Deer Doing Damage to Land Managed for Production of Marketable Forest Products Vermont Fish & Wildlife Department Working Group Report to Legislature - February 2012

Background

Act 54, Section 13 of the 2011 legislative session required the Commissioner of the Vermont Fish & Wildlife Department (VFWD) to convene a working group to review and recommend methods to address or limit damage by deer to trees, saplings, and seedlings managed for the production of marketable forest products and to assess land access issues related to wildlife management.

In October, 2011, the Commissioner appointed a working group comprised of the various interests specifically identified in Section 13. The working group membership and their respective interests included:

VFWD:

Patrick Berry, Commissioner VFWD Kim Royar, Project Specialist, VFWD

Foresters:

David Paganelli, Orange County Forester, VT Dept. of Forests, Parks & Recreation (VDFPR) Andy Sheere, Consulting Forester

Landowners:

Stuart Thurber, Brattleboro Jim Roberts, Athens

Fish & Wildlife Board: Peter Allard, Franklin County Steve Adams, Windsor County

Wildlife Biologists: Scott Darling, Wildlife Management Program Director, VFWD Forrest Hammond, Wildlife Biologist, VFWD

Hunting License Holders: Rob Borowske, Barre Don Rosinski, Vernon

At the request of the Commissioner, Rob Borowske served as the Chair of the working group to facilitate meetings, work toward consensus, and report the recommendations of the working group. The working group met on five occasions from November 2011 to February 2012.

The specific charges to the working group were:

I. To review and recommend methods for addressing or limiting damage by deer to trees, saplings, and seedlings on land managed for the production of forest products;

- II. To investigate preferred strategies to link forest landowners experiencing damage by deer with hunters and provide a set of recommendations for the potential development of a new program to accomplish this; and
- III. To evaluate if prohibiting the posting of land as a condition of taking deer doing damage to land will achieve the goal of reducing damage from deer browsing.

Charge I. Review and recommend methods for addressing or limiting damage by deer to trees, saplings, and seedlings on land managed for the production of forest products.

Solving problems related to forest regeneration in areas of high deer densities is not merely a function of reducing deer populations. The issue of deer damage to forest regeneration is a result of a series of complex inter-relationships between deer populations, forest management practices, invasion of non-native woody shrubs and plants, land use practices, and increasing trends in posted (i.e., registered and unregistered) lands. The working group approached this charge by discussing the numerous avenues that can be taken to affect most of these factors. The group recognized that no single solution to the issue is feasible or available. Instead, a myriad of inter-dependent strategies, when implemented comprehensively, would be most effective in addressing deer damage.

The working group recognizes that deer damage to forest regeneration is neither necessarily widespread nor limited to one region of the state. Instead, deer damage is typically localized within those portions of the state where deer habitat carrying capacity is greatest and winter severities are lower. In addition, conversion of forest habitat and the fragmentation of large forest blocks can exacerbate the problem by limiting hunter access and potentially increasing deer densities. Those regions along the Connecticut River Valley, southwestern Vermont, and the Champlain Valley best fit that description. The group acknowledges, however, that other cervids such as moose can also have an impact on forest





regeneration, typically where moose densities are highest such as the Northeast Kingdom.

A comprehensive approach to deer damage of forest regeneration requires specific interdependent strategies for education, identification and monitoring of browse damage, hunter access, forest management, and deer population management. A summary of the working group's deliberations and its recommendations are provided below for each of the strategies.

Education

Education and outreach for all interested parties is an essential element of addressing deer damage to forest regeneration. Education of forest landowners, foresters, hunters, and the VFWD will all be critical to the implementation of an effective education strategy.

- **Forest Landowners:** In most cases, forest landowners are not aware that local deer densities may be impacting their forest regeneration. Instead, landowners generally enjoy viewing deer and may even prefer to conduct forest management activities that benefit deer and other wildlife. Additionally, landowners may post their property in order to "protect" their deer from being harvested by hunters. When confronted with the reality of deer damage to forest regeneration, the goal will be for landowners to consider providing or enhancing hunter access and/or initiating forest management activities that reduce the impact of local deer densities on regeneration. Information on browsing conditions, alternative forest management strategies, rights and opportunities for Vermont landowners (see Welcome Wagon Kit), and opportunities to connect with hunters to legally harvest deer are all information and outreach tools that should be made available to forest landowners.
- Forestry Community: The forestry community is essential to the education of forest landowners. In many cases, a forest landowner has an established relationship with either a county or consulting forester that provides guidance for land management recommendations. Information about a standardized method for evaluating browsing conditions, the opportunities to link landowners with interested deer hunters, and alternative forest management practices to reduce the effects of deer densities on forest regeneration would provide foresters with a

set of tools to help address deer damage. The exchange of information will be dependent upon a close working relationship between the VFWD and foresters in order to achieve the mutual goals of necessary reductions in deer densities and land management strategies to enhance forest regeneration.

- VFWD: Deer management by the VFWD can be better informed as well through information about local or regional deer browsing pressure. Information collected by systematically and objectively monitoring damage to forest regeneration collected by the forestry community could become important input into VFWD antlerless deer recommendations by Wildlife Management Unit.
- **Hunting Community:** Lastly, education of the hunting community regarding the impacts of deer densities on forest regeneration, the need to maintain deer populations in balance with the carrying capacity of the land, and the importance of a respectful and positive relationship with forest landowners to provide for hunter access are critical to a successful deer population management program.

