Newsletter
Vermont Monitoring Cooperative
Vermont's Cooperative Forest Ecosystem Monitoring & Research Program

Vermont Monitoring Cooperative | The University of Vermont | USDA Forest Service | Vermont Agency of Natural Resources

Fall 2013 Volume 17 Issue 3

Larry Forcier Steps Down as VMC Leader but Stays Connected

Miriam Pendleton

As responsibility for leadership of the VMC transitions from **Larry Forcier** to **Jen Pontius**, the VMC Staff would like to take a page or two to thank Larry for his leadership and unwavering support for the VMC and its mission over the years.

When trying to gather material for an article about Larry, I quickly became overwhelmed with the huge amount of information about his long record of service and contributions to UVM and the wider community. He served, at UVM, as Associate Dean and later Dean of the School of Natural Resources (SNR), Dean of the College of Agriculture and Life Sciences, Senior Advisor to the President, and Interim Dean of the Rubenstein School of Environment and Natural Resources (RSENR, previously SNR) but doesn't take himself so seriously that he eschewed being a target in the Alternate Student Break pie-throwing fund-raiser. He has a huge interest in diversity and service learning — probably why he consented to participating in the aforementioned fund-raiser.

During my internet search for "Larry Forcier," I stumbled onto "Rate your Professor" and had to read some…. Even the few students who didn't particularly like Larry's courses liked *him*. One student said that he recommended a course just so one could be in the "awesome" presence of Larry, and another said that the course was worth it "just to be able to hang out with Larry." So instead of a long and exhaustive recounting of Larry's illustrious career, I will recount my experiences before, then during, the presence of this "totally awesome" guy.

When I started as a weekend coverage person at the VMC Air Quality (A.Q.) Site, **Tim Scherbatskoy** was the Research Director and UVM's contribution to VMC leadership, and **Sandy Wilmot** was the Monitoring Director and provided State leadership from the Vermont Department of Forests, Parks and Recreation. I mostly did my thing out in Underhill and didn't think too much about the structure of this hydra- like organization that employed me. Honestly, I was more in tune with the National Atmospheric Deposition Program for whom I collected most of the samples gathered at the A.Q. Site. I continued as a weekend and vacation coverage person until the site operator took another job, and now I was the site technician!

Larry Forcier trains UVM students to use i-Tree tools.

Several years passed and my position was made official (UVM classified staff position), so I started paying much more attention to the workings of the VMC. Unfortunately, VMC was going through a period of time with frequent changes in leadership. Staff were unsure of their roles, the focus of work, and at times even our mission.

Then Larry stepped back in. He had helped launch the VMC as Dean of SNR back in the early 1990s, working with **Senator Patrick Leahy's** office on threats to Vermont's forests and the health of its citizens. Larry's direct involvement had waned somewhat, but when our leadership vacuum persisted, he helped out. The VMC structure, as outlined in the memorandum of understanding among the VMC partners, calls for the Dean of RSENR to be a Steering Committee member, and in Larry's case, a key leader.

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INSIDE THIS ISSUE:

Save the Date for the VMC Annual Conference: December 12, 2013

This year's VMC Annual Meeting will have a slightly different format, along the lines of similar one-day conferences, with invited speakers in the morning, contributed presentations and updates from cooperators and others in the afternoon, followed by three working sessions. We are expecting these working sessions to yield concrete contributions to the VMC whether in the form of action items or priorities for future monitoring activities. Abstracts of presentations and summaries from the working sessions will be published online.

The theme of this year's conference is *New Collaborations for Emerging Forest Needs*. Outcomes of the afternoon sessions will help provide guidance to the VMC on how to enhance interdisciplinary and interagency connections to better share knowledge and resources among all parties who care about Vermont's forest ecosystems.

The conference will be held at the University of Vermont's Davis Center on Thursday, December 12, 2013. We have a great line-up of speakers and will provide snacks and lunch free of charge for those who register.

For more information and to register, please visit our Annual Conference page at:
http://www.uvm.edu/vmc/annualMeeting/2013/

We hope to see you at the conference!

