

# VERMONT FISH & WILDLIFE DEPARTMENT

## Wildlife Management Area Report



2011 Annual Report

### Wildlife Management Areas as Outdoor Classrooms and Stewardship Demonstration Sites

By Paul Hamelin

It's often said, "A picture is worth a thousand words." But for natural resource education it's infinitely better to be out on the actual site, absorbing the smells, sounds, and sights of the landscape. Standing knee deep in snow under a hemlock tree in the crackling cold of a February morning, one has a much greater appreciation for the struggles of a white-tailed deer trying to outlast the challenges of winter on a diet of twigs.

In addition to their primary role of conserving wildlife habitat and providing wildlife-based recreation, a little known role of Wildlife Management Areas (WMA) is their accessibility as outdoor classrooms. A place where students can experience the natural world and observe the results of thoughtful land stewardship.

The habitat diversity and statewide distribution of these lands make them ideal places to observe wildlife sign, animals, plants, and habitats. Throughout the state these lands are used for informal education through birding tours and guided wildlife tracking trips, and for formal activities such as college field trips, graduate research projects, and college natural resource studies. Two examples of this use are found in the Vermont Fish & Wildlife Department's (VFWD) Wildlife Management for Educators Course, an effort to educate teachers in the principles of wildlife management, and, in its collaboration with the Northeast Section of The Wildlife Society (TWS), to offer the Wildlife Field Course for college students striving to become natural resource management professionals.

For 27 years, the VFWD has offered a college level field course that gets educators out into Vermont's streams, forests and wetlands for a week with some of the state's leading experts in natural resource disciplines. The Steam Mill Brook WMA has played a prominent role in the "teacher's course," offering a diversity of habitats where teachers learn about wildlife sign and habitat concepts, beaver wetland ecology, and habitat management techniques.

The Wildlife Field Course provides future natural resource managers with two weeks of instruction in a wide variety of topics, ranging from basic navigation skills, flora and fauna



WMAs have been an outdoor classroom for the Wildlife Management for Educators Course for 27 years. VFWD Photo.

identification, and habitat inventory techniques, to wildlife sampling, inventory, and chemical immobilization methods.

Following the initial session of the Wildlife Field Course in 2009, organizer-instructor John E. McDonald noted in the Summer 2009 issue of the Northeast Section of The Wildlife Society Newsletter that "The majority of the field exercises were conducted at the Bird Mountain Wildlife Management Area, a property of the Vermont Fish & Wildlife Department. Bird Mountain was an ideal setting for the course, with a variety of habitats and forest age classes, good access, and even a pair of nesting peregrine falcons."

The habitat management practices implemented on WMAs make them excellent sites to demonstrate exemplary habitat, forestry, and land stewardship practices. WMA management activities are guided by long range management plans and a variety of policies designed to protect and conserve water quality, wetlands, rare species, unique or fragile habitats and natural communities, and cultural resources, in addition to managing for game species and related public interests. Many WMAs have hosted workshops held by VFWD staff in collaboration with VT Coverts, USDA-Natural Resources

*continued on page 2*



Workshops on the care of wild apple trees are popular WMA events, as indicated by attendance at this collaboration between VFWD, VT FPR, and VT Coverts on Whitney-Hospital Creek WMA. Photo: David Sausville.

### WMAs as Outdoor Classrooms *continued from page 1*

Conservation Service, VT Department of Forests, Parks and Recreation (FPR), and other partners.

These workshops are designed to educate students and private landowners in habitat improvement techniques such as apple or mast tree enhancement, deer wintering area management, aspen management for upland game birds, conifer management for snowshoe hares, grassland bird habitat management, and herbaceous opening development. Best management practices such as installing beaver wetland water control structures demonstrate how impacts to infrastructure can be mitigated while retaining beaver wetlands and their associated values.

During timber harvests prescribed to improve wildlife habitat, practices such as retaining snags and den trees, use of portable skidder bridges instead of poled fords, and retention of forested buffers on streams and vernal pools exhibit proper land stewardship practices to loggers and the public.

