Spring/Summer 2013

The Nature Conservancy
Protecting nature. Preserving life.™

The Oak Log

News From Vermont

A Vermont Youth Conservation Corps crew learns the finer points of making a woody debris jam from TNC's Paul Marangelo.

Hubbardton River Clayplain Forest, 10 Years On

The old Yankee farmers of West Haven, Vermont, can be excused for thinking their TNC neighbors at the Hubbardton River Clayplain Forest Natural Area are just a bit daft. For more than a decade, these old timers have watched and scratched their heads as the Conservancy has coaxed 165 acres of soggy, marginal farmland back into becoming a forest. Of course, this being TNC, there is scientific method to the madness!

Five centuries ago, clayplain forest—one of the richest ecosystems in Vermont—stretched continuously over hundreds of thousands of acres, from the shore of Lake Champlain to the Green Mountains. Known for extraordinary diversity, with more tree species than any other forest type in Vermont, clayplain forest boasted white and red oak, red maple, white pine, shagbark hickory, white ash, hemlock, beech, and much more. But by the late 20th century, only 10 percent remained—tiny, green isolated patches dotting croplands of the Champlain lowlands.

In 2002, TNC launched the Hubbardton River Clayplain Forest Natural Area, a bold experiment to restore a small piece of this rarest of Vermont natural communities. The original purchase of the 250-acre farm has since expanded to 366 acres in West Haven and Benson. The land includes 125 acres of intact clayplain forest and 200 acres of old wet agricultural fields.

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The mission of The Nature Conservancy is to conserve the lands and waters on which all life depends.

The Nature Conservancy is a private, international membership organization committed to the preservation of natural diversity. To date, we have protected more than 117 million acres in the United States and around the world.

In Vermont, the Conservancy has protected more than 183,000 acres and owns and operates a network of 55 natural areas across the state.

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In case you haven't heard the news, I recently stepped down as Executive Director of the Conservancy's Vermont Chapter, a position I've held since 1979. This is an ideal moment to look back on what we've all accomplished since then.

Conservationists once measured progress in terms of acres saved, an acre being a square about 210 feet on a side. By this reckoning, we've conserved more than 180,000 acres—over 280 square miles of our Green Mountain state. Adopting this yardstick myself, I used to say "We conserve nature the old fashioned way—we buy it."

But honestly, it's more complicated than this, because time is a hidden (but critical) dimension in our world. Since almost all of Vermont has been impacted by centuries of agriculture and forestry, even the "natural areas" we conserve have some recovering to do. That takes time. In our conservation work, when a tract's status changes from "on the market" to "conserved," perhaps the greatest gain for nature may be the gift of time and recovery that this represents.

In this Oak Log issue, we speak of "restoring" clayplain forest by planting seedlings of more than 20 woody species into wet fields that once supported this now rare forest community. It's a simple story, but the object of our desire—a complex, thriving forest—will take centuries to develop. This is not a prize for our own generation, but for our grandchildren and great-grandchildren. We can hope that they'll someday bird watch and picnic in the restored woods that we set in motion today.

This same hope underlies our efforts to restore disease-tolerant American elms to floodplain forests here. Elms were the dominant canopy trees of these forests, until Dutch elm disease nearly wiped them out in the 20th century. Realistically, many decades will pass before the American elms that we plant now will reclaim their rightful places in the canopies of Vermont's floodplain forests. But today we've kick started their recovery.

Much has changed since I became our chapter's first Director over three decades ago. Our work has evolved beyond simply conserving acres and saving habitat for endangered species, to improving ecological flows on rivers and securing connectivity across our forested landscape. All along, however, our business has really been about hope and about time. It has been an expression of our own generation's belief in the future.

As I pass the torch to a new generation of leadership, I do so with that same faith. The next edition of this Oak Log newsletter will reflect that long view, and will include more stories about what we've accomplished together in Vermont over the last three decades.

