

Report on County Forester Staffing and UVA Delivery

2016

Submitted to:

The Senate Committee on Finance
and the House Committee on Ways and Means

Submitted by:

Michael Snyder, Commissioner of the Department of Forests, Parks and Recreation
on behalf of Deborah Markowitz, Secretary of Vermont Agency of Natural Resources

Prepared by:

Vermont Department of Forests, Parks and Recreation

Keith Thompson, Private Lands Program Manager
Michael Snyder, Commissioner
Steven J. Sinclair, Director of Forestry
County Foresters

Table of Contents

<i>Legislative Mandate</i> _____	1
<i>Executive Summary</i> _____	2
<i>Introduction</i> _____	5
Background and Context	6
<i>The Work of County Foresters</i> _____	8
Stewardship Program Area	9
Stewardship Visits	9
Information and Education	10
Forest Health.....	10
Municipal and Urban and Community Forestry Support	11
Internal Initiatives	12
UVA Program	12
UVA Administration and Workload.....	13
Landowner Enrollment of Forestland in UVA - Process and Responsibilities	14
Primary Tasks of UVA Administration by County Foresters.....	15
Forest Management plan review and approval:	15
Data management and record maintenance:	16
Straight-forward inspections:	16
Action-needed inspections:.....	16
Information and outreach:	17
Coordination and policy:	17
UVA Enrollment Trends and Conditions	17
UVA Administration and Compliance	18
Time Allocation and Program Assessment	20
Needs assessment:	23
Consulting Forester Meetings.....	24
Time Allocation and Time Saving Considerations	24
Plan review:	25
Inspections:	25
Data management and paperwork:	25
UVA information and outreach:	26
Cutbacks:	26
<i>Recommendations to Strengthen the UVA Program</i> _____	26
Programmatic Changes to Strengthen UVA	27
Forester Licensing to Strengthen the UVA Program	29
<i>Conclusions</i> _____	29
<i>References</i> _____	31

Legislative Mandate

Pursuant to Act 57 of 2015 the Secretary of the Agency of Natural Resources in consultation with the Commissioner of Taxes and the Commissioner of Forests, Parks and Recreation, shall report to the Senate Committee on Finance and the House Committee on Ways and Means on whether the current number of County Foresters is sufficient to oversee compliance of forestland subject to a use value appraisal under 32 V.S.A. chapter 124, given the increasing number of forestland parcels, and the increasing acreage of forestland, in the current use program.

In addition to any issues the Secretary considers relevant to this report, he or she shall specifically consider whether any or all of the following would be appropriate to strengthening the current use program:

- (1) providing an additional forester whose sole responsibility would be investigating alleged violations of the current use requirements and doing spot compliance checks for forestland parcels;*
- (2) adding additional foresters to reflect the growth in forestland parcels subject to a use value appraisal; and*
- (3) requiring consulting foresters to be licensed by the State.*

The report of the Secretary of Natural Resources under this section shall be due on January 15, 2016.

Executive Summary

Vermont has a long held belief in the importance of forests and forestry to our state. Section 2601 from Chapter 83 of V.S.A. Title 10 sets as state policy that:

“The conservation of the forests, timberlands, woodlands, and soil and recreational resources of the state are hereby declared to be in the public interest. It is the policy of the state to encourage economic management of its forests and woodlands, to maintain, conserve and improve its soil resources and to control forest pests to the end that forest benefits, including maple sugar production, are preserved for its people, floods and soil erosion are alleviated, hazards of forest fires are lessened, its natural beauty is preserved, its wildlife is protected, the development of its recreational interests is encouraged, the fertility and productivity of its soil are maintained, the impairment of its dams and reservoirs is prevented, its tax base is protected and the health, safety and general welfare of its people are sustained and promoted”.

The role of the Department of Forests, Parks and Recreation (FPR) is highlighted as it further states that “The department shall implement the policies of this chapter by assisting forestland owners and lumber operators in the cutting and marketing of forest growth, encouraging cooperation between forest owners, lumber operators and the state of Vermont in the practice of conservation and management of forestlands, managing, promoting and protecting the multiple use of publicly owned forest and park lands...”

Under this purpose enters the role of the FPR county forester. Serving as the Department’s public face in its work with private landowners, county foresters provide myriad services to forestland owners, consulting foresters, schools and municipalities to maintain forest health and the ecologic, economic and social benefits provided by forests. With 80 percent of Vermont’s forest in private ownership, the importance of providing forestland owners with the information and tools they need to make informed decisions on one of their most valuable assets—forestland, is critical. County foresters, working with landowners and consulting foresters aim to strike a balance between protecting private rights and public interests while supporting local economic activity from forestry operations while protecting environmental quality.

One of the key functions of a county forester is to encourage and assist landowners in the maintenance of their productive forestland, an opportunity made possible through the administration of the Use Value Appraisal Program (UVA). UVA is Vermont’s primary tool supporting sound conservation and management of private and family forestland in Vermont. UVA has three categories for enrollment; Agricultural land and Forestland and Conservation land. The Forestland and Conservation land aspects of UVA are delivered by the county foresters in FPR in partnership with the Division of Property Valuation and Review (PVR) at the Department of Taxes. This report, prepared in consultation with the Commissioner of Taxes and Commissioner Forests, Parks and Recreation is intended to address whether the current number of County Foresters is sufficient to oversee compliance of forestland subject to UVA. UVA is valuable to Vermont for the role it plays in making forest ownership more affordable,

supporting good forest management and active harvest of forest products, protecting water quality and wildlife habitat, and sustaining the many other invaluable contributions from healthy forests. The number of landowners and acres covered by forest management plans enrolled in UVA has grown to over 1.89 million acres comprised of more than 14,500 parcels, in fact since the 1990's, forestland enrollment has grown on average by 41,000 acres and an estimated 315 parcels per year. With approximately 50% of eligible forest currently enrolled in UVA, there continues to be significant room for growth in the program.

Each enrollment of a Forestland parcel in UVA adds administrative responsibilities for the parcel to the county forester workload; at a minimum these responsibilities include forest management plan review, inspections, gathering of required forms, correspondence with landowners, consulting foresters and PVR, and data management. Enrollments of larger parcels increases the workload (and public benefit) associated with each parcel. The work to guide and educate enrolled landowners and ensure compliance with UVA requirements is recurring and continuous therefore the work associated with expansion of UVA through new enrollments is cumulative and must be accommodated by the county foresters through reduction in range and depth of other services and responsiveness to public requests. The costs of supporting more enrollments in UVA with the same number of foresters includes: fewer landowner visits, on the ground inspections to ensure UVA compliance, less time with schools or town forests, delayed turnaround on management plan reviews, reduced availability to address all requests. **While the staff capacity for administering the UVA program has increased by one County Forester since the 1990's, enrollment and associated workload in UVA has more than doubled; from 900,000 forestland acres enrolled in 1995 to 1,890,000 forestland acres enrolled in 2015.**

Currently, because of a complex of factors including forestland enrollments totaling more than 14,500, inefficiencies in the UVA administrative systems, and insufficient staffing, FPR is unable to conduct all of the inspections needed to ensure compliance with the rules, regulations, and standards of the UVA program. Additional staff and funds to update outmoded administrative systems are needed to enable FPR and the State to develop efficient administrative systems and secure additional staffing which would create the capacity for FPR to meet its statutory obligations. This report concludes with the following recommendations:

1. In 2016 engage county foresters, PVR and stakeholders in a formal Lean process to systematically analyze existing UVA administrative systems and administrative needs and identify new strategies to increase efficiencies and eliminate waste. Broad strategies and target areas for increased efficiencies include:
 - a. Simplification of plan and management requirements
 - b. Standardize and digitize plan, map and form submissions and approvals
 - c. Develop systems to capture enrollment metrics from digitally submitted plans, maps and forms and eliminate need for manual entry

- d. Develop systems to digitize critical hard copy files to allow integration with new systems.
 - e. Integrate FPR systems with those of PVR to allow centralized access to critical records by FPR, PVR, landowners and consulting foresters.
2. Add two county foresters – bring the total to 15 to ensure that there is at least 1 county forester for every 1000 forestland enrollments.
 3. Create new positions to maintain the integrity and support delivery of UVA: Enforcement Foresters and a Central UVA Forestry Data Manager. The Enforcement Foresters would be responsible for investigating alleged UVA violations. This position would take the lead on more egregious and time consuming UVA violations in order to ensure consistency and continued delivery of services by the county foresters and development of technically and legally robust methodologies and protocols. The Central UVA Forestry Data Manager would support the development of, and use centralized databases to manage forestland enrollments in the UVA program on behalf of FPR. This central administrator would ensure standardized management of records, improve coordination with PVR and support the county forester staff by taking on some of the statewide administrative duties currently managed by field staff.
 4. Support the licensing of foresters to strengthen the UVA program.