On WMA agricultural landscapes comparable practices include planting trees to create riparian buffers, retaining un-mowed hay buffers around wetlands and streambanks, and using delayed mowing to protect grassland bird nests. A recent initiative intended to improve aquatic habitat has provided staff training and emphasized the importance of replacing culverts with bridges when applicable to improve fish passage.

Many of the habitat practices and educational opportunities on WMAs are not apparent to the casual observer, so temporary and permanent interpretive kiosks and signage are placed at WMA access points to educate visitors. For example, interpretive signs at the Dead Creek WMA informs visitors about the migration of snow geese that visit in October. Similar panels are planned for the moose viewing platform at West Mountain WMA to educate viewers about moose biology and management, and a kiosk to educate viewers about the migratory steelhead trout leaping the falls at Willoughby Falls WMA is planned for 2012. Signage on many WMA kiosks is maintained to educate users on topics ranging from land stewardship to

sensitive loon nesting areas. Temporary signage has been placed at several highly visible timber harvests to educate visitors about the purpose of the harvest and the wildlife it was prescribed to benefit.

WMAs throughout Vermont are used routinely as effective classrooms in many fashions for effective, successful, state-of-the-art wildlife and habitat management, stewardship and research. From Dead Creek Days, one of the most popular annual celebrations of Vermont's natural heritage held each year at the Dead Creek WMA, to the courses, trainings and kiosks, the VFWD connects citizens of all ages with the land through outdoor education on our WMAs.

### WMA Research and Education Highlights

- For the past two decades, a professor at Norwich University has researched the ecology of the Canada jay at Victory Basin WMA.
- In 2004, a University of Vermont ecology class used Moose Bog in Wenlock WMA as the focus of an intensive field course.
- Small mammal abundance and distribution has been studied at several WMAs by University of Vermont wildlife researchers.
- Research on the effectiveness of scat detection dogs to confirm wildlife presence has been conducted on Steam Mill Brook WMA, Lewis Creek WMA, and West Mountain WMA.
- Dead Creek WMA hosted the 10th annual Dead Creek Wildlife Day, which featured numerous educational activities such bird banding demonstrations, live wildlife presentations, and nature walks.
- Steam Mill Brook WMA hosted a tour for Vermont legislators to exhibit active timber harvesting techniques and the benefits of prescribed timber harvest for habitat management.



WMAs host many research and education activities, including a long term study of gray jay ecology at Victory Basin WMA. Photo: Stephen Mason

## WMAs at a Glance

The VFWD manages 86 WMAs and numerous riparian parcels totaling over 130,150 acres. These lands play an important role in meeting the VFWD's mission. Management of these areas emphasizes the conservation of fish, wildlife and their habitats, while providing important public access for hunting, fishing, trapping and other fish and wildlife-based activities.

The VFWD has purchased WMAs using several funding sources, including funds from hunting license sales, Vermont Waterfowl Funds from the sale of state duck stamps, US Fish & Wildlife Service (USFWS) Federal Aid in Wildlife Restoration (Pittman-Robertson) Fund, Vermont Housing and Conservation Board, and the Land and Water Conservation Fund. Management and administration of all WMAs are primarily paid for through USFWS Federal Aid in Wildlife Restoration Funds. Each year, at least 16 VFWD biologists and Specialists work on WMA management and administration.



**Aerial photo of mowed hay fields at Willoughby Falls WMA illustrates the exemplary practice of retaining an un-cut hay buffer to maintain water quality (green between yellow line and river) versus leaving no buffer (red line at wetland edge).**

Technical assistance from our colleagues in the Vermont Department of Forests, Parks, and Recreation (FPR) is essential for completing WMA long range management planning, property administration, and habitat management projects. Wildlife habitat enhancement activities are conducted through commercial and noncommercial means to provide the rich diversity of habitat types and forest ages necessary to meet the needs of many wildlife species.

