A photograph of a waterfall cascading over dark, mossy rocks. The water is white and frothy as it falls. Numerous autumn leaves in shades of red, orange, and yellow are scattered on the rocks and in the pool of water at the base of the waterfall. The background is a dark, forested area.

VNRC

Vermont

Environmental Report

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**Vermont's
Waters:
Forever
Clean?**

Spring
2012

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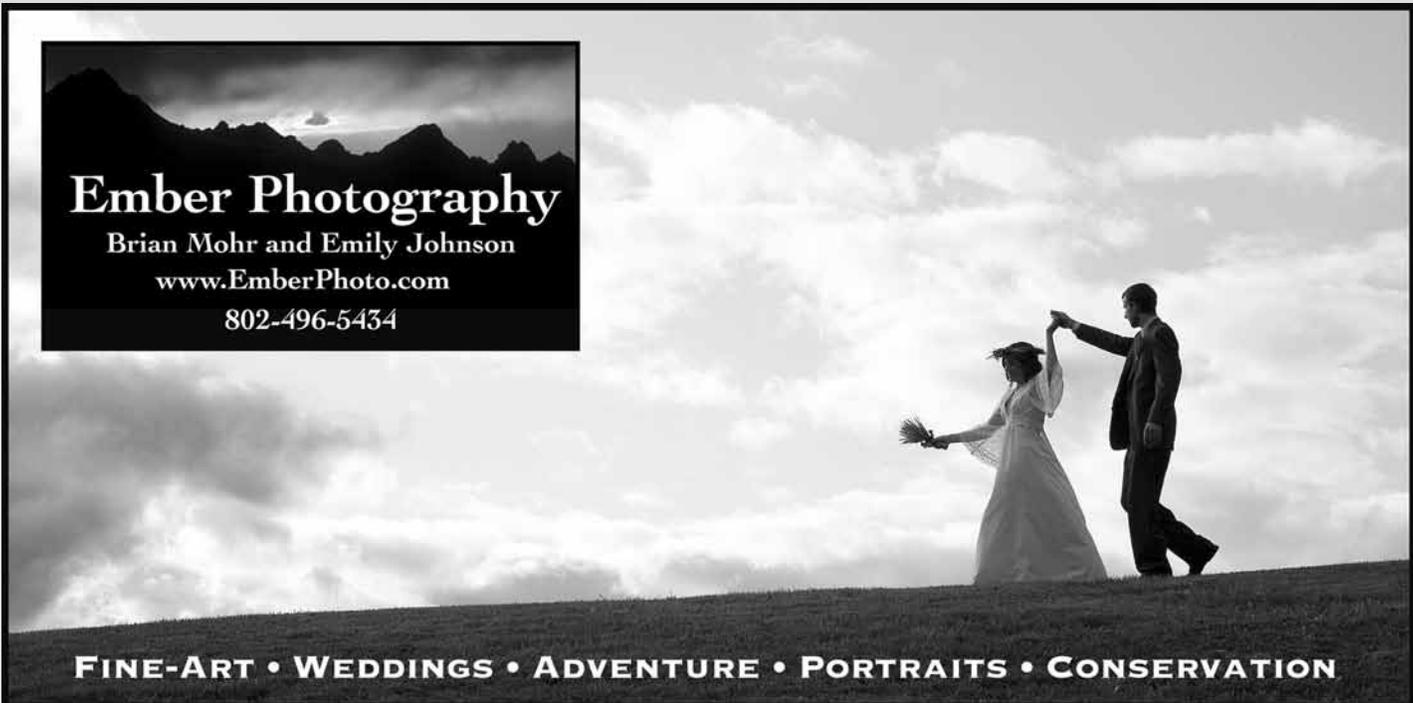


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The Vermont Natural Resources Council, Inc., is a nonprofit environmental organization founded in 1963 to protect and restore Vermont's natural resources and environment for present and future generations through research, education, collaboration and advocacy.

VNRC is the Vermont affiliate of the National Wildlife Federation.

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VNRC thanks the family of longtime VNRC member and Board Member, Peter Zilliacus, who through his 2001 Charitable Remainder Trust, gave a generous gift to support legal services for the organization in perpetuity.

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As we've explored what a good anti-degradation policy for water would look like, I can't help but imagine the same concept applied to other environmental resources, or even the economic and cultural health of our communities.

Anti-Degradation: A Fine Baseline, But Don't We Need More?

BY BRIAN SHUPE, EXECUTIVE DIRECTOR

2011 was quite a year for Vermont. The excitement started early with a record-breaking February snowfall, followed by early spring flooding along the Lake Champlain shoreline and late spring flash flooding in Central Vermont. It was a year of punishing weather that culminated with Tropical Storm Irene.

The predictions have been around for years: climate change will result in a greater frequency of extreme weather. In Vermont, that means more intense rainfall and associated flooding. We will need to manage how we interact with rivers and streams more carefully to build greater resilience. This issue of the *Vermont Environmental Report* addresses how we have been – and should be – interacting with our waterways to maintain their ecological well-being.

In the cover story, writer Will Lindner explores what is known as the “anti-degradation implementation policy” required under the federal Clean Water Act. The concept is simple. We need to identify public waters that are not yet degraded (i.e., are clean and healthy) and make sure that they stay that way. This is less about managing rivers and streams and more about how we manage the land and develop our communities.

Unfortunately, Vermont has largely ignored this important policy, leaving many of the state's most pristine streams vulnerable. The Shumlin administration has indicated, however, that they are interested in correcting this deficiency in the next year. VNRC will be closely tracking the development of this critical measure.

As we've explored what a good anti-degradation policy for water would look like, I can't help but imagine the same concept applied

to other environmental resources, or even the economic and cultural health of our communities.

Why not an anti-degradation policy for Vermont's historic downtowns? One that ensures that the big-box sprawl that is chewing up farmland and road frontage along many of the state's highways does not undermine the economic viability of the many small, locally-owned businesses that keep our villages and downtowns dynamic.

Or an anti-degradation policy for the state's working landscape? One that invests in farm and forest land and related enterprises that support the rural economy while maintaining Vermont's brand and quality of life that has attracted many of the state's business leaders and entrepreneurs.

Perhaps most importantly, an anti-degradation policy for the climate would ensure that at the very least we, as a state and as a country, promptly begin reducing our contribution to climate change.

But, pulling back even further: should we really be all that proud of anti-degradation policies for the earth? Isn't that shooting pretty low?

At the heart of it, an anti-degradation policy – whether it relates to water quality, downtown vitality, our farm and forest economy, our climate – is really rather a modest goal, almost embarrassingly modest, given the exponentially growing forces, pressures, and demands on our world.

As we contemplate the threats facing a planet that in so many ways has already been compromised, polluted, and wasted, we need to do better than simply say “no more.”

We hope the Agency of Natural Resources will issue a strong anti-degradation policy for our waters. But we must continue, as a society, to strive for more. 

The Vermont Natural Resources Council relies on its members for a large portion of our annual support. And our faithful and generous members have been critical in helping VNRC weather one of the toughest economic recessions in recent memory. We thank you.

If you are not already a VNRC member, please consider joining us to protect and enhance Vermont's natural resources, communities, and unique brand.

Energy. In partnership with the growing network of town energy committees, VNRC is helping Vermonters save energy, move to renewables, promote transportation options and reduce greenhouse gas emissions.

Forests. Working with foresters, landowners, wildlife biologists, state officials and local conservation and planning commission members and others, VNRC is helping to keep our forests both economically and ecologically viable.

Sustainable Communities. Compact village centers and vibrant downtowns surrounded by working farms and forests define Vermont's unique brand. VNRC works at the state level and also with communities themselves, to help assure the continued success of this time-honored Vermont settlement pattern.

