

VNRC

Vermont Environmental Report

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Summer
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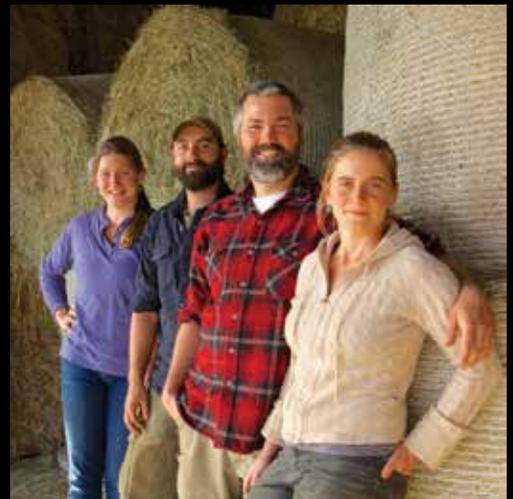
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Through research, education, collaboration and advocacy VNRC protects and enhances Vermont's natural environments, vibrant communities, productive working landscapes, rural character and unique sense of place, and prepares the state for future challenges and opportunities.

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ON FOREST FRAGMENTATION, PERSPECTIVE IS IMPORTANT

BY BRIAN SHUPE, EXECUTIVE DIRECTOR



If we really want to address forest fragmentation, we need to consider the cumulative effects of subdivision in Vermont, and strengthen the review of subdivision activity at the state level.

Many Vermonters – and probably most VNRC members – are wary of big changes to Vermont’s communities and landscape, and they should be.

Since VNRC’s founding in 1963, Vermont has experienced significant change, including ski area development, shopping malls, big box stores leapfrogging along state highways and scattered residential developments that subdivided our farm and forest land.

VNRC has consistently advanced strong state and local policies to avoid or mitigate the negative impacts of these changes, and to reject or reshape those developments that threaten the state’s character, natural resources and local economies. We have not always been successful, but our efforts have ensured that Vermont has done a better job at retaining our sense of place and environmental well-being than much of the rest of the country.

That said, some change to our landscape, as well as changes in the types of land uses that compete for space on our land, is inevitable as our technologies, priorities, and context change. More than ever before, today’s changes are driven by national and global factors – unstable energy supplies, corporate decision making in boardrooms far away from Vermont and, of course, climate change. These realities, and how Vermont responds to them, will have profound implications for Vermont’s future.

Today in Vermont, however, worrisome, homegrown change – change that we could control better than we do – is also shaping our future. We are chopping up our forestland bit by bit, creating smaller and smaller parcels, and building more and more roads to serve these parcels. Part of the threat of this incremental fragmentation is its insidious nature. There are hundreds of small, individual acts and decisions — and the mosaic of municipal policies that guide those decisions — that appear harmless in isolation but have a tremendous cumulative impact on the state’s natural resources and working lands. In this issue of the *Vermont Environmental Report*, Will Lindner describes how these changes are affecting Vermont’s forests in the article beginning on page 8.

Forest fragmentation can result from many forms of land development, and in recent years particular concerns have been raised over the relationship between wind energy development and forest fragmentation. This is understandable, as construction in sparsely developed upland areas can adversely impact our water, forests, and wildlife habitat.

To help address some of these impacts, VNRC has called for better siting criteria for wind projects, and in a recent Forest Fragmentation Action Plan (see page 16) called for strengthening several state policies to better address forest fragmentation associated with a wide range of development activities.

Acknowledging that wind development has fragmenting impacts, it is important to highlight that impacts associated with past projects have required mitigation. Ironically, though, subdivision activity, which affects a much larger percentage of land, not only lacks mitigation, in most instances it is not subject to state review.

Case in point. The Sheffield Wind project has been in operation since October 2011. The 16 turbines generate 40MW of energy and encompass an area of less than 50 acres.

The site, which is adjacent to an existing transmission line, is located on a rolling plateau of mixed hardwood forest at an elevation of approximately 1,750’. To help address the impact of the forest fragmentation, the developer conserved 2,700 acres of forestland. Other wind projects also involve similar conservation components.

Compare that to the following: In just 22 Vermont communities between 2002 and 2009, 925 parcels totaling over 70,000 acres were subdivided, creating 2,739 lots largely for residential development, according to data VNRC recently compiled. The vast majority of those parcels have likely been developed or will be in the foreseeable future. Only 10 percent of these subdivisions were subject to Act 250 review. The remaining 90 percent were not subject to anything like the scrutiny that comes with major development projects, including wind generation projects.

If we really want to address forest fragmentation, we need to consider the cumulative effects of

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FOREST FRAGMENTATION

A forest manager's perspective

BY ALAN CALFEE

I am fortunate to have been practicing forestry for over 20 years. That may sound like a long time, but in terms of forests and their processes, two decades is really nothing. This forest we live in has taken 10,000 years or more to develop since the last glacial epoch. Yet this system has been greatly altered in the last few centuries since European contact, and even more factors have contributed to stress on the forest ecosystem over the last half-century.

As a forester, I see the objective of much of the silvicultural work that has to be done as restoring the ecosystem and its functions, along with helping woodland owners reach their goals for ownership. Many of the silvicultural treatments I use in my work — patchcuts, shelterwood treatments, seed tree harvests and yes, even the judicious application of clearcuts — seek to improve the structural and species diversity in even-aged stands that grew up on abandoned agricultural lands. This approach looks at harvests that occur every 15 – 25 years. This means that I am now doing the second harvest on systems that might use four or five harvests to accomplish this overall goal.

In Vermont, it is important to understand that it's not silvicultural forest practices that are fragmenting forests. It is parcelization of land through subdivision, development and conversion to non-forest land use that is fragmenting our forests and affecting the connectivity that is so crucial to maintaining biodiversity.

During my time as a forester in Vermont, I have seen forest owners pass



It's not silvicultural forest practices that are fragmenting forests. It is parcelization of land through subdivision, development and conversion to non-forest land use that is fragmenting our forests and affecting the connectivity that is so crucial to maintaining biodiversity.

away and their beloved woodlots subdivided and developed. Sometimes heirs do not share the same philosophy of stewardship as their parents. Sometimes the heirs are forced for economic reasons to sell the land to pay estate taxes or balance other economic pressures.

Farmers, as they age and the business gets less profitable, often first cut their timber. They then might slowly be forced to subdivide and sell off their farms. Also, often land passed to heirs might get subdivided so as to equitably distribute the asset to the heirs. I have also seen where heirs cannot work out their differences in interests as tenants-in-common and end up subdividing the land to resolve differences.

Permanent conservation easements offer the only real solution to current owners who want to insure that their parcel remains whole in perpetuity. But this is not a solution that always appeals to even the most careful land steward. First off, it can be costly and complicated. Some people don't want to remove options for their heirs, or "rule from the grave." Some organizations will buy development rights from owners, offering the current owner some opportunity to extract some of the cash value of the land while insuring its future conservation value. Unfortunately the funding available

for this is hard to come by, especially for forestlands. Also, in parts of Vermont where development pressures are high, the land values are very high. This makes it even more more difficult for land conservation organizations to purchase easements.

So, to stem the dangerous trend of fragmenting our forests we need to take action based in the long-term vision of maintaining healthy, productive working forests. While we need to support organizations and programs that pay for conservation easements for private owners, that can't be the only solution. We need to support and strengthen our very successful Current Use program. We need to do whatever we can to support and cultivate a vibrant forest products industry that promotes value added manufacturing here in the state. We also need to help the public understand the incredible multitude of public benefits — clean air, clean water, wildlife habitat, just to name a few — that woodlands, and by extension, woodland owners, provide without any compensation.

Vermont's forests are threatened, to be sure. But if we think ahead, we can manage the challenge. 

Alan Calfee of Calfee Woodland Management, LLC, is a consulting forester based in Dorset.

SUSTAINABLE COMMUNITIES UPDATE

The Sustainable Communities Program works on a range of land use, community development, transportation and related issues at the state, regional and municipal levels.

At the state level, we attend meetings of the Vermont Downtown Board and the Natural Resources Board to ensure that changes to existing programs – whether it's our successful designation programs or Act 250 – will support the overarching state policy to promote compact centers surrounded by working lands. Already at the Downtown Board, we are seeing the results of legislative changes achieved last year: just recently, Burlington became the first Vermont community to receive Neighborhood Development Area Designation, a program that helps encourage smart growth housing in and around downtown areas.

And in addition to working on land use policy, we are also helping to assure investment in farm and forest enterprises by supporting continued funding for the Working Lands Initiative.

Also at the state level, VNRC has been working with the Agency of Natural Resources and other organizations on prioritizing land conservation efforts that will support flood resilience. As part of this effort, VNRC is co-chairing a committee on community outreach with the

commissioner of the Fish and Wildlife Department.

VNRC is also monitoring the implementation of Vermont's Genuine Progress Indicator (GPI) – the first legislatively-mandated GPI in the U.S. In support of this project, a Vermont State Data Committee is being assembled, with VNRC as one of the likely appointees. As conversations begin throughout the state about how standard economic approaches do (and don't) support our natural resources, we expect that GPI will be an increasingly useful tool.