Introduction

Vermont is defined by its forested green mountains. The Department of Forests, Parks and Recreation (FPR) is responsible for the conservation and management of Vermont's forests as articulated in the Policy and Purposes of Section 2601 from Chapter 83 of V.S.A. Title 10:

The conservation of the forests, timberlands, woodlands, and soil and recreational resources of the state are hereby declared to be in the public interest. It is the policy of the state to encourage economic management of its forests and woodlands, to maintain, conserve and improve its soil resources and to control forest pests to the end that forest benefits, including maple sugar production, are preserved for its people, floods and soil erosion are alleviated, hazards of forest fires are lessened, its natural beauty is preserved, its wildlife is protected, the development of its recreational interests is encouraged, the fertility and productivity of its soil are maintained, the impairment of its dams and reservoirs is prevented, its tax base is protected and the health, safety and general welfare of its people are sustained and promoted

Some of the values derived from forests that are identified in Section 2601 can be quantified, for instance Vermont's forest products industry, which includes forestry consulting services, logging, trucking, wood products and paper manufacturing, wood energy including heating and electric generation, maple syrup and Christmas trees generates approximately 10,555 jobs and 1.4 billion dollars annually. (North East State Foresters Association, 2014) One sector within this industry that is worth highlighting is the maple syrup industry. This sector has seen significant growth over the last decade with the number of taps growing from an estimated 2,100,000 in 2004 to 4,490,000 in 2015 and production growing from 500,000 gallons to 1,390,000 gallons in the same period. The value of this production has risen from approximately 14 million dollars in 2004 to 44.5 million in 2014 (National Agricultural Statistics Service, 2015) (National Agricultural Statistics Service, 2006) .

Any list of "things to do in Vermont" will illustrate how forest-centric Vermont's recreation and tourism economy is: camping, hiking, hunting, skiing, snowmobiling, wildlife and foliage viewing are among the top of many lists. This recreation and associated tourism contributes approximately 10,000 jobs and nearly \$2 billion to Vermont's economy. (North East State Foresters Association, 2014)

In addition to these benefits are many ecosystem services that are more difficult to quantify. These include ecosystem services providing wildlife habitat and biodiversity, provisioning of clean air and carbon sequestration, scenic beauty, and perhaps the most resonant in light of Tropical Storm Irene and the recent attention to water quality is the role that forests play in minimizing the intensity, frequency and extent of flooding, and the critical service forests provide in filtering and providing clean water.

Approximately 80% of Vermont's forestland is in private ownership. Vermont is dependent on the owners of this land to perpetuate the benefits that Vermont derives from its forest.

Section 2601 goes on to state: “The department (FPR) shall implement the policies of this chapter by assisting forestland owners and lumber operators in the cutting and marketing of forest growth, encouraging cooperation between forest owners, lumber operators and the state of Vermont in the practice of conservation and management of forestlands”. The county foresters serve as the primary point of contact between FPR and private landowners. The Department depends on the work of county foresters to connect with, support, and advise private landowners in their management choices and educate the broader public on forest values and issues. This work seeks to prevent harm to the public while protecting private rights through assistance that improves forest health and ecological services while meeting the economic needs and forest management objectives of landowners.

This report has been written in consultation with the Commissioner of Taxes and the Commissioner of Forests, Parks and Recreation and is primarily focused on answering the Legislature’s charge to determine if the current number of county foresters is sufficient to oversee the compliance of forestland in the Use Value Appraisal program (UVA). Because the work of the FPR applies to all forests in Vermont and county foresters also do very important work outside of the UVA program, it is important to respond to the legislative charge within the broader context of the Department’s statutory role and purpose including county forester work.

Background and Context

Since the establishment of the county forester positions in 1937 through the Norris-Doxey Act, the fundamental role of county foresters has been to provide information and technical assistance to private landowners in the careful stewardship of their forests. The original services county foresters provided included designating trees for harvest, providing technical assistance, and finding markets for products from private land. By 1947 there were 12 county foresters. Today, the purposes largely remain but the work of the county forester is much different. Consulting foresters provide professional forestry services for private landowners such as preparing forest management plans and maps, marking trees for harvest laying out access trails and water quality protections and overseeing logging contracts among other roles. The role of the county forester has evolved to be, in a large part, an expert advisor and informational resource for landowners, consulting foresters and the general public on issues related to forest management, forest health and a broad spectrum of topics whenever they intersect with forests, including delivery of the UVA program. In addition to providing expert advice and resources, the county foresters serve an important function of bringing parties together, connecting landowners with professionals, and facilitating dialog among stakeholders. Through the encouragement and assistance they offer, the services of the county foresters and FPR have shaped the culture of forestry in Vermont in positive ways – with good evidence in the woodlands around us -- yet the need and demand for their services continues to increase.

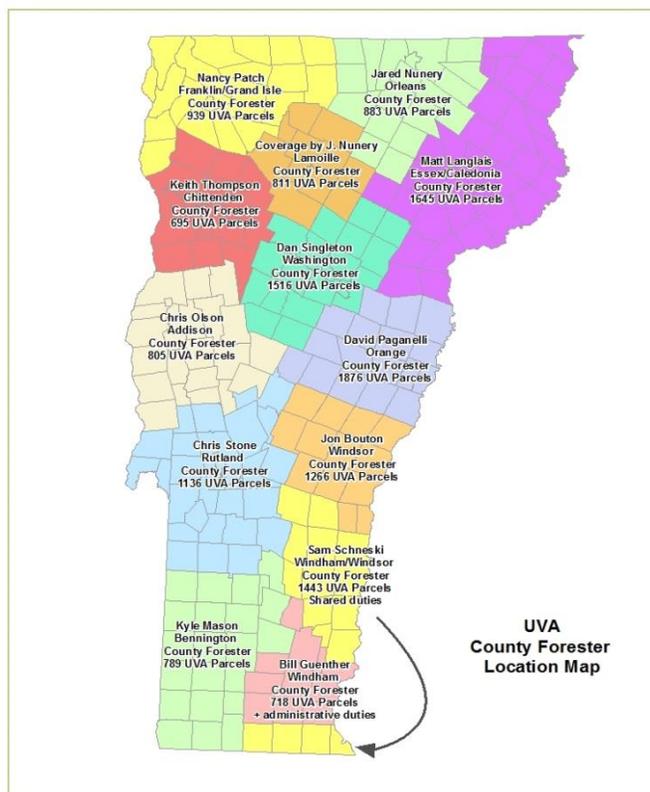


Figure 1. Map of Current County Foresters

Today, there are 13 county foresters, but compared to 50 years ago when there were 12 county foresters, there are more acres of forest, more landowners, more laws, more and increasing threats to forest health and sustainability and better understanding about what constitutes good forest stewardship. Currently, the county foresters serve in defined geographic regions as illustrated in Figure 1.

According to a 2015 report by US Forest Service based on data collected through the Forest Inventory and Analysis Program, there are approximately 3,671,500 acres of privately owned forestland in Vermont. This forestland is divided among 87,000 private forest owners, 43,000 of which are family forest owners with 10 acres or more. (Morin, 2015)

Much of the work of county foresters involves working with landowners enrolled in UVA. Enrollment in UVA changes daily as new and amended enrollments are processed and previously enrolled lands are withdrawn. For years enrollments have only increased. In fact, acres of forestland enrolled in the program grew on an average of 4% per year between 1993 and 2005, and has continued to grow at 2% over the last ten years. Acres of forestland enrolled in the program have grown 60% since 1993. Interestingly, new parcels are being enrolled at a rate of 3% per year since 2005, faster than the rate of acreage growth, which has significant implications for county forester workload. As of November 3rd, 2015, approximately 1.89 million acres of forestland requiring forest management plans were enrolled in UVA. This acreage was comprised of 14,523 parcels. The enrollment of this forestland in UVA protects clean water, wildlife habitat, recreational opportunities, and Vermont’s rural character while supporting the capacity of forests to provide important economic contributions to Vermont. To support the continued delivery of these benefits from privately owned forests, county foresters deliver or facilitate the delivery of stewardship assistance from partners or other resource professionals. This stewardship assistance can take many forms from simple advice, to a management plan, to financial incentives related to road improvements to protect water quality. The Vermont Woodland Owner’s Survey, a recent publication by the US Forest Service, highlights a correlation between enrollment in UVA and landowner receipt or utilization of common stewardship assistance. (Figure 2):