Water. From helping Vermonters protect groundwater in their towns to pushing for strong protections for lakes and streams, VNRC's water program is focused on safeguarding and enhancing the quality of all of Vermont's waters.

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SUSTAINABLE COMMUNITIES UPDATE



Wayne Fawcush

Downtown St. Johnsbury

There is a lot going on in VNRC's Sustainable Communities Program.

The program's director Kate McCarthy – who started last October – has hit the ground running and is involved on a wide variety of fronts, generally continuing to develop policy to enhance our downtowns and village centers, and at the same time promote the health and viability of the rural countryside.

After years of opposing the Chittenden County Circumferential Highway – declared dead last spring by Gov. Shumlin – VNRC is now helping to identify the best ways to relieve traffic congestion in Chittenden County by working as part of the Circ Alternatives Task Force. The task force has been directed to look for ways to serve the original purpose and need of the “Circ” highway.

On that task force, VNRC is promoting alternatives that help solve congestion while increasing transportation options, spending money wisely, and not encouraging sprawl.

The Sustainable Communities Program is also part of the multi-organization Working Landscape Coalition, a new, broad-based effort to develop policy to promote healthy agricultural and forest-based economies, including the necessary infrastructure, to enhance the value of products coming from our farms and forests. The Vermont Council on Rural Development has spearheaded the effort, and it builds on the work of their report entitled “Investing in our Farm and Forest Future.”

And VNRC continues to directly help towns that are interested in reducing forest fragmentation and maintaining

important wildlife habitat by providing technical assistance with bylaw revisions as well as education about non-regulatory options.

Finally, the Sustainable Communities Program continues to carry on much of the work of Smart Growth Vermont, which merged with VNRC last July. For instance,

VNRC is updating the Smart Growth Community Scorecard so that towns will be able to evaluate how they're doing on energy conservation, efficiency, and renewable development as well as on more traditional smart growth criteria.

For more information, contact Kate McCarthy at kmccarthy@vnrc.org.

WATER UPDATE

Protecting and improving the quality of Vermont's streams and ponds, as well as our groundwater continues to be a critical component of VNRC's work. Working with Vermonters in their communities on water issues will be a special focus of our work this year.

This spring VNRC will be heading out into communities

across Vermont letting citizens groups and other organizations know about the “anti-degradation implementation rule,” a measure the Department of Environmental Conservation is developing this year. We will be asking Vermonters to weigh in, so this critical new rule offers meaningful protection for our waterways.

VNRC is also developing

a users guide for other state rules that govern groundwater – the source of drinking water for two-thirds of Vermonters. The objective of this outreach is to be sure citizens have useful information about their ability to participate in the permitting process, should a large groundwater withdrawal be proposed in their town.

And finally, in the wake of Tropical Storm Irene's river destruction and the extensive river manipulation – much of it unauthorized – that followed the flooding, VNRC pulled together a broad coalition of groups interested in stopping unnecessary and harmful river

gravel dredging and stream bank alteration.

Besides VNRC, this coalition, known as the “Gravel Guild,” includes several statewide as well as local groups. Collectively, these groups represent some 40,000 members. VNRC, with the help from members of this group, is in the preliminary stages of planning a river management conference for this spring. Stay tuned for details!

For more information about VNRC's water program, please contact Kim Greenwood at kgreenwood@vnrc.org.

ENERGY UPDATE

It's no surprise that energy issues remain a hot topic for Vermonters and a significant focus at VNRC.

Besides our activity in the State House on energy (see legislative rundown on page 18) VNRC continues to serve as the coordinator of the Vermont Energy and Climate Action Network, working closely with the over 100 community energy committees to support their efforts to advance clean energy solutions. With other VECAN partners and UVM Extension we hosted our annual conference in early December, which was a successful day of inspiration, idea sharing, learning and networking.

Beyond that we have also been working on some other exciting efforts, including:

- Working with communities to build support for and implement the Property Assessed Clean Energy Program. This promising program to fund energy efficiency and renewable investments for Vermont homes will get the needed community hearing on Town Meeting day in many Vermont towns. VNRC continues to work with partners, town energy committees and others to help ensure this program will realize the promise it offers.
- Energy planning. Utilizing the *Energy Planning and Implementation Guidebook* that we put together with the Vermont League of Cities and Towns, we

continue to deliver technical assistance to communities to broadly address energy through the municipal plan. Beyond over a dozen

events and forums on energy planning in the past year, we are also working on putting together an accompanying analysis tool — a “scorecard”— that will help communities assess how they are meeting goals or falling short in terms of energy, land use and transportation.

- Beginning to implement the

state's new Comprehensive Energy Plan in conjunction with administration officials, partner organizations and grassroots leaders.

That is a snapshot of some of the work underway here at VNRC on energy. For more information, please contact VNRC's Energy Program Director Johanna Miller at jmiller@vnrc.org.



A worker from Local Energy, LLC, of Stowe puts up solar panels in Stowe.

Nina Otter

FOREST AND WILDLIFE UPDATE



VNRC's Forest and Wildlife Program continues to work both directly with Vermont communities offering technical assistance, and also at the state-wide level to enhance Vermont's forested landscape.

For instance, VNRC is working with several towns in the Mad River/Winooski River watershed providing specific land use planning tools to planning and conservation commissions to improve forestland and habitat conservation in the watershed. As part of this project, VNRC has formed a partnership of federal and state agencies, local conservation groups and citizens to develop conservation planning maps and training sessions for Realtors and engineers to help them plan new development with forestland and wildlife features in mind. VNRC is now branching out into new communities in the Winooski watershed to provide land use planning technical assistance.

Thanks to continued funding through the Northeastern States Research Cooperative and other funders, VNRC is developing a forest protection implementation guide as well as an on-line tool to provide towns information on how to reduce the "parcelization" of forestland and maintain productive blocks of forestland. As part of the work, VNRC will hold regional workshops over the next year that will

include a discussion of the drivers of parcelization and opportunities for strengthening regional and local plans to conserve forests through replicable planning and zoning techniques.

The forest program is also closely tracking biomass energy policy in Vermont. VNRC recently hosted a

Forest Roundtable meeting where stakeholders provided input on the Biomass Energy Development Working Group's final report. VNRC also testified on biomass policy in the House Natural Resources and Energy Committee and we are tracking two proposals for large wood-fired biomass plants in Vermont, one in Fair Haven and one in Springfield. VNRC is taking a close look at these proposals to understand a range of issues such as their level of efficiency, approaches to maintaining forest health, and whether they will be

beneficial from a carbon perspective.

Finally, VNRC has been participating in the Current Use Tax Coalition leading a study group tasked with looking at the long-term stability of the current use program. As part of this work, VNRC is supporting legislation in the State House to strengthen the viability of the program and to encourage long-term enrollment.

Stay tuned for additional developments on these issues. If you have questions please contact Jamey Fidel at jfidel@vnrc.org. 



Tim Newcomb

On VNRC's Legal Docket

VNRC has been involved recently in two important legal cases: the high profile Vermont Yankee case and another case relating to a proposal for an expanded Wal-Mart in Bennington.

In the Vermont Yankee case, VNRC is disappointed in Judge Murtha's January 19 decision, where he found that the state is preempted by federal law from enforcing legislation that would have compelled Vermont Yankee to shut down in March. However, it is important to note that in his ruling, the judge did recognize that the decision "does not purport to resolve or pass judgment on the debate regarding the advantages or disadvantages of nuclear power generation . . . nor does it purport to define or restrict the State's ability to decline to renew a certificate of public good on any ground not preempted or not violative of federal law."