Monitoring Deer Damage to Forest Regeneration

The working group recognizes that the level of deer damage to forest regeneration varies significantly within and between Wildlife Management Units (WMU). The VFWD and the Vermont Fish and Wildlife Board manage the deer herd through deer harvest prescriptions for each of the 24 WMUs. However, deer densities are not evenly distributed throughout the WMU, often as a result of differences in habitat conditions, posted lands, and localized ups and downs in hunter pressure and success.

Recent interest in objectively characterizing deer browsing pressure in southeastern Vermont produced a table of descriptive categories of browsing pressure to aid foresters in identifying those lands and localities where deer were impacting forest regeneration (Attachment A). Tools such as this are informative to foresters, landowners, and the VFWD in making land management, hunter access, and deer management decisions, respectively.

Hunter Access

With adequate hunter pressure, deer populations can be controlled through legal harvest by licensed

hunters and the working group does not support the taking of deer out of season or outside of the harvest strategies set forth in the Vermont Big Game Plan, 2010-2020. Hunter access is an essential element of maintaining a deer population within the bounds of its biological carrying capacity. Deer harvest, however, can be locally impeded through limitations on hunter access, be it registered posted lands, unregistered posted lands, or leased hunting lands. The working group recognizes that some posted lands do get hunted either by the landowners themselves or through permissions given to others. Still, the presence of posted lands typically precludes or deters hunter access for harvesting the surplus of deer within the local area. Not only does posting allow for unregulated growth of a local deer population, it shifts hunter pressure to an ever-decreasing acreage of huntable lands, thereby creating a great disparity of deer densities between huntable and nonhuntable lands.

Informing landowners of the deer damage to their forest regeneration is an important strategy to encourage hunter access where it is needed. Foresters are essential players in this educational process. A recent VFWD initiative such as the "Welcome Wagon" kit (see Attachment B) for new landowners is an example of efforts to inform landowners of their rights and opportunities as stewards of Vermont land.

The working group also discussed at length the contradictions created by Vermont's Current Use Program that remains silent on the issue of posting while, at the same time, local deer densities may preclude enrolled lands from achieving their very own forest management goals. The state of New Hampshire's equivalent of the Current Use Program provides some insights into how Vermont's program can address the issue of public access by providing enrolled landowners financial incentives to not post their land. Landowners receive an additional 20% reduction in their enrolled property value by allowing recreational use of their property. New Hampshire wildlife officials report that this added financial incentive to not post their land is effective in keeping land open to hunting that would otherwise be off-limits to this activity.

The working group believed that the posting of lands enrolled in the Current Use Program could be a significant detriment to certain aspects of managing the forests on the property. As a result, the original intent of the program (i.e., sound forest management and production of forest products) could be at risk where lands are not opened for hunter access.

The working group concludes that Vermont's Current Use Program should be revised to be a vital tool to address the conflicts between deer densities and damage to forest regeneration. Revisions to the program that allow for incentives to maintain enrolled lands as open to recreationists, including hunters, will significantly contribute to successful management of both deer populations and forest products.

The working group also evaluated the potential role of a mechanism to connect forest landowners experiencing damage to forest regeneration with licensed deer hunters. Act 54, Section 14 specifically identifies this tool as a means of addressing deer damage. The specifics of the working group's deliberations and recommendations are provided under the second charge.

Forest Management

The working group asked representatives of both the wildlife and forestry field to develop a set of forestry and land management practices that could aid in ameliorating the impacts of deer on forest regeneration. Increasingly, forest landowners prefer limited single tree selection prescriptions. This strategy, which yields limited forest regeneration, combined with browsing pressure from historically high deer population levels throughout the mid 1900s has resulted in fewer deer having a greater impact on the remaining regenerating seedlings.

A set of forest management strategies to reduce the effects of deer browsing have been developed and are offered in Attachment C. The following strategies may help to reduce the effects of overbrowsing by deer:

- □ Increase the area harvested where appropriate through group selection or even-aged management in order to yield forest regeneration in adequate abundance to withstand deer browsing pressure.
- □ Time logging activities to yield a continual availability of abundant regeneration.
- Retain slash and tops to prevent deer from accessing regenerating seedlings.





Early research suggests that food plots may provide an alternative source of food in areas of high deer densities, however additional study is needed to determine whether there are longterm benefits to forest regeneration.

The successful application of the above forest management practices is dependent on the objective monitoring of deer browsing conditions and communication of such conditions between the forester and the landowner. These practices are recommendations and likely will only result in short-term reductions on the effects of overbrowsing.

Deer Population Management

Deer population management is conducted through the implementation of four regulated deer hunting seasons in Vermont - archery, Youth Weekend, November rifle, and muzzleloader seasons. The status and management of Vermont's deer population is evaluated annually using data collected and analyzed by VFWD biologists and public input provided through hearings held by the VFWD and the Vermont Fish and Wildlife Board. The working group concludes that the existing framework of deer hunting seasons may be sufficient to properly manage deer populations on a regional basis when the other strategies described above are addressed. The current regulated hunting season framework should be employed as a first resort because it offers the following advantages to other deer population control measures:

- Licensed hunters pay license fees that are the primary funding source for fish and wildlife management in Vermont.
- Licensed hunters harvest prescribed numbers of deer to meet population objectives.
- The harvest of deer during the four hunting seasons provides thousands of pounds of quality meat for Vermonters.
- Hunter education requirements for licensed hunters result in the safe and ethical harvest of deer.