At the regional level, VNRC continues to assist the East Central Vermont Sustainability Consortium, which is writing a regional sustainability plan for the Windsor and Orange County region of Vermont. Recently we reviewed several chapters of the plan, including Climate, Energy, Housing, Health, and Habitat, and offered advice on content and policies.

Finally, VNRC's Sustainable Communities Program and the Forest and Wildlife Program continue to work together to help towns find planning and zoning solutions to keep forests intact and protect wildlife habitat.

We are also closely watching development proposals in various parts of the state, including the Northeast Kingdom, Exit 4 in Randolph, and Exit 1 in Quechee to assure



Blake Gardner

they continue to support downtowns as well as the rural economy.

For more information,

contact Sustainable Communities Program Director Kate McCarthy at kmccarthy@vnrc.org. 

A Fresh Community Planning Toolbox, Available This Summer

This summer, VNRC's online Community Planning Toolbox will get an update. Originally developed by Smart Growth Vermont, this is a go-to resource to help local decision-makers learn about topics from downtown development to natural resources protection to public participation. This summer we'll be unveiling new modules for the Toolbox, developed in cooperation with the Forest and Energy programs, on forest fragmentation, local energy committees, and more. Check out the Toolbox at: <http://vnrc.org/resources/community-planning-toolbox/> to learn how to take action in your community!

FOREST AND WILDLIFE UPDATE

VNRC's Forest and Wildlife program continues to focus, through various means, on keeping forests, forests.

We recently published a new guide, *Community Strategies for Vermont's Forests and Wildlife*, which has been very well received (see sidebar). As a follow up we have just finalized a comprehensive action plan to address forest fragmentation through the local and regional planning process. (Please see story on page 16.)

Also over the past several months, VNRC has continued to address forest fragmentation and wildlife conservation through the Staying Connected Project. We conducted three outreach meetings during the winter and developed an outreach package that was distributed at the meetings and mailed to 53 towns in critical wildlife linkage areas.

We are also helping other communities directly, with technical assistance, to develop effective land use strategies for conserving forests and significant wildlife habitat.

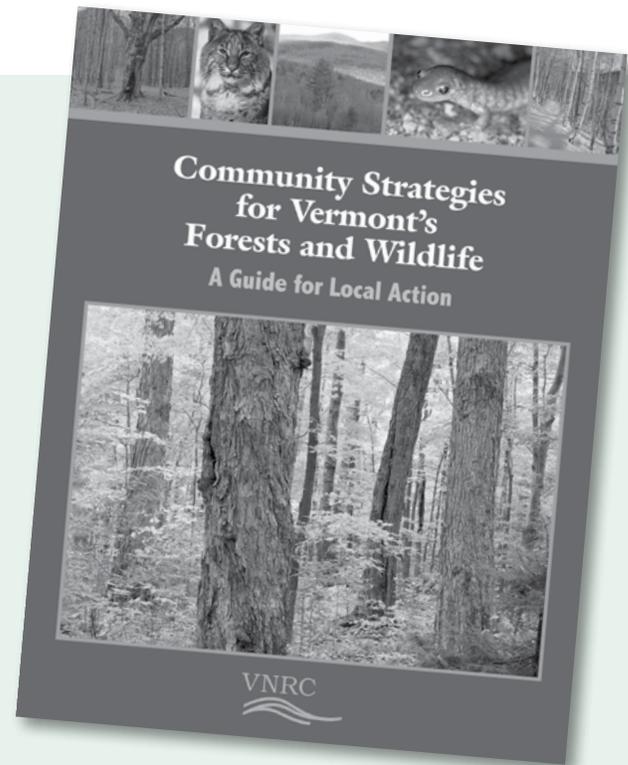
We have also now held five training sessions for real estate professionals around the state. These one-day events aim to help real estate

agents, engineers, and site technicians to minimize impacts to wildlife and forests when developing lots. As part of a recent grant, VNRC will expand these trainings to others working directly with landowners, such as foresters and ecologists, and we will collaborate with partners in New Hampshire and New York to expand the training program to adjoining states.

VNRC staff completed a second phase of subdivision trends research, including subdivision and zoning analysis in 14 communities as part of an Northeastern States Research Cooperative funded project. To read the report, go to www.vnrc.org/programs/forests-wildlife/subdivision-reports/

VNRC continued to convene the Forest Roundtable, now in its eighth year. The last meeting featured a presentation by members of the North Atlantic Landscape Conservation Collaborative housed at the Fish and Wildlife Service, and included a rundown of legislative items moving through the Vermont State House.

For more information contact Forest and Wildlife Program Director/General Counsel Jamey Fidel at jfidel@vnrc.org.



Forests and Wildlife Guide Now Available

Over the years, VNRC has supported Vermont communities by offering proactive solutions to reduce forest fragmentation and parcelization in Vermont. *Community Strategies for Vermont's Forests and Wildlife: A Guide for Local Action* is our latest attempt to do exactly that. Written by Jamey Fidel, VNRC's Forest and Wildlife Program Director, and Kate McCarthy, AICP, VNRC's Sustainable Communities Program Director, with assistance from our many partners, the guide provides examples of various regulatory and non-regulatory strategies to keep forests and wildlife habitat intact.

While the guide was written primarily for planning and conservation commission members, anyone with a passion for forests and wildlife should find it useful. Each chapter of the guide tackles a different topic and where appropriate, case studies are included to highlight real world examples of the tools in action. For instance, landowners who have participated in estate planning, enrolled their lands in the Use Value Appraisal program, or conserved their parcels with a land trust are featured in the guide. Additionally, chapters like "Case Studies – Examples of Development Review Standards" and "Writing Clear Definitions" provide sample bylaw language and definitions related to forest resources and development. Finally, newly developed illustrations flesh out various land use planning concepts in forested areas, such as overlay districts and clustered development.

If you haven't read the guide yet, we encourage you to download it for free and share it with your friends! www.vnrc.org/programs/forests-wildlife/guide/

ENERGY AND CLIMATE ACTION

VNRC's Energy and Climate Action Program works from the grassroots to the state level to advance needed conservation, efficiency, and renewable energy solutions.

As coordinator of the Vermont Energy and Climate Action Network (VECAN), we continue our multi-pronged support of the state's 100-plus grassroots energy committees. We also help start new groups, including a new energy committee in Calais. We are working closely with the Montpelier Energy Advisory Committee, Energy Action Network, City of

Montpelier, Green Mountain Power, Efficiency Vermont and others to identify and help implement energy-saving, renewable generation and transportation solutions that will reduce the capital city's carbon footprint to zero by 2030.

VECAN is also collaborating with Efficiency Vermont, Central Vermont Community Action Council, NeighborWorks H.E.A.T. Squad and the Vermont Energy Education Program to organize the second annual Button Up Vermont day of action, aimed at motivating more people to "button up"

their homes and businesses. Last year over 30 towns participated. This year we hope to double our impact. Save the date — November 1 — and stay tuned to how you or your community can help Vermont ensure we "Button Up" each fall, just like we "Green Up" every spring.

We are also finalizing a primarily online guide aimed at making it easier for Vermonters to go solar. This includes a dozen case studies showcasing Vermonters' solar success. It also includes model documents, including model municipal and school projects.

We remain active in Vermont's coordinated effort to stop the transport of tar sands through the state. While no proposal to reverse Vermont's antiquated oil pipelines and transport tar sands is live at this moment, we are vigilant in advancing

the policy, regulatory and public response needed to stop any project.

We continue to track the Public Service Department's Total Energy Study process, which is aimed at identifying potential policy, technology and financing strategies to meet the goal of getting 90 percent of the state's energy needs through renewable supplies by 2050.

"We are working on these fronts and more to build synergy among different efforts and advance the broad-based, holistic solutions we need to meet Vermont's energy and climate challenges," Johanna Miller, VNRC Energy and Climate Program director said.

For more information, contact Johanna Miller at jmiller@vnrc.org. 

You Can, Too! Energy Success Stories Now Available

VNRC in partnership with other organizations has just released a new publication, *Heating Efficiency Success Stories*, highlighting some of the people across Vermont who are reaping the benefits of having made their homes more energy efficient.