Announcing the

2013 Vermont Monitoring Cooperative Conference

New Collaborations for Emerging Forest Needs

Vermont Monitoring Cooperative

A collaboration between Vermont Department of Forests, Parks & Recreation, the University of Vermont and the USDA Forest Service

Identify and address emerging needs for forest science and policy in Vermont

Communicate, exchange ideas and learn

Expand collaboration around forest ecosystem management and monitoring in Vermont

Confirmed speakers include*

Jon Erickson Interim Dean, Rubenstein School of Environment and Natural Resources
David Mears Commissioner, Vermont Department of Environmental Conservation
Patrick Berry Commissioner, Vermont Fish and Wildlife Department
Colleen Madrid Forest Supervisor, Green Mountain and Finger Lakes National Forests
Ryan Hanavan State and Private Forestry, USDA Forest Service
Michael Snyder Commissioner, Vermont Department of Forests, Parks and Recreation

** We are also accepting submissions for presentations and posters on any aspect of forest ecosystem science, resource management, or public policy related to forest ecosystems and their use in Vermont*

Date: Thursday, December 12, 2013

Location: Davis Center, University of Vermont, Burlington, Vermont

Cost: Free. Morning snacks, lunch and an afternoon coffee break will be provided with meeting registration

More information, up-to-date schedule, registration and abstract submission details:
http://www.uvm.edu/vmc/annualMeeting/2013/

Interview with John Austin, Vermont Wildlife Biologist

Miriam Pendleton

What is your connection to the VMC?

I've been familiar with the VMC for many years although my official association has only been for the past 7 years. As a natural resource professional in Vermont, I've relied on VMC for scientific information related to wildlife and forest ecosystems. For instance, I've used information collected on reptiles and amphibians as well as high elevation forest birds that has been collected by scientists associated with VMC for many years. Several years ago, I had the opportunity to serve as Acting Director of Wildlife for the Vermont Fish and Wildlife Department, and during that 2 year period, I represented the Department on the VMC Steering Committee. That's when I learned how VMC functions, makes decisions, and sets priorities. It was exciting to be actively engaged in a collaborative partnership with other academic and applied conservation organizations who all share the same interest of developing science to better guide conservation of natural resources. Since then, I have transitioned to my current position as Lands & Habitat Program Director in the Vermont Fish and Wildlife Department. In that capacity, I work with our Director of Wildlife, Mark Scott who now serves on the VMC steering committee. I now serve on the VMC Advisory Committee. This is a great part of my job to intersect with other scientists and conservation practitioners to guide monitoring efforts for natural resources that ultimately allow us to improve our understanding and ability to conserve Vermont's environment. To me, our ability to successfully conserve our environment is only as good as the information to support our understanding of what we have and how it functions. That's why VMC is so important because it supports expanding our knowledge and understanding of the environment over time.

What is the main focus of your work and what are some of your primary duties and responsibilities?

My current position with the Vermont Fish and Wildlife Department is Lands & Habitat Program Director, although I am a Wildlife Biologist when it comes to most of my work. In this position, I oversee all efforts and projects in the Wildlife Division related to state land management, land acquisition, technical assistance to private landowners, conservation planning, inter-agency coordination, and regulatory protection of land and habitat. I supervise other wildlife scientists engaged in these activities and work closely with the Director of Wildlife and other colleagues to guide the development of division and program budgets, set program and division priorities, and work to guide and adapt program efforts based on new and emerging science and information. My office is located in the State of Vermont District office in Barre, although I work regularly out of the main office of the Agency of Natural Resources in Montpelier. I've worked with the Department for nearly 20 years and view my employment with the Department as a great privilege to represent the public's interests in fish and wildlife conservation in the great state of Vermont. There aren't many folks who get to do this sort of work in Vermont, and I'm grateful for the opportunity.

John Austin, Wildlife Biologist with the Vermont Fish & Wildlife Department

What do you see as the most pressing issues for conserving habitat that supports wildlife?

The most pressing challenge facing the wildlife profession is the loss and fragmentation of habitat. Without sufficient habitat, in all its forms and scales, many species of wildlife will not persist. The larger, more complex challenge relates to our changing climatic conditions and the largely unknown consequences on our wildlife and their habitats. To be sure, there are many compounding issues facing wildlife conservation today, including a growing prevalence of disease, invasive species, and changing social attitudes towards wildlife, not to mention shifts in funding for wildlife conservation programs. However, maintaining a landscape that supports a diverse array of healthy habitats is ultimately the most important element to the long-term success of wildlife conservation in Vermont, North America, and around the world. This goes hand in hand with how we address challenges associated with wildlife conservation in the face of a changing climate because wildlife will need sufficient space and habitat conditions to allow them to adapt to shifting climatic conditions. Addressing habitat fragmentation, for instance, is a critical part of establishing a system of inter-connected habitats and landscapes that allow wildlife to shift, move, and adapt to changes in ecosystems and natural communities.