The efficacy of all of the above strategies is dependent upon a deer management program that incorporates science-based information on deer densities and forest regeneration conditions into its deer season recommendations to the Vermont Fish and Wildlife Board. Current information of deer damage to regeneration is based on subjective opinions offered by foresters and biologists in the field. The development and implementation of a systematic and objective dataset of deer browsing conditions will better inform deer management decisions on both the local and WMU basis.

Overbrowsing by deer often occurs on a much smaller and more localized basis than what can be addressed by the more regional WMU approach. If deer management on a WMU basis does not appear to address specific, localized overbrowsing issues, the working group recommends that the VFWD evaluate and potentially consider the development of a pilot program that distributes a percentage of the WMU antlerless muzzleloader permits to hunters who agree to hunt on properties identified as "problem" sites. Problem sites should focus on the lands experiencing deer damage as identified through monitoring efforts and mapped with tools such as IMAP (i.e. a statewide map of local sites experiencing heavy browsing pressure). Landowners can be linked to hunters possessing such permits through the VFWD "Connect" website.

Lastly, the VFWD's Big Game Plan 2010-2020 recommends the realignment of several WMUs in order to better fit habitat conditions with the boundaries of the units by which antlerless deer permit recommendations are prescribed. In particular, WMUs along the Connecticut River Valley were proposed for realignment to allow for more targeted antlerless deer harvest recommendations for the lower elevations along the valley. The VFWD is currently soliciting forester feedback on the proposed realignment. The working groups supports this effort and recommends its implementation by the Vermont Legislature (WMUs are set in statute and require legislation to change).

Recommendations of the Working Group:

- 1. The VFWD and VDFPR should mutually adopt a standardized and objective method of monitoring deer browsing pressure to identify the lands, localities, and regions where deer damage to forest regeneration exists.
- 2. The VFWD and VDFPR should consider incorporating the monitoring of a deer browse index into the Current Use Program and conduct outreach within the forestry community to adopt

the monitoring index into forest management plans, particularly Current Use Program plans. The Departments should cooperatively develop the means by which monitoring results can be provided to the VFWD so that such information can be incorporated into VFWD deer season recommendations to the Vermont Fish and Wildlife Board.

- 3. The VDFPR should continue to develop outreach strategies to inform forest landowners and hunters of the potential impacts of deer populations on forest products and the need to manage deer populations. The VFWD should continue to implement the "Welcome Wagon Kit" as a tool to reach new landowners in Vermont and inform them of their rights and opportunities as stewards of Vermont's lands.
- 4. Vermont's Current Use Program should be revised to provide a tiered system of tax abatement so that landowners enrolled in the program that open their lands to hunting and other forms of outdoor activities receive an increased benefit in compensation for this additional public benefit.
- 5. The VFWD and VDFPR should adopt a set of forest and land management recommendations to lessen the impacts of deer populations on forest regeneration. Both departments should conduct the necessary outreach activities to present the monitoring and management recommendations including, but not limited to, landowner workshops, habitat management guidelines, and Vermont Society of American Forester meetings.
- 6. Deer population management should be encouraged through the use of Vermont's four existing regulated deer hunting seasons as the means to address deer densities that are impacting forest regeneration. VFWD deer management recommendations should incorporate information on deer browsing pressure as provided by the VDFPR. The VFWD should consider programs that target antlerless hunting within the regulated seasons on areas within the WMU that are experiencing heavy browsing pressure (see above).
- 7. The VFWD and VFWD should continue efforts to reduce and prevent forest fragmentation and conversion to developments.

Charge II. Investigate preferred strategies to link forest landowners experiencing deer damage to forests with hunters and provide a set of recommendations for the potential development of a new program to accomplish this.

Section 14 of Act 54 requires a program to link forest landowners experiencing deer damage to forest regeneration with licensed deer hunters. The VFWD and the working group recognize the potential benefits of such a program provided that it is accompanied by an adequate outreach initiative. States such as Ohio have attempted such a program, but the high demand from great numbers of enthusiastic hunters registering for the program could not be met by the limited participation by forest landowners. As a result, an effective outreach strategy by the forestry community will be integral to a successful program in Vermont. The VFWD has already developed a template for an on-line program to link landowners and licensed hunters (see Attachment D). The role of the VFWD should be limited to registering landowners and hunters, thereby placing the responsibility of the parties to contact each other, establish terms of their arrangement, and follow through. The VFWD on-line program can provide both parties with some easily accessible tools to foster a positive experience. Such tools may include tips for landowners allowing hunters on their lands, a code of conduct card for hunters, and a post-hunt survey to evaluate the success of the program.

Recommendations of the Working Group:

1. The VFWD should develop, implement, and administer an on-line program to link forest landowners experiencing deer damage to forest regeneration with licensed deer hunters. Sportsman's





organizations throughout the state should be encouraged to participate in the program.

2. The VDFPR should conduct outreach to forest landowners to promote participation in the program.

Charge III. Evaluate if prohibiting the posting of land as a condition of taking deer doing damage to land will achieve the goal of reducing damage from deer browsing.