Bob Klein

Celebrating Land and Legacy

Explore expansive vistas, new forests and secrets of the bog: Join Bob Klein and our conservation staff on not one, but six special conservation gatherings on weekends throughout the season. *Details, page 5.*

Stay tuned for the date and details about a celebratory event recognizing Bob Klein and his contribution to conserving Vermont's lands and waters, and to welcome our new State Director. **More at nature.org/vtannual**

Hubbardton River Clayplain Forest, 10 Years On

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TNC's plan was to transform 185 acres of fields back to clayplain forest by planting 50,000 native trees by 2014, accomplished in partnership with the U.S. Department of Agriculture's Natural Resource Conservation Service Wetland Reserve Program and the U.S. Fish and Wildlife Services' Partners for Fish and Wildlife Program.

To this end thousands of native tree seeds were gathered by volunteers, and nurtured at the Native Plant Restoration Nursery in Whitehall, NY, opened in 2002 by TNC and the Poultney-Mettowee Natural Resource Conservation District. "Restoration is an expensive and time consuming undertaking," notes the Conservancy's Critical Lands Manager Murray McHugh, who manages the ongoing restoration efforts. "The fact that we decided to invest resources here, along the Hubbardton River, underscores how rare and special clayplain forests are."

In 2004, the first seedlings were transferred to the natural area's fields. Each was encircled with a blue plastic tube to protect delicate green shoots from hungry wildlife. Volunteers from the Rutland, Poultney, and Fair Haven High Schools; Bridport Elementary School; Castleton State and Green Mountain Colleges; Camp E-Wen-Akee and Castleton Girl Scouts; and individual volunteers from many communities in Vermont, have added to the Lilliputian forest every year since.

A bold experiment to restore one of Vermont's rarest woodland communities.

Because the diversity of species in clayplain forests often depends on the relationship between micro-topography and the water table, hydrological restoration was crucial to the restoration project. So the Conservancy reshaped unnaturally ditched and leveled farmland with backhoe and bulldozer to create shallow wetland basins, naturalized stream channels and functional floodplains to attract and support wildlife. "Drainage ditches don't work like natural streams," explains TNC Conservation Ecologist Paul Marangelo. "Natural streams deliver water to the floodplains they create, which diffuse and slow floodwaters, making wetlands and providing other ecological benefits."

Another hydrologic restoration experiment installed woody debris jams in small intermittent streams with the aid of draught horses and a VYCC crew. "Historically, dead trees in streams form important habitat for aquatic organisms. But that is completely lacking in the preserve's old fields," explains Marangelo. "Woody debris jams slow flow, allowing more sediments to be deposited in the stream channel, raising the streambed level and integrating it into the floodplain."

The ambitious end goal of the Hubbardton River Clayplain Forest Natural Area still lies at least a century in the future,

© Cherie Mosher

White pines rising: By 2014, the Conservancy plans to plant 75,000 tree seedlings as part of its clayplain forest restoration efforts—50,000 on 185 acres at the Hubbardton River Clayplain Natural Area and 25,000 seedlings on 75 acres at the Helen W. Buckner Memorial Preserve at Bald Mountain.

though early results show promise. "We've had deer and rodent browse damage to the seedlings," says McHugh, "but the scientific literature shows that this isn't uncommon. If the saplings survive at least three years—which many have at the site—there is a good chance of the trees reaching maturity." When the planting phase is complete in 2014, the project will enter a monitoring phase, as nature does its work.

One of the most exciting project outcomes was serendipitous. The clayplain forest preserve was established in 2002, seven years before TNC and its partners launched Staying Connected, an effort to maintain wildlife connectivity between the Adirondacks and Green Mountains, and beyond. "When we ran computer models, we noticed that one of the most likely habitat linkage areas for large mammals went right through the Hubbardton River Clayplain preserve," says Marangelo. "It was an incredible stroke of luck, establishing the preserve there!"

Ten years on, the restoration effort is coming together. Seedlings are growing; small wetlands, naturalized stream channels and floodplains are taking shape; and a variety of species—ranging from leopard frogs to great blue herons—are returning.