In an "amicus" or "friend of the court" brief in the Yankee case, VNRC supported the contention that the state has the legal right to not relicense the aging nuclear power plant based in part on the state's authority to transition to an energy portfolio consisting primarily of renewable sources while providing electricity that is economically and environmentally sustainable.

The Public Service Board is considering whether to issue a

license to allow Vermont Yankee to operate for another 20 years, and VNRC is currently participating in the docket regarding that issue. Clearly, this proceeding will be closely watched.

In another legal case, VNRC is arguing to give Bennington residents a meaningful seat at the table in a case involving a proposal to expand a Wal-Mart in that town.

VNRC and Citizens for a Greater Bennington have been fighting to participate as parties in the Act 250 environmental review of a proposed Wal-Mart super-store. Wal-Mart has been trying to block VNRC and the citizen group from participating in an appeal at the Environmental Division of the Superior Court. VNRC responded by filing motions and supporting their participation by articulating specific concerns including the projected loss of up to one-fifth of downtown business as a result of the new super-store.

"There is no legal precedent that supports Wal-Mart's argument that the citizens do not have the right to appeal the denial of their party status in this case," said Jamey Fidel, general counsel for VNRC. "This sort of legal wrangling shows how difficult and costly it can be for citizens to participate as parties in the environmental review of large projects," Fidel added.

Stay tuned to VNRC for news on these cases. 



Vermont Yankee nuclear power plant



STALKING THE ELUSIVE ANTI-DEGRADATION RULE

On Implementing Vermont's Water-Protection Policies, And Why Our Waters Are At Risk Until We Do

BY WILL LINDNER

The New Haven River, in Addison County, seems to life as freshets on the mountain slopes above Lincoln, in Vermont's "little presidential range" (Mt. Roosevelt, Mt. Cleveland, and Mt. Grant). Alex MacDonald knows these headwaters well. Come the second Saturday of April, when fishing season starts, he is apt to be up there, or anywhere else on the river, with his fly rod and waders.

"I've fished it as high up as I can walk it," he says. "I've taken brook trout up there no longer than four inches. I release everything, and try not to harm the fish."

From April through October, MacDonald spends, he estimates, 12 to 16 hours each weekend fly fishing, a pastime he has enjoyed since he was 13 years old, 48 years ago. Primarily, he fishes the New Haven; he is, in fact, vice president of an association called the New Haven River Anglers. He knows the river from its shady, sibilant headwaters, down the tumultuous rocky reaches to Bristol, and west to its confluence with the Otter Creek, a tributary of Lake Champlain.

"The quality of the fly fishing in Vermont is very high," says MacDonald. "There are healthy populations of wild fish, and those are augmented by stocked fish every spring. My number-one concern as an angler is the quality of the trout habitat and the stream health. I haven't seen much decline in either of those, until right after the hurricane [Tropical Storm Irene]."

“We all agree in principle that we don’t want to clog up our rivers and beautiful lake with sediment. But at the same time, I think it’s out of sight and out of mind for a lot of people.”

— Alex MacDonald

It wasn’t the storm that concerned MacDonald. Floods of all sorts are part of the natural evolution of a stream, and while a flood might wipe out shady areas and hiding places for fish it also creates new ones, and they adapt.

This time, though, habitat degradation resulted from hurried rebuilding of the human habitat beside the streams and rivers. “I understand and agree with the necessity of rebuilding roads and infrastructure,” says MacDonald. “I think a certain amount of channeling and armoring was necessary. I just want to see it done with good science. I believe you don’t remove all the obstructions from the river – the big rocks and trees. You work with them, you leave a lot of them. I think they exceeded what was necessary.”

Even before Irene, MacDonald was troubled by the encroaching riverside development. The greatest long-term threat of degradation, he feels, comes from stormwater runoff. It’s not just housing development, shopping centers and roads; logging operations, farming... storm runoff comes

from multiple sources.

“It overloads the streams with sediment, which is destructive of aquatic insect life, which is necessary for maintaining trout population. It’s a problem.

“We all need to drive,” MacDonald concedes. “We all need the products that come from farms; we need to live in houses. We all agree in principle that we don’t want to clog up our rivers and beautiful lake with sediment. But at the same time, I think it’s out of sight and out of mind for a lot of people.”

It ain’t necessarily so

On paper, Vermont’s streams and rivers, lakes, ponds, and mountain brooks are some of the finest in the land. Their condition is guided by the Vermont Water Quality Standards, and if reality matched the aspirations reflected in those written standards our communities, our citizens, and our recreating visitors would be well served.

On paper, the state, through those Vermont

Anti-Degradation and Irene

It would be an understatement to say that Tropical Storm Irene brought with it severe and widespread degradation to Vermont.

The water-quality degradation that Irene meted out was plain as day. The torrents of rain sent gravel, sand, trees, gasoline, paint, and

tanks of heating oil and propane, even cars and RVs, into rivers and streams. The infrastructure and community degradation was equally, if not more, brutal. Our roads caved in, bridges crashed, homes and businesses crumbled. And we lost lives: according to the Shumlin administration, seven

Vermonters died as a result of Irene’s wrath.

People in touch with, and knowledgeable about, our streams and rivers believe there was another element to the water-quality degradation caused by Irene: Emergency recovery efforts were hasty, and were frequently performed without sufficient reference to river science.

Unfortunately, that’s nothing new. Vermont’s communities developed along river ways, as they were once a source of power, industry, and even transportation. Sadly, their proximity to civilization has done them no good. Rivers

An excavator digs in Hunter Brook in Windham County after Irene.



Louis Porter/CLF

Water Quality Standards (VWQS), dictates ever-loftier goals for most waterways, settling for no designation lower than Class B. And Class B's not half bad. Here's how the VWQS define Class B: "Suitable for bathing and recreation, irrigation and agricultural uses; good fish habitat; good aesthetic value; acceptable for public water supply with filtration and disinfection."

If that's not enough, the Vermont standards include an Anti-Degradation Policy (Section 1-03) that allows no backsliding. Class A(1) waterways (perhaps like those mountain brooks in Lincoln) are "uniformly excellent," and may not be reclassified down to A(2). Not that there's much wrong with A(2) – "high-quality waters which have significant ecological value." Nor can a Class A(2) river be downgraded to B. In fact, a Vermont waterway must not be allowed to deteriorate even *within* its classification; if a discharge or some other activity would lower the quality incrementally, but without violating its classification status, any such permit (with certain exceptions) must be denied.

have been straightened, dredged, and "tamed" – and we pay the price for it when events like Irene overwhelm the manipulated banks and channels.

Furthermore, the mistakes we now recognize that we made, like building roads and parking areas too close to the rivers, get repeated in our hurry to recover.

"Each time [there's a flood event], it's 'Oh my god! How do we address this?'" says Caitrin Noel, executive director of the Waitsfield-based Friends of the Mad River.

"My sense is that for the most part we have rebuilt the way it was before the flood. We put the houses back, and the roads and bridges and the town culverts, in the same way. I understand why we're doing that; we don't have a plan for doing it differently. But it is, or could be, an opportunity to be prepared for next time."

More hopefully, though, Noel says "the conversations have started since Irene." Could this jolting, historical event lead us to reconsider our management of Vermont's waterways and the land around them?

Angler Alex MacDonald, of Lincoln, hopes so, but he thinks the immediate efforts following the August storm went largely in the wrong direction.

"We know the science is out there," says MacDonald, vice president of the New Haven River Anglers. "But ANR [the Vermont Agency of Natural Resources] didn't have enough field engineers to go around. They're spread way too thin.

"We don't have to talk about fish habitat separately from river science," MacDonald



Alex MacDonald, Vice President of New Haven River Anglers, with a healthy trout.