The management of WMAs is guided by Long Range Management Plans (LRMP). LRMPs are based on a thorough natural resources inventory and public input. Management activities focus on providing a diversity of fish and wildlife habitat as well as quality opportunities for fish and wildlife-based outdoor activities.



**WMA management is primarily focused on providing a diversity of fish and wildlife habitat as well as quality opportunities for fish and wildlife based outdoor activities.**  
Photo: Wetland at West Mountain WMA by Bob Zaino



Most of the programs described in this report are funded through the Federal Aid in Wildlife Restoration Program. This program was initiated in 1937 as the Federal Aid in Wildlife Act and created a system whereby taxes are paid on firearms, ammunition and archery equipment by the public who hunts. Today this excise tax generates more than one hundred million dollars each year that are dedicated to state wildlife restoration and management projects across the United States. The state of Vermont uses these monies for acquiring land, and for restoring and managing wildlife. These excise tax dollars, coupled with state hunting license fees, have been the predominant source of funding for the successful restoration and management of Vermont's wildlife resources.



*Conserving fish, wildlife, plants and their habitats for the people of Vermont.*

## Non-commercial Wildlife Habitat Management

Non-commercial habitat management activities includes methods other than timber harvest. In most cases, VFWD wildlife biologists, VT Department of Forest, Parks and Recreation staff, volunteers, or private contractors perform these management activities.

The following non-commercial wildlife management activities were conducted during the 2011 calendar year:

- Installed and maintained **3** beaver baffle water control structures
- Mowed or maintained **955** acres of grassland and cropland
- Cleared competing brush from **127** fruit trees
- Released **11.5** acres of apples and young oak trees
- Planted **350** fruit or mast (nut bearing) trees
- Planted **200** white pine seedlings to restore pine and increase diversity in Victory Basin WMA.
- Maintained **104** acres of old field habitat through controlled burning (**31** acres) and brush mowing (**73** acres)
- Planted **180** trees on **2** acres of streambank for riparian restoration
- Managed water levels on **2,341** acres of wetland habitat for waterfowl and other wetland species
- Maintained **643** waterfowl nest structures and installed **7** new structures
- Installed **2** osprey nesting platforms
- Treated **22** acres to control invasive plants
- Conducted **28** habitat, wildlife and public use inventories on **22** WMAs



Maintenance of wild apple trees on WMAs, along with planting nut-bearing species and improving the vigor of older fruit and nut trees by selective thinning, yields essential fall food for turkeys, deer, bear and many other birds and mammals. Photo VFWD

## Commercial Wildlife Habitat Management

Commercial wildlife habitat management activities can enhance wildlife habitat while removing merchantable wood products or agricultural crops. Commercial logging operations also improve public access for fish and wildlife based activities by helping the VFWD develop or maintain WMA roads, culverts, bridges, and herbaceous openings.

Revenue generated by the commercial sale of timber and hay on WMAs is reinvested into the management or acquisition of these lands. Timber sale receipts from commercial forest management activities on WMAs have increased in recent years. A summary of WMA timber harvests for the 5-year period FY07-FY11 is provided in Table 1.

Table 2 reports the commercial wildlife habitat management activities on WMAs in FY11. Variations in harvesting volumes across different regions of the state are a result of disparities in State-owned timber acreage and accessibility on WMAs, staffing levels, stand conditions, and work priorities. Table 3 indicates the acreage and minimum projected income for six timber harvests that were active, sold, or about to be sold on six WMAs as of January 1, 2012.

Commercial agriculture was conducted using leases on 960 acres in four districts in 2011, generating \$11,139 in revenue to use as match for federal funding for WMA management. As with timber harvesting, this activity contributes to the local economy and maintains Vermont's working landscape while providing habitats for many species of wildlife including waterfowl, deer, bear, turkeys, and many more.



Management for habitat diversity presents excellent wildlife viewing opportunities on WMAs, fostering enjoyment of species such as this ermine.

