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The Vermont Landscape:
Views of the Past, Visions of the Future

VERMONT HISTORY

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In This Issue

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David R. Marvin has been proprietor of Butternut Mountain Farm since 1970. He is a sugar maker and forester whose life is as much a part of "the view" as the trees he tends. He is Chair of the Board of Shelburne Farms and the Vermont Land Trust.

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Elizabeth Humstone is executive director of the Vermont Forum on Sprawl. She has been involved in small city, town, and rural planning for over twenty-five years through consulting, teaching, writing, and volunteer work. Ms. Humstone is the recipient of several awards including a Rome Prize from the American Academy in Rome, and Professional Planner of the Year in 1996 from the Vermont Planners Association and the Northern New England Chapter of the American Planning Association. She serves as vice chair of the Burlington Planning Commission.

The Vermont Landscape Conference: Views of the Past, Visions of the Future

The Robert Hull Fleming Museum held a once-in-a-lifetime major exhibition of landscape paintings by Vermont artist Charles Louis Heyde in 2001.* The opportunity to see Vermont's scenic vistas through the eyes of the popular nineteenth-century artist provided the incentive for the museum and the Center for Research on Vermont at the University of Vermont to organize an interdisciplinary conference on the history and future of the Vermont landscape. The event, which took place on March 31, 2001, brought together humanities scholars, scientists, environmentalists, planners, and concerned citizens. Lectures, workshops, and discussion sessions informed participants about the natural and man-made forces that created the Vermont landscape and the pressures for development that affect land use now and will continue to do so in the future.

The exhibition's title, "Old Summits, Far-Surrounding Vales," was taken from Charles Louis Heyde's poem "Burlington," in praise of the natural beauty of the Champlain Valley, published in the *Vermont Historical Gazetteer* in 1867. A resident of Burlington from 1856 until shortly before his death in 1892, Heyde painted familiar landmarks—the Winooski River, Lake Champlain, Camel's Hump, Mount Mansfield—in different seasons and times of day. His picturesque views continue to captivate us with their vision of Vermont as a special place where imposing mountain peaks tower over prosperous valley farms.

* *Note:* In conjunction with the exhibition, the Fleming Museum published *Charles Louis Heyde: Nineteenth Century Vermont Landscape Painter.* The book contains essays by Heyde biographer Barbara Knapp Hamblett and art historian William C. Lipke, and a catalogue raisonné compiled by Guest Curators E. Thomas Pierce and Eleazer D. Durfee. It is illustrated with twenty-eight full-colored plates of Heyde's works. The publication is available through the Fleming Museum Store in hard- and softcover editions.

The conference sought to address the questions of whether and how this distinctive landscape will be preserved in the twenty-first century.

Presentations at the conference reflected the diverse interests and expertise of the lecturers and panelists, each of whom addressed the issues from his or her own informed perspective. The texts that follow make the participants' contributions accessible to a wider audience and they are published in the hope that they will inspire individuals to become involved in community planning and preservation at the local level. Knowledge of Vermont's political, economic, and cultural history significantly enriches current debates on the meaning of community, and the value of historic preservation and environmental conservation.

ANN PORTER
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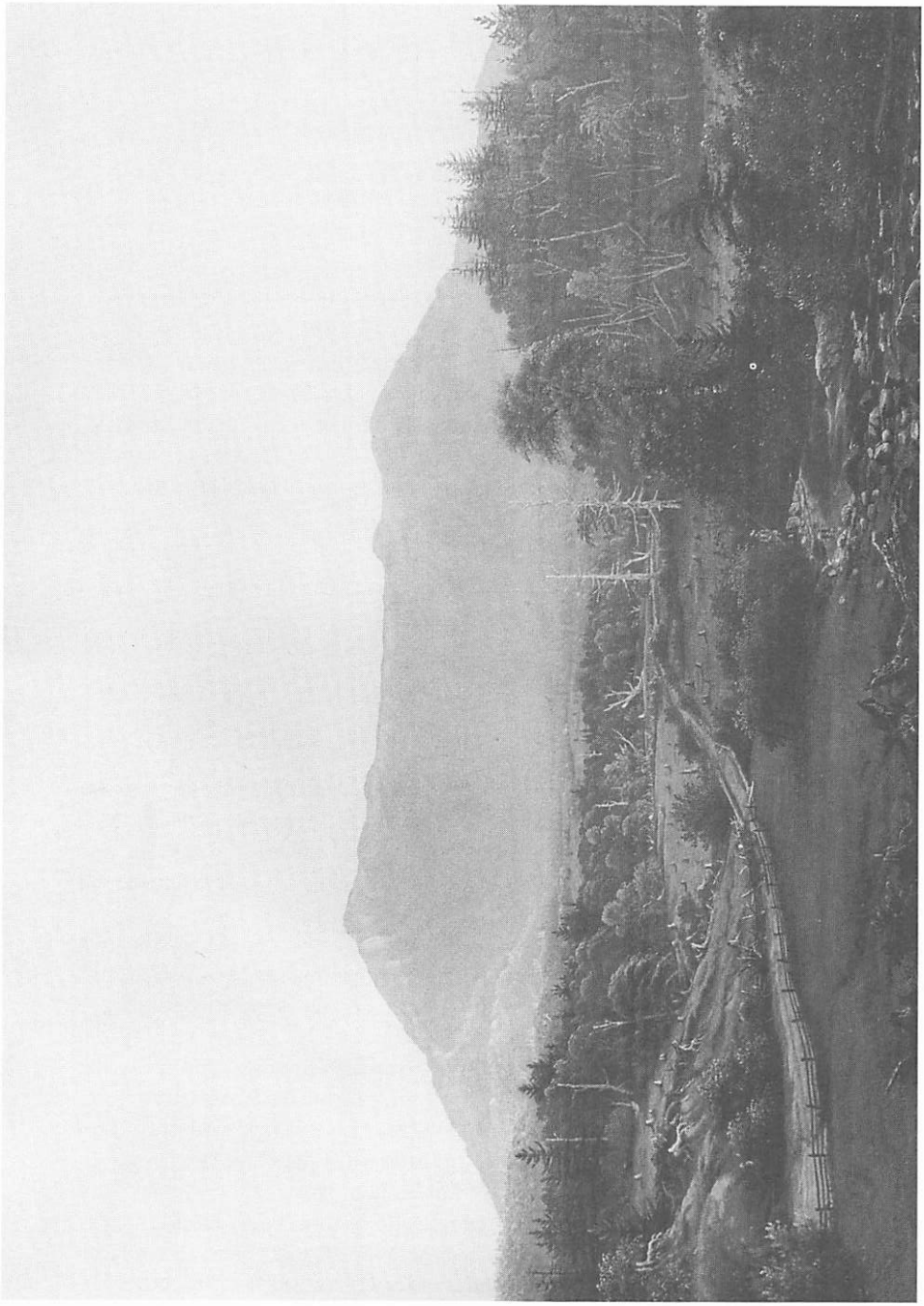
FACING PAGE: *Mount Mansfield, ca. 1857. By Charles Louis Heyde (1822–1892). Oil on canvas. Collection of the Robert Hull Fleming Museum, University of Vermont, gift of Mrs. Guy Bailey (1944.3).*



The Bleat of the Sheep, The Bark of the Tree: Vermonters and Their Landscape, A View from the Archives

My view of the landscape is from the State Archives. Admittedly the view from the vault might appear limited. Yet the Archives offers temporal vistas; it offers the viewpoints of generations of Vermonters, met together in government, to define and hold onto their landscape ideals; even as their ideals are modified by that landscape.

By D. GREGORY SANFORD

It is easy for Vermonters to feel connected to Heyde's landscapes. We still encounter their vistas even if, at times, we must narrow our line of sight, squeeze the passage of time from our eyes, and block the sounds of mechanized motion. Even if, at times, we must see with our minds, not our eyes.

That we can still see, or imagine, these images centers us in our own self-perceptions, and, occasionally, our self-delusions. For Vermont's landscape has never been a still life. It is in constant motion, subject to unrelenting change.

My view of the landscape is from the State Archives. Admittedly the view from the vault might appear limited. Yet the Archives offers temporal vistas; it offers the viewpoints of generations of Vermonters, met together in government, to define and hold onto their landscape ideals; even as their ideals are modified by that landscape.

Let me take a forest as an example of one of those viewing points. Because these are temporal viewing points as well, this forest dates from 1913, as it was described in that year's official state tourism brochure:

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> But the dear woods, the dear frank, innocent woods, God bless them! They kill no one . . . Once in a hundred years perhaps one man, and he by accident, is killed by the falling of a tree—some poor dead tree that could not stand one instant longer nor help from falling just then and there. Aye the dear woods that kill no one, tempt no one, rather warn you to keep out of their depths, [and] near their bright margins.[1]

As a marketing piece this seems a little irresolute. It expresses an ambivalence that grows with each arboreal platitude, as if the writer discovered in midpassage that Joyce Kilmer was the Blair Witch.

Temporal viewing points are tricky. The writer crafts his language in the early twentieth century, but we respond to it in 2001. We find the language's vacillation between the romantic and the gothic amusing. A mid-nineteenth-century response might have found the writer's preference for the forest's bright margins understated. Even as nineteenth-century Vermonters denuded the land of its forests, they knew it was a jungle out there.