The Anti-Degradation Policy requires that "those water bodies should be maintained at that existing high quality..."

The thrust of the Water Quality Standards and the Anti-Degradation Policy within them is that the

emphasizes. "You don't flatten the river; you don't channelize it. Good science goes hand-in-hand with good habitat."

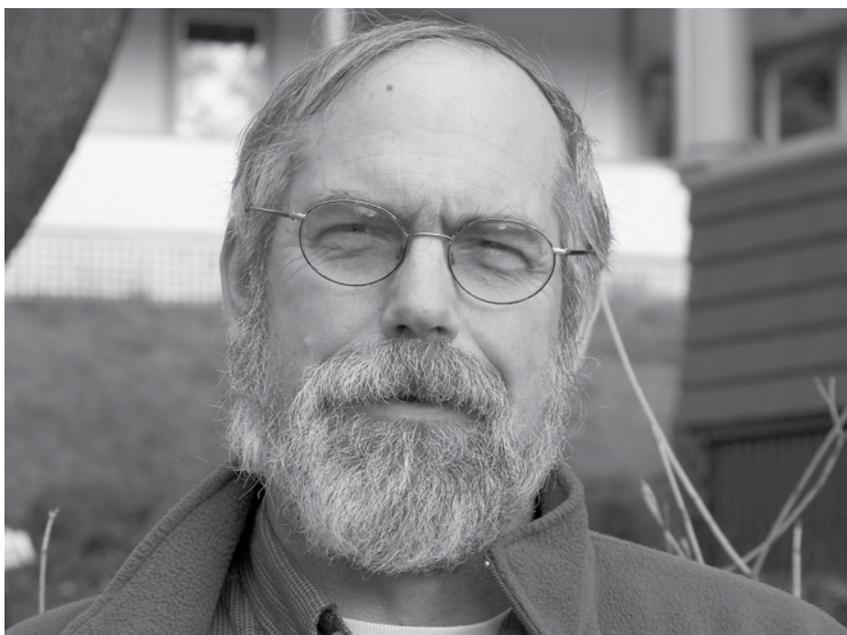
And, he notes, there's an aesthetic component, as well. "A stream rebuilt by a machine doesn't look anything like a natural river."

As we look to the future, which will no doubt bring more storms like Irene, we need to understand that a successful water-quality anti-degradation policy can go hand-in-hand with a smart approach to managing rivers which protects our communities and Vermonters themselves.

The good news is that we can have both. The overarching science-based approach ANR has used for the last decade and more to manage our rivers – notwithstanding the difficult permitting staffing challenges ANR faced post Irene – should allow Vermont to not only protect and enhance the quality of our rivers and streams but also to protect public safety and private property.

This river management approach is rooted in the notion we should let our rivers roam, and allow them, within the constraints of our existing settlements, to move into a state of equilibrium so they dissipate energy. It's based on the premise that that we should resist the temptation to "tame" our rivers by dredging them out, "berming" them, and straightening them. Doing that – except in limited circumstances – will only make things worse in the next flood, the science says. 

"We don't have to talk about fish habitat separately from river science," MacDonald emphasizes. "You don't flatten the river; you don't channelize it. Good science goes hand-in-hand with good habitat."



Bill Bartlett, water resources expert and retired chief of staff of the Vermont Water Resources Board

existing quality of a waterway or lake is a bottom line, and where improvements are attainable the Agency of Natural Resources (ANR) should seek to achieve them.

Or so it says on paper – and has said for decades (the state’s original Anti-Degradation Policy preceded the federal 1972 Clean Water Act).

That’s why it’s ironic, and not a little distressing, that a former chief of staff for the Vermont Water Resources Board characterizes what’s been happening for years to our rivers, lakes, and streams as “death by paper cuts.”

There is a federal role here. The EPA (U.S. Environmental Protection Agency) provides minimum water-quality standards and protection policies that the states must meet, but it allows states to exceed those federal minimums, which Vermont has done for years.

“Vermont has written a stronger – stronger than required – policy,” says Bill Bartlett, the former Water Resources official, who retired in 2002 after a 25-year career intimately involved with policy and regulation, and who since retirement has taken up the cudgel as an advocate (and a sometime consultant for VNRC).

What’s missing, however – and has always been missing in Vermont – is a written prescription detailing just how the Agency’s Department of Environmental Conservation (DEC) should go about implementing the standards and anti-degradation policy. Implementation rules are required under Vermont and federal law. What’s more, they are needed to ensure greater transparency in how DEC executes this critical policy.

So that’s the situation: We have high water-quality standards and a well-articulated policy for preserving them. It’s all right there on paper. But we’re lacking the means to implement that anti-

degradation policy. This may strike the average citizen as bureaucratic pedantry, but it’s the way the system works: state a principle, then provide the means to act on it.

“There have been a number of abortive attempts by the DEC to put the implementation rules in writing,” says Bartlett. “I’ve commented on draft policies going back 20 years. It often ends up going off into oblivion.”

In the absence of the implementation rules? The incremental degradation of Vermont’s water quality – largely, but not exclusively, from stormwater discharges. Death by paper cuts.

Cumulative impacts

“Anti-degradation, at its basic level, is that ‘We don’t degrade the water,’” says Kevin Geiger, senior planner with the Two Rivers Ottauquechee Regional Commission, who has had his own brush with drafting rules, only to see them roundly ignored at the ANR. “Over time, that appears to have gotten changed to, ‘We don’t degrade the water very much at all.’ There’s a difference.”

Vermont’s lack of rules to put its anti-degradation policy fully into practice has not made our state the wild west of water pollution. We have good water-quality standards, and the ANR has enacted permit procedures that most people – Bill Bartlett included – gladly acknowledge have helped protect our heritage of clean northern waters. (The fact that, as Geiger says, “We missed the industrial revolution,” didn’t hurt either.) But what suffers in the current situation is our ability to look at cumulative impacts of the stormwater discharges we permit here, and there, and there.

“It’s about assimilative capacity,” says Geiger – the ability of water bodies to absorb pollutants, nutrients, and other insults without detrimental effect. “If you don’t quantify cumulative bites from the apple of assimilative capacity, you don’t know if you’ve used it all up. What we seem to be discovering in the natural world, in all sorts of ways including the atmosphere, is that what we thought were okay little nibbles are not okay.”

His concern is shared by VNRC.

“There’s new pollution going into these rivers,” says Water Program Director and Staff Scientist Kim Greenwood. “Provisions in the Clean Water Act dictate the adoption of numeric and qualitative standards, parameter by parameter, for phosphorous, dissolved oxygen, turbidity, raising the water temperature... and every permit issued is a permit to pollute. But you don’t prevent cumulative impacts very effectively when you issue permit after permit with no consideration of how all of these permits, collectively, impact the waters. And then there are unpermitted discharges to consider. The DEC has given us no way to implement serious protection against these cumulative impacts.”



Vermont is not the only state dragging its feet. All states are required to enact provisions for enforcing their water-quality standards. And some have. But Greenwood is not impressed.

“Nobody has done it in a way we think would be meaningful,” she says. “They don’t look at the biota in a stream and see if a discharge is going to have a further negative effect. New Hampshire tried, but ended up pulling back their rule because there was so much controversy over it.”

Those familiar with the issue point to previous attempts to draft and pass, through the Legislature’s rule-making process, anti-degradation implementation rules. Bartlett has witnessed several.

“In 2008, ANR filed a draft rule,” he recalls. “It said anti-degradation didn’t apply to stormwater runoff. Well then you might as well not have a policy. Storm water equals phosphorous, and Lake Champlain, which is the drainage basin for more than half the state, is already crippled by phosphorous. What we’re arguing about is, how do you apply the anti-degradation policy to storm water? That’s the guts of it.”