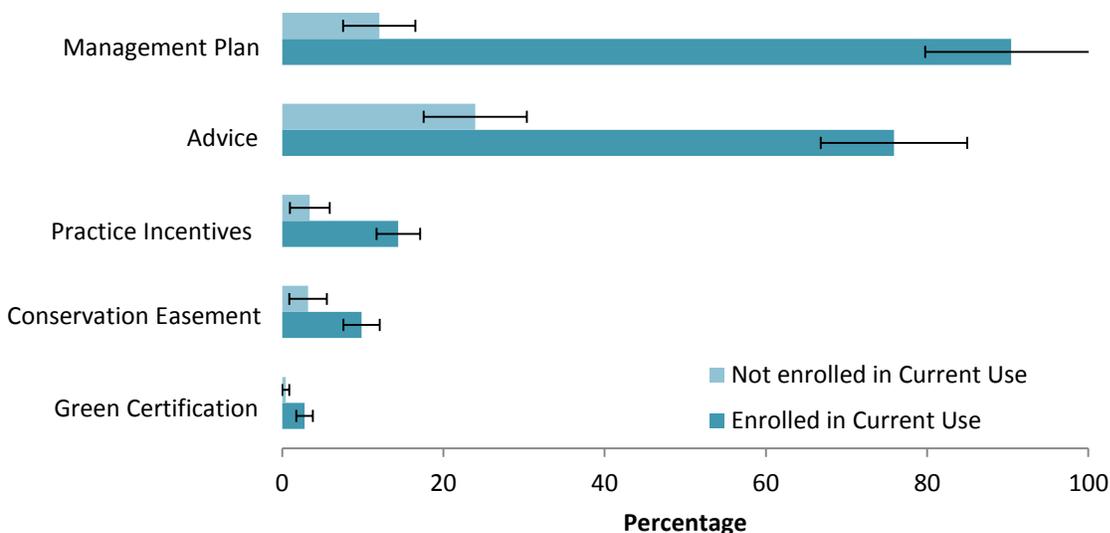


Figure 2. Percentages of family forestland and ownerships (with 25+ acres) having a written forest management plan, having received forest management advice, having participated in cost-share or certification program, and having a conservation easement. (Butler, Butler, & Hughes, 2014)

While enrollment in UVA is not solely responsible for landowner engagement in all avenues of stewardship assistance depicted in this graph, it is a very significant factor in access to advice, technical assistance and resources such as publications, technology or referral to workshops, all of which positively influence forest management choices and outcomes. The graph points towards some of the assistance that is made accessible to landowners through enrollment in UVA, but it also highlights the under-utilization of stewardship assistance among non-enrolled landowners. Approximately 28,500 forestland owners (with more than 10 acres each) and nearly 2 million acres of privately owned forestland are not directly supported through efforts related to UVA. The management actions on these unenrolled lands (some eligible, some not) have as much potential to enhance or undermine the contributions of forests to the people of Vermont. Forest related services to these landowners and this land base must be delivered through methods other than the UVA program.

The Work of County Foresters

FPR and the county foresters use a variety of strategies to serve the public and meet statutory and other legal responsibilities.

In addition to administration of UVA, which is the primary focus of the county foresters, there are three other major program areas to which county foresters dedicate their time. The most important of these program areas falls under the broad umbrella of “*Stewardship*”. Stewardship encompasses direct services to landowners and the public and is further divided in to sub-categories including Stewardship Visits, Information and Education as well as some efforts related to Forest Health. In addition to the broad Stewardship program area is the Municipal and Urban & Community Forestry Support. The County Foresters work with municipalities all over Vermont to support conservation planning and provide advice, technical assistance and forestry services on Town Forests. The final major program area is described as “Internal Initiatives” and

is comprised of the major projects that FPR pursues to advance objectives of the Department and Legislature.

Stewardship Program Area

Most tasks associated with “Stewardship” are direct services from FPR to landowners and the public that provide technical assistance and information or guidance supportive of responsible management of forests. This information and guidance is provided through various strategies. The US Forest Service views the Stewardship services to private landowners as foundational to sustainable management of forests. Because of this, the US Forest Service established the Forest Stewardship Program which provides states with grants, research publications, technical assistance and limited financial resources to provide these services. Through the Department’s delivery of Stewardship services, it receives about 130K annually, approximately 10% of the funds necessary to pay for the county forester staff time.

Densely populated areas and highly fragmented landscapes may have fewer parcels enrolled in UVA. However, many landowners find significant value in whatever forest they are responsible for and seek guidance on the appropriate course of action on that land. Because of this, areas with high densities of small parcels that result in fewer UVA enrollments may result in high numbers of Stewardship requests from non-UVA landowners directed towards the County Forester. Wise stewardship of these fragmented forests may not offer the same economic contribution to the state as larger forest blocks because of lower harvesting potential, but they offer significant ecological and social benefits in the form of water quality protection, habitat and connectivity for important species, and valuable recreation opportunities or aesthetic benefits to communities – and many, especially when managed cooperatively, do see active forest management.

Again, most forestland owners and much of the privately owned forestlands are not served through UVA related efforts. For FPR to successfully carry out its mission, county foresters reach out to and support this sector of Vermont’s landowners. The three major tasks associated with this outreach are Stewardship Visits, Information and Education and Forest Health.

Stewardship Visits

Stewardship visits are conducted by county foresters on the properties of private landowners at their direct request to provide assessments of forest conditions, management advice or referrals to consulting foresters and other professionals to help landowners in any number of ways. Requests for assistance from landowners may be open ended such as “Are my woods healthy?” or “What should I cut for firewood”, to more specific requests like “I’m building a house and want to put it in the right place without hurting the animals or water” or “I have an infestation of buckthorn, and need to know how to get rid of it”. The county forester will work to provide the best guidance possible with the available time, ideally through a visit to the property. In the instance of the question “What should I cut for firewood?” the county forester would visit the property and must consider a number of factors before making recommendations. This requires conversations with the landowner and evaluation of the site to determine the objectives of the landowner, the capacity of the site to meet the objectives, the operational realities of the site

and equipment, and how the various options may affect other aspects of the forest and the benefits it provides. Through discussions with the landowner, and evaluation of the site the county forester may make some on-the-ground recommendations discussing tree selection with the landowner, pass on literature that offers pertinent guidance, or refer the landowner to a consulting forester to help in marking of trees or provide oversight of harvesting activity.

These visits can be critical to those requesting them, addressing an immediate need or concern, but also serving to reduce the risks and increase the benefits of their management choices in the forest. The information landowner receives may help them protect important trees for endangered bat species, and ensure that roads meet AMPs and are managed in a way that protects water quality, and improving the growth of economically valuable trees – all while getting the firewood they need. Often, the most significant impediment to doing the right thing for the forest is access to the right information. By providing Stewardship Visits at the request of landowners, county foresters insure that landowners have access to critical information from impartial experts. These visits serve to move landowners beyond indecision, to a point of informed action with multiple benefits and with greater protection of water quality, wildlife habitat and economic values.

Information and Education

Information and education work of county foresters involves providing training, workshops, educational events, and development of publications and presentations; generally associated with education of the broader public through the promotion of a stewardship ethic and provision of technical assistance. Groups requesting these services include municipalities, professional organizations, environmental groups, educational institutions, consulting foresters and landowners. The outreach provided is often locally focused, pertaining to town or county level forest issues. The local knowledge of the county forester and the local and practical focus of their outreach offers perspective that is difficult, if not impossible for the public to access otherwise. This work improves understanding of individual landowners, informing their work on their own land, while cultivating a better informed citizenry, likely to support wise land use policy and practices across the landscape. Furthermore, this work of the county foresters exposes landowners and the public to the services of other resource professionals which not only improves the work on the ground but has broader economic benefits. The public are often advised to, and do seek out the assistance of people working in the private sector such as consulting foresters, excavator operators, truckers, sawmills, loggers, and consulting biologists in order to address their needs often realizing economic returns for all parties and improving economic potential and ecological contributions of private land. The public is made aware of assistance available from non-profits or the federal government which can provide direct financial assistance to incentivize forest management practices or partner to work on landscape level initiatives.