In a hundred years, descendents of those skeptical Yankee farmers may look out over the Hubbardton River preserve's former fields at a magnificent new crop: a mature clayplain forest and the return of one of Vermont's rarest, most ecologically rich woodlands.

Nature's natural rhythms: Seasonal river flooding at Maidstone Bends enriches soils for floodplain forests and farming.

Maidstone Bends:
The Power of Partnership

If you haven't driven VT Rte. 102 through Maidstone, Vermont you need to give yourself the treat. This route features the spectacular meandering bends of the upper Connecticut River, framed by far mountains. Eight miles of river frontage grow green with silver maple floodplain forest, abutting hay fields, oxbow ponds and emergent marsh.

Maidstone Bends is a naturalist's paradise. "There are riparian bird species, especially fish-eating raptors such as bald eagles and ospreys, and other fish-eating birds, like herons and kingfishers, plus a large number of dragonfly species," says Christian Marks, Floodplain Ecologist for the Conservancy's four chapter Connecticut River Program.

TNC's Vermont Chapter first became interested in Maidstone Bends in 2000 thanks to the efforts of Joan Allen, formerly the Chapter's Associate Director of Land Protection. Allen's instinct that this area was an ecological treasure was born out, not only in a report from Vermont's Natural Heritage Program, but also in a 2011 Conservancy study that identified Maidstone Bends as having some of the best remaining floodplain forest on the entire Connecticut River.

Over the next decade the Vermont Chapter built an extensive partnership to protect and restore Maidstone's floodplain forest, teaming with the New Hampshire Conservancy Chapter, the Essex County Natural Resources Conservation District, the USDA-Natural Resources Conservation Service, Vermont Land Trust, Upper Connecticut River Mitigation and Enhancement Fund, the Vermont Housing and Conservation Board, local farmers and other organizations.

"Our goal at Maidstone Bends is to protect and enhance naturally functioning floodplain forests," says Vermont Chapter Director of Protection Jon Binhammer. "Our Maidstone Bends Natural Area sits in the center of a 68-mile undammed stretch of the Connecticut River, allowing natural flows and regular seasonal flooding—which are good for ecosystems, and for people who enjoy the bird, fish and wildlife that thrive here."

The river valley's rich soils, a product of the natural flooding regime, have been much sought after. "Our goal here is to strike a balance between local agricultural needs and floodplain forest restoration," notes Binhammer.

In 2006, the Vermont chapter purchased its first riverside property, the 71-acre Young farm. While a local farmer continues to lease and hay much of the land, the Conservancy has planted silver maples and other native trees and shrubs as riparian buffer, and reseeded marginal croplands. Across the river, the New Hampshire chapter has protected the 258-acre Potter Farm. Currently, the Vermont chapter is closing on the Davitt property, where Chris and Hannah Fay are leasing and haying the best soils. "We're just getting started, but the partnership is working well. TNC has been very understanding of our needs," says Chris.

The Vermont Chapter has built an extensive partnership to protect and restore Maidstone's varied and rich floodplain.

"Once the Vermont Chapter concludes a land deal, and puts together a restoration plan with the farmer, we typically step in," says Tamara Colten Stevens of the Essex County Natural Resource Conservation District. "Then we do the restoration, ordering trees, providing labor and monitoring."

Among the Conservancy's most exciting work is the return of American elms. "Historically, elms were the dominant trees in this floodplain forest. Those big old trees offered tremendous habitat," says Rose Paul, Director of Critical Lands and Conservation Science for the Vermont Chapter. But Dutch elm disease wiped out these majestic trees. The Conservancy recently reintroduced the first 30 disease-tolerant elms in the floodplain as part of a four state collaboration with the U.S. Forest Service. Most, after two growing seasons, are doing well.

With the advent of the 22-partner Staying Connected Initiative, Maidstone Bends has taken on new significance. Its conserved lowlands connect hundreds of thousands of acres of forested habitat on both sides of the Connecticut River.

"I think it's good for the community," declares Maidstone Town Clerk Suzy Irwin. "It's right in line with our town plan to keep us rural, with an emphasis on farming and forestry."