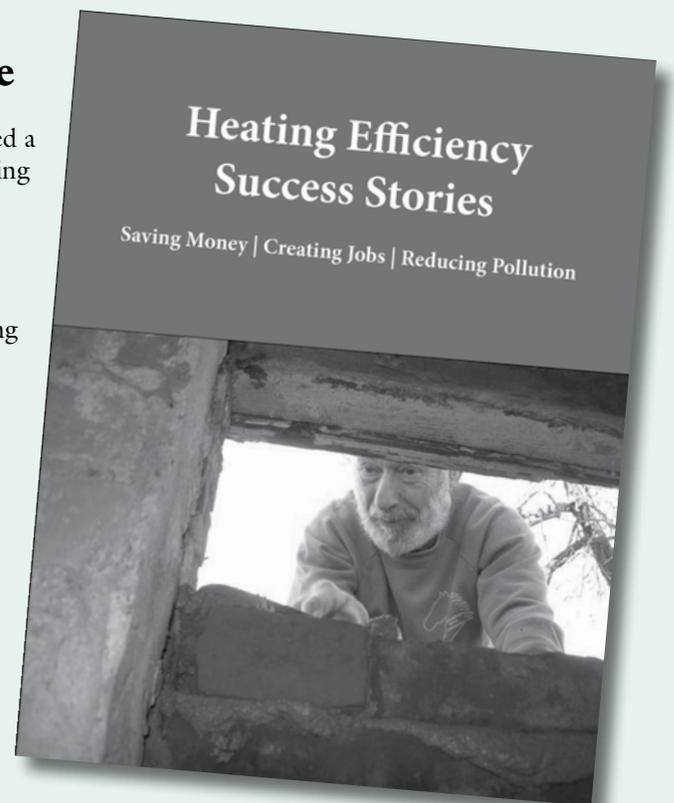
Featured in the booklet are people like Jim Wuertele of St. Johnsbury who reduced his annual heating bill by over two-thirds. And Joan Jackson, who no longer has to wear extra layers of clothing to stay warm inside her retrofitted Wallingford home. The booklet also describes the retrofit of the South Hero town office, a project that slashed the office's fuel bill by half and cut its carbon footprint by over 25,000 pounds.

People who make efficiency improvements are also helping to meet the state's goal of weatherizing 80,000 homes by 2020.

The cost of heating Vermont's homes and buildings has risen dramatically over the last decade. In 1999, a gallon of fuel oil cost 99 cents. Today, it costs about four times that, about \$4 a gallon. These costs will likely continue to rise, as finite fossil fuels become more scarce and harder to extract.

As these success stories highlight, efficiency pays off, providing a powerful benefit for people's pocketbooks and the planet.

Download a free copy of the case studies at vecan.net/resources/publications/



WATER UPDATE



Vermont Fish and Wildlife Department

Water Caucus Takes Off

VNRC recently launched a new initiative known as the Water Caucus. The mission of the caucus is to better involve the environmental community in the development and implementation of sound water policy and legislation in Vermont. The caucus will bring relevant information to watershed organizations and other interested parties to enable them to engage on these issues in a constructive, efficient and effective manner if they choose to.

“There is a need for greater diversity, perspective and number of advocates to influence the outcomes of statewide policy decisions for better water protections,” said Kim Greenwood, VNRC’s water program director. Noting that VNRC is involved on a range of issues regularly, she said one of the main purposes of the caucus is to “present enough information to member organizations – many of whom don’t have large staffs or big resources – so they can choose whether and how to engage in policy discussions.”

Examples of the issues include changes to the Vermont water quality standards, various “total maximum daily load” or TMDL pollution budgets, legislative efforts, and rules that implement legislation. The Water Caucus is open to all who work on water issues.

Read more at: vnrc.org/programs/water/water-caucus/

The Inside Word

continued from page 2

subdivision in Vermont, and strengthen the review of subdivision activity at the state level. And all of this additional, incremental pressure we are seeing on our forests comes against a backdrop of broader forest-related change that compounds Vermont’s challenge.

As the climate warms, our forests will suffer from invasive, and often destructive, pests. The composition of the forest will change. The pressure to look to our forests for fuel will increase as we move away from fossil fuels. And, it is conceivable that, as sea levels rise and weather patterns make other parts of the nation less and less hospitable, Vermont will be viewed as a safe(r) and more comfortable place to live resulting in even more development pressure. This all makes forest fragmentation an urgent issue.

At VNRC we work very hard to encourage greater awareness about the threats facing Vermont’s forests based on data, partnerships with diverse agencies and organizations, and outreach with communities across Vermont. To better protect our forests for future generations, we invite Vermonters to join us in a common effort — based on the best information we have — to assure our forests remain big, healthy and vital. 

VNRC is committed to maintaining and improving the health of Vermont’s lakes, streams and aquifers, and has been working closely with state officials, partners and members to achieve this goal.

For example, a permit program governing the release of certain wastes – known as underground injection control program – into groundwater is currently under revision and VNRC is challenging ANR to require that any permits granted under the rule affirmatively find that public trust protections for groundwater are protected. In 2008, VNRC strongly supported legislation declaring groundwater to be a public trust resource. Assuring that groundwater-related permitting programs under development or revision clearly include that concept is critical.

VNRC is also weighing in as ANR updates its stormwater management manual, which specifies requirements for all state stormwater permits related to impervious surfaces.

We are closely watching hydro-electric power issues, too, including the relicensing of two hydro projects owned by Morrisville Water & Light. Broadly, we are working to ensure water quality protections near these dams are strong enough.

Hydro-electric dam relicensing proceedings generally represent a critical,

once-in-a-generation opportunity to assure conservation flows are adequate to protect water resources in rivers because licenses are generally granted for decades. In this case, the dams affect the Green and Lamoille rivers. In recent years, reaches of the Lamoille River have periodically all-but-dried up under the current permitting regime so VNRC is particularly interested in assuring there is a thorough environmental review during the process, which is likely to take months if not longer. We’re also watching federal relicensing for the Waterbury Dam and the conversation underway at Seymour Lake related to water level elevations and shoreline property damage.

Relative to Lake Champlain, we continue to support ANR in its cleanup plan, but have been urging Gov. Shumlin to show greater leadership on the issue than he has to date and support some state funding for the long overdue cleanup of this important natural resource.

VNRC is also serving as an advisor for the newly formed Watersheds United Vermont (watershedsunitedvt.org) an exciting new partnership of water organizations.

For more information, contact Water Program Director/Staff Scientist Kim Greenwood at kgreenwood@vnrc.org. 



The Slow Creep of Forest Fragmentation

And What Vermonters Are Doing About It

BY WILL LINDNER

There's no such thing as an American moose, although there are moose in North America. There are no deer from Dummerston, or black bear from Bennington or grouse from Montgomery, even if they may be plentiful in those places at any moment of the day. It takes 27 square miles of terrain to accommodate the lifecycle needs of an adult male bobcat: shrubs, deciduous and coniferous forest and wetlands variously providing shelter and food as the seasons cycle, and mating opportunities that afford the genetic diversity vital for the viability of the species. A bobcat might commence his nocturnal wanderings in Bloomfield, but be in Lewis, Lemington, or Brunswick by morning. That is, if he can get there.

Obviously, our forest friends don't give a hoot what we choose to call some tract of land where they might winter, breed, or merely spend the night. But it's another matter when our settlement patterns confine them to a portion of the habitat they need, forcing them to adjust to limited options for food, for shelter, for reproduction.

We do this, for the most part, without even knowing it. We do this, in fact, often with the best of intentions.

"I had always thought that the house that was isolated, up a long, curving driveway on a 50- or 100-acre parcel in the woods, was the right thing to do," says Betty McEnaney, a Realtor who practices in Okemo and Chester. To

McEnaney, like many other people, that seemed to be the least intrusion a family could make (look at all the untouched acres surrounding our home!) while still satisfying their spiritual and aesthetic desire to live close to nature.

She had her eyes opened when she participated in an informational training for real estate agents last fall, conducted by Vermont Natural Resources Council (VNRC) and the state's Department of Fish & Wildlife. The daylong training was designed to teach them about forest fragmentation: the myriad ways that our usages of the Vermont forests – in fact, of

the entire Northern Forest, which stretches from north-central New York State in the west, through Vermont, Quebec, New Hampshire, and Maine, to the Canadian Maritimes – create segments that we scarcely notice as such but which are starkly real and life-altering for species that cohabitate the forests with us. "Discovering what fragmentation is, and that long driveways break up animal corridors," McEnaney says, "that's a learning curve for me." "There are insidious problems that come with developing a house and clearing in the woods," says Vermont



Commissioner of the Department of Forests, Parks & Recreation Michael Snyder. "It introduces elements that interrupt natural habitat values – non-native plants that people put in for landscaping; cats, dogs, diseases. It's bad enough that there's a hole in the forest, but you also start to get mortality of trees, expanding from the yard back into the woods, a slow erosion of forest health. Some tree species are not well-suited to live on the margins, trees on the edge of the clearing you've made that don't react well to changes in

their environment.

"Plus, the site-development work can disturb root systems," Snyder adds. "Now you've got dying trees on the edge that are more vulnerable to insect pests – a slow creep of forest-health problems that radiates back into the woods. Clearly, the perforation of the forest is a threat in itself, but the secondary effects of landscape practices is the next stage of harm."

In the century or so since Vermont reforested, after denuding its mountains, hills, and valleys in the 1800s for timber, mining, potash and charcoal production, farming, and the grazing of sheep, we have come to take the abundance of our forests for granted. Almost anyone with a passing familiarity with that history can recite the numbers: by around the turn of the 20th century the Vermont landscape was just 20 percent forested and 80 percent cleared. As a result, floods claimed lives, farmland, houses, and infrastructure in 1830, 1858, and 1869; wildlife species vanished (deer were deliberately reintroduced in 1878). Two-thirds of the way into the 20th century those numbers had reversed; forest had overtaken 80 percent of the landscape, and had become part of our definition of life in Vermont.