Forest Health

FPR recognizes and asserts that sustainable forests begin with and depend on healthy forests. For this reason, few duties of FPR staff can truly be separated from the concept of forest health. However, for purposes of characterizing the duties of county foresters, Forest Health

encompasses those tasks associated with identification, education and other services related to diseases, stressors and damaging agents, both biotic and abiotic, affecting Vermont's trees and forests. The Forest Health work of the county foresters in this area is primarily applied through what are called "shade tree calls" – though they are not literally so-limited. County foresters will often visit properties in response to calls from owners regarding shade trees – or other yard or non-forest issues -- seeking guidance on maintaining individual tree health near their homes. These visits often help the landowners address safety concerns about their trees, but they have further benefits to the State in providing FPR with opportunities to identify previously unknown or uncommon pests or disease. Some pests like hemlock woolly adelgid, emerald ash borer, or Asian long-horned beetle are either not widely established or not known to occur in Vermont. These pests pose major risks to Vermont forests and towns, and early detection of pests will significantly improve Vermont's ability to respond appropriately to a new infestation. These shade tree calls present important opportunities for early detection. Other Forest Health tasks include work with invasive plants, Emerald Ash Borer preparedness and others. The visits to address specific forest health issues often open the door for further engagement with the landowners and the delivery of additional stewardship assistance, leading to a further assessment of the backyard, a full walk of the forest, or landowner engagement with other natural resource professionals.

Municipal and Urban and Community Forestry Support

There are more than 67,000 acres of forestland owned by 168 municipalities in Vermont (Capen & MacFaden, 2009). These town forests are unique in their contributions to towns and the state because they are open to the public and are actively used in innumerable and invaluable ways. They are used for watershed protection, outdoor recreation of all kinds, timber management and municipal building projects, local firewood, outdoor classrooms and demonstration sites, all while simultaneously providing the wide array of economic values and ecological services that forests provide. Fundamentally, Vermont's town forests allow important access to nature for those Vermont residents that don't own land, and the visibility of these lands creates unique opportunities to highlight good forest stewardship.

With so many active uses and values, the tension among various uses of these public lands and their appropriate balance requires thoughtful consideration, as well as understanding of the land and its varied users. County foresters support municipalities in the management of their Town Forests by providing technical assistance (like forest inventory and management plans), facilitating community dialogue to balance competing uses, minimizing conflict through planning, providing workshops, administering forest management contracts including timber sales, or implementing non-native invasive plant control efforts. The county forester is uniquely equipped to balance the ecological, economic and social values derived from municipal land.

County foresters also assist municipalities and regional planning commissions in conservation planning and prioritization efforts. In Vermont, where significant responsibility is put in to the hands of volunteer town committees to guide local land-use policy; access to professional guidance and expert advice at no cost is critically important to effective planning.

Internal Initiatives

Internal Initiatives are those efforts that FPR pursues to respond to any number of immediate needs or mandates. Examples include staffing the Working Lands Enterprise Initiative in support of Vermont's forest economy, developing Voluntary Harvesting Guidelines, and the 2015 Fragmentation Report. These projects demand significant amounts of time, and generally involve one or more county foresters along with other staff who may be writing reports, responding to proposed legislation, commenting on draft Agency publications, or providing input on multidisciplinary boards or advisory panels. For short periods of time these projects may take a significant percentage of available staff time. Some projects like the Fragmentation Report required significant time for several weeks. On the other hand, work with the Working Lands Enterprise Board, requires nearly 30% of available time for the Essex/Caledonia County Forester and this time investment is ongoing. Given current workloads and staffing throughout the department, continued availability to conduct such work is at risk though necessary in order for FPR to be responsive to emerging needs and mandates.

UVA Program

Use Value Appraisal is the most successful forest management and conservation program in Vermont, having kept the land of more than 18,000 parcels comprising 540 thousand acres of agricultural related land and nearly 2 million acres of forestland in active use and wise management (Table 1).

Table 1. UVA enrollments as of November 3rd, 2015

Parcels	Owners	Agricultural Acres and other lands <u>not</u> requiring forest management plans	Forestland and Conservation Land Acres Requiring forest management plans	Total Acres
18,183	14,666	539,814	1,890,232	2,430,046

The program provides a property tax reduction for qualifying landowners engaged in the practices of forestry and agriculture. Instead of the normal ad valorem approach, assessing property taxes based on the potential development value of those undeveloped, working lands, UVA assesses property tax based on the current use of those lands for forestry or agriculture, resulting in a significant reduction for enrolled parcels. To be eligible for the tax reduction, forestland may be enrolled in the Conservation land or the Forestland category. Conservation land has relatively few enrollments, 126 parcels and fewer than 30,000 acres, and is only eligible to 501(c)(3) organizations that are principally engaged in the preservation of undeveloped land. These lands must be managed according to a forest management plan approved by FPR. All other forestland may be eligible by enrolling at least 25 contiguous acres which must be managed according to a Conservation Management plan and map approved by the county forester. In coordination with PVR, FPR administers the program for lands and parcels with forestland enrollment.

UVA Administration and Workload

County foresters dedicate more time to UVA than any other program area. The original intent of the statute enacting the UVA program continues to be well conceived and worthwhile:

...to encourage and assist the maintenance of Vermont's productive agricultural and forest land; to encourage and assist in their conservation and preservation for future productive use and for the protection of natural ecological systems; to prevent the accelerated conversion of these lands to more intensive use by the pressure of property taxation at values incompatible with the productive capacity of the land; to achieve more equitable taxation for undeveloped lands; to encourage and assist in the preservation and enhancement of Vermont's scenic natural resources; and to enable the citizens of Vermont to plan its orderly growth in the face of increasing development pressures in the interests of the public health, safety, and welfare.

The UVA program is successful at meeting its stated goals. With 14,523 parcels enrolled in the Forestland category, totaling over 1.89 million forested acres requiring forest management plans, the program is increasingly making a positive difference for Vermont, its forests, its landowners, and the Vermont economy. In the last 5 years, 41% of enrolled land owners reported harvesting timber, with 57% intending to harvest timber in the next 5 years (Butler et al 2014). Through the required Forest Management Activity Report (FMAR) more than 176 million board feet of timber was reported to have been harvested from lands enrolled in UVA in 2014. FMARs are forms required to be submitted to FPR and the Department of Taxes when a landowner implements a forest management activity on land enrolled in UVA. These forms enable the Department of Taxes to ensure taxes are paid on income derived from harvesting of wood products. The harvest volumes reported reflect the economic input that benefits landowners, consulting foresters, loggers, truckers, sawmills and other manufacturers of wood products. While these numbers reflect a significant contribution to the Vermont economy, it is important to acknowledge that harvest volumes are underreported by both UVA enrolled landowners, and very likely, non-UVA landowners.

There are important cultural implications to the program as well. The National Woodland Owner Survey report indicates that the primary concern of forestland owners in Vermont is property taxes. For UVA enrollees, the next highest rated concerns include keeping land intact for future heirs, protecting water quality and concerns related to unwanted insects and diseases. These concerns are rooted in issues that have broad implications for the capacity of forests to provide public benefits. These high priority concerns for enrolled landowners differ than those of unenrolled landowners and are achieved through the professional and dedicated work of Vermont's county foresters and the access the program provides to professional advice and support.

Landowner Enrollment of Forestland in UVA - Process and Responsibilities

The county forester's work of administering UVA is complex and while the overarching role of the county forester in UVA is to encourage and assist landowners in the maintenance of their productive forestland, there are other administrative duties that facilitate this opportunity. In order to provide context for the duties related to its administration, the UVA program is briefly described here:

The Commissioner of FPR has approved forest management standards and plan standards which, in conjunction with eligibility criteria set forth in statute, establish conditions for initial and continued eligibility of forestland in UVA. These standards are articulated in the UVA Program Manual which is available on the FPR [website](#).

A landowner with 25 acres or more including at least 20 acres of forestland to be managed for production of high quality forest products may be eligible to enroll land in the forestland category of UVA.

This landowner must submit an application to PVR by September 1 of the year prior to enrollment.

A forest management plan, signed by the landowner and three copies of maps must be submitted to FPR by October 1, of the year prior to enrollment. The forest management plan describes the property and makes recommendations for managing the property for production of high quality forest products, or other eligible categories. Management plans are typically developed by a consulting forester, however anyone may submit a plan as long as it meets plan and program standards.

The county forester reviews the management plan and if it meets all standards and the property meets eligibility requirements the county forester will then approve the plan. If there are eligibility issues related to conditions of the land or detail of the plan, then the County Forester will require clarification, additions, or corrections before the plan can be approved.