It seems that farming and floodplain forest restoration have made a happy marriage at Maidstone Bends.

Full length story at nature.org/vermont

Burleson Conservation Easement — 275 acres

Red Rock Bay, Lake Champlain — Benson

Red Rock Bay, at the south end of Lake Champlain, is a wild and remote place, a rugged, largely undisturbed area marked by dense forest, deep ravines, limy cobbles, wetlands and sheer limestone cliffs, some of which descend abruptly to meet the lake.

At the heart of Red Rock Bay is Les and Jan Burleson's 398-acre farm, where they began raising dairy cattle back in 1957. While the Burlesons were not originally proponents of conservation, their retirement from farming along with years of friendly discussion with the Vermont Chapter of TNC changed their minds. In 2012, they agreed to protect 275 acres of their ecologically rich forestland with a conservation easement.

Under the easement, the westernmost 105 acres of their farm—deep forest bordering the lake—will be maintained as a natural area, with no further timber harvesting. On the remaining 170 easement-protected acres, the Burlesons will manage the forest for timber and enroll the acreage in Vermont's Current Use program. The easement will be held by the Vermont Department of Fish and Wildlife.

The newly protected property includes a large tract of woodland, wetlands, streams, and cliffs that descend to Lake Champlain. It also includes sizable patches of five state-significant forest communities—all in very good condition. So far, one rare and six uncommon plants have been identified. In addition, there are several vernal pools and a large wetland complex, plus 1,200 feet of undeveloped lake frontage.

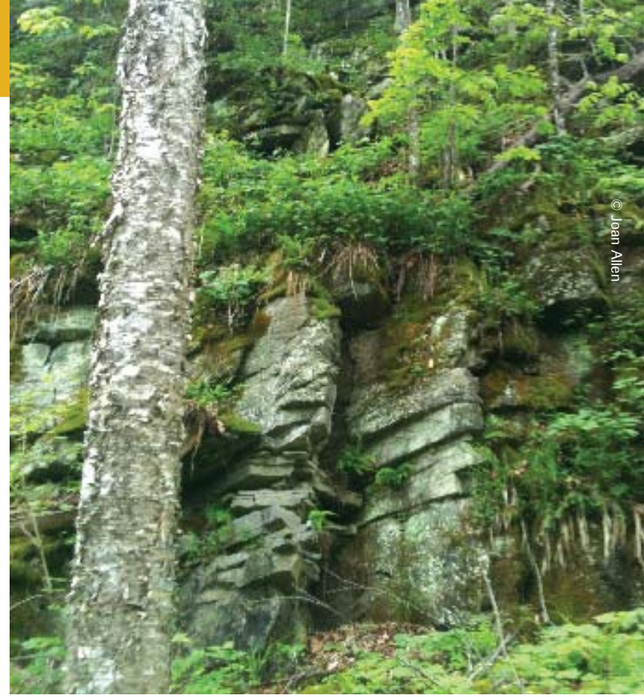
The wildlife associated with the natural communities of Red Rock Bay range from interior forest and wetland birds and waterfowl such as wood ducks and black ducks; to moose and deer; reptiles and amphibians.

"The forests at Red Rock Bay in the Narrows of Lake Champlain are some of the most diverse in Vermont—loaded with rare species and natural communities," says Jon Binhammer, Director of Protection for the Vermont Chapter. "Through the purchase of the Burleson easement we have ensured the protection of a scenic and wild lakeshore for years to come."

Public access will be allowed for hiking, birding, snowshoeing and other passive forms of outdoor recreation from a designated point on Carter Street in Benson from January 1st to September 30th. Access for hunting during peak season from October 1st to December 31st requires written permission from the Burlesons.

Franklin Bog Natural Area addition — Franklin

The Nature Conservancy has added 7 acres to its Franklin Bog Natural Area—one of Vermont's largest quaking bogs. A deep "moat" surrounds the enormous bog mat, making it inaccessible except when frozen in winter. The TNC-owned preserve now protects 183 acres of this National Natural Landmark.