The working group discussed the implications of posted lands on the ability to effectively manage deer populations as one of the several interdependent strategies to address deer damage to forest regeneration. The group's conclusions that the four existing regulated hunting seasons in Vermont coupled with an effective set of strategies to enhance hunter access would result in great headway toward addressing deer damage. The group also discussed the potential for modifying the posting law to legalize hunting by permission only, recognizing that maintaining opportunities for access while at the same time giving the landowner some flexibility, may improve hunter access. It is clear however, that improved hunter access through landowner education/outreach, a tiered-based system to the Current Use Program, and a new program to link landowners and deer hunters would be greatly compromised by policies and laws enabling landowners to control deer populations within posted lands. In addition, such policies simply contradict the principles of the public trust doctrine so outlined in Act 54, Section 2.

The complex and inter-dependent factors that result in deer damage to forest regeneration will only be resolved by a comprehensive set of strategies implemented by informed landowners, foresters, and wildlife managers working under a set of policies that promote all of the strategies outlined in the first charge of this working group.

Recommendations of the Working Group:

- 1. The working group recommends that the prohibition of the posting of land as a condition of taking deer doing damage to land should remain.
- 2. VDFPR and VFWD should assess the level of posting on Use Value Appraisal Program properties.
- 3. Consider modifying the posting statute to legalize hunting by permission only.

Attachment A - BROWSING SITE CONDITIONS FOR MANAGED NORTHERN HARDWOODS

Site conditions by presence and life form of species under different browsing intensities

Tall Woody Species (3' to 15' saplings)	Low Intensity (*None to Light)	Moderate Intensity (Moderate)	Intensive Browsing Evidence of Regeneration Impacts (Heavy)	High Intensity Historically Intense Browsing (Severe)
	1	2	3	4
Condition of Forest	Diverse mix of tree saplings, shrubs, forbes, ferns, and grasses of varying heights. Little sign of browsing.	Preferred forage species show some signs of browsing, but not affecting height growth. No browse lines.	Unpalatable species show increase in density while others decline in number and occur in poor form. Mostly beech and striped maple and other unpalatable species in understory in stems >1 ft. in height.	In later stages, New York and hayscented ferns, sedges occupy opening as an almost complete mat with only occasional tree sapling showing. Browse line evident throughout forest. Mid-story if present dominated by 1 or 2 unpalatable woody species (black, birch, beech, red spruce, buckthorn, etc.).
White Ash Red Oak	Occasional sign of browsing.	Frequently browsed, reduced heights relative to other species.	Reduced density, all misshapen or hedged, few have any leaves remaining.	Absent or present as dead and dying whips.
Sugar Maple Yellow Birch	Occasional sign of browsing.	Light * to moderate browsing showing minor changes in form.	Heights impaired relative to unpalatable species.	"Hedged" in form.
Hemlock Balsam Fir	Unbrowsed except near DWAs.	Well formed, present at different heights. Browsing may be heavy near DWAs.	Obvious browsing of lower branches, some bark stripping.	Reduction in density noted, heavily browsed plants with poor form.
Striped Maple Black Cherry	Unbrowsed.	Browsing of some laterals and terminals.	Browsing impacting form on most stems.	Poor form and height suppression.
Beech Black Birch Ironwood	Unbrowsed.	No indication of browsing or light browsing only.	Light to moderate browsing especially on stump sprouts.	Moderate to heavy browsing on most plants. Reduction in density noted. Poor form and height suppression.
White Pine	Present, no sign of browsing.	No indication of browsing.	Browsing on some branches and terminals.	Reduction in density, most in poor form and height suppression.
Hobblebush Pin Cherry White Birch	Unbrowsed, common in understory.	Some branches browsed lightly – no reduction in density.	Most plants show browsing, reduction in density.	Plants sparse with poor form & height suppression.

*Relationship to DeCalesta/Forex			
Browse Assessment	DeCalesta	Forex	
Low Intensity	Light	1 (Light)	
Moderate Intensity	Moderate	2 (Moderate)	
Intensive Browsing	Heavy	3 (Heavy)	
High Intensity	Severe	3 (Heavy)	

This rating system was designed cooperatively by The Woodland Owners Association, VT Dept. of Forest, Parks and Recreation and VT Fish & Wildlife Dept.

Attachment A - BROWSING SITE CONDITIONS FOR MANAGED NORTHERN HARDWOODS

Site conditions by presence and life form of species under different browsing intensities

Short Woody Species (.5' to <3' Seedlings)	Low Intensity (*None to Light)	Moderate Intensity (Moderate)	Intensive Browsing Evidence of Regeneration Impacts (Heavy)	High Intensity Historically Intense Browsing (Severe)
	1	2	3	4
White Ash Red Oak	Light browsing to moderate.	Heavily browsed.	Seedlings and saplings >.5' mostly absent in understory. Some whips mostly lacking leaves.	Occurs only as (<.5') seedlings and as mature trees.
Sugar Maple Yellow Birch	Light browsing.	Light browsing, still well formed in short & tall woody forms.	Moderate browsing, some misshapen plants. Reduced density obvious.	Occur only as (<.5') seedlings and as mature trees.
Hemlock Balsam Fir	None to light browsing.	Light to moderate browsing.	Moderate to heavy browsing. Mostly misshapen plants.	Occur only as (<.5') seedlings and as mature trees.
Striped Maple	Not browsed.	None or light browsing.	Heavy browsing.	Severe browsing. Limited and poor form.
Beech Black Birch Ironwood	Not browsed.	Not browsed or areas with light browsing.	Light to moderate browsing on branches and terminal shoot.	Heavy to severe browsing or limited and poor form. Many misshapen plants.
White Pine	Not browsed.	Not browsed.	Frequent terminal shoot browsing.	Most browsed, lacking terminal shoot. Reduced density and poor in form.
Hobblebush	Unbrowsed to light, varying heights and density.	Light to moderate browsing, stems occur to waist height.	Suppressed heights and reduced density noted.	Limited in number. All poorly formed.
Rubus	None to light browsing. Present, varying heights.	Light to moderate browsing on current year's growth.	Moderate to heavy browsing. Reduction in density noted.	Severe browsing. Few present. All heavily browsed.