Once a forest management plan is approved:

1. The County Forester notifies PVR which allows them to proceed with the enrollment process.
2. 2 hard copies of maps are forwarded to PVR.
3. The County forester enters all critical information in to database from hardcopy plan. This includes 10 metrics for each forest stand, as well as landowner, contact information, year of plan and update year.
4. The county forester prepares a hard copy file to store all records related to the new enrollment.
5. If PVR determines the parcel is eligible, the property will be enrolled.

With enrollment, the following steps take place:

1. A lien, filed in the town's land records, is placed on the enrolled portion of the property and the landowner is now accountable for adherence to the forest management plan prepared for those enrolled acres.
2. The county forester is expected to inspect the property at least once every 10 years to ensure compliance with plan and program standards.
3. Landowners must update their forest management plans every 10 years, at which point the County Forester reviews the plan again for adherence to plan standards.

If land transfers ownership, enrolled acreages change or management recommendations change, the county forester takes on administrative responsibilities to approve and process these changes.

Enrollment of land in the program continues in perpetuity as long as the property continues to meet program standards, the landowner has not developed or withdrawn the enrolled acres and the State supports the program.

As mentioned previously, Conservation Land is a category in which undeveloped lands may be enrolled. FPR administers enrollment of lands in this category but it is only eligible to 501(c)(3) organizations that are principally engaged in the preservation of undeveloped land. These lands must be managed according to a Conservation Management plan approved by FPR. There is neither minimum acreage nor the requirement that lands be managed for production of a crop or forest products, however, these lands must include appropriate provisions to preserve valuable ecological and public resources. Excepting the fact that 501(c)(3) organizations must demonstrate eligibility, the mechanics for enrolling these land in UVA parallel those of enrolling land in the forestland and agricultural land categories.

Primary Tasks of UVA Administration by County Foresters

There are 6 primary tasks that are most critical to the successful administration of the UVA program. They are described below:

Forest Management plan review and approval:

Prior to enrollment and subsequently every 10 years a landowner must submit a forest management plan that satisfies the minimum plan standards as outlined in the UVA Program Manual. The plan standards are detailed in 22 pages nested within a 144 page manual. Plan review may take an hour for a small parcel or a day or more for properties of thousands of acres. Some plans are more than 100 pages long. County foresters must confirm that eligibility requirements are met for the property as a whole and that plan and management standards are met for each enrolled forest stand. Plan approval may require extended correspondence with consulting foresters to bring plans into compliance, or alternatively, site visits are often necessary when written descriptions are insufficient to understand on-the-ground conditions or proposed forest management that UVA compliance will be based on.

Data management and record maintenance:

Every one of the 14,523 enrolled parcels has a hard copy file in the county forester's office. This file contains all correspondence, approved management plans, maps, FMARs, and conformance inspection reports pertinent to the enrolled land. These files must be maintained and all contents require updating and occasional confirmation. In addition, county foresters manage two databases. The FPR database is linked to the PVR enrollment records and serves to keep details of each enrollment organized. The data associated with each enrollment includes records of when site inspections have occurred, when management plans are due, who the primary contacts are, when activities were implemented, and which consulting foresters are associated with each enrollment. The second database called eCuse serves to communicate with PVR, allowing FPR to notify them when all necessary paperwork has been received and approved. Significant correspondence with PVR, landowners and consultants are necessary to insure that all necessary paperwork is provided, with all the necessary signatures accurately reflecting the details of each enrollment. Currently, significant time is required to insure consistency among hard copy records, digital records and database entries. The FPR database that has been developed has been possible in part through the use of funds from the Property Transfer Tax, made available to FPR through interdepartmental transfer of funds from the Department of Taxes.

Straight-forward inspections:

Each property enrolled in UVA must be inspected by the county forester to ensure compliance with the program at least once every 10 years. Inspections may take a couple of hours on a small property, or several days on large properties. Inspections on the largest properties take so much time to fully complete that the process is ongoing, with partial inspections conducted annually. If a property is in compliance with the management plan and there are no eligibility concerns, then inspections are documented and complete. These are considered "Straight Forward Inspections". The time dedicated to inspections also serves as a critical opportunity to encourage and assist landowner in the stewardship of their forest.

Action-needed inspections:

Action Needed Inspections are those inspections conducted by the county forester that require corrective action, or result in recommendations for removal from the program. Corrective action requires significant time to communicate with the landowner, consulting forester and logger to convey the concern, establish and implement a plan to bring the property in to full compliance with UVA. This corrective action may include requiring the completion of a planned harvest activity, proper implementation of AMPs, or other efforts. Properties that are unable to be brought in to compliance may require removal from the program requiring significant documentation and collection of data. Documentation supporting the removal of a property from UVA must be thorough enough to withstand legal rebuttal if the FPR determination to remove the property from UVA is appealed. When more inspections are completed, more problems are encountered and more "Action Needed Inspections" occur.

Information and outreach:

In a program of this size, it is critical to keep landowners, consulting foresters and the general public aware of program requirements, responsibilities and opportunities – and also to be responsive to public needs. This work of county foresters includes development of publications, one-on-one discussions, public meetings, maintenance of the program website and other strategies to ensure that the public is aware of the details of the program and misconceptions are kept to a minimum.

Coordination and policy:

As more landowners enroll in UVA and new trends in forest management emerge, management standards and plan standards are modified to establish appropriate program parameters. This work requires significant coordination and communication internally and increasingly externally with the affected stakeholders. County foresters are always engaged in this process. Examples include the recently adopted Sugarbush management guidelines and standards, or the establishment of the Ecologically Significant Treatment Areas as an eligibility category.

UVA Enrollment Trends and Conditions

Enrollments of forestland have increased almost every year since the inception of the program. In fact, the only two years in which enrolled forestland acres dropped, were in 1992 and 1993 when a moratorium on enrollments was in place due to underfunding of the program and an Easy-Out was enacted, allowing landowners to withdraw from the program without penalty. Figure 3:

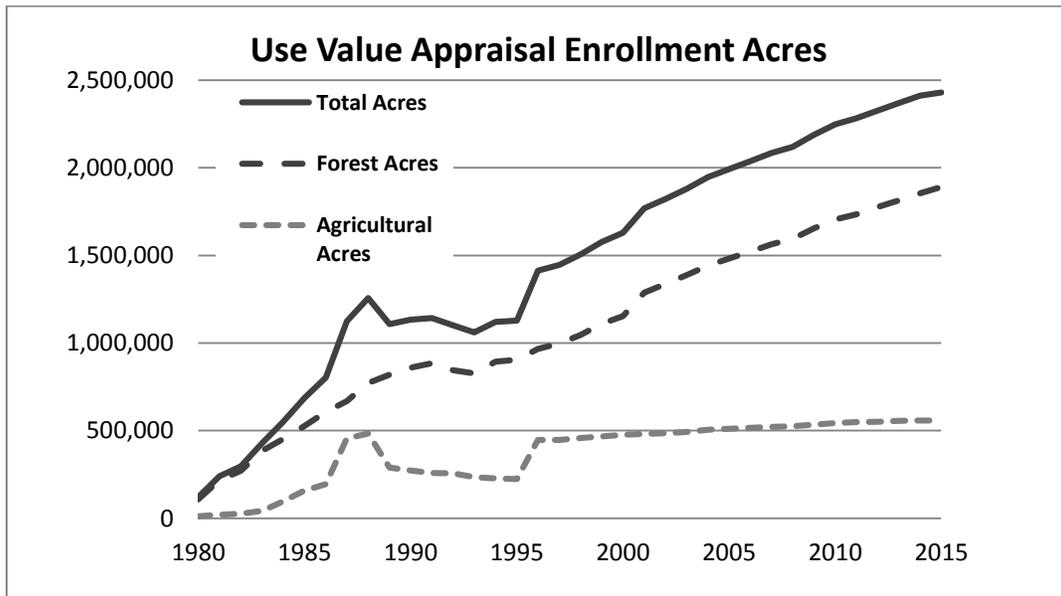


Figure 3. UVA enrollment acreage by year.

Since the end of the moratorium in the mid 1990's, forestland enrollment in the program has grown on average by 41,000 acres per year and an estimated 315 parcels per year. It is

estimated that approximately 50% of eligible forest is currently enrolled in UVA. This suggests that there continues to be significant room for growth in the program.