Rugged limestone cliffs and deep forest on the Burleson property.

Summer of Fun!
Walk the land with Bob Klein

Sat, June 1 - North Pawlet Hills, Pawlet. 2pm to 5pm with celebration of new 524-acre addition 5pm to 6:30pm.

Sat, June 22 – Helen W. Buckner Preserve at Bald Mountain, West Haven. 10:30am to 2:30pm, bring picnic lunch.

Thurs, July 25 - Green River Reservoir, Morrisville. 2pm to 5pm, optional cook-out 5pm to 6:30pm.

Sat, Sept 28 - Chickering Bog, East Montpelier. 10:00am to 1pm, bring a picnic lunch.

Sat, Oct 5 - Raven Ridge, Charlotte/Monkton. 10:00am to 1pm, with cider and doughnuts.

Sun, Oct 20 – Hawk Hill, Brandon. 10:00am to 1pm, bring a picnic lunch.

Visit nature.org/vtannual for more details and look for your invitation in the mail

Staying Connected: Take It to the Next Level!

The Staying Connected Initiative—a groundbreaking effort by 22 partners in 4 U.S. states and 2 Canadian provinces to protect, maintain, and enhance wildlife connectivity across the length and breadth of the Northern Appalachians Acadian region—has reached a watershed moment.

Phase one, launched in 2009, has surpassed its goals. Among other highlights, nearly 90,000 acres of lands important to connectivity are on their way to being conserved, and 12 municipalities and 1 regional planning commission have enacted new land use policies to sustain connectivity and habitat for wide-ranging mammals.

"The partnership has elevated the visibility of landscape connectivity, putting it on the radar in the communities of the region's seven key habitat linkages," says Phil Huffman, Director of Landscape Conservation and Policy for the Conservancy's Vermont Chapter. "We've generated real momentum, and plan to build on that in phase two."

TNC has played key roles in the Staying Connected Initiative (SCI), leading conservation work on the ground in several linkages and acting as overall coordinator, lead administrator, fiscal agent, and chief cheerleader for this complex partnership.

"The folks at TNC Vermont have been indispensible to the collaboration, harnessing 22 organizations," declares Vermont Fish and Wildlife Department Conservation Planning Biologist Jens Hilke. "They've kept us all focused on both the large scale landscape connectivity vision and the local application of that vision. It takes a lot of patience and flexibility to be a convener of a partnership that large. It's herding cats!"

"TNC has done a brilliant job!" agrees Wildlands Network Eastern Programs Director Conrad Reining. "They've ensured we've met the needs of our two main funders, the U.S. Fish and Wildlife Service and the Wildlife Conservation Society and spearheaded the creation of SCI's great new website to promote our work. "

As the partnership shifts from phase one to phase two, "We will be strongly committed to building on the work done, and accomplishments made," notes TNC's Huffman. In phase two, SCI will seek new long term funding sources, conserve more key habitat "stepping stones," engage with its Canadian partners in a more powerful way, expand land use planning efforts, and build on emerging partnerships with transportation agencies to make it easier for wildlife to safely cross roadways.

"We need to use all of our diverse skills and resources to solve the landscape connectivity puzzle," concludes Huffman. "It's a broad challenge for the conservation community, and society at large, to determine how we interact with the landscape we live in, and how we share it with other living things."

StayingConnectedInitiative.org

DISCOVER MORE about the people and places involved in Staying Connected, and the tools and resources available to help municipalities and landowners protect wildlife and habitat connectivity.