"We're the Green Mountain

Bobcat photo courtesy Vermont Fish and Wildlife Department





State for a reason,” notes VNRC Executive Director Brian Shupe. “We are among the most forested states in the union. Forests are the source of our clean water; they make us more resilient to storms and flooding. They are a hedge against climate change. They have a tremendous economic impact, supporting a \$3.4 billion forest-products industry along with tourism and recreation.

“Forests are part of the mosaic that defines our landscape and our culture as well,” says Shupe. “It’s really about who we are. And the troubling thing is that we’re losing it.”

That 80 percent is eroding – but it’s death by thousands of scattered lots and subdivisions occurring incrementally across Vermont, so that the erosion is neither obvious nor easy to quantify.

“We have circumstantial evidence and indicators saying that forest fragmentation is real,” says Jens Hilke,

conservation planning biologist with Vermont’s Department of Fish & Wildlife. “I can give you metrics about subdivisions and the number of houses added to the grand list every year, and the acreage a typical house might impact. But it doesn’t tell you how long the driveways are, for example. Cumulatively, it’s not as scientifically precise as what we need. As a wildlife biologist, I’d like good statistics on how much land was lost over time.”

We don’t have those statistics, Hilke explains, because of the development pattern Vermont is experiencing: slow, exurban crawl, one new house at a time. It’s not until other homes fill in around that first

“Forests are part of the mosaic that defines our landscape and our culture as well. It’s really about who we are. And the troubling thing is that we’re losing it.”

—Brian Shupe

one, or three-lot subdivisions appear, that a pattern shows up on the computer images that the Agency of Natural Resources (ANR) uses to classify types of land coverage (such as forest, farm, fields in transition).

Fragmentation may be hard to measure, but there are sobering statistics that show we are losing undeveloped land, and creating smaller parcels as a result of subdivision. For example, the number of individual parcels in Vermont increased from 61,900 in 1983 to 88,000 in 2008, while the amount of undeveloped forestland in parcels 50 acres or larger decreased by 43,000 acres between 2003 and 2009.

These statistics, and the aggregate signs of their impact, have not escaped the agency’s notice. The agency knows, too, that instituting remedies that will work for people, not just the forest, is a heavy lift. In its 2010 Forest Action Plan, the ANR observed that “managing forests sustainably involves the recognition of connections among ecological, social and economic systems to maintain forest health while preserving options for future generations and meeting the needs for the present. Livable communities, functioning natural systems, and our quality of life depend on healthy sustainable forests. We must embrace our responsibility as stewards of this valuable resource.”

There’s a lot at stake.

“Forest fragmentation is the largest problem we face in terms of maintaining the integrity of the whole Northern Forest, which is probably the most intact temperate forest in the world,” says Nancy Patch, county forester for Franklin and Grand Isle counties (within the Vermont Department of Forests, Parks & Recreation). “There are large, intact, boreal forests in the far north of Canada, and tropical rainforests. But the temperate forests of Europe are highly fragmented, which makes our temperate forest unique. But it’s within a region,” she points out, “that’s highly populated.”

And there’s the rub. Many Vermonters, native and otherwise, value the state’s proximity to population centers while savoring the lure of a quiet clearing in the woods at the end of a long, curving driveway.

So what do we do about us?

A. Blake Gardner



Vermont Forests, Parks and Recreation Commissioner Michael Snyder (center, with blue shirt) addresses the VNRC-convened Forest Roundtable.



Nancy Patch



Nancy Patch

A team effort

Vermont's Director of Forests at the Department of Forests, Parks and Recreation, Steve Sinclair, is deeply familiar with the myriad forces at work that influence our forests. While he says they have the potential to provide us with an abundance of goods and services, the long-term sustainability of Vermont's forest depends on keeping forests forested.

"Decisions we make today will influence our forests for years to come," says Sinclair, noting that the single biggest threat to Vermont forests may be their conversion to other uses, which often occurs from parcelization, changing landowner objectives, and development.

"We need to use all available tools to slow this trend," he says. "Working with our partners, we need to set clear goals and effective strategies to maintain forest ecological and economic values."

It turns out that a lot of people are working on that. VNRC has been very proactive, working directly with communities across

the state (some of them are Brandon, Enosburg, Montgomery, Marlboro, Williston, Huntington, Jericho, Waitsfield, Fayston, and Warren.) As part of this work, VNRC helps town governments and citizens groups adopt and employ tools that already exist and are available in statute; community members can employ these tools to identify their commonly held values and put them into practice in their forests and upon their landscape.

VNRC is far from alone in this effort. Regional planning commissions observe trends across the landscape of their constituent towns, and forest fragmentation has not escaped their notice.

"Fragmentation is a big issue here," says Chris Company, executive director of the Windham Regional Commission in southeastern Vermont. Anything that threatens a productive working forest is a grave concern because of the role that forest industries play in the region's economy.

"Approximately 509,000 acres, or 86 percent of the Windham Region, is forested," Company wrote in a letter of support for a conservation project proposed by The Conservation Fund. Windham County "produces enough timber annually to make the region one of the leading producers in Vermont, especially in the area of high-quality northern hardwoods. Our region also leads the state in lumber manufacturing and hardwood kiln drying. As a group, forest-product industries lead the regional manufacturing sector in payroll, sales, and employees."

But the services forests provide to the citizens of the region — including

A. Blake Gardner



Steve Sinclair

ecological services like watershed protection — are at risk, Company wrote, "as population and second-home growth have increased development pressures in the region's forested areas."

Company believes that one of his organization's most critical missions is to open people's eyes to the role that the abundant, but threatened, forest plays in their lives.

"An amazing number of people have at least some forest component to their livelihoods," he says. "Equipment operators, mechanics, firewood and sugaring operations..." And yet, even in the Windham Region, the forest's importance is lost on many people. "When we talk about the working landscape, agriculture gets a lot of attention," Company observes. "You see a pasture, a greenhouse, livestock, poultry, crops in the field. What we want to do is help tell the story of forestry, and what people are seeing when they see an actively managed forest landscape."

While planning commissions work at the regional level, the Staying

Connected Initiative (SCI) looks past regions, towns, and those human inventions, state lines. Coordinated with the help of Vermont's chapter of The Nature Conservancy and 21 partner groups including VNRC, SCI works with communities, agencies, organizations, and residents to help them recognize and protect wildlife corridors so that that Bloomfield bobcat can access all 27 square miles of habitat he needs, and the black bear and other large species their even-greater range requirements.

The antithesis of fragmentation, Staying Connected strives for cohesion — even, if there is such a word, re-cohesion. SCI has identified priority linkage areas in Northern New England, New York State, and Canada. Nearly all of them include critical terrain in Vermont, and keeping them intact comes down to protecting what Heather Furman, executive director of The Nature Conservancy, refers to as "pinch points." They can be startlingly close to development. The Nature Conservancy, Fish & Wildlife's Jens Hilke, and the state Agency of Transportation (AOT) recently cooperated on a digital analysis to determine where the linkage was that connects large-animal habitat sections on the eastern and western sides of Route 100 near Stowe.

"We just received a grant to install cameras along there," says Furman enthusiastically. "The information we gather can be used to support AOT policy decisions about how to treat road crossings."

The Conservancy and VNRC also actively support each other's efforts — and both turn to land trusts and the Vermont Housing &



Conservation Board (VHCB) to keep land intact and repel the pressures that lead to forest fragmentation. VHCB has helped countless organizations purchase and protect forested land, and conservation easements arranged through the efforts of the Vermont Land Trust and many regional and local land trusts provide landowners the assurance that hills and meadows they own and love will remain intact, unbroken, and undeveloped in perpetuity.

These are examples of non-regulatory approaches to forestland protection, actions that groups and individuals can take without recourse to (or interference from) any branch of government, be it state agencies or the local zoning board. Empowerment of the

individual is particularly critical in Vermont, where fully 81 percent of the land is privately owned.

“Private landowners are the ones determining the quality of our wildlife habitat, the ability of our forests to sequester carbon,” says Hilke, of Fish & Wildlife.

But the financial burdens of property ownership exacerbate the problem of forest fragmentation, creating pressure that leads to further fragmentation or outright development. Deb Brighton, a board member with Bristol-based Vermont Family Forests and a frequent policy and research consultant with VNRC, points out that “when parcels are small the per-acre value tends to be higher, which makes it less likely that

a private owner could afford to keep it or purchase it just to be forest.” Landowners can earn money off their holdings by logging a portion of it (ideally under a sustainable management plan devised by a professional forester), but when the owner can offer only a comparatively small lot to work in, loggers may conclude that their earnings would not be worth the investment of time, personnel, and equipment. The land, financially unproductive, then becomes more of a burden for the owner, and selling off a portion or subdividing the property becomes an attractive, maybe inevitable, alternative.

Non-regulatory remedies for this predicament include conservation easements and the state’s Use Value Appraisal

program (commonly called “current use”).