“The implications of whether we continue to ignore cumulative phosphorous – or at best aim low in our preventative efforts – has enormous implications for Vermont’s economy, let alone its environment.”

The view from Harveys Lake

Harveys Lake, located in the town of Barnet (Caledonia County) about five miles west of the

Connecticut River, is a glacier lake, hollowed out like the inside of a bowl. Sherm Sprague has been coming to Harveys Lake since 1953, when he was a child. His family rented a camp, and this seasonal respite carried forward after he met and married Jackie, and they started a family. Both worked in Chittenden County, but in 2005 they ditched all that and moved to Harveys Lake fulltime. They started construction on a house, set back about 100 feet from the shoreline.

The lake offers recreational opportunities year-round: swimming, boating, kayaking, canoeing, water skiing, and fishing in the warmer months, snowshoeing, skating, and ice fishing when the lake is frozen.

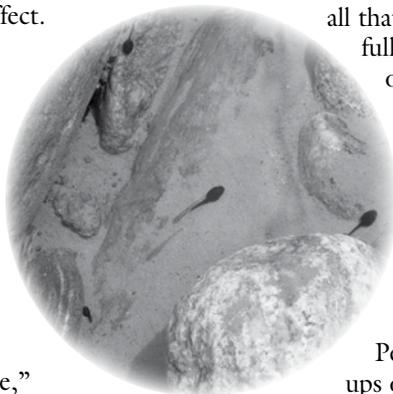
People take their shanties and tip-ups out on the ice, and as Jackie says,

“It’s like a new village out there in the winter.”

As a permanent resident, however, Jackie became more attuned to some unsettling ecological changes happening to the lake, and her curiosity and activism led her to organize the Harveys Lake Protective Association. That organization is ongoing, but Jackie also is now the secretary of the Federation of Vermont Lakes and Ponds (FOVLAP), a statewide organization “interested in promoting and maintaining the quality of the environment of, and the pleasure of living near and using, Vermont’s lakes and ponds,” according to the organization’s website.

The challenges to Vermont’s lakes are many. In some places they include aquatic nuisances like milfoil, water chestnut, and invasive mollusks. Jackie says Harveys Lake has been spared those

It’s ironic, and not a little distressing, that a former chief of staff for the Vermont Water Resources Board characterizes what’s been happening for years to our rivers, lakes, and streams as “death by paper cuts.”





The challenges to Vermont's lakes are many. In some places they include aquatic nuisances like milfoil, water chestnut, and invasive mollusks.

threats so far. What's high on her worry list is erosion – sediment entering the lake from the slopes that surround it.

"If we don't do something about the sediment, not in my lifetime or maybe not in my grown daughters' lifetimes, but eventually, it will become eutrophic," she says. Basically, the lake will turn into a wetland with flourishing invasive species, and will cease to exist.

Sprague is doing something about it. She recruited for her association's board a local farmer with significant acreage above the lake, who took ownership of the problem his farm was creating, with rain and spring runoff carrying phosphorous-rich soil to the water. While state advisers told the association that the situation would cost hundreds of thousands of dollars to address, the farmer took matters into his own hands and created a berm, redirecting the water through a diversion ditch.

But there are other sources, and sediment remains an issue. Sprague mentions another one: shoreline management.

"It's a sticky subject," she says. "When you own lakeside property you want to have control over it. But people have to realize the impact it has on water quality if you mow down to the lake. More and more, people are accepting that you need some sort of a buffer, with vegetation, and that you can still keep your view. But not everyone is on board."

Sprague says she has found ANR officials to be allies in her environmental crusades. If they issued strong anti-degradation implementation rules, they could show their colors once again.

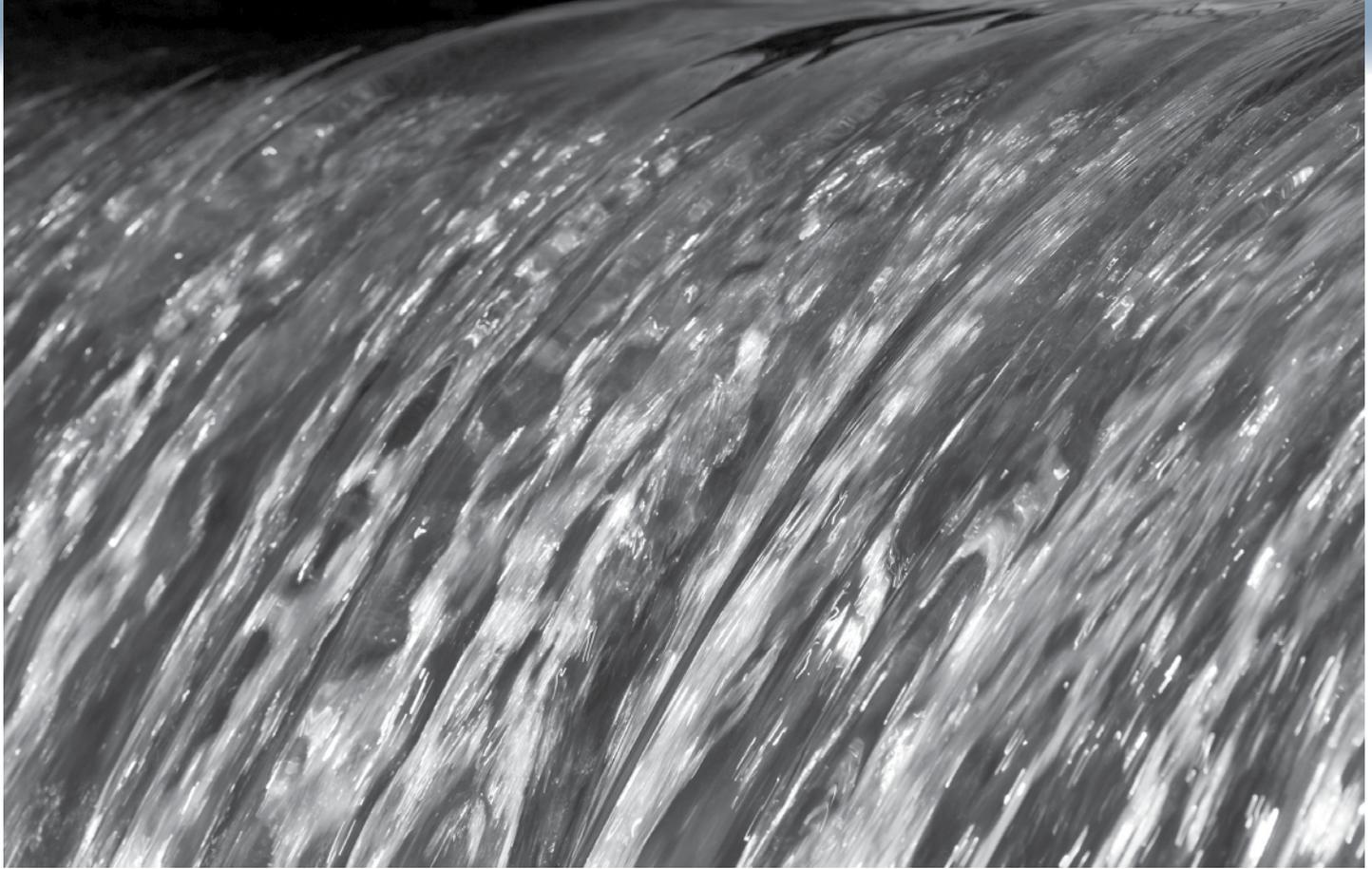
Where it gets tricky

Suddenly it's 2012 – the year, environmentalists and water advocates hope, that the DEC will propose new anti-degradation implementation rules that will make it to the public forum, where longstanding divisions will be hotly debated — and when, after the dust settles (precisely everyone predicts there will be dust), the department will have an intact, effective process to propose to the Legislature in 2013.