A quick glance through nineteenth-century town histories confirms this. In 1859 twelve-year-old Melvin Codling of Waterville was "crushed by the fall of a burning tree, near which . . . he was at play. [H]e lived only a few hours after the accident." Nelson Potter, also of Waterville, was killed in 1862 by a falling tree. In 1825 Jonathan Baldwin of Coventry had his leg amputated after a falling tree crushed it. Jeremy Merrill of Maidstone borrowed a neighbor's fan for separating chaff from grain. On his way home a tree fell, hitting the fan and killing Mr. Merrill instantly. In 1829 James Seavey refused to listen to his "little son" who begged him, "don't go into the woods today, pa, for a tree will fall on you and kill you, if you go." You can guess what happened.[2]

If these town histories routinely portray the early settlers as waging war with nature, clearly nature was not completely unarmed. Actually, Vermont's early settlers helped create this lethal landscape. Remember that burning tree that took out little Melvin in Waterville? Melvin had not wandered into a forest fire to play. Rather, he was playing near where his family was using fire to convert forest to farmland.

Another method for clearing the land for agriculture was girdling trees, then planting around them on the now shadeless ground. In 1788, as young Joseph Merrill ploughed his father's land, he "came near [a girdled] elm tree [and] it fell just at that time, killing one of the oxen" pulling the plow and pinning Joseph until help could arrive.[3]

As Joseph could attest, we have an impact on the landscape and the landscape has an impact on us. Indeed, the interplay between commu-

nity and landscape is integral to the original meaning of landscape, "a place on the land where a community is formed."[4]

I want to offer three cautions about the scope of my remarks. My view is from the Vermont State Archives and thus is largely limited to what Gordon Whitney calls the legislated landscape.[5] Second, while my focus is on eighteen- and nineteenth-century Vermont, it is important to remember that temporal landscapes do not easily accommodate borders.

Third, to talk of "the" Vermont landscape is misleading, at best. Whether through the persisting Arctic air mass over central Canada in 1816—the year without a summer—or the global economy of 2001, the larger world influences what we call the Vermont landscape. We may be a special place, but social, economic and environmental ecologies don't easily accommodate borders, either.[6]

So let me briefly touch on a few topics we may expand on during today's sessions.

The first point is that government has always shaped community and landscape. Current arguments that government has trespassed upon private ownership and use of land need historical context.[7]

The legislated landscape began with the original town land grant charters, including the first, for the Town of Bennington, issued in 1749 by Governor Benning Wentworth of New Hampshire. The charters envisioned agrarian, self-governing communities whose inhabitants, not the government, held title to the land. These were equalitarian communities with land ownership broadly distributed through lotting plans.

Rather than promoting settlements of unfettered individuals creating farms in isolation across the landscape, early charters envisioned town centers, built around public meetinghouses, churches, and, in a very few cases, a town common. Bennington, for example, allotted each inhabitant a one-acre lot in a town common "as near the center of town as the land will admit."[8]

Private ownership and use of land were bundled with civic obligations to the community. Landowners had to plant and cultivate five acres of land, within five years, for every fifty acres they owned. If they failed to meet that obligation, the land reverted to the government.

The idea that civic rights and obligations followed private ownership of the landscape remained within all subsequent town charters, whether issued by New Hampshire or Vermont. The scope of these obligations changed with time, though each offered a vision of community. Vermont charters, for example, often required houses to be at least eighteen feet square on the ground. Lots had to be set aside for educational and religious purposes. Individual towns established their own public-

purpose lots, offering land in exchange for building the first barn or mill or allowing a public right of way.

That government, from the beginning, played a role in shaping land use and community provides context to current public dialogues over community planning and development. Government's ability to shape the landscape, however, is tempered by the landscape itself. In many cases the vision of a town centered on a marketplace, public meetinghouses, or a common, collapsed in the face of geographic and other realities.

The imagined communities of the original charters also had to survive as political and economic entities across time. Some towns were doomed by landscapes that could not withstand the changing economic or social forces of a particular time period. By contrast, a landscape that was a barrier to town growth or prosperity in one time period could be a boon in another.

Given Heyde's frequent use of Mount Mansfield, it is appropriate to look at the Town of Mansfield, which provides an appropriate example of the unanticipated consequences of social and economic change. Mansfield, which encompassed the mountain, was hardly prime agricultural land. Through the mid-nineteenth century, no agriculture often meant no economic base for either local or state property taxes. The legislature solved this case of rural poverty by obliterating Mansfield, completing the task in 1848 when it annexed the remnants of Mansfield to Stowe.

Today tourism and recreation have surpassed agriculture as economic forces. If it had survived, Mansfield would now be one of Vermont's richest communities. Mansfield's fate is instructive for today's discussions. Government actions, by themselves, cannot assure a particular type of community or landscape outcome.

Vermont towns possessed other means, beyond government, for enforcing visions of community and landscape. On January 16, 1789 Daniel Harmon brought a charge against Simeon Hatheway for "being dishonest in his dealings and overreaching his brother by false representations."[9] Harmon wanted Hatheway to change a deed that had mistakenly given him an advantage over the Harmons.

Harmon brought his charge before the First Church of Bennington. Three arbitrators appointed by the church failed to end the impasse and eventually the congregation excommunicated Hatheway.

The Harmons, a farming family, ranked among the original members of the church. The Hatheways, by contrast, associated with mercantile and industrial interests and had ties to Bennington's emerging new elite. To the Hatheways the dispute was a matter for the courts, not the

church. Under secular law it would be illegal to alter a legal agreement simply at the bidding of church arbitrators.

The Harmon-Hatheway feud is representative of tensions between old and new settlers and their differing visions of community. The mechanisms and belief systems that enforced community visions broke apart and changed in the face of these tensions. The rights of individuals, rather than community, came to govern the landscape. Indeed, control of established community institutions by the first settlers made arguments for individual rights essential to the newcomers.[10]

Can we here today articulate our own vision of civic virtue, our own balance between individual freedom and community obligations? What local mechanisms do we have to achieve community consensus effectively? Do municipal and regional planning commissions provide the same force as the earlier community institutions? These are crucial landscape questions.

Religious and social institutions were not the only aspects of community that changed and diversified over time. In 1848 George Armington and others petitioned to amend the Vermont Constitution to limit the amount of land that any one individual could acquire.[11] Mr. Armington saw that while the number of acres in farming continued to grow, the number of farms declined. He turned to government to reverse a trend that had its roots in Vermont's changing agricultural practices.

The early equalitarian community ideals envisioned the broad-based ownership of land, primarily farmland. That ideal began to break down as Vermont moved from subsistence farming to cash crops to sheep and then dairy farming. Sheep required larger land holdings than did cash crops. In the Connecticut River Valley the median improved acreage of farms grew from 37 acres in 1820 to 61 acres in 1840. That twenty-year period marked the height of the sheep craze. The trend toward large farms continued after 1840 because of dairy farming. It takes as much land and feed to support one cow as it does for five sheep.[12]

The transition from crops to livestock had an immediate impact on the land because of grazing habits and practices. There were other consequences as well. Larger farms and higher land prices restricted the number of people who could afford farms. In addition, farmers could not divide their holdings among heirs because smaller parcels could not support the new agriculture. All these factors changed landscape, demographics, and the early equalitarian ideals of community.

Agriculture was not alone in shaping the landscape. Bennington again provides an example. Bennington's charter envisioned a community landscape clustered around a town common centered on a hilltop. Manufacturing, initially dependent on waterpower, pulled population

and community control from the hilltop to the riverbanks. New communities grew up around factories on Paran Creek, the Roaring Branch, and other waterways. Rather than coalescing around a single town center, Bennington now sprawled across the landscape and included two incorporated villages. Shared local institutions capable of guiding land use, supported by a land-owning, agrarian community, further fragmented the community.[13]

Vermont is the only New England state with incorporated villages. The movement to incorporate separate municipalities within towns peaked between 1870 and 1910 when 47 villages incorporated.[14] Villages often incorporated to provide special services—such as lighting and water—that technology and tax bases restricted to compact areas within a town. In some ways incorporated villages echoed earlier ideals of geographically compact settlement. But they also redefined community by creating distinct legal entities shaped by technological capabilities within towns. Some villages eventually broke away from the parent town to become cities. In most cases, however, once services such as electricity could be provided across distance, villages merged back into their town. Conversely, expanding technological services helped move town populations into the countryside.

Incorporated villages and cities also reflect Vermont's changing demographics. Demographics, in turn, are crucial to understanding the landscape. When Heyde arrived in Vermont in 1852 the median town population was 1,224; when he died in 1892 the median had fallen to 935, a nearly 25-percent decline. The landscapes Heyde painted were of countryside being emptied of people.

Rural depopulation meant low population densities, which had an obvious and sustained impact on the landscape. A majority of Vermont towns attained populations in the 1830s that they would not surpass until the 1960s. Only with the completion of the interstate highways did Vermont's population trends change. Every state plan I am aware of from the late nineteenth century until 1960 addressed rural depopulation. Every plan since has sought to manage growth and development as new populations spread across the landscape.

Some state plans trace Vermonters' awareness of their changing landscapes. As early as 1794 Samuel Williams speculated on the impact of clear cutting on seasonal temperatures, soil, and flooding. Later Zadock Thompson and George Perkins Marsh further explored human impact on the landscape and climate of Vermont. Marsh's *Man and Nature,* published in 1864, remains a milestone in the environmental movement.

Marsh was not alone in observing human influences on Vermont's

landscape. Amos Churchill's 1855 history of Hubbardton has a section entitled, "The Birds—Where Are They?" "When the country was new," he wrote, "our fields and forests were made vocal, and rendered pleasant and animated by the presence of the feathered songsters." He then listed birds that were no longer common, starting with the robin. Zadock Thompson responded that "[birds] have vanished before the advance of the white men and some . . . are probably destined for utter extermination." He further observed that changing land use had attracted previously unknown bird species.[15]

Such observations began to be translated into renewed government action as the nineteenth century waned. Government's return to regulating the landscape was tied to a host of factors. The increasing population densities within villages and cities led to public health regulations on everything from the placement of pigpens in villages to the protection of public water supplies.