SCI: Accomplishments by the Numbers

- 22 partners, in a Conservancy-led alliance, work to maintain 7 major habitat linkages stretching across 4 U.S. states and 2 Canadian provinces.
- SCI has completed GIS habitat connectivity models for all linkages and initial wildlife tracking and "ground truthing" of models along key roads.
- 41,000 acres of habitat connectivity land protection projects complete.
- 48,000+ acres of additional habitat connectivity land protection projects nearing completion.
- 32 municipalities and 6 regional planning commissions, covering more than 100 towns, have received direct SCI assistance, including outreach, presentations, and technical assistance on connectivity and municipal planning.
- 20 communities and 3 regional planning commissions have completed or are working on land use plans, policies, and other actions to address connectivity.
- In the Adirondacks to Green Mountains linkage alone, SCI has organized nearly 60 events (presentations, walks, and meetings) attended by more than 1,000 people.
- SCI offers technical assistance and data on priority road crossings for wildlife connectivity to VT, NY, NH, and ME state transportation agencies.

© Donia Prince

Green Mountain Coffee Roasters crew and TNC staff at LaPlatte Natural Area.

Corporate Stewardship Benefits Conservation

There's a lot less common buckthorn infesting the Conservancy's Williams Woods and LaPlatte Rivershore natural areas thanks to some generous Vermont corporations.

Employees from Green Mountain Coffee Roasters, Seventh Generation, IBM, Pizzagalli Construction, Merchants Bank, and the Vermont Energy Investment Corporation have clocked hundreds of volunteer hours since 2005 to rid preserves of invasive species, improve trails and plant trees.

"We're proud to work with The Nature Conservancy," says Liz Dohrman, Volunteerism Specialist at Green Mountain Coffee Roasters. "Our employees get to spend days outside helping preserve vulnerable areas in this beautiful state we call home, while turning into ambassadors for conservation."

"It's a great way to build camaraderie and teamwork," says Tara Sullivan, Implementation Staff Manager at the Vermont Energy Investment Corporation. "I'd absolutely recommend the program to other companies and volunteer groups."

"The program is definitely in line with our mission to lessen environmental impacts," says Chris Lyon, Seventh Generation Community Services Manager. "Any chance to work with a likeminded organization benefits our employees."

"We're grateful for all the help we've received," concludes Lynn McNamara, the Conservancy's Northern Vermont Critical Lands Manager. "Now we're looking for more companies to join the party!" If interested in corporate stewardship, please contact Lynn McNamara at lmcnamara@tnc.org

Dam Relicensing Offers Ecological Opportunities on Connecticut River

The Nature Conservancy and several of its partners have a unique chance to improve the long-term ecosystem health of 150 consecutive miles of the main stem of the Connecticut River and its floodplains over the next five years.

The Federal Energy Regulatory Commission (FERC) is currently reviewing the licenses of five hydropower generating facilities on the Connecticut River, including the Wilder, Bellows Falls, and Vernon Dams in Vermont, and the Northfield Pumping Station and Turners Falls complex in Massachusetts.

FERC approves hydropower licenses for 30 to 50 year terms, and is required under the amended 1986 Federal Power Act to give "equal consideration" to energy generation and other values such as fish and wildlife protection, environmental quality, and recreation. The review process runs until 2018.

"Very rarely do so many facilities, impacting so many consecutive miles of river habitat, undergo relicensing all at the same time," notes Katie Kennedy, Applied River Scientist for the Conservancy's four chapter Connecticut River Program. "Our goal is to be a voice for river ecosystems—to help find solutions to balance hydropower and ecosystem needs."

TNC plans to promote license requirements leading to more natural flow patterns in the river to restore and maintain ecosystems such as floodplain forests, and to protect the habitats of riparian invertebrates such as the state-threatened cobblestone tiger beetle, freshwater mussels, and resident and migratory fish, such as the federally listed short-nosed sturgeon.

"As part of the FERC process, the Conservancy and a small group of stakeholders have been invited to collaborate with the U.S. Fish and Wildlife Service, the lead agency responsible for completing the natural resource assessment," says Rose Paul, Director of Critical Lands and Conservation Science for TNC's Vermont Chapter. "They are turning to us as an organization that has vital scientific information to share."

© Katie Kennedy

Wilder Dam on the Connecticut River.

Data gathering is already underway. Over the last five years the Conservancy partnered with the U.S. Army Corps of Engineers, academic institutions, the U.S. Geological Service, and the power companies to develop models at the scale of the entire Connecticut River watershed to better understand river hydrology, and deepen understanding of the flows needed to generate hydropower and to support river ecosystems.