"We want this rule to be the best in the country, and to meaningfully protect the waters of Vermont," says VNRC's Greenwood. "People need to understand why it's important to get this right."

David Mears, commissioner of the DEC, where the rules will originate, believes 2012-2013 is a workable schedule. The Department had hoped to spend last fall doing outreach, collecting opinions from watershed groups, environmental groups and the regulated community, and have a draft proposal for legislative committees of jurisdiction in the 2012 session. Tropical Storm Irene derailed those plans; the DEC was flooded out of the Waterbury complex, and staffers are working in temporary offices spread among several communities. Consequently, Mears says, "I don't think we'll be able to finalize anything this spring. We would like to propose something to go out to formal public comment" after the session.

But Mears, close to the action, appreciates the complexities of implementing anti-degradation rules. "None of the states has quite figured it out," he says. "It's an elegant and simple principle, that if you have high-quality waters you don't want to let



them get worse. But it's harder to apply in practice because the policy is not an absolute prohibition on degradation."

Mears is right. That part of Vermont's Anti-Degradation Policy that says, "Where the quality of water is better than the applicable standards, those bodies should be maintained at that existing high quality" comes with this caveat: "... unless it is necessary to accommodate important social or economic considerations."

Suddenly business interests and towns' economic vitality enter into it, which are calculations out of the comfort zone of DEC scientists with sampling tubes and microscopes.

"Let's say somebody wants to build a resort on top of Mt. Mansfield," the commissioner says, "and it's going to have some degradation of the water quality. It still wouldn't violate standards – but would we allow some degradation to happen? Now you have to judge how important it is to have a resort on top of Mt. Mansfield. That's tricky stuff. I wouldn't want to make that decision in a box."

Rather, Mears says, he would want to have a process that weighs and allows non-scientific input, but somehow guides the DEC toward decisions that promote the goal of anti-degradation.

Actually, that's what everyone wants. And increasingly, the environmental community wants to get on with it.

Advice from the watersheds

The DEC has identified 17 watersheds for basin-planning purposes in Vermont, and has periodically attempted to implement comprehensive, statewide

water-quality-protection regimes based on those discrete watersheds. Alas, basin planning has foundered on the very reefs that have sunk anti-degradation – basically, the inevitable tension between serious water protection and business/economic interests.

Meanwhile, the best line of defense for many watersheds has been their local watershed groups – bands of citizens, sometimes hundreds strong, committed enough to pay dues, hire staff, and roll up their pant legs when necessary to work in the water. These groups are ambitious. In 1995, the Waitsfield-based Friends of the Mad River produced a 132-page report titled "The Best River Ever: A Conservation Plan to Protect and Restore Vermont's Beautiful Mad River Watershed." This voluminous report outlined major threats to the river and set forth remedies within citizens' reach (such as aquatic-habitat protection, and improving/protecting water quality) to address them.

Caitrin Noel, executive director of the FMR, says the group has spent the intervening 15 years actually doing the work the report prescribed – monitoring water quality and temperature, remediating sedimentation, and combating didymosphenia, a slimy freshwater alga.

"The Mad River is highly used for recreation," says Noel, citing the valley's famous appeal to second-home owners and tourists. "A study was once done that found that the Mad River had the highest number of swimming holes per mile in the state. Maintaining the water quality of the river for recreation is our highest priority."

"We want this rule to be the best in the country, and to meaningfully protect the waters of Vermont," says VNRC's Greenwood. "People need to understand why it's important to get this right."

Mary Russ, executive director of the White River Partnership, measures the dimensions of a temporary culvert.



Greg Russ

“The DEC’s overly permissive approach puts the regulated community at greater risk of having their discharge permits overturned on appeal, and it will cost them more to comply after the fact than it would to fully comply in the first place.”

— Bill Bartlett

But even the estimable Friends of the Mad River can’t do that without the state’s help. Like Alex MacDonald, the New Haven River angler, Noel is concerned about channel management after flood events. With a major state artery (Route 100) running beside it, the Mad has been altered and straightened over the years, adding to the instability of the river system – “An artifact of our history that creates ongoing problems,” she notes.

And, like MacDonald, she worries about stormwater runoff.

“This area is a narrow, steep valley with resort development in the headwaters, sometimes in a very concentrated way,” says Noel. In storm events the river can rise quickly, with a phosphorous-rich water-and-soil mixture cascading from the developments above.

Marty Illick is the longtime director of the Lewis Creek Association in Addison County, another thriving, conscientious volunteer organization that takes on such projects as community education, stream-bank stabilization, and water-quality monitoring. An interesting aspect of the LCA is its holistic view of the 33-mile creek and the land surrounding it. The association is as concerned with wildlife habitat and the working landscape as it is with the creek itself – for good reason, Illick says.

“There needs to be another way to approach [waterway] remediation. Let’s set up standards that aren’t based on phosphorous numbers in the creek. Yes, use phosphorous for long-term monitoring. But the issue is the land. The land’s capacity [for absorption] is used up.

“You can’t have cornfields that are bare-naked in the winter anymore. Forget about the creek; if

it’s not in the creek now it will be there next fall because it’s always moving. We’re done with the days of bare soil.”

Illick wants new agricultural practices: Don’t plant corn by itself; plant it along with grassy vegetation that stabilizes and enriches the soil, reducing runoff and increasing absorption.

“You monitor the water, and you want your standards,” she acknowledges. “But your management plan, if you will, is to put certain standards on the land.”

Politically, Illick knows it’s an uphill climb. She says agriculture is king, and she can’t conceive of the ANR influencing the Agency of Agriculture, Food & Markets. She also doesn’t think the state has the economic resources for comprehensive, statewide water-quality testing and management.

“They’re behind the eight-ball,” she says. “We have to come up with rules and standards that are affordable. To me? Set some basic standards up and just do it!”

Setting standards must be an inclusive, collaborative effort, says Mary Russ, executive director of the White River Partnership, another well-established watershed group. The WRP has seen previous anti-degradation and basin-planning efforts come and go – some focused on their very watershed. One effort foundered when some of the towns realized it would curtail certain development projects.

Russ is therefore sympathetic with Commissioner Mears regarding the paradox within the Anti-Degradation Policy: Never compromise water quality – unless important social and economic factors pertain. Russ says the White River Partnership operates in its watershed with a similar view, incorporating environmental values (ecosystem health), cultural benefits (water clean enough for recreation, and plentiful enough for agricultural withdrawals), and economic values (tourism, development) in its decision-making and programs.

“Our message is that the more people who have a role in thinking about an issue, the better end product we’re going to have,” says Russ. “Because the more you think you know the answer at the outset, the more people you’re going to alienate. At the end of the day, an inclusive process will come out with better results.”

Paying now or paying later

There will be pain in trying to arrive, finally, at an official, and effective, Anti-Degradation Implementation Rule. Former Water Resource Board staffer Bartlett believes the DEC has habitually been so accommodating to business and economic interests that the regulated community has an unrealistic expectation of what a permit that seriously strives to protect our waters should entail. Consequently, taxpayers have been footing the bill

for remediation that ought to have been avoided.

Ironically, Bartlett says, “The DEC’s overly permissive approach puts the regulated community at greater risk of having their discharge permits overturned on appeal, and it will cost them more to comply after the fact than it would to fully comply in the first place.”

Of course, that depends on Vermont adopting anti-degradation implementation strategies with teeth. If it does, Greenwood and Bartlett anticipate a certain amount of shock when citizens, civic and corporate leaders, and even regulators discover what it will cost to truly protect our waters.