What other services or information might VMC provide to help you in your position? What more effective approaches might VMC use to support resource managers or those making policy decisions related to management of wildlife and forests?

This seems like a highly relevant question at this time of great environmental change. It seems that with changing conditions of climate and related connections to ecosystems

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John Austin *continued from Page 3*

progressing on an uncertain course, we need to have a well-structured monitoring system for all facets of the natural environment. VMC already serves this function and has for many years. That's the great opportunity for Vermont; that is, VMC and other individual organizations have well established monitoring efforts to learn about environmental change over time. This is evidenced by work on Mount Mansfield, Lye Brook Wilderness, and elsewhere. So, in a general sense, VMC is serving an important role right now; one that I hope and trust continues into the future. However, there is a great deal of monitoring that occurs through many organizations in Vermont related to the environment and there is a need for bringing greater coordination to those efforts and broadening our collective understanding of and access to that information. Perhaps, VMC can help guide such an effort.

In terms of what else VMC could do, I would suggest there is an opportunity to expand upon what already exists within VMC and continue with recent efforts to broaden the use of and access to available natural resource data. VMC is already embarking on this idea, which is fantastic. Relatedly, the Vermont Fish and Wildlife Department continues to work with the U.S.G.S. Fish and Wildlife Research Coop Unit at UVM on a similar endeavor, thanks to the support and guidance of Dr. Theresa Donovan. Together, we have developed a database known as ROVER, or Resources of Vermont, that allows us to centralize our wildlife data, habitat data, as well as data from UVM, and thereby bring consistency to data management and archiving, broaden access to data, and improve new ways of analyzing and using the data. Again, VMC is considering something similar. Ultimately, the more data we can bring together in consolidated databases where they are readily accessible to scientists, practitioners, and policy makers, the better our conservation efforts will be.

Continuing to support many of the monitoring efforts focused on wildlife, forest ecosystems, and water quality, in my view, should remain an important function of VMC. Maintaining a consistent set of monitoring data on habitats, species, and communities that are good bellwethers of environmental change, such as high elevation, montane bird communities, is critical.

Overall, VMC should continue to serve, and broaden where possible, its role as a central coordinating hub for monitoring the environment in Vermont and the Northeast. VMC should remain focused on supporting science and monitoring that in turn supports applied conservation so that the science and information is tied to conservation actions. This has been a big part of VMC's success to date. Perhaps VMC can develop metrics to serve as performance measures for monitoring over time that are tied to various conservation plans and programs. In this way, the information generated by VMC monitoring efforts is used to guide and adapt various on-going conservation programs from a variety of conservation organizations. For instance, we have worked with the Fish and Wildlife Coop Unit at UVM to create a biodiversity monitoring system with sample plots scattered throughout Vermont. The idea is to monitor these plots for plants, vertebrates, invertebrates, etc. every 10 years or so, and then use that information to guide how Vermont implements its Wildlife Action Plan and other related conservation programs such as land management, land acquisition, and research priorities.

Lastly, perhaps there are opportunities to incorporate VMC monitoring efforts on lands owned by the Vermont Fish and Wildlife Department. A good example is the 22,000 acre West Mountain Wildlife Management Area in Vermont's Northeast Kingdom where we have a core special treatment area for passive management (an area comprised of 12,000 acres). The Agency of Natural Resources is committed to studying the effects of this passive management approach to this sort of boreal environment that had previously been actively managed for many years by industrial forest landowners. This is a unique part of Vermont's environment in that it supports boreal habitat conditions along with species associated with that unique condition such as moose, American marten, and Canada lynx, as well as being within the largest habitat block remaining in Vermont. This environment will be critical to monitor over time as landscape, climate, and other changes unfold. In any event, there are many opportunities for partnerships with VMC to continue to expand our knowledge of Vermont's rich environment.

What led you to an interest in the environment and environmental issues?

I was fortunate to grow up in a place and time when there was an abundance of forests, meadows, and wetlands close to home where I could explore the natural world. I was also fortunate to grow up in a household that valued the environment and conservation. From the time I was a young boy, I wanted to be a wildlife biologist. Actually, when I was 10- or 11-years-old, I announced to my parents that I wanted to be a herpetologist; I loved to collect and study snakes, frogs, turtles, salamanders, and the like. My parents were incredibly patient and supportive of my interests. My grandfather was an avid angler and hunter. He had a strong influence on my passion for the outdoors and wildlife. So, I would say it was these early connections to the natural world and growing up in a community that was deeply connected to fishing, hunting, and other aspects of the land that initiated my passion for the environment and related issues. It has turned into a life-long pursuit and life-style that I cherish. I now have 2 sons, both of whom are equally connected to the land, natural resources, and the importance of being good stewards of the land.