"We hope the FERC relicensing process will lead to the optimizing of water use for people and for nature," says Paul.

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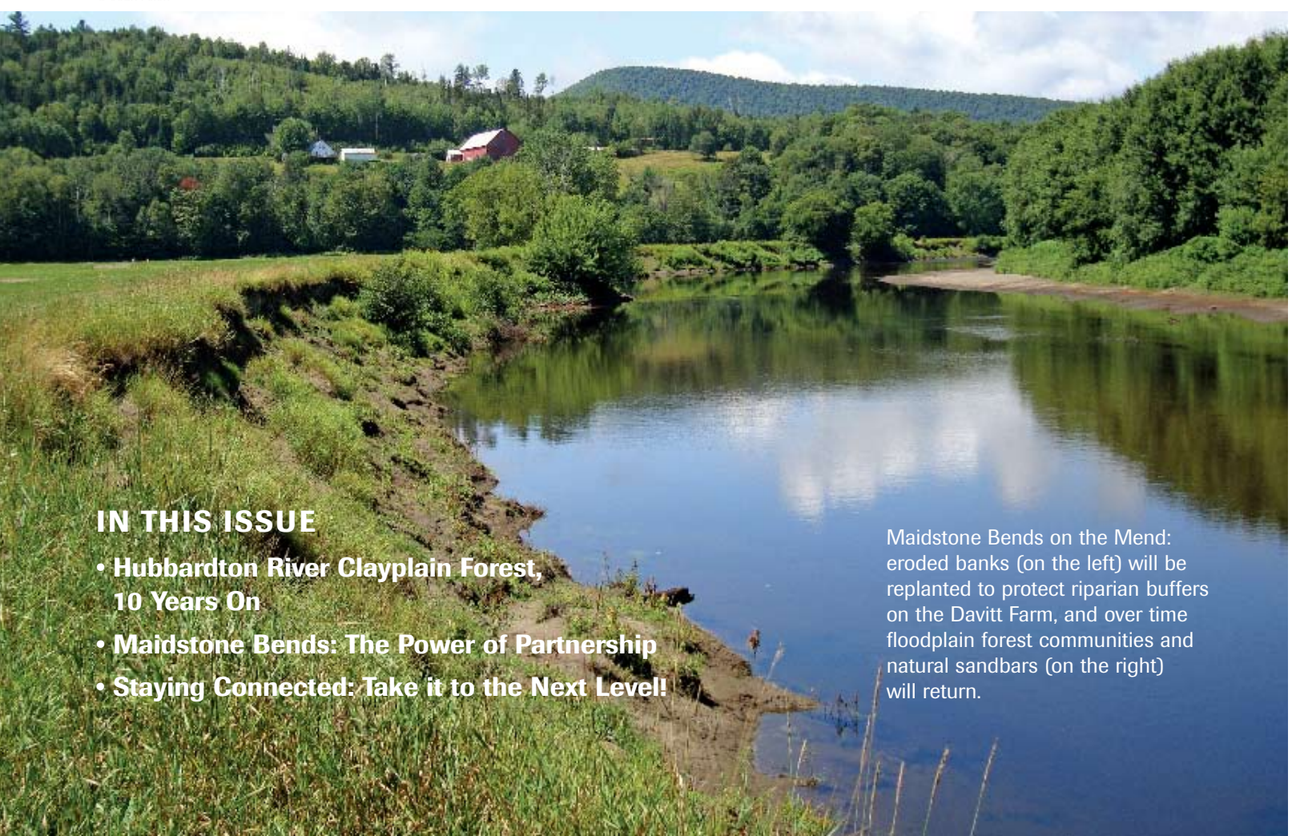

IN THIS ISSUE

Maidstone Bends on the Mend: eroded banks (on the left) will be replanted to protect riparian buffers on the Davitt Farm, and over time floodplain forest communities and natural sandbars (on the right) will return.