Photo: Toby Alexander, USDA NRCS

Table 1. Wildlife Habitat Timber Harvests on VFWD WMAs FY07-11<sup>a</sup>

	FY07	FY08	FY09	FY10	FY11	5-Year Totals
<b>Fee Acres Harvested (#)</b>	444	659	624	565	404	2,696
<b>Board Feet (MBF)</b>	898	891	992	782	739	4,302
<b>Cords (#)</b>	2,473	3,008	3,477	1,939	3,215	14,112
<b>Program Income (\$) <sup>c</sup></b>	\$180,487	\$294,582	\$268,200	\$205,193	\$200,748	\$1,149,210
<b>Non-fee Acres Harvest (#) <sup>b</sup></b>	110	105	300	500	700	1,715
<b># of Active Timber Sales</b>	12	12	11	8	14	N/A: Timber Harvests Span Several Years

Table 2. Wildlife Habitat Timber Harvests on VFWD WMAs - FY11<sup>a</sup>

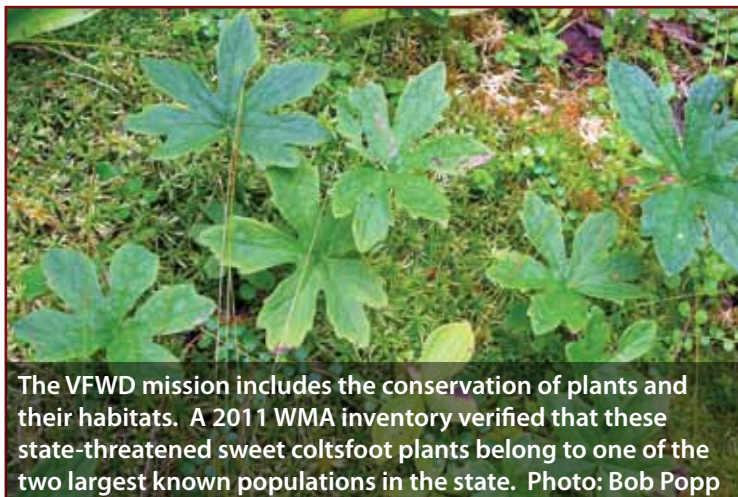
	District I Springfield	District II Rutland	District III Barre	District IV Essex Jct.	District V St. Johnsbury	State Totals
<b>Fee Acres Harvested (#)</b>	0	214	0	120	114	448
<b>Board Feet (MBF)</b>	0	314	0	?	431	745+
<b>Cords (#)</b>	0	903	0	?	1,945	2,848+
<b>Program Income (\$) <sup>c</sup></b>	\$4,984	\$128,860	\$0	\$49,540	\$96,513	\$279,897
<b>Non-fee Acres Harvested (#) <sup>b</sup></b>	1,200	0	0	0	0	1,200

<sup>a</sup> Includes pre-harvest payments; <sup>b</sup> Timber rights privately owned; <sup>c</sup> Revenues generated on WMAs go back into the management of these properties.

Table 3. Wildlife Habitat Timber Harvests Active, Sold, or Ready to Sell on Six VFWD WMAs as of Jan. 1, 2012

District	Number of Sales	Clear-Cut Acres	Selective Acres	Acres Total	Income Projection*
<b>Springfield</b>	2	18	48	66	\$29,029
<b>Rutland</b>	2	31	59	90	\$34,353
<b>Barre</b>	1	0	79	79	\$13,948
<b>Essex</b>	0	0	0	0	\$0
<b>St. Johnsbury</b>	1	0	50	50	\$22,100
<b>Totals</b>	<b>6</b>	<b>49</b>	<b>236</b>	<b>285</b>	<b>\$99,430</b>

\*Based on actual price of purchased sales or minimum acceptable bid for sales ready to sell. Projection = payment amount remaining in active sales + uncut sold sales + prospectus minimum bids. Revenue subject to winter operating conditions; total income may not be realized until after June 30, 2014.