VMC Makes U.S. Forest Service Forest Inventory and Analysis Data Available for Vermont

Jim Duncan and Randy Morin

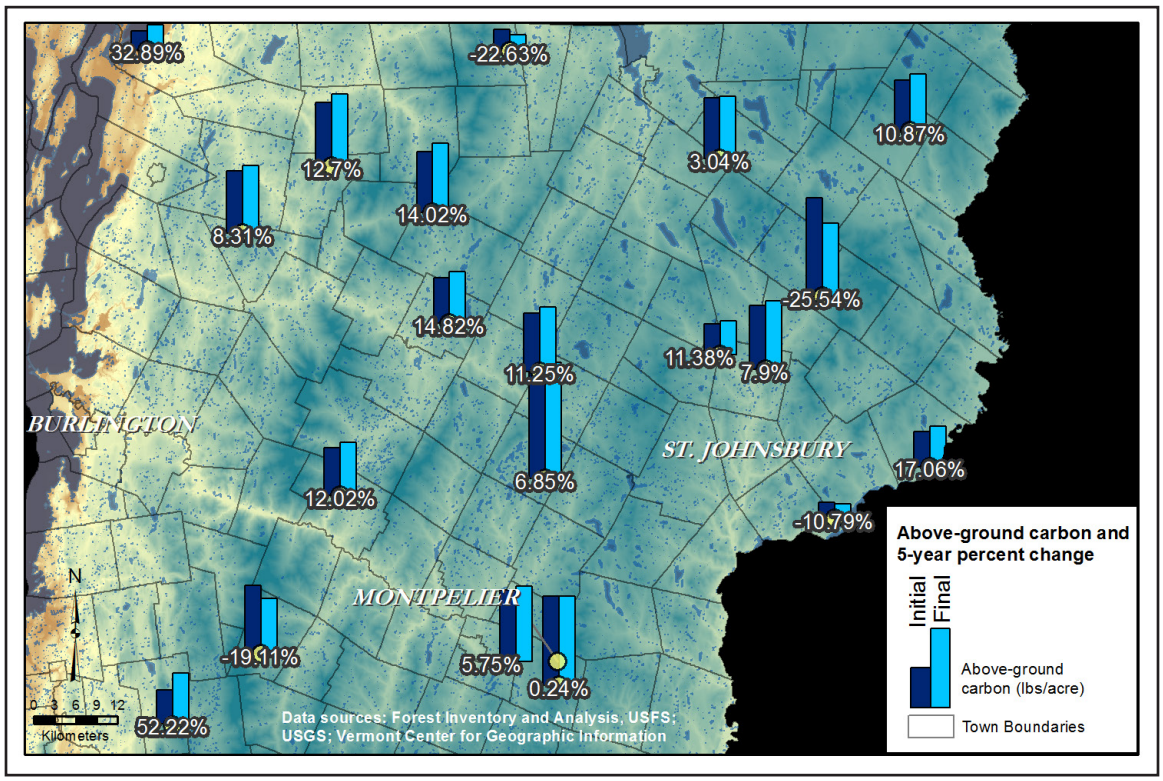
VMC has been working with cooperator and Advisory Committee member Randall Morin of the U.S. Forest Service to make the Forest Inventory and Analysis (FIA) data for Vermont more accessible to a range of users in the state. Key data on plots, conditions, and trees from around the state have been extracted and loaded into the VMC database and are now available through the web at http://www.uvm.edu/vmc/research/summary.php?id=311.

There are data from 1983 to 2011, covering over 2000 unique plots around the state. Even more exciting are the 123,000 records of tree data for 75 species collected during this time period, including attributes such as height, diameter, species, and condition. These data give us a picture of the overall state of Vermont's forests from year to year, such as how many trees there are or how the distribution of species is changing over time.

From a monitoring perspective, there is an even finer level of detail within the FIA. A subset of plots (called Phase 3 or P3 plots) have been designated for more intensive sampling of biomass, carbon storage, crown health indices, and other additional data. These plots will be regularly resurveyed every 5 years, meaning that trends can be observed over time. For example, the changes in above-ground carbon can be calculated, revealing interesting and diverse trends over time. (See Figure.) Plots were revisited on a five-year rotation over time, meaning that while the 5-year range of measurement is identical, the starting and ending dates can range from 2003-2006 and 2008-2011 respectively. Note that FIA injects uncertainty into the plot locations for privacy reasons, and so the location of the points is approximate and shown for illustrative purposes only.