When an owner donates all, or a portion, of her land through a conservation easement the tax advantages can include a 30-percent deduction from her gross income and, potentially, permanently lower property taxes because the easement’s restrictions on uses of the land might lower its value. But it costs money, in various fees and expenses, to negotiate a conservation easement; thus, the greatest satisfaction a landowner might receive is not financial, but comes from knowing that the land will remain sacrosanct no matter what happens around it.

The Vermont Land Trust has conserved some 360,000 acres of forested land, and

Waterbury Forester, Landowner Allan Thompson on Planning Ahead

After their mother died in 2005, Allan Thompson and his two brothers inherited 30 acres and a house in Waterbury, all organized as part of a trust.

In 2010, it became apparent that of the three brothers, Allan was the only one who was really spending time on the property, yet all three were sharing the financial burden. When Allan showed interest in taking over the land and the house, the three brothers met and talked about the best way to go about it.

The brothers worked hard at communicating their intent for the land the best they could, and after long discussions, they unanimously decided that Allan would be written out of the trust and would buy his two brothers out at a reduced price. They also agreed on use restrictions barring the land from being subdivided and, that if it were to be sold, it could only be sold back to the family trust, not a third party.

“Our collective feeling was we did not want this property to be subdivided and the forest resources of the property fragmented into lots,” Allan said. “So we took specific action – like enrolling the land in Current Use, adding restrictions on subdivision and sale outside the family – to keep that from happening.”

Allan said that clear, honest communication among family members, a willingness to accept a level of sacrifice for the long term benefit of the property, and foresight were critical to the process.

Allan runs Northern Stewards, a forestry and wildlife consulting business providing consulting services to help enrich the relationships between landowners and their land. His brother Keith is the Chittenden County Forester at the Vermont Department of Forests, Parks, and Recreation.

Photo courtesy Allan Thompson



Allan Thompson



the many regional and local land trusts scattered around Vermont have added significantly to that total.

Another option for Vermonters seeking refuge from the financial burdens of owning forest parcels is “current use.” Under the Use Value Appraisal program, people can register forest tracts of 25 acres or more and receive an annual property-tax reduction; rather than paying tax on the “fair market value” of the land (meaning its value as developable property), the property is assessed at a lower value that reflects its use as unoccupied forestland. Enrollees are required to file and conform to a management plan that includes harvesting some of the trees, so there are people who decline to join the program because they’re opposed to cutting. However, those management plans are designed by professional foresters with the forest’s long-term sustainability in mind, and they contribute to Vermont’s forest-products economy. Finally, participants who withdraw their enrolled land before the prescribed minimum period of time face a land-use change tax (LUCT) that is intended as a penalty.

The UVA program, on the books since 1978, has protected 1.7 million acres of forestland from development. Despite its popularity, current use is the subject of debate in the Vermont Legislature because of its perceived impact on towns’ and the state’s tax revenues. The state makes towns whole for the municipal share of their property taxes, but there is less money in the education fund as a result of current use. Supporters, however, contend that the benefits of keeping Vermont’s working farms and forests intact and

productive far outweigh such costs. There’s also concern about people gaming the system – “parking” property in current use to lower their taxes even while they’re planning to withdraw it prematurely for development purposes. VNRC favors increasing the LUCT to discourage this behavior.

“Forty percent of the state’s eligible forestland is enrolled in current use,” says VNRC Forest Program Director Jamey Fidel. “That’s a huge success story. But 40 percent means that a majority of the eligible land is not enrolled and is still subject to property tax pressures. That’s the kind of stress that makes land vulnerable to development. The challenge, for the state and for conservation organizations like VNRC, is to find ways to continue to grow the number of people enrolling in the current use program,

because it’s one of the best non-regulatory tools we have for fighting fragmentation.”

While Act 250 slumbers

When Vermonters look at the regulatory side of ledger, for purposes of examining any type of development proposal, their instinct is to trust in Act 250 at least to review it carefully and impose permit conditions to modify detrimental effects it could have upon the environment.

But unfortunately, Act 250, a pioneering development-control law when it was adopted in 1970, is showing its age. Act 250 subjects development proposals (at least, those that meet the various thresholds for review) to examination under 10 criteria designed by its authors to constitute a comprehensive critical assessment. But that was 44 years ago.

“The criteria haven’t been updated in decades,” says VNRC’s Brian Shupe, “and issues like forest fragmentation weren’t on people’s radar in 1970.”

What’s worse is that the act has become frayed. Certain provisions that used to be in the law, and which might have been effective against fragmentation, have been weakened or eliminated. Noteworthy is the loss of a rule pertaining to roads.

“A proposal containing a road of 800 feet or longer automatically triggered Act 250 review,” Shupe asserts. “By itself?”

There was good reason for that.

“Roads are the single largest fragmenting force,” says forester Nancy Patch.

That’s because a road opens a forest up to possibilities – or more accurately, to certainties – that development will follow. In a similar vein, Windham Regional Commission’s Campaign recalls how Central Vermont Public Service Corp. (the electric utility that was subsumed by Green Mountain Power Corp. in 2012) lobbied successfully for legislation that, in effect, requires district environmental commissions to ignore the impact that power line corridors might have, extending into undeveloped areas.

But the most surprising thing about Act 250 is that it’s practically a bystander to subdivision development in Vermont. VNRC conducted a two-phase analysis of subdivision applications and approvals in 22 representative towns between 2002 and 2010, and discovered that Act 250 was virtually irrelevant.

“A very small percentage of subdivisions are going through Act 250,” says Jamey Fidel. “Only the larger

Lawmakers: Research Fragmentation

Legislation passed this year asks the Department of Forests, Parks and Recreation for a report on how to best protect the integrity of forests and preserve large tracts of forest blocks.

Forests define Vermont in many ways and provide the backdrop for Vermont’s beautiful historic downtowns and agricultural lands, according to Vermont Commissioner of Forests, Parks and Recreation Michael Snyder.

“Our goal is to keep that alive and keep options open for landowners to be good stewards of their forestland,” he said. “Beyond articulating our ethic of responsibility to the land, this report can highlight economic options for maintaining healthy, intact forests.”

“At some point we begin to perforate our forests, and that array of important and valuable functions falls apart,” Snyder said, noting that his department welcomes the opportunity to pursue a suite of strategies and tools, including education and engaging in diverse partnerships, to develop a report on ways to keep healthy forests functioning in Vermont.

Jamey Fidel, VNRC’s forest and wildlife program director, said of the legislation: “While we have solid information that our forests are continuing to be fragmented, this work will add to that information and will provide solutions.”



subdivisions are reviewed, such as those in ski areas, but on an average basis the subdivisions occurring in Vermont are small; they result in only two to four lots. Extrapolating from our survey and analysis, only about 2 percent of the total subdivisions were large enough to trigger Act 250. For the most part, any review happening at all is happening at the local level, assuming towns have zoning or subdivision regulations.”

Shupe and Fidel believe that the Vermont Legislature may be receptive to making changes in Act 250. “Unfortunately, it’s been easier to weaken it than to strengthen it over the years, by creating exemptions and loopholes,” Shupe observes. “But we need to improve it, through strategic criteria changes and reassessing the jurisdictional thresholds, because we’re not capturing most of the development in the state.”

To Fidel, the conclusion is obvious.

“Our economy pivots off of tourism, working lands, hunting, wildlife watching, outdoor recreational pursuits. If we don’t pay attention, I would suggest that the entire fabric, and really the identity of the Vermont landscape, is threatened.

“Until the state strengthens Act 250, the action is in the towns,” says Fidel. “It’s about people engaging with each other and creating their own solutions. The tools for doing that are there to be used; people only need to learn them and access them. We’re available to do all we can to help.”

“The Guide”

For individuals and communities tackling forest fragmentation and proactively seeking to influence the

“Until the state strengthens Act 250, the action is in the towns. It’s about people engaging with each other and creating their own solutions.”

— Jamey Fidel

development that takes place in their towns, an invaluable resource is the 84-page VNRC publication titled *Community Strategies for Vermont’s Forests and Wildlife; A Guide for Local Action*. VNRC calls it, simply, the Guide. Exhaustively researched, meticulously organized, and attractively designed, the Guide details both regulatory and non-regulatory approaches to forest conservation, citing both opportunities and pitfalls.

As an example of the former, the Guide explains the relationships between planning commissions and zoning boards, what the statutory obligations are for each, and how those obligations can be leveraged for further forest and wildlife protection. It explains how communities create subdivision regulations and how citizens can influence them; how towns can create conservation commissions and how those commissions interact with other town bodies. It explains how an “overlay district” weaves through zoning districts and imposes heightened protections of specified resources therein.

As for “pitfalls,” the Guide repeatedly coaches readers that they must do their research carefully (hiring contractors with expertise in natural resources is a good idea for communities that can afford

them), define their objectives, and write their bylaws with sufficient detail to survive court challenges. It even provides examples of language that works and doesn’t work for that purpose.