In his 1890 inaugural, Governor Carroll Page referred to New Hampshire's success in attracting summer residents and called for "planting trees along our highways and in our villages . . . not only to [add to] our own comfort, but to the general attractiveness of the State." He supported reforestation to prevent "serious injury to the physical interests of the State," claiming he knew of "no subject of so great importance."[16] Reforestation began in earnest in 1907 when the state planted 35,000 seedlings. By 1925 over a million seedlings were being planted annually.[17]

Growing, rather than cutting, forests took some getting used to. In 1902 Vermont's fish commissioners bemoaned inconsistent state policies allowing clear cutting that silted the rivers, killing the fish populations they were trying to replenish. By 1902 fishing had become a key part of our recreation economy.[18]

Realization that rural depopulation had created a landscape attractive to tourism and summer residents increasingly found voice in public discourses. In 1910 Lord Bryce spoke in Burlington, cautioning Vermonters: "Do not permit any unsightly buildings to deform beautiful scenery which is a joy to those who visit you. Preserve the purity for your streams and your lakes, not merely for the sake of the angler . . . but also for the sake of those who live on the banks . . . Keep open the summits of your mountains. Let no man debar you from free access to the top of your mountains . . . and the joys their prospects afford."[19] Lord Bryce moved beyond the economic benefits of landscape management, assigning certain qualities of life and thought to our landscape.

An appreciation of the landscape views is not the sole province of artists and writers. Let me turn to that hotbed of poetic prose, the

Vermont judiciary. In 1873 the Vermont Supreme Court heard *Levi K. Fuller* v. *John Arms.* The issue being litigated was whether a person could sell property with a restriction against subsequent owners building structures that would block a view of the landscape.

> No [one] man has any exclusive "right or privilege" to, or "interest in," a landscape. To view and enjoy the beauty of the earth, is a privilege belonging to all God's creatures alike . . . It is probably true . . . that one person has no right to control land owned by another, in any respect on account of a view; but it is equally true that any person has a right to control and dispose of his own land as he sees fit, for the sake of a view, and is entitled to have that view protected as much as any other interest.[20]

I have ranged rather far and wide in my breathless rush through the Vermont landscape. We began with killer trees and ended with a call for reforestation. We started with governments imposing a view of community on the landscape, and concluded with government declaring an individual's right to view that landscape.

I populated my talk with the largely obscure and forgotten. That is appropriate because our current expectations and concerns about community and landscape have been shaped more often than not by the accumulation of small events and forgotten folks. Nor are our current expectations and concerns parts of some logical and orderly progression. Vermont's first towns were chartered by the government of New Hampshire and populated by settlers from Connecticut. Yet our visions of community and landscape differ widely from those of both New Hampshire and Connecticut.

The landscape is a complex fabric of tightly woven environmental, economic, social, and demographic threads. You cannot define or preserve a landscape by focusing on only one thread. We cannot realize our own visions of landscape and community by talking among ourselves within our own professional enclaves, within our own, like-minded social networks. Only by encouraging public dialogues among the rich diversity of perspectives that constitute our communities will we be able to broaden our vision of landscape.

Notes

[1] Vermont Publicity Bureau, Office of the Secretary of State, *Vermont, the Land of Green Mountains* (Essex Junction, 1913), 7.

[2] These stories were drawn from Abby Maria Hemenway's 5-volume *Vermont Historical Gazetteer* and can be found within the histories of the towns cited.

[3] Joseph's story is also found in the *Vermont Historical Gazetteer.*

[4] Definition is provided in Jan Albers, *Hands on the Land: A History of the Vermont Landscape* (Cambridge, Mass.: MIT Press, 2000), 12.

[5] Gordon G. Whitney, *From Coastal Wilderness to Fruited Plain* (New York: Cambridge University Press, 1994), 324–334.

[6] A handy reference for weather events, Vermont or otherwise, is David Ludlum, *The Vermont Weather Book* (Montpelier: Vermont Historical Society, 1985).

[7] Government's role in shaping the landscape provides a variety of sources for understanding historical ecology. For a good summary see Dave Egan and Evelyn A. Howell, eds., *The Historical Ecology Handbook* (Washington, D.C.: Island Press, 2001).

[8] For the Bennington charter see Albert S. Batchellor, *The New Hampshire Grants*, Vol. XXVI of the New Hampshire State Papers (Concord, N.H.: Edward N. Pearson, 1895), 29–34. For a good discussion of land grant charters and the landscape, concepts of ownership, and other issues see William Cronon, *Changes in the Land. Indians, Colonists, and the Ecology of New England* (New York: Hill and Wang, 1983). For reflections on private property see John Hanson Mitchell, *Trespassing: An Inquiry into the Private Ownership of Land* (Reading, Mass.: Addison-Wesley, 1998).

[9] As quoted in Robert Shalhope, *Bennington and the Green Mountain Boys: The Emergence of Liberal Democracy in Vermont, 1760–1850* (Baltimore: The Johns Hopkins University Press, 1996), 198.

[10] For a discussion of the impact of new blocks of settlers on local communities see Michael A. Bellesiles, *Revolutionary Outlaws: Ethan Allen and the Struggle for Independence on the Early American Frontier* (Charlottesville, Va.: University Press of Virginia, 1993).

[11] Paul S. Gillies and D. Gregory Sanford, eds., *Records of the Council of Censors of the State of Vermont* (Essex, Vt.: Offset House, 1991), 444, 447, 451, 453.

[12] See Randolph A. Roth, *The Democratic Dilemma: Religion, Reform and Social Order in the Connecticut River Valley of Vermont, 1791–1850* (Cambridge: Cambridge University Press, 1987), 124–125 and Harold A. Meeks, *Time and Change in Vermont: A Human Geography* (Chester, Conn.: Globe Pequot Press, 1986), 94–95.

[13] Shalhope, *Bennington*, 252–253.

[14] For acts incorporating villages see D. Gregory Sanford, ed., *Vermont Municipalities: An Index to Their Charters and Special Acts*, Vol. 19, State Papers of Vermont (Montpelier: Secretary of State, 1986).

[15] Amos Churchill, "The Birds—Where Are They?" in "Sketches of the History of the Town of Hubbardton" (Rutland: G. A. Tuttle, 1855), reproduced in Hemenway, *Vermont Historical Gazetteer*, Vol. III (Claremont, N.H.: Claremont Manufacturing Company, 1877), 765–766, followed by Zadock Thompson's response (1855), 766–767.

[16] *Journal of the Senate of the State of Vermont, 1890* (Burlington: Free Press Association, 1890), 342.

[17] Figures are from *Report of the Department of Conservation and Development, June 30, 1940* (Springfield, Vt.: Springfield Printing Corporation, 1940), 73–74.

[18] 1902 Fish Commissioners' Report, Fish and Wildlife Law Collection, available at Vermont State Archives.

[19] As quoted in *Report of Governor's Panel on Scenery and Historic Sites*, Central Planning Office, State of Vermont, Montpelier, October 1963, iv.

[20] *Levi K. Fuller* v. *John Arms*, 45 Vt. 400 (1873).

Climate Variability and Socioeconomic Consequences of Vermont's Natural Hazards: A Historical Perspective

The climate of Vermont has been described as changeable, with inherent variations. . . . Today, in the face of inherent climate shifts and enhanced greenhouse gas effects, understanding the role of climate variability becomes critical.

By LESLEY-ANN DUPIGNY-GIROUX

Over the last three centuries, Vermonters have lived with, learned from, and come to love the weather and climate around them. In turn, the relentless march of the seasons, each with its own series of weather events, has shaped our activities and the landscape. From the completion of the state's constitution during a severe thunderstorm in 1777[1], to the necessity-driven creation of recipes during the January 1998 ice storm, weather and climate have greatly influenced the socioeconomic fabric of our lives.

The climate of Vermont has been described as changeable, with inherent variations. Climate variability refers to the natural fluctuations that occur in hydroclimatological variables such as precipitation and temperature patterns, storm tracks, and frequency at a number of time scales (annual, decadal, centennial, and even millennial). Such naturally occurring variations make it difficult to distinguish long term trends in the climate record. Our knowledge about the climate around us is ever improving, although actual observations of climatic parameters remain somewhat limited. The interaction and inter-relatedness between the weather (i.e., daily temperatures, storms, precipitation) and climate (e.g. the recurring patterns of droughts and floods) on human activities and vice versa has long

been documented in Vermont. Samuel Williams first published *The Natural and Civil History of Vermont* in 1794, followed by Zadock Thompson's *Natural History of Vermont* in 1853, and *Lectures on Milk, Fertilization, Birds, Insects, Forestry, How to Foretell Storms, etc.* by Dr. Hiram A. Cutting in 1884. In the twentieth century, numerous accounts by naturalists, meteorologists, and climatologists, including F. E. Hartwell (1922), Arthur Stone (1929) and David Ludlum (1985) have greatly enriched our understanding of the complexities of the state's weather and climate.[2]

These complexities are highlighted by considering some well-known facets of life in Vermont. In general, Vermont enjoys equally distributed precipitation due to the convergence of storm tracks in New England originating in the northwest, west, and Gulf of Mexico. This implies that the cloud shield affects much of the region, making it one of the cloudiest places in the U.S. Two well-known climate singularities observed in Vermont include the January thaw and Indian summer. A climate singularity refers to a meteorological event that tends to occur on or around a well-defined date. Meteorologists now believe the January thaw occurs around the twenty-first of January. When F. E. Hartwell wrote his article about Vermont's weather for *The Vermonter* in 1922, the mild period could occur at any time from the final week in December to the middle of February. Then, as now, thaws have been known to remove all of the snow cover from the Lake Champlain valley, but do not tend to occur during severe winters.[3] Recently, pronounced thaws were observed in 1995 and 1996.