Herbaceous Layer	Low Intensity (*None to Light)	Moderate Intensity (Moderate)	Intensive Browsing Evidence of Regeneration Impacts (Heavy)	High Intensity Historically Intense Browsing (Severe)
	1	2	3	4
Orchids** Lilies	Present, flowering different heights.	Nearly absent, occasional species.	Rare.	Absent.
Asters** Twisted Stalk Wild Nettles Jewelweed Trillium Meadow rue	High density, mix of species of varying heights. Most flowering or possessing buds.	Moderately browsed. Some flowering stems. Low in height	Low density, many browsed stems lacking flowering parts. Few flowering individuals.	Absent or rare.
New York & Hay-scented Ferns***	Infrequent in small patches.	Frequent in understory.	Forming dense patches.	High density to complete carpets that suppress other species.

** In higher BA areas with little cutting in past.

*** In more recently cut or disturbed areas or areas with a history of overbrowsing

Attachment B - LANDOWNER WELCOME WAGON MESSAGES and PRODUCTS







Landowner Welcome Kit

Product by Message:

The Welcome Wagon kit provides information to landowners about planning for wildlife conservation with the goal of introducing and reinforcing the most resource-friendly aspects of land stewardship. Approximately 250 kits will be hand delivered to new landowners owning more than 25 acres (first target audience) by a cooperating partner such as Coverts, Woodland Owners Association, Conservation Commission member, 4-H volunteer, Audubon, etc. The volunteers spend an hour or two reviewing the materials in the kit and offering future assistance thus opening the door for mentoring.

Land Stewardship	Description
• Bumper sticker/removable decal R, P, &E	•
• Who to call magnet (wooden)	The website address on the magnet directs folks to NGO's and state agencies that provide landowner technical assistance— available at your finger tips.
• Stonewalls and Cellar Holes Booklet	Information about conserving the unique archeological features found on your property
• Furbearer Card	Information about furbearer management and trapping
• VNRC/Coverts Forest Fragmentation brochure	Outlines the issues surrounding forest fragmentation
 New England Wild Flower Invasive plant booklet/invasive insect cards 	A summary of invasive plant identification, background information and control methods.
• Vermont maple syrup VT Center for Ecosystems	
• Wooden cutting board (forest products keep VT growing)	
Fish identification cards	Not available yet
Natural Communities bookmark	
Keeping Track Ruler	
Animal Tracking cards	
• The Place You Call Home Publication	A series of excellent articles pertaining to forest and wildlife management issues and practices
Audubon Birders dozen CD	Vermont's forest birds are listed first by Audubon's birders dozen and then by habitat type.
Habitat booklet (on line) Keychain	The website on the key chain directs landowners to a Fish and Wildlife Department on-line <i>Habitat Booklet</i> which outlines how to manage for a variety of wildlife species. Not available yet
Vermont Woodland Owners coasters/brochure	· · · · · · · · · · · · · · · · · · ·

Attachment B - LANDOWNER WELCOME WAGON MESSAGES and PRODUCTS







Conservation and Management of Large Habitat	
Blocks	Description
Current Use Tax Calculator	A quick reference guide for tax savings via enrollment in the current use program (varies from year to year). More in depth information can be found on pg 20 of TPYCH
New England Forests Through Time/wildlife history	Provides an in-depth history of new England land use changes since European colonization. Includes a brief insert tracking some of the associated changes in wildlife populations
Coverts landowner CD	Includes interviews with Vermont landowners on a variety of topics including forest/wildlife management, logging, recreation, hunting, taxes, etc. Begins with a short video—worth watching!

Public Support	Description
Nature Journal/diary	Journal for documenting sightings and other nature related activities
• "Habitat is the Key" keychain (wooden)	The website on the key chain directs landowners to a Fish and Wildlife Department on-line <i>Habitat Booklet</i> . Not available yet
VINS Kit for Children	
Library reference list	A list of reference books that provide information on getting to know your forest—all available at your public Library

Access	Description
Safety Zone signs	
Hunting by permission only courtesy cards	Includes a description of the heritage of hunting in Vermont and encourages maintaining open access to property.
Recipes	A series of recipes utilizing locally available, organic, wild grown foods including blue berries, trout, deer and others.

Attachment C - SILVICULTURAL CONSIDERATIONS TO ADDRESS THE EFFECTS OF DEER BROWSE ON FOREST REGENERATION IN AREAS OF HIGH DEER BROWSE PRESSURE TO AID IN ESTABLISHING **DESIRABLE FOREST REGENERATION**

The following considerations have been developed and used in the eastern United States to increase native regeneration of forest tree species by managing the effects of browsing by White-tailed deer. In areas of high deer densities successful application must be conducted in concert with efforts to manage and reduce deer densities and requires cooperation between forest managers, wildlife managers and landowners.