The number of parcels enrolled has a major influence on the administrative workload of the UVA program for each county forester as well as staff in the Current Use Section of PVR. Table 2 illustrates the number of enrollments and parcels administered by each county forester. Enrollments administered by county foresters range from a low of 695 parcels for the Chittenden County Forester to a high of 1,876 administered by the Orange County Forester. A different factor, the acreage of enrolled parcels, has a major influence on the frequency of management activity and how long an inspection takes. The acreage administered by each county forester ranges from 67,462 acres in Chittenden County to 355,052 administered by the Caledonia/Essex County Forester. As an example, one parcel alone totals 56,000 acres crossing 9 towns.

County	Total Plans	Forest Acres	Avg Acres
Addison	805	88,400	110
Bennington	789	114,974	146
Caledonia/Essex	1,645	355,052	216
Chittenden	695	67,462	97
Franklin/Grand Isle	939	116,845	124
Lamoille	811	124,641	154
Orange	1,876	189,075	101
Orleans	883	128,684	146
Rutland	1,136	160,162	141
Washington	1,516	168,814	111
Windham	718	81,902	114
Windham/Windsor	1,443	157,976	109
Windsor	1,266	136,238	108
Total	14,523	1,890,232	130

Since the 1990's there has been minimal expansion of the county forester staff. In 2007, the Windham/Windsor County Forester was hired to support an expanding UVA enrollment in those Counties. Following the retirement of the Orleans County forester in 2008, the position was not refilled due to budget shortfall. The Lamoille County Forester administered UVA enrollments in both Lamoille and Orleans Counties until 2013 when funding for the Orleans County Forester position was reinstated. **While the staff capacity for administering the UVA program has increased by one county forester since the 1990's, enrollment and associated workload in UVA has more than doubled; from 900,000 forestland acres enrolled in 1995 to 1,890,000 forestland acres enrolled in 2015.**

UVA Administration and Compliance

Statute requires that management plans are updated every 10 years. Conformance inspections by the county forester are required to occur on a 10 year cycle as well.

Currently, without exceptions, all plans are thoroughly reviewed to ensure compliance with management standards. Management plans are a requirement for initial and continued eligibility of forestland. Forest management plans describe the owners' objectives, the capability of the land, and outline the management activities proposed for the property. In conjunction with the program requirements outlined in statute and the program manual, these management plans establish parameters for compliance with UVA. All plans must be updated on a ten year cycle, so in Orange County where there are 1,876 enrolled parcels, there are an average of 188 management plans due for an update every year. Many of these plans are submitted very close to the deadline of April 1st. This is a rigid deadline to allow FPR and PVR to confirm the continued eligibility of parcels requiring updates before grand lists are set each year. These plans can take a long time to review and move towards approval. Plans that do not meet standards require corrections or field review involving county foresters and consulting foresters. This back and forth may take weeks or months depending on other obligations and the complexity of the corrections. From the time that a plan arrives in the county forester office to the time it receives approval it may be up to one year. This is an undesirable timeline for all involved.

Conformance inspections of enrolled lands must occur on an ongoing basis. By statute they are required to occur every ten years to ensure that management plans accurately reflect on-the-ground conditions and prescribed activities are implemented according to the approved management plan. This ten-year timeline is appropriate, and constitutes the maximum period of time between which on-the-ground visits can reasonably insure compliance with program standards. Inspections are sometimes carried out in association with technical assistance and advice provided at the request of a landowner; however, most inspections are initiated by the county forester according to a regular schedule and with prior notice. It should be noted that through Act 205 of 2008, the Legislature, acknowledging the increasing workload associated with UVA, increased the inspection interval from 5 years to 10 years.

When balanced with other duties, county foresters are able to complete a maximum of 100 inspections per year. However, numbers of inspections are reduced if other duties limit available time for this task. Currently, county foresters report that they complete an average of 70 inspections per year. County foresters, landowners, and consulting foresters all report that the inspections, particularly when carried out with a landowner, are among the most valuable UVA related services the county foresters provide. However, at 70 inspections per year, with a staff of 13 county foresters, inspections were being completed at a rate that is 62% of what is necessary to satisfy statutory requirements – to say nothing of any other added-value outcomes. This rate is unacceptable and must be improved in order to maintain the integrity of UVA.

The reasons for this unacceptable situation are many, and the solutions are multifaceted. In order to assess where efficiencies can be found and priorities set, the county foresters have analyzed the time they invest in various programs.

Time Allocation and Program Assessment

To assess the adequacy of county forester staff to administer the UVA program, as requested by the Legislature, FPR used two tools to analyze time allocation of county foresters. These two approaches each had their respective strengths.

The first tool to assess time allocation was based on a query of electronic timesheets (Table 3). The reported time of each county forester was queried and percent of available time allocated to each program was tallied and summarized for all county foresters. Major programs include: UVA, Stewardship, Municipal Forest/Urban and Community Forestry.

Table 3. County Forester time allocation by programs. Derived from timesheets query.

Program Area	% Available Time
UVA	63%
Stewardship	22%
UCF Municipal	6%
Fire Detail	1%
Working Lands Initiative	2%
All others	< 1%

Table 4. County Forester time allocation by program. Derived from recollection.

Program Area	% Time
UVA	60%
Stewardship	19%
Municipal Forests	6%
Internal Initiatives	7%
All other <1%	7%

The second tool to assess time allocation was primarily based on recall of county foresters, called a Recall Accounting Tool. While the recollection of individuals is subjective and may contain significant bias, the time allocated to major programs (Table 4) in this approach was generally reinforced by the findings of the more objective time sheet query, suggesting at least some reliability.

Program areas can be very broad and encompass many tasks. The major strength of the Recall Accounting Tool was that it allowed the county foresters to attribute time to a specific task within the larger program area. This specificity was not available through the timesheet query. In order to analyze how time has been spent, where efficiencies may be found and where tasks may be prioritized, county foresters identified the major task associated with the each program area (Table 5)

Table 5. Tasks associated with major program areas

UVA	Stewardship			Municipal Forests	Internal Initiatives
	Visits	Info/Ed	Forest Health		
Data Management	Forest Management and Stewardship advice	Forest Health and Ecology	Shade Tree Calls	Community Engagement	Working Lands Enterprise Initiative
Plan Review/Approval	Incentive Program Advice	Silviculture and Management, including AMPs	Aerial Survey	Project Management	Fragmentation Report
Straightforward Inspections	Information about Training Opportunities	Legal Considerations	EAB Statewide Preparedness	Plans	Carbon and Climate Change
Action Needed Inspections	Preparation and follow up	Community Planning	Collaborating with Forest Health Program	Records/Admin/Research	Adaptive Silviculture
Information/Outreach	Timber Trespass and Other Conflicts	Partnerships	Forest Health Monitoring Plots	Conflict Resolution	Legislative Requests
Coordination/Policy Internal/External	Technical Assistance	Maple sugar maker assistance		Conservation	Economics of Conservation

After estimating the percent of the available time spent on each program area, each county forester estimated the percent of that time committed to major tasks associated with each program area. This allowed an automatic calculation of the percent of total available work time spent on each task. Table 6 illustrates the time allocated to each task associated with the UVA program area as summarized through the Recall Accounting Tool.

Table 6. Time allocation summary from the Recall Accounting Tool for the UVA Program Area and associated tasks.

Program Area	Avg. % of Available time on program	Associated Task	Avg. % of Operational Area Time spent on task	Avg. % of available work time on task
UVA	60%	<i>Data Management</i>	19%	11.1%
		<i>Plan Review/Approval</i>	36%	21.7%
		<i>Straightforward Inspections</i>	25%	15.2%
		<i>Action Needed Inspections</i>	6%	3.7%
		<i>Information/Outreach</i>	8%	5.0%
		<i>Coordination/Policy Internal/External</i>	6%	3.4%

Based on these estimates from the Recall Accounting Tool, UVA constituted 60% of available staff time. Based on averages of county forester estimates of time allocated to each task, about 22% of county forester time is spent in plan review. This is the single most time consuming task performed by county foresters. The next most significant task is related to inspections, with Straightforward and Action Needed Inspections comprising just under 20% of county forester time. Plan Review and Inspections are the two most critical elements to UVA compliance for enrolled forestland.

While an estimated 60% of available time allocated to UVA suggests that some time may be reallocated from other services to UVA, to achieve this would require a major reduction of valuable services to public, the majority of which would be achieved through refusal of direct requests by the public. Because of the nature of these requests it is unlikely that the demand would be filled by the private sector. Table 7 shows the top 20 time consuming and important tasks performed by county foresters as estimated by the Recall Accounting Tool.