## In the Spotlight: Sandbar WMA

By Bill Crenshaw

The Sandbar Wildlife Management Area in Milton and Colchester was acquired by the VFWD in 1920, making it Vermont's oldest WMA. It consists of 1,560 acres of mostly river delta wetlands located at the mouth of the Lamoille River. These wetlands represent a rich mix of floodplain forest and emergent marsh, including one of the finest wild rice stands in the state. Water levels in these wetlands are controlled primarily by the level of Lake Champlain.



*Several hundred mallards and wood ducks are banded on the Sandbar WMA annually. Photo: Bill Crenshaw*

Sandbar is also home to more than 10 breeding pairs of osprey. In recent years, a nesting colony of great blue herons has become established in the floodplain forest. Pied-billed grebes, sora rails and common moorhens can also be found in the wetlands. During the spring, the floodplain forest attracts migrating warblers and other song birds. Bald eagles and northern harriers are also commonly seen on the area.

The Sandbar wetlands provide important habitat to a variety of reptiles and amphibians including the northern leopard frog, green frog, gray tree frog, bullfrog, American toad, and spring peeper. Turtle species include painted turtle, snapping turtle, map turtle, and the state-listed spiny soft-shelled turtle. Many species of warm-water fish, including largemouth bass, longnose gar, and bowfin spawn and feed in these wetlands.

About 30% of the area consists of forested uplands and old fields, including an excellent example of a pine/oak sandplain forest community. This forest community used to be more common in the Champlain Valley but, due to clearing for agriculture and development, it's now extremely rare. Dominated by red oak and pitch pine, it's believed to be a fire-dependent natural community. In 2010, the VFWD and the Vermont Department of Forest Parks and Recreation conducted a prescribed burn on a 12-acre parcel to control nuisance exotic species and prepare the soil for pitch pine and oak regeneration.

The forested uplands on the east side of Route 2 are comprised of a mixture of red and white oak, sugar and red maple, shagbark hickory, white pine,

Sandbar has long been recognized as an important breeding and stopover area for waterfowl and other aquatic birds. Most of the WMA is set aside as a waterfowl refuge to provide resting and feeding areas during breeding and migration periods. Over 100 waterfowl nesting boxes are maintained on the area by the VFWD, which are utilized by wood ducks, goldeneyes and hooded mergansers. These wetlands are also used for nesting by mallards and Canada geese. During fall and spring migration, the refuge also receives heavy use by these species as well black ducks, ring-necked ducks and green-winged teal. Several hundred mallards and wood ducks are banded on the Sandbar WMA annually.



*At least 10 osprey pairs nest on Sandbar WMA every summer, making them one of the area's most visible wildlife species. Photo: Alan Irwin*



*The shy sora is rarely seen, as it prefers concealment in the dense thicket of marsh plants, but its whinny-like call is often heard by early morning marsh visitors. Photo: USFWS*



*Wild rice (inset) growing in the Lamoille river delta marsh makes Sandbar WMA a highly attractive feeding area for migrating waterfowl to refuel on their journey south.*

*Photo: Bill Crenshaw*

hemlock, aspen and grey birch. This area is managed to provide both young forest and mature forest habitat for wildlife. Several old fields are managed for nesting waterfowl, turkeys and grassland birds through periodic mowing. These fields also provide important cover for deer fawns during late May and June.

Since much of the Sandbar Wildlife Management Area is a wildlife refuge and closed to public use, the best way to enjoy the wetlands is with a boat, canoe or kayak along the Lamoille River. Two access areas, one along the Lamoille River and the other across from the Sandbar State Park, provide access to the river and Lake Champlain. Make sure to stay outside the refuge signs and enjoy the wildlife with binoculars from a distance along the river or the lake. The forested area east of Route 2 and west of Bear Trap Road is open to the public for wildlife-based recreation.