Today, in the face of natural climate shifts and enhanced greenhouse gas effects, understanding the role played by climate variability becomes critical. Changes in climate regimes could have adverse impacts on tourism, forestry, and water resources in Vermont. In particular, there is growing concern about the ability of farmers to adapt to increasing climate variability. In quantifying the impact of climate variability, individual events, and weather extremes on the state's economic activities over the past century-and-a-half, this account differs from earlier accounts in its focus on natural hazards. Severe weather, droughts, and flooding are all examples of naturally occurring phenomena that pose hazards or risks to human beings. It is the intersection between exposure to the risk by vulnerable populations that leads to a natural disaster. This emphasis on hydroclimatic hazards (and not geologic ones) will augment David Ludlum's synopsis of Vermont's weather[4] by highlighting the temporal and spatial underpinnings of climatic phenomena that have helped to shape Vermont's society and economy during the recent past.

Hazards in Vermont

Vermont is susceptible to a number of hydrometeorologic natural hazards ranging from temperature extremes, drought, flooding, flash flooding, tornadoes, and damaging winds, to severe thunderstorms, winter storms, and forest fires. Many of these phenomena are either made up of several hazards or are associated with additional ones. For example, lightning and hail often accompany severe thunderstorms. Winter storms can include snowstorms, blizzards, and icing events.

Every hazard has seasonal characteristics. For example, winter and spring flooding can result from ice jams or sudden thaws, whereas during the fall, tropical cyclone remnants can bring copious amounts of precipitation. Each hydroclimatic hazard also tends to occur in temporal cycles, and thus, some have been more frequently observed during some decades but not others. When this cyclical nature of extreme weather events is considered in conjunction with evolving patterns of population growth, land use practices, and economic development, we observe varying impacts on life, limb, and property over the course of Vermont's history.

Flooding, with Special Reference to Tropical Cyclones

One of the most pervasive hazards that impinges upon and marks the Vermont landscape is flooding. Flooding can be categorized as one of two types: flash flooding, which has a rapid onset of six hours or less from the time of the initiating event; and flooding that has a more gradual onset. Rarely does a year elapse without a flooding event of a significant magnitude being reported in at least one of Vermont's fourteen counties or perhaps statewide, making this the number-one hazard across the state. Between 1955 and 1999, floods accounted for $16.97 million in damage annually.[5] In recent decades, 1973 ($422 million) and 1984 ($115 million) stand out as notable for extreme amounts of flood damage.

The causal factors that lead to flooding are strongly seasonal in nature and include the arrival of consecutive large storms, snowmelt, ice jams, rain on frozen ground, wet antecedent soil conditions, and the passage of tropical storms or hurricane remnants. In the case of rain on frozen ground, downward percolation is inhibited, leading to surface runoff, as occurred during the ice storm of January 1998. Runoff due to lack of infiltration also occurs when the ground is already saturated from previous precipitation or a rising water table.

Large precipitation totals can be associated with a number of factors, including frontal systems. In Vermont, the combination between frontal

characteristics (such as orientation and speed) and complex topographic barriers such as the Green Mountains and Taconics produces enhanced precipitation totals (also known as the orographic effect). The Montgomery flood of July 15, 1997 is a good example of orographic enhancement of the effects of a backdoor cold front (that moved from east to west) interacting with tropical moisture that was guided around the northern spine of the Green Mountains by the upper level (jet stream) flow. In the towns of Montgomery, Montgomery Center, Lowell, and Wolcott at least 6 inches of rain fell in less than six hours. Roads and bridges were washed out and homes were swept away. Along the Missisquoi River, North Troy recorded a new record peak flow value that exceeded the 100-year recurrence interval. The 1997 flooding at Montgomery points to another Vermont characteristic: repeat occurrences of certain types of hazards. Prior to 1997, the Montgomery/Jay Peak area was also affected in June 1993, while the Lamoille River in the adjacent watershed overflowed in August 1995. Repeat flooding was also observed in Underhill in 1998 and 2000.

Ice jams can occur during winter or spring and cause water accumulations that produce flooding upstream. If the ice jam breaks free, then downstream flooding occurs, as was the case in Montpelier on March 11, 1992. As the floodwaters rose to seven feet in the business district, 400 families and major businesses were affected. Montpelier is particularly prone to flooding given its location in the Winooski River valley just upstream from the confluence with the Dog River. Throughout its history, the capital city has been the site of flood damage, including extraordinary freshets (defined by the *Glossary of Meteorology* to encompass flooding due to either rain or melting snow) in July 1811 and July 1830. The floods of July 1859 and October 1869 produced heavy losses and claimed several lives. Early residents of Montpelier used the high water marks left on trees by the freshets as reminders against building too close to the water's edge.[6]

About a century-and-a-half ago, Zadock Thompson noted that "very little damage is ever done by hurricanes or hail. The crops oftener suffer from an excess, than from a deficiency of moisture, though seldom from either."[7] By the early twentieth century, however, the arrival of tropical cyclone remnants had become a double-edged sword. The precipitation accompanying these systems often has helped to reverse or end an existing drought. This happened in August 1988 with the arrival of Tropical Storm Chantal, again in October 1995 with Hurricane Opal, and most recently with Hurricane Dennis and Tropical Storm Floyd in 1999.

The opposite of this beneficial addition of moisture occurs when, in-

stead of being parched dry, the landscape is already moist to saturated as a result of previous rainfall. Under these conditions, tropical remnants have produced widespread, and at times, catastrophic flooding. For example, the Great Flood of 1927 resulted from record rainfall totals produced by tropical storm remnants on November 3, following October precipitation totals that were already 50 percent above normal. As this decaying storm tracked directly along the spine of the Green Mountains, streams rose so rapidly that there was little time for warning. The Winooski River rose 40–45 feet above its normal level, causing land and settlement along the river to bear the brunt of the estimated $30 million in economic losses. The 1927 flood was greater than the 100-year flood on many rivers and remains today as the flood of record at many gauging stations. Eighty-four of the eighty-five fatalities during this New England-wide flood occurred in Vermont. In addition, thousands of dairy cows and other farm animals drowned. Rich topsoil on farmland either washed away or got buried under infertile silt, such that no crops could be produced for many years.[8] Montpelier remained isolated for days and Waterbury for weeks. The flood disrupted communications across the state and with the outside world, producing a "black triangle."

One positive highlight of the 1927 flood was the survival of the Chittenden Dam near Rutland, which did not overflow, despite the copious precipitation. Although some dams washed away in other parts of the state, the ones that did not (e.g. the Deerfield River) pointed to the usefulness of such structures as flood control measures. In 1929, the *Report of Advisory Committee of Engineers on Flood Control* recommended that "the only feasible method of diminishing flood flows in Vermont consists in constructing reservoirs for power use."[9] The resulting flood control plans took advantage of New Deal programs such as the Civilian Conservation Corps (CCC).[10] Today, attention has shifted to the wise use of floodplains as a prevention strategy, including buy-outs, improving municipal transportation infrastructure, and building flood resistant structures.[11]

The Great New England hurricane of 1938 (ranked category 3 on the Saffir-Simpson scale for hurricane intensity) arrived on September 21, following significant rainfall a few days earlier between September 12 and 20. Between September 17 and 20 alone, over 6 inches of rain fell, only to be followed by similar amounts during the hurricane itself. On some rivers (e.g., Black, Williams, Saxtons, West), peak flows exceeded both the 1927 and 1936 floods. Winds wrapped around the central low pressure to arrive from the northeast bringing salt-laden seawater and seabirds including puffins and albatrosses, which were left floundering

in fields and swamps across Vermont in the aftermath.[12] The state reported almost $4.4 million in highway and bridge damage, especially in the areas around Brattleboro, Ludlow, Woodstock, Middlebury, and Rutland. Farm losses from the wind and water stood at $7.6 million, while tremendous wind speeds led to the loss of about half of the state's sugar maples. The havoc wreaked by hurricane-related winds was repeated most recently with the arrival of Tropical Storm Floyd on September 15–17, 1999. After surviving moderate losses ($1 million) as a result of the 1998–1999 drought, the apple industry suffered approximately $3 million in damages in the wake of this storm.[13]

Tropical cyclone remnants need not produce the catastrophic flooding of November 1927 or September 1938. Throughout the twentieth century, other cyclones have produced flooding of varying magnitudes and extents, as well as wind-related damage. Table 1 lists the tropical cyclones or their remnants that moved directly over Vermont. It should be noted that, in addition to these landfalling storm systems, the rainbands associated with the outer fringes of a decaying tropical cyclone can also produce significant damage. The 1938 hurricane was notable in that it followed a track very similar to the famous 1815 hurricane. The 1950s was a particularly active decade for hurricane activity. Of note

TABLE 1 Tropical Remnants that Made Landfall In/Proximate to Vermont

Name	*Year*	*Month, Day*
	1927	November 3
Great New England	1938	September 21
# 2	1949	August 29–30
Hurricane Baker	1952	September 1–2
Hurricane Carol	1954	August 31
Tropical Storm Brenda	1960	July 30
Hurricane Donna	1960	September 12
Tropical Storm Doria	1971	August 28
Hurricane Belle	1976	August 9–10
Hurricane David	1979	September 6–7
Hurricane Frederic	1979	September 14
Hurricane Gloria	1985	September 27
Tropical Storm Chris	1988	August 29
Hurricane Hugo	1989	September 22–23
Hurricane Bob	1991	August 19
Hurricane Opal	1995	October 5–6
Hurricane Bertha	1996	July 13
Hurricane Fran	1996	September 8–9

were Hurricanes Edna and Hazel in 1954. Hazel tracked from the Carolinas all the way to the city of Toronto in Ontario, with wind gusts of over 70 mph and considerable tree losses in the Burlington area. In 1955, two category-3 hurricanes (Connie and Diane) affected New England. In 1960, the flooding from Tropical Storm Brenda was confined to the extreme southeast of Vermont, while Hurricane Donna six weeks later produced little flooding. In October 1962, Tropical Storm Daisy's remnants caused leaves to be stripped from trees, leading to clogged drains and urban flooding. The remainder of the 1960s was relatively quiescent. The next major event, Tropical Storm Doria's remnants arrived in August 1971, causing landslides, road washouts, and bridge damage in the southeast. In June 1972, the winds from Hurricane Agnes felled trees and caused utility failures, blocked roads, and other property damage.[14]

In the winter, flooding can occur due to rain on frozen ground, ice jams, and snowmelt. The depth of the snowpack and the rapidity of its ablation (melting) are important factors in determining the severity of snowmelt-related flooding. At times, rain on snow assists in the ablation of the snow by the transfer of latent heat. This happened in March 1936 when a snowpack with water equivalents of 2–10 inches covered much of the state, the ground was frozen, and the streams covered with ice. The ice jam flooding on the Winooski River that devastated Montpelier in March 1992 was caused by rainfall and snowmelt. Similarly, above-normal temperatures on April 1, 1998 combined with excessive snowmelt to produce flooding on Lake Champlain as it rose to over 100 feet. Flood stage on Lake Champlain in Burlington is 101.88 feet, while the lowest level on record is 92.04 feet.