Table 7. Top 20 time consuming tasks performed by County Foresters and % of time allocated to each task

Operational Area	Associated Task	% of available time on task
UVA	Plan Review/Approval	22%
UVA	Straightforward Inspections	15%
UVA	Data Management	11%
Stewardship Visits	Forest Management and Stewardship	5%
UVA	Information/Outreach	5%
UVA	Action Needed Inspections	4%
UVA	Coordination/Policy Internal/External	3%
Info and Education	Forest Management	3%
Municipal Forest	Project Management	3%
Forest Health	Shade Tree Calls	2%
Internal Initiatives	Working Lands Enterprise Board	2%
Info and Education	Forest Health and Ecology	2%
General Admin	Time Sheets and expense reports	1%
Stewardship Visits	Technical Assistance	1%
Info and Education	Partnerships	1%
Municipal Forest	Plans	1%
Stewardship Visits	Incentive Program Advice	1%
Municipal Forest	General Assessments	1%
Info and Education	Community Planning	1%
Municipal Forest	Community Engagement	1%

These 20 tasks comprise about 85% of county forester time. About 60 additional tasks were considered in the Recall Accounting Tool and all of them comprised a fraction of a percent of available time. However, among those tasks that county foresters spend little time on, yet are extremely important, are emerald ash borer statewide preparedness, invasive plant

coordination, forest fragmentation issues, municipal forest conflict resolution, landowner support on timber trespass, and others.

Needs assessment:

Within the Recall Assessment Tool, county foresters were able to individually estimate what percentage of a full-time position would be necessary in order to meet the need or demand of each task performed in their region. For instance, if a county forester found that they were dedicating 20% of their total available time to Straightforward inspections, and only meeting 50% of the need, they may estimate that an additional 20% of the time of a Full Time Employee (FTE) would satisfy the need in their county. The estimate of each county forester was added together to provide a cumulative need across the state. At the time of the assessment, county foresters reported that in order to satisfy all UVA tasks an additional 5.71 Full Time Employees would be necessary to meet the needs of the UVA Program Administration (Table 8).

Table 8. Cumulative response of County Foresters to the question: What additional percentage of a full time position would be required to meet the current need for tasks associated with UVA?

UVA Tasks	FTE Needed
Data Management	1.48
Plan Review/Approval	.54
Straightforward Inspections	2.70
Action Needed Inspections	.45
Information/Outreach	.42
Coordination/Policy Internal/External	.13
Total	5.71

The county foresters also estimated additional time needed to meet all other tasks and program areas in addition to those tasks associated with UVA. It was estimated that there was an unmet demand for services that could potentially be met through an additional 2.3 additional FTEs. The estimated need of each major program area outside of UVA is shown in Table 9. While difficult to estimate, it is possible that the delivery of these services in the past has eroded as a result of expansion of UVA workload.

Table 9. Cumulative response of County Foresters in response to the question: What additional percentage of a full time position would be required to meet the current need for Operational Areas outside of UVA?

Operational Area	FTE Needed
Stewardship	.99
Municipal	.81
Internal Initiatives	.34
Forest Legacy	.10
Gen Admin	.8
Total	2.32

These estimates of additional need did not account for broader responsibilities of FPR for delivery of UVA or other services. For example, these estimates did not account for additional

need to effectively and efficiently communicate program delivery with PVR, or to manage the statewide forestland UVA enrollment data, or to develop and implement legally robust UVA compliance methodologies. These needs have developed as the scale of the program has grown and they extend beyond the scope of traditional county forester duties. Historically, administrative responsibilities for forestland enrollments in UVA have been managed almost exclusively by county foresters. However, enrollment in the program has grown, requirements have become more complex, we face a more litigious society and technology has changed. In order to preserve the focus of the county forester as an educator, advocate, facilitator, forester and administrator of UVA enrollments, there is additional need for staff dedicated to delivery of specialized segments of the UVA program. By transferring some of the responsibilities of the program to specialized support staff, FPR and the county foresters will be better able to deliver UVA. Additional county foresters are necessary, but there is an also need in the more specialized areas of UVA data management and compliance and enforcement.

Consulting Forester Meetings

In late October and early November of 2015, three meetings with private consulting foresters were conducted in St. Johnsbury, Rutland and Barre. These meetings were intended to gather perspectives from consulting foresters on the work of FPR's county foresters and their administration of UVA, in particular. About 30 consulting foresters attended and shared perspectives on a wide spectrum of issues.

While the focus of the meetings were not specifically addressing the workload of county foresters, it was clear that many of the concerns of consultants could be tied to workload and inefficiencies in the mechanics of the UVA program and tensions created by program standards and delivery. These challenges increase the UVA workload for county foresters. Many detailed solutions were offered which are very likely to be pursued, but two of the recurring messages were which stand out are:

1. Simplify the program, while maintaining its integrity.
2. The UVA program works better for everybody when the county foresters are able to get in the woods more with landowners, consulting foresters, and loggers.

While the specifics of improvements to UVA will take time to work out, it is generally agreed among the county foresters, consulting foresters, and FPR leadership that on the whole, specific, strategic changes to the program should move us towards these two broad goals, but alone will not be enough to increase the capacity of county foresters to adequately administer UVA.

Time Allocation and Time Saving Considerations

During the analysis of time allocation a few factors emerged which point to challenges with current administrative systems in UVA and opportunities for improvement and increased efficiency.

Plan review:

- 20% of county forester time is currently spent on review of management plans. There are many elements that influence the time dedicated to plan review, including: number of plans reviewed, complexity and detail of plans, format of plans, need for revisions and amendments, management of plan data, system of plan submission and handling. Improvements and increased efficiencies that address these factors may decrease the amount of time allocated to plan review.

Inspections:

- 20% of county forester time is allocated to inspections. About 62% of the necessary inspections are being completed annually. Based on this, it will be necessary to both increase the efficiency of inspections and increase the time available for inspections.
- Because the on-site inspection process is primarily on-the-ground time, the best opportunities to increase efficiencies will be found through reductions in travel time and increased efficiency in reporting, documentation and communication associated with inspections.
- To the extent that compliance on enrolled properties may be increased, it is possible that the time dedicated to Action-Needed Inspections may be reduced. However, in the short-term, as more inspections are conducted, they are likely to expose more non-compliance issues, resulting in an initial increase in Action-Needed inspections.
- Action-Needed inspections currently demand 4% of available time of the county foresters. However, some are more litigious and can demand more than 50% of available time of a forester for extended periods. Opportunities that minimize the extent to which these situations prevent county foresters from completing their daily and ongoing duties should be considered.

Data management and paperwork:

- 11% of available time is dedicated to Data Management and Paperwork. This work often involves taking data from hardcopy records, and entering them in to databases or transferring them in to digital format. Examples include transferring data from Plan Summary forms, FMARs, management plans, acreage charts, or conformance inspection forms.
- The critical information for each parcel and the program are located in many places: in hard copy in the county forester's office, in the FPR database on an ANR network, in the PVR database, in the PVR eCuse system, in GIS shapefiles, and in some cases on additional outmoded databases on staff computers. In addition, many county foresters are in satellite field offices that are outside of ANR network firewalls. In order for staff to access the internal State network to reference data in one database, they must often

sign on to a Virtual Private Network (VPN). This insures network security but restricts other computer uses. This restricts the ability of county foresters to cross reference information that is located both on and off the network. Improvements that consolidate the locations of critical information and increase the automation of data transfer among data sources will improve efficiency significantly

UVA information and outreach:

- 5% of county forester available time is dedicated to information and outreach. This is sometimes directed using broad outreach strategies like publications or workshops, however; most often this is delivered in a responsive manner, to help individuals understand program requirements and landowner options, opportunities, and responsibilities. It is possible that instead of a primarily responsive approach, proactive outreach strategies will prevent the need to provide one-on-one guidance and corrective action. Automation of outreach efforts directed to individual enrollments may help landowners stay abreast of UVA enrollment responsibilities such as plan update timelines, upcoming scheduled harvest activities, Forest Management Activity Report submission deadlines or submission of Agriculture Certification forms.

Cutbacks:

- County foresters reported that an estimated additional 2.3 Full Time Employees would satisfy the unmet demands for forest stewardship services related to non-UVA tasks. These are some of the most beneficial services the county foresters provide. Moreover, the unmet demand reflects and quantifies a prioritization away from these tasks and services in an attempt to meet increasing demands of the UVA workload. During the 3 decades of administering the UVA program with no increases to county forester staffing, all of the time dedicated to the growth in UVA has been provided through cutbacks in other county forester services.
- While there has been significant reduction of services provided to the public by the county foresters there are some services that county foresters may require further reductions. The services that may receive less time could include those directed towards Municipal Forests which could also be provided by private consulting foresters, Information and Education, and Community Planning which may not be well served by the private sector

Recommendations to Strengthen the UVA Program

The UVA program and the services that county foresters provide are enormously valuable to the people and forests of Vermont. To support Vermont forestland owners the capacity of the county foresters to serve both UVA enrolled landowners, non-UVA landowners and municipalities, must be maintained. However, without additional capacity and programmatic improvements, it is clear that we are not on a path to ensure continued delivery of high-quality, effective services.