VMC will be making these data and a few standardized products available for Vermont over the coming months and will update these with future releases of new inventory data. These data can be previewed, downloaded, and visualized at our website. As we work to build up this valuable resource for Vermont, we would love to hear back from you. What type of aggregation or product would be most useful for you to have through our website? Please send your ideas to Jim Duncan (james.duncan@uvm.edu) or Randy Morin (rsmorin@fs.fed.us).

Above-ground Carbon in Northern Vermont



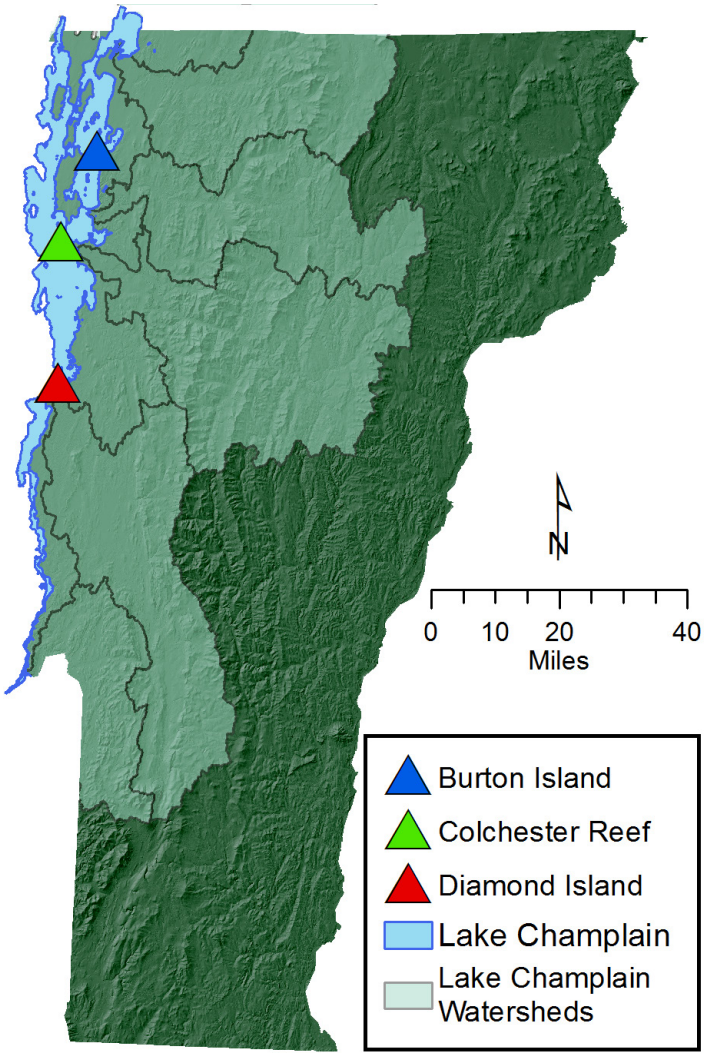
Map of northern Vermont showing the levels of above-ground carbon estimates in pounds per acre from FIA Phase 3 monitoring plots, as well as percent change over staggered, 5-year periods. Point locations are approximate.

Transect of Meteorological Measurements on Lake Champlain

VMC Staff

The VMC maintains and operates three meteorological stations on Lake Champlain. The southernmost station is located at Diamond Island near Ferrisburg; the middle station is on the Colchester Reef navigational light tower off Colchester Point, and the northernmost station is on the southern tip of Burton Island State Park near St. Albans point.

Colchester Reef was the first true on-lake meteorological station, established in 1996. The Diamond Island station was established in 2004 also using a pre-existing navigational tower to support the meteorological array. The Burton Island station is the most recent addition to VMC's lake meteorological monitoring, established in 2010. Data from these stations are available on the VMC website.



Location of VMC meteorological stations on Lake Champlain

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Larry Forcier

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In his capacity as Interim Dean, Larry assumed a leadership role after VMC was director-less. Even after Larry was no longer Interim Dean, he continued in the VMC leadership role with the official title of Principal Investigator (P.I.) and a salary of zero dollars. I was impressed by his obvious commitment to our success!

