ask for references and in particular whether they have worked with any nearby landowners with whom you can speak. If you are enrolled in Vermont's UVA program, contact your county forester or the Vermont Fish and Wildlife Department for guidance if you want to update your management plan to address wildlife habitat interests.



While some habitat conditions respond quickly to management (e.g., aspen sprouting from patch cuts), other conditions require time and patience to be realized (e.g., development of riparian plantings).

Implement the Decision, Monitor the Results: Once the habitat management plan is complete you can begin to implement the various prescribed strategies in accordance with an implementation schedule.

While some habitat conditions respond quickly to management (e.g., aspen sprouting from patch cuts), other conditions require time and patience to be realized (e.g., development of riparian plantings). Monitoring the results of habitat management actions during the implementation of the plan is essential for determining to what extent the management goals are achieved and whether adjustments are required to better meet the goals. For instance, if your goal is to create young softwood habitat to encourage snowshoe hare and instead the site regenerates to mixed hardwood and softwood, it may be necessary to adjust your goal and focus on encouraging habitat for other species such as ruffed grouse, if your interest is small game hunting.

Remember that natural, economic, or other conditions may change during the life of the plan and you may need to revise your goals, objectives, and strategies accordingly. For example, in the planning process, a landowner may decide to establish a 40-acre field of warm season grasses, beginning in three years. When it is time to begin the management action seed prices may have gone up and the landowner can only afford to prepare and seed 20 acres. An appropriate and reasonable alternative response to this unforeseen change is to plant 20 acres of warm season grasses, and allow the other 20 acres to revert to an old field providing valuable shrub habitat conditions. This decision allows the landowner to stay within budget, and still results in the creation of valuable habitat.

WORKING WITH NEIGHBORS

Working in partnership with other landowners is often an exciting management approach that can result in even greater benefits to wildlife given the larger area of influence. As wildlife habitat becomes more fragmented in Vermont due to the subdivision and sale of land, small property owners may find it difficult to understand and identify opportunities to manage their land for wildlife. The answer may lie in working with neighbors to create a more meaningful habitat plan. You may be able to provide one component of wildlife habitat (e.g., release oak trees to improve acorn production) and neighboring landowners may be able to provide other components (e.g., buffer to a nearby stream or wetland). For example, the wetland on one property and the old field with shrub habitat on an adjoining property can be managed together for the benefit of birds and mammals that rely on these habitats and the essential connections between them. This is also a case where working together with neighboring landowners can turn a management operation that should involve harvest of timber into something that can become economically viable. By working with multiple landowners, there may be sufficient timber as an incentive for a commercial timber harvest designed to benefit wildlife habitat. Again, experts such as county foresters, state wildlife biologists as well as local and state land trusts can be helpful in making connections between landowners to discuss how best to manage your lands collectively.

VERMONT'S USE VALUE APPRAISAL PROGRAM

The Use Value Appraisal Program (UVA), also known informally as “Current Use,” is a tax incentive program for Vermont property landowners. It assesses the value of agricultural or forest land based on the current use of the land, rather than the use of greatest financial value, which is often as developed with homes or commercial structures. This program allows owners of forest land the opportunity to pay lower property taxes as long as they do not develop their land and they commit to managing their land through a forest management plan approved by a county forester.

UVA is an outstanding program in terms of the opportunities it creates for landowners interested in managing their land for wildlife. The program allows landowners to develop management plans that focus on wildlife habitat enhancement while still allowing for the economic benefits of forest products through commercial timber sales. In addition, UVA allows landowners that own land with Ecologically Significant Treatment Areas (a.k.a., ESTAs) to protect and manage those features through noncommercial methods where necessary to protect the resource. In most cases, landowners enrolled in UVA rely on the services of professional consulting foresters, wildlife biologists, and ecologists. The plans must be reviewed and approved by county foresters in the Vermont Department of Forests, Parks and Recreation. This level of professional guidance and review ensures that the plans comply with statutory and program requirements, and are appropriate, realistic and of high quality.

County foresters are available for field visits to discuss forest stewardship goals and management options. They can advise on practices programs and technical assistance available through a variety of programs and partner organizations. These range from funding options for specific activities through the Natural Resources Conservation Service to peer-to-peer networks to assessment for songbird habitat through “Foresters for the Birds.”

For landowners with 25 acres or more of land, this program is recommended as a means to develop a habitat management plan. (For more information about the UVA program and for other important website links, see **Resources**. Also, note the sample plan template provided in **Appendix A**.)



RESOURCES

Degraff, R.M., M. Yamaski, W.B. Leak, A.M. Lester. 2005. *Landowner's Guide to Wildlife Habitat – Forest Management for the New England Region*. Burlington, VT: University of Vermont.

Long, S., V. Barlow, I. Post, M. Snyder, C. Thompson, C. Wooster. 2012. *More Than a Woodlot: Getting the Most from Your Family Forest*. Vermont: Northern Woodlands.

Vermont Fish and Wildlife Department. Wildlife Expertise. http://www.vtfishandwildlife.com/nnhp_expertise.cfm

U.S. Department of Agriculture. Natural Resources Conservation Service. <http://www.nrcs.usda.gov/wps/portal/nrcs/site/vt/home/>

Vermont Department of Forest, Parks and Recreation. County Foresters. http://www.vtfpr.org/resource/for_forres_countfor.cfm

Use Value Appraisal Program. http://www.vtfpr.org/resource/for_forres_useapp.cfm

Vermont Woodlands Association. Consulting Foresters of Vermont. <http://www.vermontwoodlands.org/certified-foresters.asp>

The UVA program allows landowners to develop management plans that focus on wildlife habitat enhancement while still allowing for the economic benefits of forest products through commercial timber sales.