Programmatic Changes to Strengthen UVA

To strengthen UVA and expand capacity of county foresters to do their work, we recommend that FPR engage in a formal Lean process focused on its UVA administration. Lean is a systematic method for eliminating waste in a process. This effort would explore the current systems in place for the administration of the UVA program and identify opportunities for increased efficiencies. While the outcomes of the Lean process would direct the specific strategies for improvement, some options are presented here for consideration:

1. Simplify forest management plan requirements and perhaps revise management standards in order to reduce administrative duties and increase the ease of public understanding, while maintaining and enhancing forest health.
2. Shift from a hard copy plan and custom submission format, to a standardized digital format for plan, map and form submissions and approvals. This will increase efficiency of the plan review process and communications of approvals or need for additional information. Systems capable of this submission process will increase efficiencies in PVR as well as FPR.
3. Develop electronic systems to pull and store critical data from digital plans, maps and forms related to geospatial information, enrollment acreages, silvicultural activity dates, harvest volumes, and other data to increase availability of UVA enrollment metrics, minimize manual data transcription and entry by county foresters or other staff.
4. Digitize critical hard copy files and develop an electronic filing system that may be integrated with new plan submission and data management systems.
5. Develop systems for use of handheld mapping and conformance inspection tools to enable reference of digital documents and completion of inspection documentation from the field.
6. Consider whether the frequency of submission of management plans or other reporting requirements is sufficient and appropriate; i.e., is it best to require forest management plan updates on a 10-year cycle or would another schedule be more appropriate?
7. Determine whether, based on new digital systems, centralization of administrative duties would increase available staff time for inspections and other field duties.
8. Integrate systems with PVR to share access to critical documents and create a central clearinghouse for PVR, FPR, landowners and consultants for accessing, updating and retrieving enrollment information and documents.

During the Lean process current administrative systems would be analyzed and mapped to identify exactly where critical steps and inefficiencies are located in the process. After the current UVA administrative systems are mapped, representative stakeholders of the consulting forester community and landowners could be engaged to consider and provide input on

potential improvements. After improvements are designed these groups should be re-engaged to provide input on the implementation and details of the improvements.

County foresters have estimated that based on a staff of 13 and the current design of the UVA program, an additional 5.7 FTE dedicated to carrying out UVA related duties are needed. Expanded staffing would spread out the office duties of the county foresters and present the opportunities necessary to increase inspection rates. Notwithstanding additional growth or changes in UVA, if more efficient systems are developed through the Lean process, it is likely that additional staffing needs could be reduced from the estimated 5.7 FTE to a lower target. The additional staffing needs include:

- 2 county foresters - bringing the total to 15. These county foresters would be located create more manageable workloads in the Northeast, supporting the work in Orange, Caledonia, Essex and Washington Counties primarily. This recommendation of an additional 2 county foresters assumes the filling of the Lamoille County Forester position which was vacated through the retirement incentive program in 2015. If the Lamoille County Forester position remains unfilled then the recommendation is 3 additional county foresters.
- Create new positions to maintain the integrity and support delivery of UVA: FPR is recognizing that in order to increase county forester efficiency and bolster the compliance and administrative elements of UVA there is need for additional roles in the delivery of the UVA program. These new roles include Enforcement Foresters and a Central UVA Data Manager: Enforcement Foresters would be responsible for investigating alleged UVA violations. This position would take the lead on more egregious and time consuming UVA violations to ensure continued delivery of services by the county foresters. When no violations require investigation or documentation this position would support county foresters in completion of required inspections or other duties. The focused nature of this position would allow an advanced skill set and development of technically and legally robust methodologies and protocols. The Central UVA Forestry Data Manager would lead the development of, and utilize, centralized databases to manage forestland enrollments in the UVA program. This central administrator would ensure standardized management of records, improve coordination with PVR and support the county forester staff by taking on some of the statewide administrative duties currently managed by field staff, thereby concentrating fixed costs and reducing inefficiencies.
- Overtime, if UVA enrollments continue to increase, to maintain program integrity, an additional county forester should be considered when enrollments reach 16,000. With no changes to program design, county foresters should be expected to administer approximately 1,000 enrollments. Through simplification of program requirements, streamlined data management and submission systems or development of other efficiencies FPR is optimistic that the capacity of county foresters to administer enrollments will increase while maintaining their availability to provide the breadth of

services that the public needs. These program improvements could allow greater expansion of enrollments in the program before additional staff are needed.

This additional county forester staffing is needed in the short-term as well as the longer term. If FPR is unable to get this additional support in the near term it will be necessary to redistribute the UVA administrative duties among the county forester staff. This redistribution will not achieve a sustainable condition; however, it has become urgent to redistribute the disproportional workload carried by the Orange County forester with 1,876 UVA enrollments and the Caledonia/Essex County Forester with 1,645 enrollments.

Forester Licensing to Strengthen the UVA Program

If the internal staffing and administrative changes outlined above are made they will go a long way in strengthening the UVA program and more importantly, the critical statewide benefits it drives. In addition, there are changes to other systems in the forest industry and related processes that may support and simplify efforts to ensure compliance in the UVA program. One of the major improvements would include licensing of foresters to establish education, experience, and professional conduct requirements for those offering forestry services for hire. The licensing of foresters would strengthen the UVA program in a number of ways. The licensing of foresters could provide credentials to foresters that allow landowners to discern those individuals with the background necessary to represent their interests as they relate to forest management. Licensing should provide a standard among Vermont foresters regarding quality of work and services conducted in the forest and on behalf of landowners as well as the leverage to hold foresters accountable. These two benefits would increase the likelihood that landowners will work with foresters, and that the work the foresters provide will meet a certain standard. This would reduce the need for county foresters to pursue corrective action on UVA enrolled lands or to remove lands from the program. In addition, the licensing of foresters creates a process for insuring professional accountability. The professional accountability that comes with licensing could be integrated in to the delivery of the program by reducing county forester review in certain elements of UVA, while depending on the certification of licensed foresters to ensure compliance of UVA enrollments. How licensing is integrated in to the UVA program depends largely on the details of the licensing system, and its implementation. It is too early in the consideration of this licensing option to determine details; however, it may present opportunities that should be explored if the state adopts licensing and becomes familiar with its implementation.

Conclusions

It is widely and increasingly recognized that Vermont's forests are incredibly important for their economic, ecological and social contributions to the state. The UVA program and Vermont's county foresters provide critical support to landowners across the state which is necessary for the wise management and conservation of Vermont's forests. In light of this reality, the lack of capacity of the county foresters to fully administer the UVA program or provide sufficient services to the public in support of wise forest management threatens to erode the gains made

over the last 75 years since the establishment of the county forester positions and 35 years of the UVA program. If compliance with the UVA program can't be sufficiently insured, then over time the UVA program loses its integrity. If county foresters are unable to continue to provide sufficient information to the public and equip them to make good forest management decisions, then the future of Vermont's forests is increasingly left to chance. For these reasons, the State should make all reasonable efforts to streamline the administrative systems of the UVA program and increase the capacity of FPR and the county forester staff to deliver the program and other private lands services.

References

- Butler, S., Butler, B., & Hughes, J. (2014). *Vermont Woodland Owners Survey*. Amers: US Forest Service and University of Massachusetts.
- Capen, D., & MacFaden, S. (2009). *Town Forests in Vermont: Inventory of an Overlooked but Essential Component of the Forested Landscape*. Burlington: Northeastern States Research Cooperative and UVM Spatial Analysis Lab.
- Morin, R. e. (2015). *Forests of Vermont and New Hampshire 2012*. Newtown Square, PA: U.S. Forest Service.
- National Agricultural Statistics Service. (2006). *Maple Syrup 2006*. Concord, NH: United States Department of Agriculture.
- National Agricultural Statistics Service. (2015). *Northeast Maple Syrup Production*. Washington DC: United States Department of Agriculture.
- North East State Foresters Association. (2014). *The Economic Importance of Vermont's Forest-Based Economy*. Concord: NEFA.