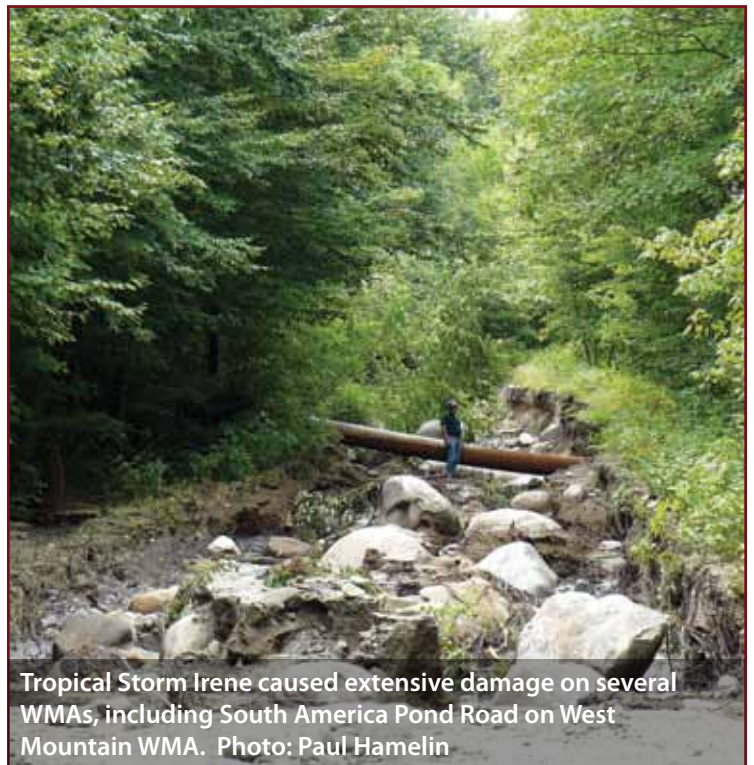
*Controlled burning was conducted at Sandbar WMA to improve habitat quality and control invasive honeysuckle in the rare pine/oak sandplain forest. Photo: John Gobeille*

## Property Administration

An essential component of any land management program is the maintenance of property boundaries and infrastructure, such as roads, bridges, and signs. These efforts are essential for the VFWD to meet its goals for habitat management and public use. The 86 WMAs routinely require boundary line surveying and maintenance, building maintenance, signage, trash removal, and responses to encroachments and other trespasses.

The following maintenance activities were completed on WMAs during the 2011 calendar year:

- Installed or repaired **34** culverts or bridges
- Constructed **2** new parking areas
- Maintained **5** buildings
- Mowed/maintained **36** dams, dikes and levees
- Maintained **51** miles of forest roads
- Removed **750** feet of defunct fence
- Improved/maintained **18** parking areas
- Maintained **25** miles of property boundary
- Installed **2** new gates and repaired **4**
- Conducted **4** cultural resource reviews
- Assessed **11** parcels for potential VFWD acquisition to protect habitat and public access for wildlife based recreation
- Addressed **93** property administration issues (encroachments etc.)
- Conducted **27** presentations or media releases
- Hosted **2** public input meetings and finalized **2** Long Range Management Plans



*Tropical Storm Irene caused extensive damage on several WMAs, including South America Pond Road on West Mountain WMA. Photo: Paul Hamelin*

## Land Acquisition

WMA land acquisition is an important element in achieving the VFWD's mission. Parcels are evaluated based on existing habitat values and restoration potential, rare or exemplary natural communities, and public access values for wildlife-based recreation on land or water. Some parcels are acquired to improve access to existing WMAs, or to ensure that existing values are not compromised by adjacent developments.

WMA land acquisition is executed by VFWD staff and is assisted by ANR Lands Administration staff. Many land acquisition projects are made possible with the aid of conservation partners, notably Vermont Land Trust Inc., The Nature Conservancy, Ducks Unlimited, and the Trust for Public Land. The acquisition process is comprehensive, involving assessment of attributes, real estate appraisal, property survey, town approval, funding approval, ANR and Gubernatorial approval, and other administrative procedures, so only a small number of potential parcels meet all of the criteria and are actually acquired.

Ten parcels ranging in size from 16 to 410 acres are currently under consideration and in various stages of acquisition. We anticipate closing on at least five of these properties in 2012. In 2011 we acquired the following six parcels in fee, totaling 481.3 +/- acres.