Apart from ice jams and snowpack ablation, freezing rain and frozen ground conditions can also produce flooding scenarios. During the first week of January 1998, a series of freezing events affected southeastern Canada and northern New England, including Vermont. During this Great Ice Storm of '98, Grand Isle and Franklin counties were particularly hard hit. Record-breaking rainfall combined with snowmelt to produce flooding on January 8 along the Otter Creek in Rutland and the Black River in Coventry. Ice jams along the Sleepers River washed away a bridge. Electricity pylons collapsed under the weight of the accumulating ice, and extended power losses led to financial ones as milking operations were disrupted around the state. Forest health issues came to the fore as crown loss, bole breakage, and other injuries, all of which are consequential in their own right, became even moreso in the face of subsequent attacks by disease and insects. Only one fatality occurred in Vermont, as a resident of the town of Milton, who was critically injured on January 8, 1998, lost his final battle on May 22, 1999.

Freezing rain and glaze conditions are inherent features of the climate in northern New England and occurred fairly frequently in the 1960s. These events resulted in school and business closings, tree injury, and hazardous travel. In December 1969, a multi-type event took place that is comparable in scope to the Great Ice Storm of 1998. This event began as a nor'easter on December 26–28, bringing 45 inches of new snow to Waitsfield and 1.5–3 feet elsewhere. Adding to a major snowstorm of a few days earlier, snow drifts ranged from 6–30 feet high, so that only snowmobiles were functional. As the precipitation changed to freezing rain in the Northeast Kingdom and the Connecticut River valley, forest injury and utility line damage became marked, leaving some customers without electricity for a week or more. Farmers lost thousands of gallons of milk as the lack of power translated into a lack of storage options or transportation opportunities.[15]

Thus, flooding in Vermont can occur during any season and produce a variety of geophysical and socioeconomic impacts. Flooding scenarios are often enhanced by the state's complex and rugged topography, antecedent moisture characteristics, and the tendency for flood-producing storms to stall or stagnate over preferred locations.

A Note About Flash Flooding

In addition to the effects of flooding, we must also consider flash flooding. These rapid onset events often result from stagnant or slow-moving thunderstorms as well as from the passage of a series of thunderstorms over the same geographic area. Such high-intensity and often long-duration events produce copious amounts of precipitation in a short period of time. These precipitation amounts can quickly exceed bank-full stages along rivers and streams, trigger mass movements (such as landslides and mudslides), sweep away unattached structures (e.g. trailer parks), and carve new channels.

Urban development and recreation activities, antecedent soil conditions, and ground cover type exacerbate flash flooding. Vermont's steep V-shaped valleys help to constrain the flow, creating remarkable depths of flow at tremendous speeds. As far back as 1853, Zadock Thompson noted these topographic characteristics along the Winooski, Lamoille, and Missisquoi rivers, such that by default, roads could only be constructed along the open valley floors, making them susceptible to flooding damage.[16] In the aftermath of the 1927 flood, Arthur F. Stone observed that, not only did the roadways, bridges, culverts, and other built features encroach on streams in these valleys, but the secondary growth and other vegetation that had replaced Vermont's primeval forests following clear cutting were inadequate to promote the infiltration and

percolation necessary to delay runoff.[17] Today, over 70 percent of the state is now forested, but the encroachment of the built environment on streams and rivers still plays a crucial role in flooding episodes. This increasingly familiar scenario was repeated in late June 1998 (the third major flooding episode of that summer) when a stationary front stalled, allowing a series of thunderstorms to train across central Vermont. The already swollen rivers quickly overflowed onto adjacent roadways and developed urban spaces, leading to the evacuation of the towns of Lincoln and Bristol on July 2.

Timing can significantly affect the consequences of flash floods. Many of the frontal systems that affect northern Vermont are spawned at night. In addition to the difficulty of warning the vulnerable populations of the impending danger, many of these storms were enhanced by the steep slopes over which they passed. Examples include the Montgomery floods of July 15, 1997, as well as the northern Vermont flooding on 19 and 27 June, 1998.

Droughts

In Vermont, there is a saying that one extreme follows another. This is especially true for the hydrological extremes of floods and droughts, and examples abound. Extraordinary heat and drought followed the yearlong snow and frost of 1816. Drought-like conditions that had been in place since at least April preceded the November 1927 flood. The September 1938 hurricane brought relief from the severe drought of the 1930s. More recently, flash flooding in the northern portions of the state in August followed the statewide drought in the spring and summer of 1995. The statewide flooding of June/July 1998 gave way to the drought of 1998/1999.

Very severe droughts are rare in Vermont. They tend to affect the entire state and span a number of years. Prior to the 2001–2002 episode, the droughts of the mid-1960s were the most severe and long-lasting ones to afflict the state in the last fifty years. The years 1963, 1964, and 1965 were the second, third, and fourth driest years since records began in 1895, while 2001 was the fifth driest. Less severe droughts are relatively common and more localized in extent.

As a drought progresses, various socioeconomic sectors are affected. The 1998–1999 drought caused problems for individuals, utilities, agriculture, tourism, and other economic sectors that depend on surface or subsurface water supplies. An estimated $30 million in hay and pasture was lost statewide by the end of 1999. In the western counties of Addison, Chittenden, and Rutland, which were among the hardest hit, farmers suffered corn production losses estimated at $2,249,520, $29,586

and $664,290 respectively.[18] Christmas tree farms lost 50 to 100 percent of the seedlings or transplants set in 1999.[19] Some crops and plants, however, benefited from the warm, dry conditions. These included berries and grapes, which grew larger and sweeter than normal, while hot weather crops such as tomatoes, cucumbers, and non-silage corn ripened early and in abundance.

It should be noted that the effects of a precipitation shortfall cascade through the landscape, affecting the surface soil moisture, streams, and groundwater in that order. The hydrologic impacts of a given drought become increasingly evident as an episode evolves. During the 1998–1999 drought, record low streamflows and groundwater levels were observed at a number of U.S. Geological Survey (USGS) sites and wells across the state by the end of August 1999. While many individual drinking water wells also had run dry by this time, the water quality issues that were present during the 1994–1995 drought were absent. The summer of 1995 was a time of water conservation in many communities, while others, such as the towns of Newbury and Barre City, brought in water supplies by truck.[20] Such conservation measures were not required during the 1998–1999 event due to the timing of the water shortages and the reversal of the drought in the fall of 1999. Record low streamflows and dry wells were also a feature of the 2001–2002 drought, which when combined with the magnitude of the deficits, raises some concern for the nature of the recharge of the state's aquifers.

Across state forests, a total of 85,000 acres (34,425 ha) showed the effects of the 1998/1999 drought with such symptoms as leaf scorch, leaf yellowing, and early leaf color. Some deciduous trees began changing color by mid-August and the fall foliage color in the Northeast Kingdom was described as "subdued."[21] Several species, such as red and sugar maple, are susceptible to drought, and leaf scorch was evident in urban trees across Chittenden County.

Thunderstorms

A thunderstorm is a storm that contains thunder and lightning. According to the National Weather Service, Vermont and northern New York experience about twenty-five thunderstorm days annually. At times thunderstorms may be associated with wind gusts, torrential rainfall, and hail. A severe thunderstorm (defined by the National Weather Service as one with 3/4-inch hail and surface wind gusts of 50 knots) is also capable of producing flash floods and tornadoes. When thunderstorms form in a line along or ahead of a cold front, these are classified as a squall line. Thunderstorms that form in winter can be associated with snowfall, which some refer to as thundersnow. Each of the thun-

derstorm-related events (lightning, strong wind, hail, flash flood, and tornadoes) is itself a natural hazard that can cause property and crop damage as well as loss of life. One of the most memorable thunderstorm outbreaks in Vermont occurred between May 21–31, 1968, when thunderstorms, lightning, hail, and high winds were observed across the state. Although Vermont escaped the $133 million in flooding damage that occurred in New Jersey, this severe weather outbreak was beneficial in that it helped to reverse the drought that had gripped much of the northeast in the mid-1960s.[22]

Tornadoes

One of the concomitant hazards of severe thunderstorms is the spawning of a tornado. Historically, tornadoes were reported in Rutland on September 19, 1787, and again on May 3, 1790. Since 1950, tornadoes have struck every county except Grand Isle, Caledonia, and Washington for an annual average of $241,600 in damage in 1999 dollars.[23] Many of these tornadoes tend to be weak (F0 or F1 on the Fujita Scale, used for ranking tornadoes based on the damage caused and their speed of rotation). Between 1960 and 1969 alone, one waterspout on Lake Champlain and ten tornadoes were observed across the state.