Researched and written primarily by Jamey Fidel and Kate McCarthy of VNRC (other contributors are credited), the Guide also illuminates other resources that are out there and explains the differences among them: The Conservation Fund, the Trust for Public Land, Keeping Track®, Vermont Family Forests, Vermont Coverts, and many more. (See page 5 for details on how to get a copy.) In sum, the Guide is about empowering local people to make choices that are appropriate for their own unique towns, environments, and social and economic priorities.

Here’s how the power of self-determination has worked in two Vermont communities and regions.

Mad River Valley Planning District. For three towns in this planning district – Fayston, Waitsfield, and Warren – it’s about the power of maps. The Valley is heavily dependent upon tourism, with famous ski areas and a year-round culture that developed

from people’s affinity for this picturesque setting of a river valley rimmed by mountains, and the proximity of affluence (lots of second homes) to areas of true wilderness.

Joshua Schwarz, executive director of the MRV Planning District, explains that around 2008 the district undertook a natural heritage inventory for the towns of Waitsfield and Fayston. It was funded by the Vermont Agency of Commerce and Community Development, and performed by Arrowwood Environmental, a research consultant based in Huntington, Vermont. Arrowwood’s report identified a variety of existing habitats – wetlands, uplands natural communities, vernal pools, types of forests and the particular species each supports.

“It gave us a lot of data,” says Schwarz, “but it didn’t prioritize.”

The process led VNRC and others to form the Forests, Wildlife & Communities Project, which worked closely with Jens Hilke (Fish & Wildlife), sorting through the information Arrowwood had provided and evaluating what was most important to people about the forests and habitat around them. With this information, the groups developed strategies to address the management and conservation of these resources across town boundaries.

“This required a fair amount of public input,” says Schwarz. It also required a suspension of the emphasis communities often place on town boundaries. “We learned that when talking about habitat you’re not talking in terms of municipalities. The Project took a Valley-wide view and perspective on our natural resources.”

Then came the maps: a



Joshua Schwarz



“Community Values Map,” a “Tiered Ecological Priorities Map,” and a “Conservation Focus Areas Map,” to complement the Arrowwood-inspired “Natural Heritage Inventories Maps,” created with the participation of residents and the expertise of professionals like Hilke and VNRC’s Fidel.

Schwarz was struck by one particular insight. “If you look at the Values map and the Tiered Ecological Priorities map,” he says, “there’s a lot of overlap. That indicates that we know, on a subconscious level or even a conscious level, that ecological principles are an important part of life for people here. I find that to be reassuring, and giving hope.”

Schwarz also made this point: “We’re not interested in locking up growth. As a community, we’re trying to find the balance where our ecological priorities, our economic priorities, and our quality-of-life priorities come together.”

Town of Enosburg. Nancy Patch never tires of this stuff. In addition to serving as county forester, coordinating efforts with her neighbors related to the Cold Hollow to Canada program and the Staying Connected Initiative, delicately encouraging people toward conservation easements (she is a former board member of the Vermont Land Trust), and managing her own property with her husband, Patch serves on the Conservation Commission for her hometown of Enosburg.

But Patch is merely practicing what she preaches.

“Conservation commissions assist the planning commission,” she explains, “and their members are appointed by the select board. When a project comes before a board there’s little they

can do if it doesn’t violate the zoning rules that exist. The moral of the story is to get in a position to influence the rules that guide development. Getting involved with your community is critically important.

“I was on the planning commission for a long time,” she adds. “We changed our bylaws dramatically while I was there.”

Enosburg – a thoroughly rural town, separated only by Berkshire from the Canada border – worked with VNRC and the Northwest Regional Planning Commission to enhance its conservation district and expand a natural resources overlay specifically to include and protect connectivity zones. It also has brought new attention to wetlands preservation. And that 800-foot-road-review rule that disappeared from Act 250? It reappeared in Enosburg, where the development review board applies it when evaluating certain projects that come before the panel.

“It isn’t prohibitive in all cases, but it requires conditional review,” Patch explains. “The board has to make sure there’s the least fragmentation possible, and that the length of the road being proposed is truly required for the development to take place.”

Citizen participation

“The moral of the story is to get in a position to influence the rules that guide development.”

— Nancy Patch

in the workings of local government – untangling those mystifying bureaucratic panel names – is how Vermont can save itself from fragmentation. And people are stepping up in communities everywhere.

“There’s exciting work in the Montpelier/Waterbury/Stowe

corridor up to Stannard and Sheffield,” says Hilke. “There’s the Science to Action Project in Bolton, Jericho, Richmond, and Huntington; the Linking Land Alliance in the Upper Valley; the Orange County Headwaters Project; the Windham County Connectivity Project. We’re seeing more work in the Northeast Kingdom, where they’ve always been very concerned about developing economic opportunities, but to some degree that has changed. Very much depends,” Hilke concludes, “on whether towns have seen real evidence of developmental impacts.”

VNRC has a hand in nearly all those projects, working in concert with other valuable partners. VNRC is also reaching out to non-traditional

partners like real estate agent Betty McEnaney – because the time these professionals spend with their clients could present opportunities to inform them about the impact they might make, or avoid, when

deciding how to utilize their land.

McEnaney concedes that that could be an uphill battle, and Waitsfield Realtor Steve Robbins, a partner in Mad River Valley Real Estate, who also took part in the VNRC workshops, concurs.

“I think in our office we’re well versed and supportive of these concepts – shared driveways, clustering homes to reduce their impact,” Robbins says. “But it also comes down to dollars and cents, and what the buyer really wants to do. If town plans give weight to what people think is important, though, it can make it through to a zoning concept, and then it has teeth in it.”

Déjà vu

The world has grown tediously complex. A myriad of rules have been written, and then exceptions carved out of those rules, and then delicately worded remedies to trim the impacts of those exceptions. The natural world, nevertheless, continues to follow its own rules, and VNRC Executive Director Brian Shupe has a feeling that Vermont has been here before.

“Ecology was discovered in Vermont,” says Shupe. “George Perkins Marsh wrote about deforestation and the ecological and economic consequences of it in 1864. We had lost our wildlife populations, we had lost our economy, there were flash floods because the soils didn’t hold water. We had an economic and an ecological collapse in this state.

“And then we reforested. We came back.

“We need to learn that lesson again, that our forests really matter, for so many reasons. It’s a part of Vermont’s history that we really should be listening to.” 



A. Blake Gardner

NEWS & NOTES



VNRC Releases New Forest Fragmentation Action Plan

VNRC has spent the past year asking regional planners, state officials, local planning and conservation commission, and selectboard members to share their ideas on how to

reduce forest fragmentation in Vermont. After collecting input at regional workshops across the state, VNRC published a roadmap for reducing forest fragmentation at the local, regional, and state levels.

The *Forest Fragmentation Action Plan* provides a quick overview of parcelization and fragmentation trends in Vermont and highlights nine

priority strategies for reducing forest fragmentation. The plan also includes recommended actions for each strategy that can be taken by local, regional, and state entities to ensure the future of Vermont's forests. You can download the plan for free by going to vnrc.org and on the left side of the homepage, clicking on Forest Fragmentation Action Plan.



Long Time Supporter Dr. Peter Alden, Through Bequest, Continues His Support of VNRC

VNRC relies on the support of our loyal members for our work. The late Dr. Peter Alden of Burlington was one of those members, offering steady annual support to VNRC for many years. Regrettably, Dr. Alden passed away last September. But his foresight, in the form of a bequest to VNRC, is allowing Dr. Alden's legacy of support for the organization to continue.

"Peter always believed that VNRC was essential because of its ability to do what busy people cannot do themselves: be a consistent and informed voice for natural resources when and where important decisions are being made," said Susan Alden, Dr. Alden's wife. "People have full lives, and we rely on VNRC," she said.

Dr. Alden practiced Internal Medicine in Vermont with a specialty in gastroenterology for 32 years. He was a founding partner of Aesculapius Medical Center in South Burlington, an attending physician at the Medical Center Hospital of Vermont, assisted in the clinical training of medical students at the UVM College of Medicine, and cared for hundreds of area residents.

Dr. Alden was active with the Green Mountain Club, Camp

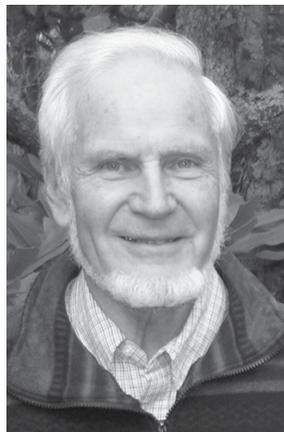


Photo courtesy Alden family.

Abnaki, numerous local and national conservation associations, and local canoe and tennis clubs.

Dr. Alden's gift to VNRC helps to ensure that we can continue to do the work that was important to him and our members into the future.

Planned giving can provide a donor's estate with financial and tax advantages. With the help of a qualified professional advisor, one can create a charitable gift that is personally satisfying and beneficial to you, your family and VNRC.

Please considering talking to a professional about your wishes, call our development director Stephanie Mueller at 223-2328 x113 or visit join.vnrc.org to find out more about planned giving options available to you.