He re-energized our Steering and Advisory Committees and reorganized the management structure of the VMC to unleash the considerable management abilities of **Carl Waite** in the post of VMC Program Coordinator. Following **Joanna Grossman**'s departure as Data Manager, Carl recruited a promising RSENR undergrad, **Aaron Rice**, to continue improving the VMC's website and database.

There was a tremendous new sense of purpose and direction. Returning to our roots and mobilizing VMC cooperators, we published "Vermont's Changing Forests" which utilized those scientists to write a multi-disciplinary synthesis report on the state of Vermont's forests based on VMC data. Our connection to the USFS was strengthened by relocating the VMC office to the Aiken Forestry Sciences Lab on Spear Street, and Larry coordinated his RSENR students to establish urban forest monitoring plots using i-Tree tools in Burlington in his NR 1 course, which combines forestry concepts with service learning.

Larry asked all of us a simple question, "How are Vermont forests doing?" Simple, but not necessarily easy to answer. Larry thought it was an essential thing to know if we were to be true to our mission. In response, the VMC put out a request for proposals to examine forest growth at its Mt. Mansfield intensive study site. This VMC-funded project is using a combination of new data collected by the contractors specifically for this project, other data previously and concurrently collected by them, and VMC archived data to answer Larry's question.

The VMC mission statement has really informed Larry's tenure as leader of the Cooperative. It helps us keep focused when we are tempted to stray away from our core responsibilities. It's easy to go off course, but with limited funding and staff, the emphasis on our mission is an excellent guide for the work of the VMC. Larry is also extremely talented in using the collaborative structure of the VMC to get things accomplished instead of seeing our structure as unwieldy.

During Larry's time as VMC's P.I., a new staff position was created and filled by the very capable **Jim Duncan** in the role of Data and Web Coordinator. Larry also identified another RSENR faculty and VMC Advisory Committee member who showed great enthusiasm for the VMC and deftly convinced her to assume the P.I. role. Lucky for us, Jen Pontius was amenable! Larry will continue for now as Co-P.I. so we are well-positioned to realize our full potential as an organization that provides "the information needed to understand, manage, and protect Vermont's forested ecosystems in a changing global environment."

Thanks so much, Larry, for setting the VMC on a sustainable path so that we can continue to fulfill our mission.

Meteorological Measurements
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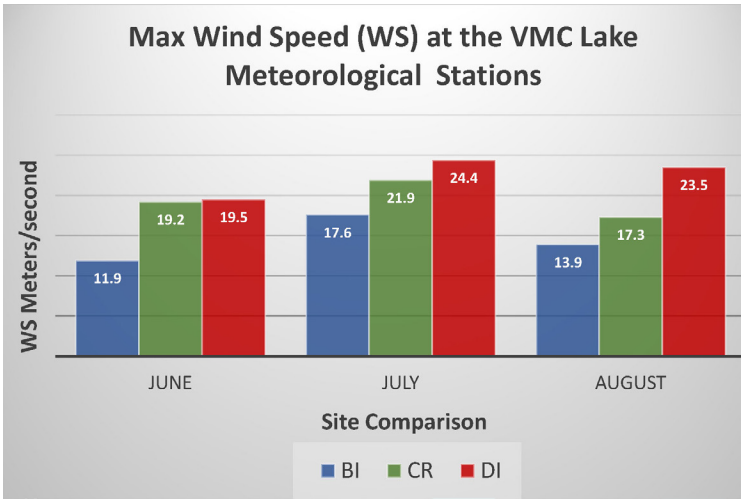

Judy Rosovsky

2013 summer maximum wind speeds measured at the VMC meteorological stations on Lake Champlain: Burton Island (BI), Colchester Reef (CR), and Diamond Island (DI).

Reminder to Cooperators

Researchers conducting work in 2014 on state or federal land or at VMC study sites must update their study site permit and project description with VMC. Any changes should be sent to Carl Waite at cwaite@uvm.edu or (802) 656-0683. In addition, if your research is located on the Green Mountain National Forest, please contact VMC and Melissa Reichert, at mmreichert@fs.fed.us or (802) 747-6754.

If an existing project remains active and unchanged, please confirm your status with VMC to ensure your study site permit remains active. If you need a copy of your study site application on file, please let us know.

Thank you!

For more information about VMC, please visit our website at http://www.uvm.edu/vmc.

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Vermont Monitoring Cooperative

The University of Vermont

USDA Forest Service

VERMONT AGENCY OF NATURAL RESOURCES