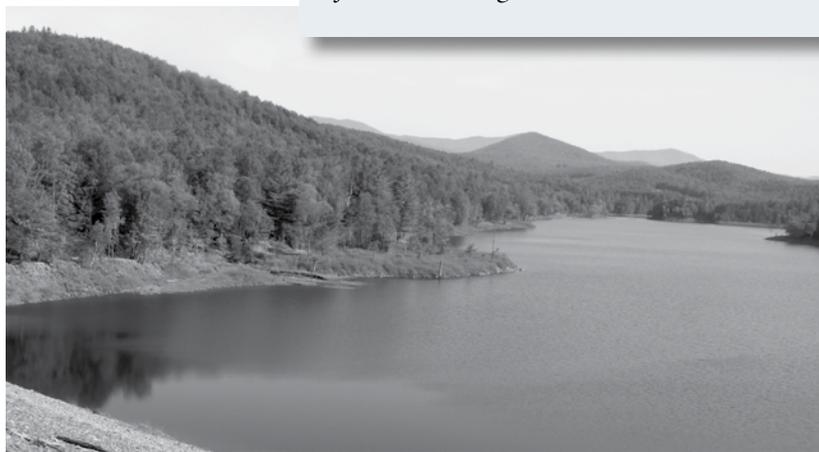
“But the longer we go without facing up to the bill, the higher it will be when we pay it,” says Bartlett.

VNRC has been working with partners at the Conservation Law Foundation on this complicated but critical policy issue, one that is a top priority for VNRC this year.

As for Greenwood, she just wants the DEC to get the ball rolling.

“It’s been a rocky road even to get to this point. I know we’ll have more disagreements with DEC before this rule is finalized,” Greenwood says. “Signals are that DEC is pushing for a rule

that is simply not aggressive enough. But I’ll be so glad when we’re actually moving ahead in the conversation. We’re doing our environment and ourselves no favors by constantly ducking the issue.”



Tim Newcomb

VNRC is deeply grateful to the following entities for their generous support for our Water Program: the Lintilhac Foundation for supporting our research and advocacy regarding anti-degradation policy; Green Mountain Coffee Roasters for supporting education and outreach efforts related to river management and anti-degradation initiatives; and the Johnson Family Foundation for general support of our Water Program.

Lessons From Irene: What We Can Do About “The Next Time”

Post Irene, there has been a lot of talk about floodplains, and building in floodplains. While we need to rebuild differently, we also need to be realistic. We need to recognize that people will continue to live along or near rivers in Vermont because, to a large extent, that’s where our lives are: our homes, our downtowns, our roads, our best agricultural soils, our recreation.

What this means is that we need to take a broader view. We need to recognize that there are landscape-scope solutions to the challenges before us and that to blunt the effects of future storms, Vermont needs to look beyond rip rap, culverts, and river armor. We should:

- **Keep our forests healthy.** Land with trees – not pavement – is more stable, filters water, and discharges far less runoff. Our headwater streams and wetlands are critical for protecting downstream resources. We should conserve these forests, keep them economically and ecologically viable, and try to keep them from being “converted” to non-forest use. Successful policies like Current Use, also known as Use Value Appraisal, and conservation funding, are critical ingredients.
- **Allow vegetation to temper disaster.** Trees, grasses, and other vegetation along our rivers naturally withstand fluctuating river-water speeds and water levels, and are among the best and cheapest type of protection we have against massive and damaging flooding.

- **Promote compact growth.** Among other things, “smart growth” (compact, rather than spread out, development) minimizes the need for runoff-inducing parking lots and roads. If we continue to scatter development throughout the countryside, we’ll need more new roads, more new bridges, and more new culverts. All of this infrastructure can prove to be a massive burden on public budgets not just for initial construction but also for repairs when future floods hammer Vermont’s infrastructure.
- **Disperse the water.** The state should set up both incentives and regulations to encourage “low-impact development.” That’s development that puts a premium on letting water soak into the ground where it lands, rather than letting it run off into watercourses.
- **Generate more clean energy.** Most scientists agree that the reason we are facing climate instability is our collective use of carbon-based fuels. To reduce our contribution to climate change, Vermont needs to aggressively promote energy efficiency and conservation, as well as a greater reliance on renewable energy, with a focus on efficient and sustainable sources.

If we pay attention to the most recent science, and hold fast to Vermont’s traditional resource-conservation ethic, we can be prepared for the next Irene.

In the Thick of the Legislative Session

VNRC is tracking and supporting a variety of legislation in the State House this year. While bills are always moving and changing, here is a broad overview of VNRC's legislative focus this year:

Water protection:

VNRC is strongly supporting river-related legislation to create incentives for towns to develop smart land use planning in order to prevent the kind of damage wrought by Irene. VNRC has also been testifying and providing technical information in support of a ban on hydraulic fracturing. VNRC also supports and has testified on potentially innovative Lake Champlain cleanup legislation.

Working lands: VNRC supports legislation that would invest in agricultural and forest related entrepreneurship by setting up new incentive programs, creating a one-stop shop for business development and permitting assistance,



Steve Wright

and streamlining and consolidating various working lands programs. VNRC, along with a broad range of forest and agriculture organizations, also is advocating for an increase in the penalty for developing land that has been in the Current Use program as a way to enhance long-term stability of the program.

Renewable energy: VNRC has been tracking legislation aimed at creating a mandatory renewable portfolio standard, or RPS, that would require electric

utilities to get a certain amount of their power from renewable sources. VNRC supports moving to a mandatory RPS and is working hard to ensure that Vermont carefully crafts a program to emphasize goals we find particularly important: fostering more distributed, community scale generation, in state and in the region; reducing greenhouse gas emissions; and supporting

development that is efficient and environmentally sound. VNRC also supports a bill that will expand net-metering opportunities and make the program easier and more equitable as well as legislation that would require the disclosure of building energy performance and promote thermal energy efficiency. VNRC may also weigh in on legislation related to spent nuclear fuel as well.

For more on VNRC's work in the legislature, contact Jake Brown at jbrown@vnrc.org. 



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NEWS & NOTES



Jordan Gonda is VNRC's 2012 Legislative Intern

VNRC has hired recent Vermont Law School graduate Jordan Gonda as our 2012 legislative intern. Jordan has been working with VNRC since early January and will wrap up her work when the session ends this spring.

"We are very fortunate to have hired Jordan, who has strong academic credentials and a breadth of appropriate experience," said Jake Brown, VNRC's communications/government affairs director.

Jordan has a JD as well as a Master of Environmental Policy from VLS and holds a B.S. from East Stroudsburg University



Jordan Gonda

in Environmental Studies. She has held a judicial externship with the Vermont Environmental Court and has worked with an engineering firm and a county conservation district in Pennsylvania in the areas of wastewater and NPDES permitting. She also served two years in the National Guard.

"I'm enjoying contributing to the good work of VNRC," Jordan said.

Jordan has been helping VNRC keep tabs on legislative activity by monitoring committee action. Jordan, who has done academic research on fracking for natural gas, testified early in the session on a bill to ban the practice in Vermont. She is also helping VNRC with additional natural resources and energy legislation moving through the State House this year.

Greenwood on Water Tour

VNRC's Water Program Director/Staff Scientist Kim Greenwood recently spent some time at a few water conferences, absorbing the latest science and policy developments in New England.