How A Bequest Can Boost Your Giving, In Perpetuity

Supporters of VNRC can continue their support, even after their death, through bequests. Bequests of any size still allow VNRC donors to powerfully extend their support beyond their lifetime. Based on historical interest rate trends, leaving a bequest of, say, \$3,000 that is managed as an investment ensures an annual income to VNRC of over \$100 a year, in perpetuity. (That's more than double VNRC's basic annual membership of \$40.)

Here are some other examples of the power of invested gifts, including bequests, based on a conservative estimate of 3.5 percent annual investment growth:

\$3,000	\$105/year
\$5,000	\$175/year
\$10,000	\$350/year

NEWS & NOTES



Vermont Winter Olympians Call for Action on Climate Change

At a press conference this spring organized by VNRC and the National Wildlife Federation, Vermont Olympic athletes whose sports rely on cold winters and plenty of snow called for strong action on climate change.

Nordic skiers Liz Stephen and Ida Sargent, and biathletes Hannah Dreissigacker and Susan Dunklee spoke to the press at Morse Farm, a cross country ski location in East Montpelier.

The Vermont winter Olympians train and compete all over the world and are witnessing how climate change is jeopardizing winter sports from

Lake Placid to Switzerland, as well as in Vermont.

Thirteen of seventeen venues the group raced at over the past year had to use man-made snow, noted Liz Stephen, an East Montpelier native. The athletes called for Vermont to take a lead in rejecting dirty fuel sources that cause global warming pollution, including tar sands oil. They also said there should be a charge on global warming gases.

“It’s time to start putting a price on carbon emissions that reflects the true cost of climate change,” said Dreissigacker, a Morrisville native. “It will allow us to continue to do the things we love, while giving us space to develop cleaner sources of energy.”

Morse Farm’s popular Nordic ski center has experienced unpredictable winters recently.

AVCC Awards Funds for Local Conservation Projects

Trail work, a publication highlighting local hikes, the support for a town-wide natural resource inventory and a natural resources training program for a local community all are expected to go forward thanks to recent grants awarded to local groups by the Association of Vermont Conservation Commissions.

Two years ago VNRC and AVCC entered into an affiliation under which VNRC appoints some of the board members of AVCC.

This year, grants were awarded to conservation commissions in the following towns: Bradford, Dummerston, Milton and New Haven. Each group will receive \$600 from the AVCC Tiny Grant program.

“We are proud to be able to help advance, in a small way, conservation projects identified and carried out by local conservation commissions,” said Jake Brown, chair of AVCC. “Supporting this sort of work is what AVCC is all about.”

AVCC has offered this annual grant program for several years and plans to continue to do so in the coming years.

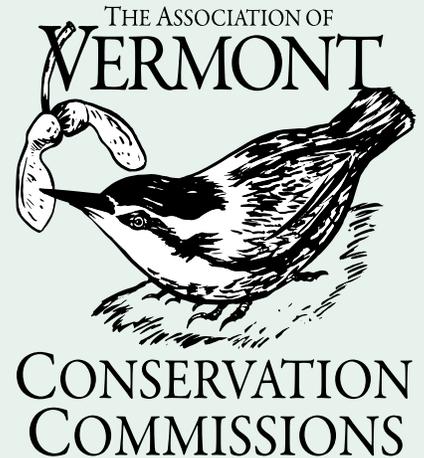
Conservation commissions are non-regulatory bodies designed to advise planning commissions and select boards on natural resources issues. Often these commissions get involved in natural resource inventories and land management of town-owned lands as well as many other types of projects.

The Bradford Conservation Commission will use money to publicize and present the findings of a new natural resources inventory to the public in a large community gathering and the Dummerston Conservation Commission received help to pay for the creation of a brochure with trail descriptions and maps of trails in the town.

The Milton Conservation Commission got funds for a technical assessment, design solutions, and construction to help improve a critical trail that is plagued three seasons a year with water drainage problems.

The New Haven Conservation Commission will receive money to work with the Shelburne Farms’ PLACE (Place-based Landscape Analysis and Community Education) program to increase awareness in New Haven of the local, natural landscape.

For more information visit www.vtconservation.org.



John Lazenby



From left to right: Nordic skiers Ida Sargent and Liz Stephen; biathletes Hannah Dreissigacker and Susan Dunklee.

NEWS & NOTES



VNRC's Miller Appointed to CEDF

VNRC's Energy Program Director Johanna Miller was recently appointed to serve on the state's Clean Energy Development Fund.

The CEDF is focused on increasing the development and deployment of cost-effective and environmentally sustainable electric power resources — primarily with respect to renewable energy resources and the use of combined heat and power technologies — in Vermont.

“I have had the privilege of working closely with many grassroots groups,” Miller said, “and I hope to be able to help create more synergy between community goals and clean energy opportunities.”

VNRC Joins Conservationists at the National Wildlife Federation Annual Meeting

VNRC board member Virginia Farley and Communications/Government Affairs Director Jake Brown participated in the three-day NWF Annual Meeting this spring in Baltimore in part to represent VNRC's views on a series of conservation-related resolutions proposed by the NWF. Annual resolutions are the basis of policy positions NWF takes in Congress and elsewhere for the coming year. The meeting included addresses by EPA Administrator Gina McCarthy, Interior Secretary Sally Jewell, and the in-coming president and CEO of NWF, Collin O'Mara. VNRC is the Vermont affiliate to NWF.



Part of the Northeast delegation to the 2014 NWF Annual Meeting in Baltimore pose with incoming NWF President Collin Patrick O'Mara (front center right, in suit)

Vermonters in the picture include NWF staff Don Hooper and Catherine Bowes (next to each other on O'Mara's right), NWF Regional Director Curtis Fisher (front row, far right); VNRC board member Virginia Farley and VNRC staff member Jake Brown (back row center and center-right).

Legal Briefs

Two important cases in which VNRC has been involved for several years came to conclusion over the past few months.

Vermont Yankee: In late December, the State of Vermont and Entergy entered into a memorandum of understanding that would allow Entergy to operate the Vermont Yankee nuclear power plant until the end of 2014. The MOU, in part, requires Entergy to provide \$10 million to promote economic development in Windham County and commit to site restoration measures.



The Public Service Board recently ruled on the MOU, endorsing its provisions, and requiring closure of the plant at the end of 2014. As part of the final deliberations on the MOU, VNRC filed a brief with the Connecticut River Watershed Council encouraging the Board to limit Vermont Yankee's discharge of hot water into the Connecticut River in the meantime.

In its decision, the Board ruled that the thermal discharge would need to be handled by the ANR as part of their NPDES discharge permitting process. Updating VY's discharge permit is long overdue, and VNRC has been urging ANR to swiftly implement a revised discharge permit that protects the ecological health of the Connecticut River.

North Springfield Biomass Plant: In February, the Vermont Public Service Board denied an application for the construction of a biomass electricity generating plant in North Springfield. VNRC was actively involved in the case to ensure that the project would safeguard forest health and use limited forest resources efficiently and not unduly contribute to climate change.

The Board ruled that the expected greenhouse gas emissions of the plant (448,714 tons of CO₂ per year), in tandem with the project's low level of thermal efficiency, would not promote the general good of the state.

“This is a precedent-setting decision,” said Jamey Fidel, VNRC's General Counsel. “Future applicants for biomass electricity generating plants will need to understand the greenhouse gas impacts of a proposed project and design it with a high enough level of thermal efficiency to offset those impacts.”

While the ruling does not necessarily mean that a future biomass electricity generating plant will not be permitted in Vermont, the ruling ultimately raises the bar for sustainable and more efficient utilization of woody biomass in Vermont.

VCV, VNRC Settle into Strategic Alliance

Having entered into a strategic alliance late last year, the Vermont Conservation Voters and the Vermont Natural Resources Council began operating under one roof at the VNRC offices in Montpelier in March.

“The two organizations, which remain independent entities with separate boards of directors, are pursuing their respective missions,” said Brian Shupe, the executive director of both groups. “At the same time, both organizations are sharing resources and complementing each other’s work. So far, the partnership is exceeding our expectations.”

Earlier this year, VCV hired Lauren Hierl as political director.

Hierl has a BA from Dartmouth College and two masters degrees from Duke University: one in public policy and one in environmental management. She has worked in Washington, DC at both the National Audubon Society and the Alaska Wilderness League in support of protections for public lands in Alaska and most recently was an environmental health advocate at VPIRG.



Lauren Hierl

The non-partisan VCV, which is a 501c4 non-profit organization, is the political arm of Vermont’s statewide environmental community. VCV lobbies lawmakers to pass pro-environment and clean energy legislation. The organization also scores lawmakers’ voting records and supports pro-environment candidates in elections.

A Reflection on the 2014 Legislative Year

While the past legislative session may have lacked truly bold, groundbreaking action to address the environmental and development challenges facing Vermont, lawmakers deserve credit for making meaningful progress on several fronts.

They passed a bill to protect shorelands around the state’s lakes and ponds. This measure, which helps safeguard water quality and wildlife habitat along lakeshores, was among VNRC’s top priorities over the past two years.