Tornado damage tends to be localized. Some recent examples include barn destruction in Cambridge and apple orchard demolition in Bennington on June 24, 1960; timber, tree, and farm silo damage in St. Albans on June 13, 1961; roof damage, twisting or uprooting of trees, and some electric power loss in southeastern Windsor County on July 9, 1962. On August 7, 1970 a tornado at St. Albans injured seven in a camp home and demolished buildings. A rare F2 tornado, observed in Colchester on August 8, 1983, packed winds of 59 mph recorded at the Burlington International Airport and unofficial winds of 80 mph. It capsized aircraft at the Champlain Airport and snapped trees 100 feet tall.[24]

Tornadoes that form ahead of a cold front are often steered by southwesterly winds and move in a northeasterly direction. Those that hit Vermont are no exception. In some cases, tornadoes are not spotted, but rather inferred from the type and orientation of the resulting damage. Such cases occurred in Swanton on October 31, 1965 and near the Burlington International Airport on August 9, 1972, where a narrow path of destruction 0.1 mile long was reported.

Tornado sightings were frequent in the 1960s, less so during the 1970s, and rather rare in the 1990s, when only two were observed. Of these, the most recent occurred in Bennington County on May 31, 1998, producing $630,000 in property damage and power outages that affected

about 8,000 customers for two to three days. Prior to that, the September 3, 1993 tornado that touched down in Orleans and Essex counties destroyed a Christmas tree farm as well as 70–80 acres in a maple orchard worth $50,000.[25]

Tornado outbreaks refer to a family of tornadoes that tend to form along a squall line. Such outbreaks can either be spawned by the same thunderstorm or by several thunderstorms over a period of time (more than two hours) and an extended spatial extent (more than 100 km). One example of the former scenario occurred on May 20, 1962, when three tornadoes formed from the same thunderstorm cell in Franklin and Orleans counties. On July 9 of the same year, another cell spawned at least two more tornadoes in southeastern Windsor County. In the first case, a barn, silo, and new trailer home were destroyed and tree damage was observed on both occasions.[26]

Hail

The F2 tornado that swept across Bennington County on May 31, 1998 was accompanied by 1.75-inch diameter hail that produced $20,000 in property damage. Like lightning, hail is a thunderstorm-related hazard that has produced significant property and crop damage through the years. Farmers have sometimes called hail the "white plague," because entire fields of crops can be destroyed in minutes.[27] Apples are one of the crops most susceptible to hail damage. As far back as July 15, 1799, accounts tell of devastating thunderstorms in the Connecticut towns of Lebanon, Bozrah, and Franklin, which destroyed not only apples but also apple trees due to heavy rains, winds, and hail as large as 7 inches in circumference.[28] Hailstones destroyed entire apple orchards in May and June 1959, as well as on July 10, 1966 in southern Vermont and two days later in the counties of Addison, Rutland, and Bennington. On June 25, 1983 a three-minute hailstorm in Cornwall damaged over 500 acres of apple crops, causing growers to label it as the worst storm in ten years.[29]

Hailstones have flattened entire hay fields (e.g., the tornadic thunderstorm in Highgate Springs on June 13, 1961) as well as cornfields from Grand Isle to Morrisville on August 18, 1969. In addition, large acreages of potatoes were also lost in the towns of Albany and Craftsbury on July 21, 1964.[30]

On the same day as the hailstorm in Cornwall, another one, which produced 1-inch diameter stones, prematurely ended a hot air balloon event in Quechee, forcing balloonists to make emergency landings. Overall, hail damage to property in Vermont has been estimated to be on the order of $111,000 between the beginning of 1993 and the end of March 2001.[31]

Lightning

Lightning is an electrical discharge within a cloud, between clouds, or from a cloud to the ground. While cloud-to-ground lightning only accounts for about 20 percent of all lightning strikes, this type has been the most detrimental to life and property across the state. Between January 1, 1993 and March 31, 2001, approximately $1,611,000 in lightning-related property damage occurred. Next to flooding, lightning strikes have accounted for a disproportionate share of hydrometeorological-related fatalities in Vermont since the 1960s. At least nine people have died in lightning-related incidents. Others have sustained burns and other injuries. Dairy cows and other livestock have been killed; barns have burned down completely; and communications facilities have been impaired on a number of occasions including June 15, 1972 and July 21, 1983, when emergency services personnel were forced to use back-up supplies.[32]

June 18–24, 2001 was designated as National Lightning Awareness Week around the U.S. One of the most important messages of this campaign is that lightning not only strikes in conjunction with a thunderstorm, but away from it as well. This occurs when positive lightning originates in the cirriform anvil at the top of a thunderstorm. This type of lightning is particularly dangerous because it can strike up to 5–10 miles away from the storm, and its lengthy duration ignites forest fires more easily.[33] The threat of forest fires is heightened when large amounts of debris accumulate under dry atmospheric conditions, as occurred when the drought of 1998–1999 followed the Ice Storm of January 1998.

Winds

Damaging winds can occur at any time of the year, can gust to more than hurricane speeds (74 mph) and can be classified as one of three types. One category, Shirkshires, are gravity or fall winds that gain speed from being funneled through the Valley of Vermont, located in southwest Bennington County between the Green Mountains and the Taconics.[34] During one such event in the county on March 12–13, 1962, wind gusts of up to 81 mph produced widespread, extensive damage. One of the rare wind-related fatalities occurred when a man who was trying to open a door against the wind went into heart seizure.[35]

Very strong winds are also associated with thunderstorms when downward moving air (called a downdraft) strikes the ground and moves out laterally to form a downburst. Downbursts are examples of straight-line winds that can exceed 100 mph and produce damage that

is reminiscent of a tornado. Microbursts are downbursts of 4km or smaller in size, while macrobursts are larger than 4km. When microbursts reach the ground and continue moving outward, they become a gust front. Downbursts in combination with gust fronts have caused tree damage, flattened crops, and downed power lines. Often, these damaging winds occur along with other hazards, such as hail.

During the winter, strong winds can accompany snowstorms, blizzards, and icing events. On April 3–7, 1975, during the worst storm of the 1974–1975 season, record snowfall that was heavy and wet combined with very strong winds to damage trees and take down power lines. Statewide, high winds and glaze on February 15, 1967 broke glass panes, communications antennae, and signs, and took down trees.[36]

One atmospheric pattern that is conducive to windstorms occurs in advance of a cold front when the associated low pressure system is moving to the north and west of Vermont. At the same time, high pressure exists over the Canadian Maritimes. As air moves from the area of high pressure to the area of low pressure, the strength of the resulting wind usually depends on the gradient (or difference in pressure values between the two). Vermont's complex topography is conducive to creating downslope winds and/or strong winds that have been funneled through narrow mountain passes. On January 27, 1996 windstorms of this sort produced air flow of 95 mph at Cambridge, damaging a school roof; 68 mph winds at Jericho, also resulting in roof damage and; 67 mph at Waltham.[37]

Winter Storms

Despite such tongue-in-cheek comments as "Vermont has only two seasons: winter and July,"[38] snowfall in its many varieties, sources, and durations has been both a boon and a bane to the state. Winter sports industries (especially skiing) and various components of the agricultural sector definitely reap benefits from this form of precipitation, although not without several caveats. A number of systems or scenarios produce snowfall, including lake-effect and lake-enhanced snows off Lake Champlain, mountain-induced events, nor'easters and blizzards, and frontal events. For a winter storm to develop, three key ingredients need to be in place. The first is moisture so that clouds and precipitation can form. Secondly, this moist air must be uplifted in some way so that condensation can initiate the cloud formation. Such uplift is provided by warm and cold fronts, as well as by topographic barriers such as mountains. Third, cold air must be present between the clouds and the ground to ensure that the precipitation falls as either snow or ice.

Just as Lake Champlain produces a moderating effect on the temper-

atures of the Champlain Valley so that the growing season there is longer than in other parts of the state, so too it influences snowfall. Alexander Tardy has found that most of the time, the lake's influence is limited to low clouds and flurries once an Arctic airmass has moved through.[39] At the other end of the spectrum, however, snowstorms on Lake Champlain can reduce visibility to zero and produce over 12 inches of snowfall.

Nor'easters (also called northeasters) are intense low-pressure systems that develop or intensify along the North American eastern seaboard between December and March. Moving northeastward along the coast, these systems are accompanied by very strong winds, heavy snowfall, and at times, sleet. The nor'easter of December 26–28, 1969 produced 1.5–3 feet of snow statewide and 45 inches at Waitsfield. The state was declared a disaster area. Snowdrifts were 6–30 feet high, halting all traffic except by snowmobile. Forests and utility lines were devastated, while roofs collapsed in both urban and rural areas. Power outages on dairy farms led to the disposal of thousands of gallons of milk, due to a lack of transportation or storage.[40] This situation would be repeated twenty-nine years later during the ice storm of January 1998, when such losses contributed to the statewide total of $5.8 million in property damage. More recently, the winter of 2000–2001 was marked by four nor'easters between December 31 and March 31. Although the financial losses did not approach the 1969 storm, the later nor'easters in the 2000–2001 season set new snowfall records (e.g., 22.9 inches at Burlington on March 5–6), with the wet, heavy snow breaking branches and leading to telephone and power outages.

