



By Rick Paradis, Director Emeritus, University of Vermont Natural Areas



Carse Wetlands Natural Area is part of the Natural Areas System of protected land that is owned and managed by the University of Vermont.
 Credit: Rick Paradis

At a glance:

- 10 conserved natural areas
- 4 research forests
- Natural areas center
- Land conservation program



“UVM serves as a national model of an academic institution that has taken the responsibility of identifying significant natural areas on its lands and dedicating them as important ecosystems to be protected and used, where appropriate, for field-based research and education.”

In 1974, The University of Vermont (UVM) Board of Trustees established the University of Vermont Natural Areas System. By this action, the board recognized UVM’s responsibility of leadership in the identification, protection, and management of important natural areas on its lands. The resolution passed by the board establishing the Natural Areas System states “that these University-owned lands be preserved to the greatest extent possible in their natural condition, and be used for educational and scientific purposes insofar as such uses are compatible with the preservation of their natural character.”

The UVM board also approved a series of regulations that govern the use and management of the natural areas. Over the years since this action by the board, the Natural Areas System has emerged as the institution’s premier assemblage of field sites supporting and demonstrating excellence in research, education, and community service.

With the addition of Carse Wetlands in 2014, there are now ten UVM Natural Areas totaling over 2,400 acres of conserved land. Originally, at the time of the Board of Trustees action creating the system, there was an additional natural area. Four Brothers Islands, a cluster of small islands in Lake Champlain, were deeded to the New York Audubon Society as the islands are within the state of New York and UVM does not enjoy property tax exempt status there. Additional acreage has been added to several areas over the years. Colchester Bog, Centennial Woods, Carse Wetlands, and Shelburne Pond have all increased in size.

These natural areas represent some of the finest examples of Vermont's natural heritage. From high-elevation alpine ecosystems on Vermont's loftiest mountain to lowland wetlands, lakeshores, and forests, these sites provide outstanding resources to meet UVM field-based teaching and research needs. Studies have been conducted on acid deposition's stress on high elevation vegetation communities, changes in forest breeding bird diversity across spatial and temporal scales, peatland formation and paleoecology, and the archaeology of Woodland Era Indians, to name a few examples.

Creation of the Natural Areas System

There were several UVM faculty instrumental in the creation of the natural areas system. Carl Reidel, the newly appointed director of the Environmental Program, advocated for the system to be placed under the administration of the Program. Hub Vogelmann, chair of the Botany Department (now called Plant Biology) and founder of the Field Naturalist Program at UVM, also lobbied the Board of Trustees to establish the system. His chairmanship of the state chapter of The Nature Conservancy (TNC) would prove pivotal as several natural areas were acquired by TNC and then transferred to UVM. Tom Hudspeth and Ian Worley both had established impressive research portfolios with the natural areas and used them extensively as field sites for teaching, demonstrating to the Board of Trustees the value of these areas for research and education.

The responsibility for the administration and management of the natural areas system was placed within the Environmental Program, a cross-college academic unit that serves undergraduate students majoring in environmental studies. The Program hired UVM's first natural areas manager in 1985. Prior to that time, management and administrative functions were performed by several faculty in the Environmental Program. The natural areas manager was given the responsibility to oversee the day-to-day operations of the natural areas and the long-term planning and stewardship of the system. Initially, the position was funded by both UVM and TNC, who played a significant role in the acquisition of several natural areas. This began a partnership between UVM and TNC that continues to this day.

Additional partnerships have developed with local governments, state and federal agencies, and other conservation organizations including the Vermont Land Trust (VLT) and the Green Mountain Club. These partners have helped UVM acquire and conserve these lands by holding conservation easements and placing other deed restrictions on some of the natural areas. UVM serves as a national model of an academic institution that has taken the responsibility of identifying significant natural areas



The H. Laurence Achilles Natural Area at Shelburne Pond is one of ten University of Vermont Natural Areas. Credit: Rick Paradis

on its lands and dedicating them as important ecosystems to be protected and used, where appropriate, for field-based research and education.

When the Board of Trustees established the Natural Areas System, they left open the opportunity to add lands and natural areas to the system. Recently, over 100 acres were added to Carse Wetlands with the assistance of VLT. TNC negotiated with an adjacent landowner at Shelburne Pond to add 50 acres to the Carse Wetlands, and a neighbor near Colchester Bog gifted 10 acres to UVM to add to the natural area as well.

Natural Areas at a Glance

UVM acquired its 10 natural areas over many decades and through a variety of means. Each natural area, and its history, are described below.

At 330 acres, **Carse Wetlands Natural Area** is a complex of wetlands and woodland habitat in Hinesburg, Vermont. It is the most recently designated natural area received as gifts of land from the Henry Carse Family in 2014 and 2019 with the assistance of VLT (which holds a conservation easement on the area) and the local Hinesburg Land Trust.

Centennial Woods Natural Area, adjacent to campus in the cities of Burlington and South Burlington, Vermont, was part of several farms acquired by UVM in the early twentieth century as the campus was expanding in that direction. The 75 acres of woodlands and riparian habitat with significant stands of white pines and hemlocks were provided perpetual protection in 1994 with VLT placing a conservation easement on the area.

The 190 acres that make up **Colchester Bog Natural Area** in Colchester, Vermont was acquired with the assistance of TNC and through several gifts of land by neighbors. Deed restrictions were placed on this large peatland complex before it was conveyed to UVM.



Concord Woods Natural Area was deeded to UVM by local landowners in the 1840s. The area consists of approximately 100 acres of mature hardwoods on the southwest slope of Miles Mountain in the Northeast Kingdom town of Concord, Vermont.