In areas with high deer densities, where browse pressure on native hardwood regeneration is considered severe, certain silvicultural adjustments can be made that may still adequately regenerate forest stands. While these silvicultural options may improve regeneration success in the short-term, they are not viewed as viable longterm management alternatives. Eventually, abnormally high deer populations need to be reduced to help curb the negative impact on the forest ecosystem.

Where deer populations are so high that they make it difficult, or impossible, to practice silviculture that mimics natural processes (natural dynamics silviculture), foresters may be forced to shift to an alternate silvicultural regime, to compensate for the ecological imbalance. Uneven-age techniques that maintain forest canopy and generally create only small canopy gaps may no longer be successful to regenerate a natural species mix and it may be necessary to shift to even-age management. Even-age regeneration techniques generally result in larger canopy gaps and reduced structural complexity, but may prove more effective at regenerating certain native tree species under conditions of heavy browse pressure. These practices may include large clearcuts and can appear quite drastic, causing concern among landowners, the general public and foresters who practice in more balanced forest ecosystems.

Uneven-age vs. Even-age Management

Both silvicultural systems are generally accepted and widely used in Vermont. Uneven-age silviculture is most commonly used in forests with naturally complex structure, such as mixedwood and northern hardwood forests. In this management system, small canopy gaps (group selection) of up to 2 acres are created in an attempt to regenerate the forest gradually and to mimic natural gap sizes. If 2-acre group selection cuts are determined to be too small to overwhelm abnormally high browse pressure, then foresters have the option to select a different silvicultural system (even-age management) that provides for larger openings. The even-age management system is commonly used in forests that tend to be naturally even-aged, such as spruce-fir forest types, softwood plantations and in forests that have been damaged or degraded (high-graded, ice-damaged, wind damage, etc.). Even-age techniques are less complex and provide certain operational and cost benefits. With even-age management, the forest stand is grown as a unit and regenerated as a unit. Canopy gaps larger than 2-acres (clearcuts) are permitted, and can be as large as the stand that is being regenerated. It is uncommon to see silvicultural clearcuts larger than 5-10 acres in Vermont, but they can be much larger. Since the even-age management system is designed for forests with less natural structural complexity, and since it tends to promote

structural uniformity within stands, even-age management tends to simplify forest structure over time. Reducing structural complexity may be acceptable as a short-term strategy to achieve adequate regeneration in the face of unnaturally high deer populations, but it is not a viable long-term solution to ecosystem imbalance.

Group Selection

Where group selection is the preferred regeneration system, the number and/or size of groups may be increased in an attempt to establish enough regeneration to overwhelm unnaturally-high deer browse pressure.

□ For example, in a place with a balanced, normal deer population, a particular northern hardwood stand might receive a combination of individual tree selection over much of the stand with 15-20 small groups (perhaps 4-10 trees/ group) harvested in areas of low-quality or mature trees. If the same stand was present in an area with abnormally high deer population and severe browse pressure, foresters might forego the thinning and instead implement fewer, but larger groups. Perhaps 5-10 half-acre groups. These larger groups may, by necessity, include the harvest of some trees of good quality that are not yet mature. If more trees and less mature trees, are harvested in each entry (by creating more and larger groups), then return entries will be further apart. Rather than a return cutting cycle of 15-20 years, this alteration may result in cutting cycles of 20-25 years.

Clearcutting

In areas of abnormally high deer population, where severe browse pressure limits the successful establishment of certain favored tree species (sugar maple, white ash, red oak, etc.), foresters may expand the size of clearcuts in order to overwhelm the browse pressure.

□ For example, in a place with a balanced, normal deer population, a particular ice-damaged, northern hardwood stand might be regenerated using a series of 2-5 acres clearcuts. If the same stand was present in an area with abnormally high deer population and severe browse pressure, foresters might enlarge the clearcuts to 5-10 acres each.

Lopping Tops

Leaving tops un-lopped makes it more difficult to move around and may reduce local browse pressure. This technique is a more natural alternative to lopping tops (when a tree dies naturally in the forest, nobody lops the top), is safer (fewer chainsaw cuts means fewer accidents) and should also result in lower logging costs.

Invasive Plant Control

The increasing presence of aggressive invasive plants in Vermont will make regeneration of native species more difficult and will reduce the quality of habitat for deer and most other species. The more we reduce invasive plant establishment, the greater the likelihood of successfully establishing desirable natural regeneration. Foresters should treat invasive plants prior to silvicultural activity and then should monitor invasive plant establishment and growth after silvicultural activity, treating again as necessary. 11





Wildlife Programs Hunting and Trapping



Fishing

Wildlife Programs



Fisheries Programs



Conservation Programs



Law Enforcement & Game Wardens



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HUNTER ACCESS VERMONT **Connecting Landowners and Hunters**

White-tailed deer browsing has profound implications for the structure and function of Vermont's forested ecosystems, especially when deer densities are high.

Regulated hunting is a wildlife management tool that effectively controls deer densities. This site offers landowners and sportsmen a way to connect and develop a relationship to help manage deer densities, reduce property damage and improve habitat.