### Steam Mill Brook WMA, Walden, VT – 5 acres

Located in Walden near the southwest boundary of Steam Mill Brook WMA, the property is mostly beaver pond and associated wetland with approximately 1,000 feet of road frontage. Wood ducks nest in boxes maintained on the pond, other duck species use the wetland during spring and fall migration, northern harriers have been observed feeding over the sedge meadows, and a host of other bird, mammal, reptile and amphibian species use this valuable wetland. The property also includes a significant natural community, listed as an intermediate fen. Acquisition of this parcel buffers the WMA against impacts from development. Public access is enhanced due to the proximity of the property to a town road.

### South Stream WMA, Pownal, VT – 15 acres

Addition of this 15-acre parcel to the South Stream WMA provides improved public access for hunting, trapping, wildlife viewing, and the conservation of significant wildlife habitat. A state-significant example of a Calcareous Red Maple-Tamarack Swamp straddles the boundary of the WMA. Acquisition of this property significantly improves the ability to manage the WMA and improve public access in an area valued by waterfowl hunters and other members of the public that enjoy this area.

### Little Otter Creek WMA, Ferrisburgh, VT – 27 acres

The addition of this 27-acre parcel to the Little Otter Creek WMA provides permanent protection of public access for hunting, trapping, wildlife viewing, and the conservation of significant wildlife habitat. The 27 acre parcel is in the process of reverting to forest and contains significant frontage on Little Otter Creek. There is significant value in owning this acreage to maintain public access for wildlife-based activities, in addition to being able to enhance the restoration of the forest through invasive species management.



A recent acquisition on Whitney Creek in Addison includes a highly productive VFWD waterfowl banding site, along with 200+ acres of outstanding wetland and upland wildlife habitat. Photo: Bill Crenshaw

### Atherton Meadows WMA, Whitingham, VT – 147.7 acres

This parcel adds 147.7 acres to the existing Atherton Meadows WMA, ensuring that wildlife such as white-tailed deer, black bear, mink, beaver and osprey have suitable habitat over time. Approximately 50 acres of the property were observed to be deer wintering area. There are also numerous vernal pools, seeps, permanent and seasonal streams, as well as a major wetland complex on the north side of the parcel.

### Whitney-Hospital Creek WMA, Addison, VT – 207.8 acres

The parcel consists of 65 acres of Lake Champlain influenced wetlands (emergent marsh, button bush swamp, and floodplain forest) and 142.8 acres of uplands. The uplands consist of two reverting pastures and small patches of clay plain forest. This area is rich in fish and wildlife resources. Whitney Creek is heavily used by fishermen in the spring and by waterfowl, deer, and turkey hunters in the fall. The wetlands are important spawning areas for warm water fish (e.g., Northern Pike, Large-mouth Bass, Brown Bullhead, White Crappie, Bowfin, and Channel Catfish, etc.) originating from Lake Champlain. We were fortunate to close on a unique, and probably one time, opportunity to guarantee public hunting, fishing, trapping, and habitat management, and to eliminate the potential development of two building sites that could seriously impact the public use of this area. This parcel represents a key component to the Whitney/Hospital Creek WMA.

### Athens Dome Wetland Complex, Athens and Grafton, VT – 78.8 acres

The VFWD and The Nature Conservancy are collaborating to protect +/-560 acres as a new WMA where numerous beaver-influenced wetlands provide ideal habitat for the federally-endangered Northeastern bulrush (*Scirpus ancistrochaetus*). The Athens Dome Wetland Complex Project located in the towns of Athens and Grafton, VT is comprised of undeveloped and intact forest land that supports vital wildlife habitat, state-significant wetlands, stream frontage, traditional recreational opportunities, and scenic viewpoints. This wetland complex includes two documented occurrences of Northeastern bulrush, and supports numerous wetlands containing ideal habitat for the Northeastern bulrush. We closed on one of the three properties that make up this project in 2011.