Blizzards are common occurrences in Vermont. True blizzards are dry, powdery snow events that are accompanied by low temperatures and strong winds (34.5 miles per hour or 15.3 metres per second) that can reduce visibility to a few metres. The Great Blizzard of March 1888 was actually preceded by a blizzard on January 25–26. Roads were blocked and businesses closed in Strafford for three days, while ten trains were stranded between Shelburne and Charlotte by huge drifts. Peak winds of 47 mph and 42 mph were recorded at Brattleboro and Northfield respectively. This storm would be followed by the unforgettable Blizzard of March 1888 during which deep snowfall, extreme temperatures, and gale force winds converged. Snowfall totals exceeded 40 inches over much of the southern counties, while at Danville, only 12 inches of snow was measured. The temperatures dipped as low as 6°F.[41]

In the twentieth century, one of the worst blizzards in the state's history occurred on December 29–31, 1962. Gale-force winds accompanied the 2–30 inches of snow that fell over the thirty-six-hour period,

clogging highways and slowing air and rail transportation. The high winds and bitter cold led to a number of frostbite reports and froze water pipes around the state. Stores, offices, schools, and even ski operations closed, in some cases all week. Transportation hindrances would also be a by-product of the Blizzard of 1993, another memorable event. Property losses from this storm totaled over $500,000 including a barn that collapsed in Craftsbury and statewide power outages that affected nearly 3,000 customers. In terms of its broad geographical extent, the Blizzard of 1993 rivals the Great mid-February snowstorm of 1958, the Great Snowstorm of January 1831, the Cold Storm of January 1857, and the Eastern Blizzard of 1899.[42]

Apart from these memorable storms, a few additional observations are notable. As mentioned above, one extreme frequently follows another. For example, the September 1999–January 1, 2000 period was the least snowy on record at Burlington, while April 2000 became the second snowiest April on record. Another observation revolves around the fact that, during some winters (e.g., April 1967), snow squalls associated with thunder are especially common. In other years, large snowfalls in October or November have led some ski resorts to open early, as was the case in November 1965 and 1968. In the latter year, 10–20 inches of snowfall on November 7 and 8 precipitated early openings, but the addition of two feet of snow on November 10 forced the closure of roads like State Route 9. Several thousand skiers were marooned with insufficient food and accommodations.[43]

The transportation sector frequently bears the brunt of severe winter weather. In the modern era, no mode has been spared. Repeated snowstorms in January and February 1960 led to the closure of Lake Champlain on February 14. Occasionally, heavy snow makes for difficult clearing and removal, at times stranding motorists who have abandoned their automobiles. Holiday air travel has also been disrupted.

The winters of 1968–1969 to 1971–1972 were the snowiest on record dating back to the 1800s. At Burlington, the previous snowfall record of 132 inches was set in 1886–1887. The final total for the 1970–1971 winter was 145.4 inches.[44] The 122.5 inches received during the 2000–2001 winter exceeds the 1968–1969 (96.3 inches), 1969–1970 (104.6 inches) and 1971–1972 (108.9 inches) seasons. Prior to the 1970–1971 season, the 1965–1966 season held the record for the highest snow total in the twentieth century at 111.7 inches. It is significant to note that this latter record occurred at a time when much of the state was locked in a multiyear drought. During these especially snowy winters repair personnel and line crews used snowmobiles and snowshoes as a mode of transport. New snow removal equipment also debuted during this time and

annual budgets for winter maintenance were accordingly adjusted to better handle snow removal in the post-1970 era.[45]

During particularly snowy winters, the threat of snowmelt-related flooding in March or April is heightened. By late March 1971, the water content in the snowpack was twice the normal value in some areas. In addition, some rivers were at 160 percent and 185 percent of their normal discharges. Under those conditions, officials predicted that only 1.9 inches of rain would be needed to produce a flash flood.[46]

In addition to winter recreation, another economic sector that is heavily dependent on snowfall is the sugar maple industry. A blanket of snow during the winter protects the roots of these trees, making it easier for them to extract soil water when temperatures rise and the sap begins to flow. The latter occurs when the internal tree temperature rises above freezing, which corresponds to air temperatures of 35°–40°F. Even though the 2000–2001 winter season provided excellent root cover, the thermal factor was absent, as has been observed over the last four to five winters.[47] Along with the 1987 maple syrup season, the 275,000 gallons produced in 2001 ranked as the second lowest production total since records began in 1916. The 1970–1971 record-breaking snow season yielded the lowest maple syrup totals (240,000 gallons) on record.[48] Table 2 shows the vagaries of maple syrup production over the last eight years. The 1998 figure reflects the aftermath of that year's ice storm.

Temperature Extremes

Climatologists use a thirty-year period to compute statistics of the mean temperatures, precipitation, and other parameters for a given re-

TABLE 2 Maple Syrup Production in Vermont, 1994–2000

Year	*Total (thousands of gallons)*
1994	435
1995	365
1996	550
1997	395
1998	360
1999	370
2000	460
2001	275

Source: Vermont Department of Agriculture, Food & Markets.

gion. One of the noteworthy characteristics of Vermont's climate is the tendency to stray above or below these expected values, a statement that was as true in 1922 as it is today.[49]

Extremes in temperature and the seasonality of these extremes are important to both individuals as well as economic activities. During the summer, both extreme cold and extreme heat can be observed. The former is associated with frost, which can be detrimental during the growing season. Extremely high temperatures can occur when a high-pressure system (under which air is descending towards the earth's surface) develops and intensifies over the state. Under such conditions, the potential for a heat wave exists. A heat wave is a period of three or more consecutive days during which the diurnal maximum temperature meets or exceeds 90°F. In Burlington, the average number of days per year with above 90°F temperatures is six. In 1999, a drought year, this figure climbed to nineteen. Extreme maximum temperatures are often observed during drought years, and in many cases, the records that are broken were long standing and set during previous droughts. It should be noted that a heat wave can be either a boon or a bane depending upon the time of year and the antecedent conditions. For example, the hot conditions of August 1996 followed a cool, wet summer, thereby providing an extra boost for plants.

In the fall, both abrupt cold snaps and record warmth can be observed, where the latter tends to be associated with southerly flow. Similarly in winter, both extreme cold and record warm conditions occur. The winter of 1933–1934 was particularly cold and the lowest temperature ever recorded for the state (−50°F) occurred at Bloomfield on December 30, 1933. Prior to this, extreme cold temperatures were widespread on January 4 and December 18, 1835, with −40°F at Montpelier and White River, −38°F at Bradford, −30°F at Rutland and −26°F at Burlington.[50]

Following the winter of 1933–1934, more than 20 percent of the apple trees in Vermont were eliminated, although this figure was less than 2 percent for the Macintosh variety. Temperature is a very important variable in promoting apple growth. The dwarf trees introduced in the 1860s lacked the winter hardiness needed to be truly viable in Vermont. In 1868, the first Macintosh tree, a transplant from Ontario, was planted in Newport. The severe winter of 1917–1918 destroyed almost all of the Baldwin and other strains. Only the Macintosh variety survived, and it remains the dominant strain grown today.[51] In 2001, temperature fluctuations in the spring produced a different loss. Daily maxima of at least 90°F followed by minima on the order of 20°F accelerated the flowering of the apple blossoms, which were then killed by the low nighttime temperatures.[52]

One of the most prolonged cold episodes lasted from January 18 to February 3, 1969. Diurnal maxima were below 0°F. Water mains and other connections froze and burst in record numbers across the state. Since then, extreme cold has been recorded in February 1993 and again on January 19, 1997. In both cases, cold dense air moving out from an Arctic high pressure system caused temperatures to plummet. Daytime highs in 1993 were 10°F, while the minima were −5°F.[53]

An interesting pattern is that these cold episodes tend to follow (and sometimes precede) severe snowstorms. In some cases, cold dense, subsiding air in high pressure systems quickly follows the passage of cold fronts that are associated with a given winter storm. In others, cold waves (surges of cold air), which originate over Hudson Bay, move across northern Vermont fairly frequently in the winter.[54] Examples include one of the state's worst blizzards on December 29–31, 1962, near blizzard conditions on January 30–31, 1966, the 8–18 inches of heavy, wet, clinging snow received on November 14–15, 1972, and the Great Ice Storm of 1998.

The variability in temperature extremes would not be complete without mentioning 1816, "the year without a summer." In April 1815, Mt. Tambora on the Sumbawa Island of Indonesia erupted, spewing 150 km^3 of ash into the air that reached well into the stratosphere at a height of about 28 miles (44 km). The dust and aerosols thus produced and dispersed affected global climate for up to two years. The northern hemisphere, especially New England and Europe, were particularly affected, and accounts of the hardships suffered were preserved by farmers such as James Winchester and Benjamin Harrison of Bennington. The severe winter of 1815–1816 gave way to a warm, dry April that turned into a backward spring, a cold, snowy summer, and an early fall. The month of May was dry and cold and although the start of June promised warmth (90°F on June 5), the series of cold spells that would keep Vermont and much of New England in their grip through September and onwards arrived on June 6. As the maximum temperatures dropped to 40°F, snow began. Snowfall continued through June 8 with accumulations of 12 inches at Montpelier and 18 inches at Cabot, accompanied by severe frost that froze standing water and killed all but the hardiest crops, such as oats.[55]

Dry, windy conditions continued into July and August. Although rain fell in other parts of New England, Vermont received no relief. Some enterprising farmers built bonfires around their cornfields and salvaged some of the crop. On August 21, a killing frost decimated more potato, corn, and bean crops. The cold drought continued into September, accompanied by forest fires. Staples were destroyed. Livestock starved

due to lack of forage and later due to lack of hay in the winter. Money was scarce and it was difficult to import food due to the condition of the roads. The years 1816–1817 were marked by famine, but 1816 will remain infamous for the phrase, "eighteen hundred and froze to death."[56] Thus tested, many people emigrated from Vermont and New England in the wake of the year without a summer.