East Woods Natural Area in South Burlington, Vermont, is 40 acres in size and consists of mature hardwood and softwood stands and riparian habitat along Potash Brook. The area was purchased by UVM in 1949 with financial assistance from neighbors and friends and was over 100 acres in size, having been reduced when the interstate was constructed in 1960s.

The Vermont Bird and Botanical Club assisted UVM in establishing **Molly Bog Natural Area** by acquiring about 35 acres in Morristown, Vermont, including the open bog habitat and some surrounding forest in 1961. The land was then conveyed to UVM by way of TNC without any conditions



Molly Bog Natural Area, one of ten natural areas that is owned and managed by the University of Vermont, is listed on the State of Vermont Fragile Areas Registry. Credit: Rick Paradis

placed on the land prior to its transfer. Molly Bog is listed on the State of Vermont Fragile Areas Registry and is designated as a National Natural Landmark. Over 400 acres along the ridgeline of Mount Mansfield, Vermont's highest mountain, was purchased by UVM from residents of Stowe, Vermont, in the 1850s. The deed drawn up at the time stipulated that the area be used exclusively for scientific purposes and that any structures erected there serve only those purposes.

Mount Mansfield Natural Area harbors the largest expanse of alpine habitat in the state and is also listed on the State of Vermont Fragile Areas Registry and is designated as a National Natural Landmark.

Pease Mountain Natural Area in Charlotte, Vermont, is 180 acres of mesic and dry



Mount Mansfield Natural Area, which is owned and managed by UVM, is home to one of the largest alpine habitats in the state. Credit: Rick Paradis

hardwood forests with several knolls containing calcareous rock outcrops. The Pease Family gifted this prominent hill in the Champlain Valley to UVM in 1949.

At three acres, **Redstone Quarry Natural Area** in Burlington, Vermont, is the smallest area in UVM's system. UVM purchased the area that exists at the base of an old quartzite quarry in 1958 because of its exposed rock illustrating the geological history of the region.

H. Laurence Achilles Natural Area at Shelburne Pond in Shelburne, Vermont, protects over 1,050 acres of wetland and upland habitat around one of the largest undeveloped bodies of water in the state. For over 40 years, TNC has been acquiring land when it becomes available and then transfers it to UVM with deed restrictions in place.

Natural Areas Center

In 1996, the University of Vermont Natural Areas Center was established to promote and integrate activities at UVM related to natural areas and land conservation and stewardship. The center provides educational opportunities, research support, professional development, internships, and outreach services to students, conservation organizations and land trusts, and professional and lay conservationists throughout the region.

The Center developed the Summer Land Conservation Program that offered short courses, workshops, and field experiences for students and others interested in land conservation and stewardship. This popular program ran every summer from 1996 to 2003. Participants gained academic credit for these experiences through the UVM Division of Continuing Education.

At the urging of faculty in the Rubenstein School of Environment and Natural Resources, the center sought to establish a certificate program at UVM in land conservation. Staff from the center attended several annual Land Trust Alliance Rallies in the late 1990s to gauge the level of interest of such a program and to determine what the instructional content of the program should be.

With interest high, particularly among graduate students, and with no other academic program in land conservation currently available in the country, the center and the school embarked on creating a certificate program in land conservation that would be available to graduate students in Ecological Planning and in the Field Naturalist Program. The certificate would also be available as a stand-alone offering for professionals and lay conservationists seeking additional training in land conservation. Both the UVM Graduate College and Division of Continuing Education were initially supportive of the certificate program. However, once it was determined that the program would have to

rely on adjunct faculty and that the current graduate programs had little room for additional courses in land conservation, plans for the certificate program ceased.

Research Forests

In addition to the natural areas described above, there are four UVM Research Forests totaling over 800 acres. These diverse woodland landscapes are managed by the Rubenstein School of Environment and Natural Resources and are utilized by the School's Forestry and related programs where faculty and students undertake a variety of research, educational, and demonstration activities. The Jericho Research Forest in Jericho, Vermont, is the largest and most widely used with a variety of on-site facilities including an early-nineteenth-century farmhouse, a block building containing a classroom, maintenance shop and woodturning studio, and the Forrest E. Orr Conservation Center constructed with the assistance of students in 2008 from lumber harvested and milled at the forest.

The lands that comprise the Research Forests came to UVM through a variety of means and each forest is described below.

Much of the acreage of the **Jericho Research Forest** was acquired from the city of Burlington in a land swap in 1941. Two additional parcels were added to Jericho more



The Forrest E. Orr Conservation Center at the Jericho Research Forest was constructed with the assistance of students using lumber harvested and milled at the forest. Credit: Rick Paradis

recently by local developers who donated surplus lands to UVM. One of these parcels is conserved with a conservation easement held by the Vermont Agency of Natural Resources to protect deer wintering habitat and archaeological resources.

The **Talcott Research Forest** in Williston was given to UVM by the Talcott Family with the deed designating use of the land for educational, scientific, and extension activities.

Both the **Wolcott Research Forest** and **Washington Research Forest** were part of the original college grants and were lease lots until allocated by UVM for forestry research in the 1960s and 70s.

Lessons Learned:

UVM has grown to include a substantial number of land holdings, including ten natural areas and four research forests. Each area utilizes student involvement and partnerships for land management, research, and education. Several key takeaways from UVM's experience are:

- Partnerships with land conservation organizations, such as TNC and local land trusts, can help achieve long-term goals for land acquisition and conservation.
- Faculty, administrators, nonprofit organizations, and state agencies can form partnerships that utilize conserved lands to deliver educational programs for both degree-earning students and continuing or professional education.

More Information:

University of Vermont Natural Areas <https://www.uvm.edu/environmentalprogram/uvm-natural-areas>

UVM Rubenstein School of Environment and Natural Resources <https://www.uvm.edu/rsenr>



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