Getting Started

Landowner - Once you register, you will be provided with the contact information of hunters interested in hunting in your area. You can choose which option best suits your needs, and then make direct contact via e-mail or telephone. »Jump to registration

Hunters - Once you register, your contact information will be added to our database and provided to landowners looking for help in controlling deer damage on their property. Landowners will be able to contact you via e-mail or telephone to arrange access privileges. »Jump to registration

HUNTER ACCESS VERMONT maintains a database of private landowners and individuals who are seeking hunting access to private lands. Information requested during registration is confidential and used only for the purpose of matching hunters with landowners seeking help controlling deer damage. Please review our Terms of Use.



Quick Links

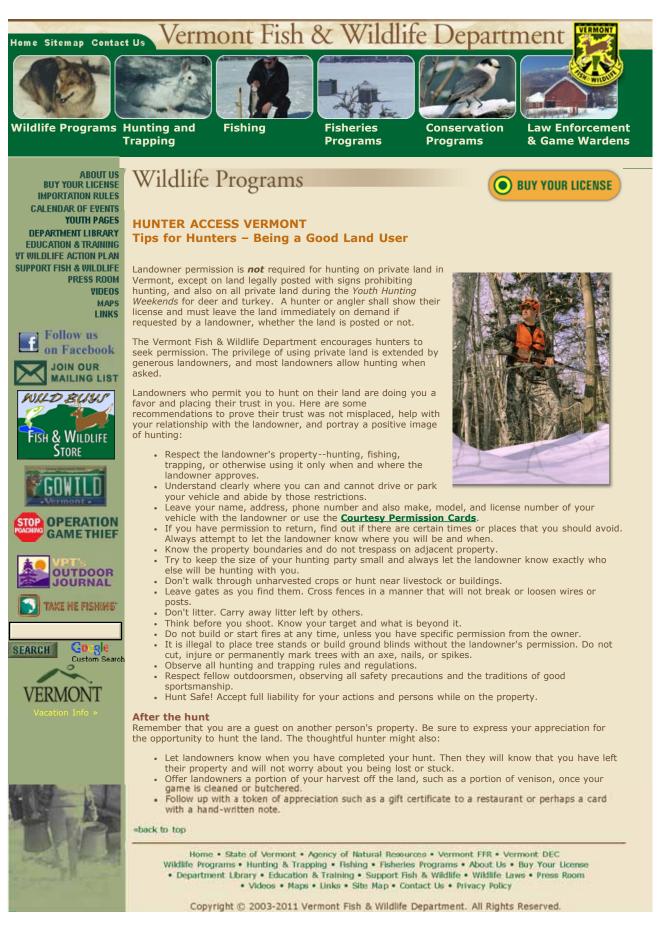
- **»Tips for Hunters**
- »Tips for Landowner
- »Courtesy Permission Cards
- »<u>Terms of Use</u>

Deer Densities and Vermont's Forests

Over browsing by white-tailed deer can alter forest plant communities, threaten endangered plant species, reduce ground-level hiding cover and forage for other wildlife species, and reduce abundance of nesting birds when deer densities are too high. Agricultural crops and residential ornamentals also can be negatively impacted when there are too many deer.

For landowners, finding responsible hunters can be an important part of their wildlife management plan, especially if they are absentee or do not hunt themselves.

Home • State of Vermont • Agency of Natural Resources • Vermont FPR • Vermont DEC Wildlife Programs • Hunting & Trapping • Fishing • Fisheries Programs • About Us • Buy Your License





Options to Protect Your Property A Notice or addressed all show their Second of requested by a landowner, and must leave the land immediately on demand, whether the land is posted or not. In order to base, finh or trag on property posted land, a genum must have the written consect of the second of the period having exclusive right to late finh or visit alimital from that land.

Option 1. Selety Zero Rignet A property swimer war watability a 500-foot. Selety Zone around an occupied divelling, residence, harn, status or other building with searce provided five by the File & Shidt's Department. These signs and the placed as each corner of the property and no more than 200 feet apart. All abouting is prohibited in the Selety Zone and the walk example taken within it unless advance permasion is obtained from the owner or rightful occupant.

The advantage of allowing responsible ituritiers assess to the property volable of the safety zone is it can reduce file probability of property and game law abuses by perivating the perivated handlers an elemente to book out for the uniformer's best interest.

Option 2. "Munting by Permission Ordy" Space. These ages are an alternative to posting "NO HURTING" signs if you with to regulate hunters. Although its estimated to play, they indicate that you're writing to guest permission to a initial wanter of hurters, but require them to seek permission and laterd to expel them from your land if encountered hurters.

Similar to the Salety Zone option, Henting by Permission Only can reduce probability of property and game have abuses and periods fetter reserved of heating persons. If permission cashs are isolated, if cash have been with which management objectives by regulating the monther of periods and their own. For example, landowners whe suffer deer damage should great stoogh permits to ensure a videolation invest of deer each year.

Counters formation (Lando): These tanks can be used by you to grant written parmityion to humbrs who seek it, regardless of whether or not your land in "posted" against humbrs, The "land owner corp" creates a record of those humbers for your file. These cards give the isodowner of different potters regarding seasons, timits, and/or locations, to starsing: "Permission granted only on north sets of the timits, Keeg gate closed at all times." <u>Printable Carding Particular</u> (24 4).

stanck to Real

Check (stylCheck wat System) Landowners can zepake all huoters to check-in before and after they hunt by holding their permission catch when they are not is use. This check-is system provides:

- An estimate of the game harvested, which can be used to signific the permit numbers insued the next season.
 A way to stimitude harters for greater safety, enhanced harding experience guality, and increased listificed that inspaces will be suggift or discovriged.
 A way to permit harters as somo permit holders by making the permits valid for only two days per week to balance the access of harters who could come every day with those who can have only on weeksmit and harters.