On the smart growth front, another important step forward this year was the passage of two bills (H.809 and H.823) designed to improve the state’s “growth centers” and downtown programs and better align Act 250 with the state’s land use goals, including encouraging compact centers surrounded by rural countryside.

The most significant of the two bills, H.823, promotes downtown development while, for the first time in Act 250’s history, curbing certain types of sprawling strip development outside of our existing downtowns and villages.

Vermont’s popular solar energy incentive program also received a much-needed boost early in the session with the passage of H.702, which

Gov. Shumlin signed into law in April. The bill expands the state’s successful net metering program and also makes it easier to build solar energy projects on capped landfills, something that VNRC in particular supported.

The Legislature also took an important step to protect Vermont families by passing S.239, a toxics bill. The legislation creates a new program at the Department of Health that will create a list of chemicals of concern to children’s health and then require companies to tell the state if they’re using those chemicals in children’s products. The bill also authorizes the department to ultimately require labels or restrict dangerous chemicals in children’s products. This bill was a priority of several groups, including Vermont Conservation Voters. (See related piece this page.)

Lawmakers also approved sufficient funding for the Working Lands Initiative that supports the businesses on which our land-based economy depends, as well as an increase in the Vermont Housing and Conservation Board’s (VHCB) budget. VHCB is the 26-year-old program that invests in affordable housing,

predominately in smart growth locations, and in the conservation of the state’s farm and forestland and natural areas.

Lawmakers also made it easier for landowners to enroll “ecologically significant treatment areas,” or ESTAs in the Current Use program. That means more habitat for rare or threatened species, forested wetlands, vernal pools, natural communities of statewide significance, riparian areas, and old forests can now be enrolled in the program.

On the downside, lawmakers failed – for yet another year – to pass legislation that would have both helped curb unfortunate abuses in the Current Use program and put the program on firm financial footing.

The Legislature also failed again to take action to keep the low-income weatherization program adequately funded. With a \$2 million shortfall in the program, it’s likely the state will be hard-pressed — without a real commitment to funding the program soon — to meet its goal of retrofitting 20,000 homes by 2020. Tightening up our homes and buildings is one of Vermont’s most powerful greenhouse gas reduction strategies.



VNRC’s Sustainable Communities Program Director Kate McCarthy testifies before the House Agriculture Committee. On her right, with laptop, is Rep. Tristan Toleno (D-Brattleboro). To her left is Rep. Will Stevens (I-Shoreham). Obscured behind Stevens is Rep. Daniel Connor (D-Fairfield).

VNRC Member Laury Saligman on Forest Conservation Finance

Laury Saligman has been a member of VNRC since 2009 and among other things, has participated actively on VNRC's Forest Roundtable. Through her organization, Conservation Collaboratives, she works with other environmental and research groups to examine new models of conservation finance, including the potential for carbon markets to support forest and watershed protection. She lives in Montpelier with her husband and two daughters where she serves on the Board of the North Branch Nature Center.

Why are you a member of VNRC?

VNRC has always been there to advocate for issues of environmental health that are important to me. So, I want to be there to support VNRC.

What is the genesis of your personal interest in forests?

As a child, I spent endless hours exploring the woods behind our house, climbing trees, and catching frogs. As an adult, I still love being in the forest, but rather than scurrying up trees, I now spend my time mountain biking and cross-country skiing.

Has your view of the role of forests changed over the years?

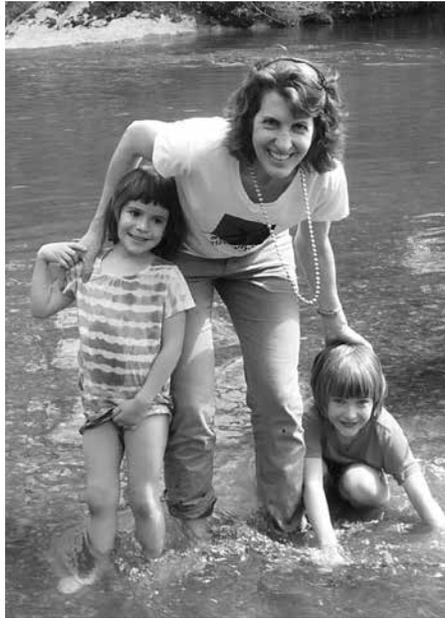
In the past, I appreciated forests as a place for solitude, reflection and recreation. Now, I understand forests to be critical infrastructure on which our existence depends. Forests filter the air we breathe, protect the water we drink, and provide habitat and all kinds of wildlife.

Forests have all sorts of values. Can landowners get paid for the "ecosystem" values of their forests?

Yes. Nationally and internationally, there are markets that compensate landowners for the ecosystem services provided by their land. This idea makes a lot of sense to me. As taxpayers, we are accustomed to paying for built infrastructure for water treatment, flood mitigation, and recreation. If we are willing to pay for a waste water treatment plant or engineered solution to flood control, why shouldn't we financially support forest management and conservation activities that provide the same benefits?

What about the carbon uptake of forests? Can landowners get paid for that?

Yes, but there are challenges, at least currently. Forest landowners can receive payments for planting trees, permanently con-



Laury Saligman with her children Sara left, and Kira, right.

serving wild or working forests, and sustainably managing forests to increase long-term carbon storage. The key point is that the activities must result in the storage of more carbon than that which would have been amassed in absence of the carbon project. Carbon markets are relatively new and an exciting incentive system because they could help slow forest fragmentation. Landowners are paid to keep forests intact and to store carbon, rather than to clear and develop them.

What does this mean for Vermont forests?

Unfortunately, at this point, it's difficult for Vermont forestland owners to be able to really benefit from this new revenue stream.

Most of Vermont's forest private forest holdings are too small to sequester sufficient carbon to justify the upfront fixed costs associated of entering the market. However, as the selling price for

carbon offsets goes up, the outlook for small scale projects will improve.

What sorts of structures/policies/additional market forces need to be in place for this marketplace to mature and flourish?

We need a serious and stable climate policy at the national level for carbon markets to flourish. Until this occurs, voluntary, state and regional programs can serve as laboratories for different approaches and models. Also, we need cost-effective ways for landowners in Vermont and elsewhere to join together to participate in carbon markets to gain necessary economies of scale.

How can organizations like VNRC help with all of this?

VNRC can support state and federal climate legislation that includes forests as part of the solution to global warming. VNRC should also continue to support policies to ensure that our forest resources aren't converted to non forest uses. That way, landowners will be able to take part in the carbon markets if they so choose.

Finally, VNRC can help explore non-market based systems for payments for ecosystem services. For example, currently USDA compensates landowners for activities that benefit wildlife habitat and prevent erosion; exploring similar payments for climate friendly activities could help keep our forests intact without the complexity and limitations of carbon markets. 



www.vbsr.org
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Vermont has been through a lot in the last few years. But we've always been the state that could.

We are growing and attracting new businesses to Vermont. We have an extraordinary workforce, a high quality of life, beautiful open spaces and a clean environment. We are moving away from carbon-fueled energy and toward renewable and local sources of power. We are committed to becoming the first climate-neutral state in the country.

VBSR businesses know that public investments in infrastructure, education, workforce training, environmental protections and health care strengthen our state. Every house that is weatherized and every business that plugs in solar panels makes our state a little more resilient to the next storm - whatever it may be.





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Save the Dates!

Wild and Scenic Film Festival

October 23, 5:30-9 at Main Street Landing in Burlington

Join VNRC and Patagonia Burlington for the 7th annual Wild & Scenic Film Festival. To commemorate the 50th anniversary of the Wilderness Act, the theme of this year's event is protecting wilderness in an era of climate change. We'll feature films about wilderness, land use, and natural communities, especially as these things pertain to activism and how individuals or groups of people can make a difference. The evening-long festival will feature environmental and adventure-based films, food and drinks catered by Skinny Pancake, and a stellar silent auction. Stay tuned for details.

Button Up Vermont Day of Action

November 1

Many Vermonters waste heat — and a ton of money — because our homes and businesses aren't properly weatherized. This year's second annual, statewide "Button Up Vermont Day of Action" is aimed at sealing the leaks and helping people save energy and money.

Vermonters always "Green Up" in the spring. Let's stop the waste and start an annual tradition of "Buttoning Up"

in the fall. For further details visit www.vecan.net

(Organized by Vermont Energy and Climate Action Network, Efficiency Vermont, Central Vermont Community Action, Vermont Energy Education Program and NeighborWorks H.E.A.T. Squad.)

VECAN's 7th Annual Vermont Community Energy and Climate Action Conference

December 6, 9 a.m. - 5 p.m., Lake Morey Inn, Fairlee.

This one-day conference emphasizes clean energy and climate action strategies that Vermonters can help implement.

Designed to inspire, support and grow the statewide network of town energy committees and other energy-ambitious Vermonters, this is a "can't miss" event if you're interested in

energy efficiency, transportation choices, renewable generation and

building greater public and political support for needed energy action. For details visit vecan.net.



VNRC is a membership organization and we count on members for support!

Please join us!

vnrc.org