She attended the

Town Energy Committees at State House

On February 2, VNRC organized the first-ever special joint legislative hearing specifically to hear from town energy committee leaders from across Vermont. The event, which involved the House and Senate natural resources and energy committees was a way to deepen the dialogue and strengthen the connection between grassroots efforts and state policy making. Representatives from 30 town energy committees testified, clearly articulating the benefits of programs they've already undertaken and the potential power of new policies to meet Vermont's energy efficiency and renewable energy goals. Energy efficiency — particularly thermal efficiency — was one of the primary topics on which the groups asked the state to focus attention and funding.



Local energy committee members testify at the State House.

Jordan Gonda

Northeast Private Well Symposium where she learned more about some of the potentially dangerous substances people are finding in their drinking water from wells; she learned how to work with tricky well water data, and all about hydrofracturing.

And at the recent conference of the Northeast Chapter of the International Erosion Control Association, Kim heard about new erosion control tools, got updates from EPA, and

heard case studies of erosion prevention and sediment control related to the I-93 project in New Hampshire.

Finally, at the New England Water Law and

Policy Conference, Kim outlined VNRC's gains on controlling water pollution as part of the VNRC/Wal-Mart settlement agreement in the recent St. Albans Wal-Mart case. At the conference, it was clear: because water resources around New England are becoming increasingly polluted — and increasingly in demand — we should expect more difficult conversations in the coming years.



Kim Greenwood





MEMBER PROFILE

Kate Crawford: A Conservationist from Childhood and VNRC Member

By JAKE BROWN

VNRC recently sat down with one of our members, Kate Crawford of Essex, for a wide ranging conversation about her background and the energy and environmental challenges we face. Below is a condensed version of the exchange.

Jake Brown



Kate Crawford

How did you develop a conservation ethic?

My parents were back-to-the-land types and founded Stump Sprouts Guest Lodge and Cross Country Ski Center on a 500-acre farm in the really tiny western Massachusetts town of Hawley. The business has deep connections to the rural landscape and environmental conservation. My father cuts all the firewood to heat the lodge, most of the produce is grown in on-site gardens, and we get our electric power from a solar array. It is very much a

family business and I guess the way I grew up, my life *was* my environmental experience.

How did your career path develop?

In high school, I took an advanced placement environmental science class, which I really enjoyed. That marked the transition from environmentalism being a part of my upbringing to a passion of my own. I enrolled in UVM's Rubenstein School of the Environment and Natural Resources where I earned an undergraduate degree in environmental

science and a Masters degree in Aquatic Ecology and Watershed Science. That was in 2007. Since then I've worked at an environmental consulting firm specializing in groundwater remediation, and now I do GIS mapping of municipal water systems for the Vermont Department of Health. Also, a couple of years ago I initiated the involvement of Indian Brook Reservoir, in Essex, in the state's Lakes and Ponds Water Quality Lay Monitoring Program.

Why did you join VNRC?

VNRC's approach seems to reflect my values: pragmatic, realistic, and science-based efforts to address pressing environmental issues. The staff seems to have deep expertise. VNRC is always my go-to barometer for current issues.

What do you see as the big environmental challenges facing the globe, and Vermont?

Energy conservation and efficiency is a big one. I'm floored that with the disasters we've seen recently – the Gulf oil spill, the Fukushima nuclear power plant disaster in Japan, and the Enbridge oil pipeline spill in the Midwest – there really isn't a serious conversation about energy conservation and efficiency. Renewable energy is wonderful, but it does not address our seemingly endless thirst for energy. Also, given my background, water-related issues are particularly close to my heart. And after Irene, I've become interested in river gravel dredging and stream channelization. I will also be following H. 464, the proposed legislation banning hydraulic fracturing in Vermont. My husband and I love Vermont's waterways – canoeing the Green River Reservoir and Lake Champlain in the summer – and are avid cross country skiers in the winter. We are facing a lot of environmental challenges, and for people to understand them, I think it's important to make the concepts tangible, to help everyone understand the impacts of their actions. I don't know – I'm just trying to make the world a better place by the time I leave it! 

VNRC Receives Generous Bequest

VNRC is deeply grateful for an unexpected bequest we received last fall.

The bequest, in the amount of \$13,900, came from an individual who has been a faithful VNRC member for some 25 years.

Over the years, VNRC has been the recipient of several gifts from people who remember us in their estate planning. As we continue to advance our mission, support of all types, including gifts like these, are critical.

If you would like more information about opportunities for planned giving to VNRC, please be in touch with Development Director Stephanie Mueller at 223-2328 x 13, email her at smueller@vnrc.org or contact your estate planner or attorney.

Burlington-based Glass Studio Supporting VNRC

VNRC is proud to be sponsored by AO Glass studio's 12-12-12 campaign. AO Glass, of Burlington, is designing and producing 12 glass objects, choosing 12 organizations that work for a positive change, and then generously donating 12% of the proceeds directly to the connected organizations. AO Glass has chosen VNRC as one of these organizations and has created a beautiful glass leaf (pictured here) especially for VNRC. Thank you AO Glass studio!

AO Glass is hoping that their new campaign will raise awareness about critical issues for our planet and people in 2012. If you are interested in purchasing the VNRC leaf, or want to check out the items for the other non-profits they are supporting, please visit www.aoglass.com.





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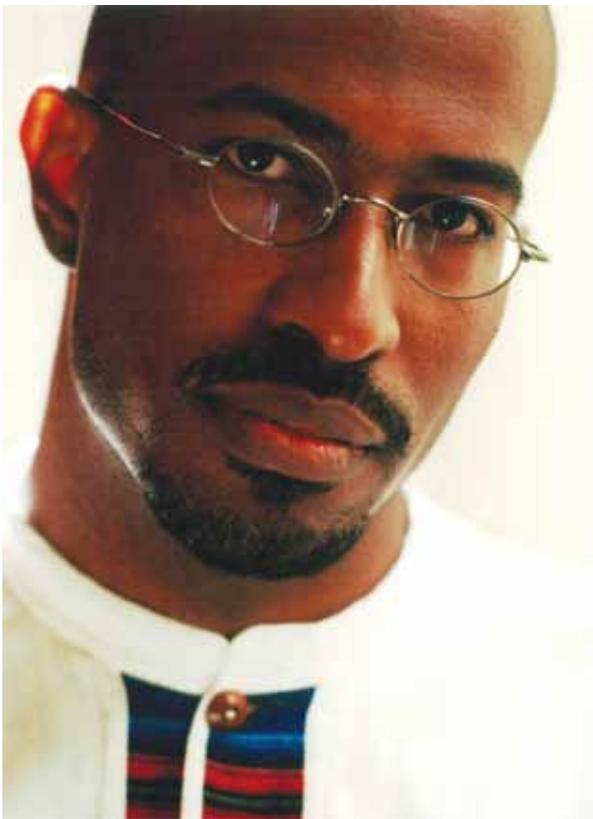
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Save the Date! **Celebrate VNRC's 50th with Clean Energy Pioneer Van Jones**



VNRC's year-long Legacy Project celebrating our 50th anniversary will culminate Saturday, September 22 with a big party at Shelburne Farms. Our featured speaker is Van Jones, the "Green Jobs Czar" of the 2009 Obama White House. Please join us!

Jones, a moving and inspirational speaker, is the author of the definitive book on green jobs, "The Green Collar Economy: How One Solution Can Solve Our Two Biggest Problems" which became a New York Times bestseller. In 2009, he worked as the special advisor for green jobs at the White House Council on Environmental Quality. In that position, he developed policy recommendations to help implement the Obama administration's commitment to clean energy jobs.

Also on hand at the September 22 celebration will be VNRC's Advisors: Bill McKibben, Gus Speth, Maude Barlow, Will Raap and John Ewing. Vermont-made music, dancing, local fare and brew will follow.

Please stay tuned for more information about the event in the coming weeks at vnrc.org.

JOIN VNRC!