Option: 3. Posting Property: Intering, having of trapping on property posted land is lingal. Property posted land will have records find with the town car's and the Yosh's suitcide Department. See <u>the to Vice Course</u> Tartie records find To be property posted land:

- + The owner or the person who has exclusive rights to flatt, hust and trup on the land will post the
- The overall of the person who have exclusive rights to flats, hust and trap on the land will post the tage.
 The overall or person posting the land shall annually record the posting at the town clerk's office for a free of 55.00
 Signs must be not less than 11% incluss which by 88 incluss high in size
 Lottaining and background in the object must be of combacting colors.
 The signs must contable the working that husting, listing an Explosing at any combination of the
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 Signs are addressed in Addressed addresses in contact the one, as long as reasonable person sould
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 specified on the explored on the explosing and the addresses).
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 Products are explored and the explosing on the person sould
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 specific each year (2000 keet
 specific each year) apart.

Posting property can be very infor intensitie. Signs must be maintained around the perimeter of the property. If a sign is maining, the land is no longer property point, and there is no valiation when a period accesses the land. Is addition, the signs must be dated and the proting registered annually with your form dark's office.

Protections from Poachere Paching in the illegal taring of him and widdle and is an insuit to the vest majority of law abding lunters and argies. Poachers threaden our Willife resources by breaking laws despined to arraw sound widdle management and approximation fractional reliance to the laws, they willing dampart pooling spine. Working cooperatively with Verminit State Carlie Wattlens is a good way to prefer types of you can report a violation anonymously through Operation Gather Their going, or by calling 2-000-73ALERT.

vermont State Game Wardens work hand to identify and arrest poachers. But there are less than fortp avidine speed throughout the state. Vermont's game wardens need the help of all Vermonites to successfully flying poaching.

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Courtesy Permission Card - Land User's Copy		
I would like permission to access your land for the purpose of:		
hunting, fishing, trapping, other		
Landowner's Name:		
Landowner's Address:		
Phone number:		
Permission given from to		
date date		
Landowner's Signature:		
Landowner's Signature: Date:		
I hereby agree to conduct myself and members of my party as true sportsperson –safe, legal and ethical- and accept the responsibilities that are part of hunting and outdoor recreation. I will follow all laws, safety rules and the sportsman's code.		
I will immediately report any violations observed. I pledge to respect and follow any additional restrictions as stated by the landowner. I will not hold the landowner responsible for any accidents or injuries while on the landowner's property. I also		

understand this permission can be revoked at any time for any reason REPORT ALL VIOLATIONS. CALL OPERATION GAME THIEF 1-800-75ALERT (1-800-752-5378) OR REPORT VIOLATIONS ONLINE: www.vtfishandwildlife.com/laws_thief.cfm.

Courtesy Perr	nission Card - Landowner's Copy
Land User's Name:	
Address:	
State:	Zip Code:
Phone number:	VERMONT
Max number in party:	
Vehicle description - Year:	Make:Color:
License plate #:	License #:
responsibilities that are part of hunting and I will follow all laws, safety rules and the spo I will immediately report any violations obse or report violations online: www.vtfshandw I pledge to respect and follow any additional	rtsman's code. read: Call Operation Game Thief 1-800-75ALERT (1-800-752-5378) ildlife.com/laws_thief.efm restrictions as stated by the landowner. ray accidents or injuries while on the landowner's property. I also
Thank you for giving me the privilege to hunt, fis	sh, or trap on your land.

Date:

Signed: (land user)

\sim	Vermont Department of Fish and Wildlife	
VERMONT Vermont.gov	Hunter Registration Form	
 Fish and Wildlife Online License Sales 	Vermont Landowner Program - Hunter Registration Form Once you register, your contact information will be added to our database and provided to landowners looking for help in controlling deer damage on their property. Landowners will be able to contact you via e-mail or telephone to arrange access privileges	
	* First Name: Bill * Last Name: Jones	
	Mailing Address: * Address:	
	45 east hill pob 4	
	* City State Zip: newport Vt 05855	
	* Phone: 802-888-1256 (For Department use only)	
	* Email: bill@alo.com	
	Submit	
	A Vermont Government Website Copyright @: Privacy Policy Acc	

\sim	Vermont Department of Fish and Wildlife	
VERMONT Vermont.gov	Landowner Registration Fo	orm
 Fish and Wildlife Online License Sales 	Vermont Landowner Program - Registration Form Once you register, you will be provided with the contact information of hunters interested in hunting in your area. You can choose which option best suits your needs, and then make direct contact via e-mail or telephone	
	 * First Name: Jim * Last Name: Beam * Email: jim beam@aol.com Mailing Address: * Address: 123 Forest Grove * City State Zip: Montomery * Vt 05471 * Phone: 802-555-1234 (For Department use only) xxx-xxx-xxxx 	* Location of Land to be hunted: Montgomery Lewis Lincoln Londonderry Lowell Ludlow Lunenburg Lyndon Maidstone Marshfield Mendon Middlebury Middlebury Middletown Springs Mitton Montpolier Montpolier Moretown
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