Conclusion

The human and physical landscapes of Vermont have been and continue to be shaped by the vagaries of our weather and climate. The manifestations of certain events (e.g., shirkshires) are native to the state and occur as a function of the state's complex topography. In turn, the topography has dictated to some extent the way in which infrastructure (in particular, roads) has developed, thereby setting the stage for vulnerability to flooding. Many of the most devastating floods, droughts, winter storms, and temperature extremes have been related to regional, and at times, hemispheric patterns and changes. Atmospheric fluctuations have long fascinated human beings and repeatedly proven a number of Vermont weather truisms such as "when the mountain roars, close your doors." Given the cyclical nature of hazards and the inherent variability of the climatic system, perhaps we should remember that for Vermont, it is normal to be abnormal.

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Vermont's Changing Rural Landscape: Paradise Lost?

It is more than escapism, nostalgia, and symbolism that attract people to Vermont. It is also hope. For generations travelers have come to Vermont hoping for wonderful memories. But let us carefully consider what visitors actually see when they arrive here today.

By THOMAS D. VISSER

Farewel happy Fields
Where Joy for ever dwells
—John Milton, 1667

Perhaps the greatest intangible asset of the state of Vermont is its historic rural landscape. In this rapidly changing world many seek the comfortable knowledge that here one may still find places where time seems to pass more slowly and evidence of our heritage dwells longer. For those with a sharp eye and bit of wanderlust, hints that "we are not in Kansas anymore" may first appear on the Vermont landscape as odd anachronisms—things that are chronologically out of place. But with a little persistence, travelers may soon discover winding roads that take them through places where the sense of the past so overwhelms that of the present, that they are drawn to explore Vermont as they would watch a wonderful movie that they hope will never end.

In *The Experience of Place,* his study of how people experience a rapidly changing environment, Tony Hiss observes that "Until recently, when people spoke about a vivid experience of a place, it would usually be a wonderful memory. . . . These days people often tell me that some of their most unforgettable experiences of places are disturbingly painful and have to do with unanticipated loss."[1] And in describing how people feel when faced with the accelerating pace of destruction of their familiar surroundings, David Lowenthal notes in *The Past Is a*

Foreign Country, "Prevailing disaffection with the present and pessimism about the future fuel nostalgia."[2] In his essay on symbolic landscapes, D. W. Meinig also observes that, "Every mature nation has its symbolic landscapes. They are part of the iconography of nationhood, part of a shared set of ideas and memories and feelings which bind people together."[3]

But it is more than escapism, nostalgia, and symbolism that attract people to historic places like Vermont. It is also hope. For generations, travelers have come to Vermont hoping for wonderful memories.

In 1949 my recently wed Bostonian parents took their first summer vacation together on a road trip to Vermont. Throughout my early childhood, that "Trip to Vermont" was one of those tales so frequently retold that it became part of our family legend. Although it would be more than fifteen years before I first witnessed the lush landscape of the Green Mountain State, by a very young age I had developed a strong impression of Vermont through my parents' enthusiastic recollections. As generations pass, however, so do the stories that first shape our impressions of the great world beyond, and with the passing of my father, I inherited a box of Kodachrome slides chronicling my parents' legendary trip of a half-century ago. Reflecting on the rich tapestry of feelings that this collection of images conveys, these questions come to mind:

What hopes drew these urban newlyweds to Vermont for their first summer vacation?

What places so satisfied their hopes that they recorded them on film?

How has the character of these places changed in the past half century?

Certainly the hope of still finding places like these continue to attract thousands of visitors to Vermont annually. One only needs to leaf through the pages of *Vermont Life* magazine, or to spin a display of scenic Vermont postcards to see wonderful timeless views that reinforce the mythic image of the state. But let us carefully consider what these visitors actually see when they arrive here today. How do these places now make them feel? What impressions and memories are now being shaped?

At the same time that the Vermont myth was being polished to the delight of a generation of post-World War II vacation travelers, so too was our modern culture becoming obsessed with the future and with change. "Construction makes America strong," the country was told through the Cold War years, and soon millions of dollars of federal funds were invested in the nation's transportation infrastructure. With

Photo 1. Stowe, Vermont, circa 1949. Photo by William W. Visser.

Photo 2. Summit of Mount Mansfield, view looking south, circa 1949. Photo by William W. Visser.

Photo 3. Cambridge, Vermont covered bridge, circa 1949. Photo by William W. Visser.

the start of the interstate highway system in Vermont in 1958, the pace of change of Vermont's landscape accelerated. As the scale of projects increased in size and complexity, and as decision making became more fragmented and farther removed from the places affected, the "form follows function" mantra became a convenient excuse for *ad hoc* design. From exposed wires and transformers to pumps and meters to vent stacks and mechanical boxes, what before had been buried, hidden, or discreetly sited, now so often is left to stand naked in full view. Moreover, due to budget limitations this piecemeal decision making often dismisses or ignores considerations over how these changes make observers feel.

But people resent changes that destroy the character of symbolic places. Much of the joy of being on the summit of Mount Mansfield, for example, is now spoiled by the array of radio, television, and communication towers and their shabby equipment structures scattered across Vermont's highest mountain ridge amidst signs that warn visitors to keep away from the hazards of radiation and high voltages.

Until it was recently demolished, the trim red brick 1930s Colonial Revival style border station in Highgate provided a simple, tasteful greeting to those entering Vermont from Canada. The jarring design of the new United States Immigration and Naturalization Border Station complex, however, is so out of character with what is expected of Ver-

Photo 4. Summit of Mount Mansfield, 1999, with communications equipment punctuating the view to the south. Photo by Thomas Visser.

Photo 5. United States Immigration and Naturalization Border Station, Highgate, Vermont, 2001. How was it decided that the sewage-handling equipment in the foreground should first greet travelers entering Vermont? Photo by Thomas Visser.

Photo 6. Welcome to Vermont. Route 2, Alburg, Vermont, 2001. Photo by Thomas Visser.

mont that some Canadian vacationers now opt to enter through New York State. And those who cross into Vermont via the Rouses Point Bridge are met with the image of canopied corporate gas stations anxiously crowding toward the shore of Lake Champlain.

Even Route 2 through the Champlain Islands, long regarded as one of the most beautiful rural landscapes in North America, has been assaulted by the chainsaws of utility companies felling the majestic century-old shade trees that marked the southern entrance to North Hero village and lined some of the few remaining wire-free stretches of the Theodore Roosevelt Highway.

There is some good news, however. Certainly the recent relocation of the power lines below the surface of Lake Champlain between South Hero and Milton is to be applauded, as is a new rule of Act 250, Vermont's statewide land-use review legislation, that calls for new and relocated utility lines to be installed underground wherever feasible.

Vermont's utility companies should be encouraged to follow the leadership of HydroQuebec by voluntarily burying power lines both to strengthen the reliability of their electrical distribution networks and to improve the appearance of villages and rural landscapes.

Some Vermont communities are also recognizing the importance of protecting their nighttime environments from becoming dominated by the harsh pall of yellow high-pressure sodium street lights and security lights, by requiring that outdoor lighting fixtures limit glare and use energy-efficient white light bulbs.

A few Vermont communities have taken the lead in holistic environmental planning. In 1988, the Mad River Valley Planning District developed and published the *Mad River Valley Rural Resource Protection Plan* in collaboration with the Vermont Division for Historic Preservation and the Vermont Land Trust. The plan has served as the foundation for additional planning efforts to protect the distinctive character and feeling of the Mad River Valley that supports much of the local economy.

The Vermont Forum on Sprawl, Preservation Trust Vermont, Vermont Housing and Conservation Board, Vermont Natural Resources Council, Vermont Agency of Natural Resources, Vermont Agency of Commerce and Community Development, Vermont Agency of Transportation, regional planning commissions, local communities, and other groups are also working together on the issues of sprawl and compatible design through various innovative initiatives to help protect the state's rural landscape.

If we continue to ignore the fragility and vulnerability of Vermont's remarkable vistas and roadways and the impressions they create, then many more favorite places may soon become painful memories. But by systematically documenting these special locations through local and statewide landscape surveys, and by using this knowledge to carefully assess the impacts that proposed changes may have on the character and feeling of these places, we can hope to sharpen our judgments and make wiser decisions about how we care for Vermont.

Notes

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Trains, Logs, Moose, and Birds: Building on the Past and Reaching toward the Future with Cultural Heritage and Nature-based Ecotourism in Island Pond, Vermont

Environmental interpretation involves communicating about natural history, cultural heritage, and environmental issues to visitors engaged in recreational pursuits in a way that is interesting and entertaining. Interpreters seek to enhance visitors' recreational experiences while assisting recreation managers in protecting the resources through the use of interpretive media.

By THOMAS R. HUDSPETH*

The Vermont Landscape Conference considers views of the past and visions of the future, using the paintings of Vermont landscape painter Charles Louis Heyde as a jumping off point. This paper looks at trains and logs in Island Pond's past and their contribution to the area's unique sense of place. It then considers moose and birds and other watchable wildlife as potential contributors to Island Pond's economic revival and sustainable development—development that meets the needs of the present without compromising the needs of future generations.

Island Pond is a village in the Town of Brighton in the wild and remote Northeast Kingdom of Vermont, a region that encompasses Caledonia, Essex, and Orleans counties and is currently confronting high unemployment, poverty, and outmigration of youth. The village takes its name from the adjacent body of water, which in turn is named for the twenty-acre island in the pond. This paper describes a collaborative

project between the University of Vermont (UVM) and the Island Pond community that develops watchable wildlife and other year-round ecotourism opportunities in the area, primarily through the use of environmental interpretation media. Interpretation is a key element of sustainable rural community development. Besides UVM and the Island Pond community, many other partnerships and cooperative working relationships are involved in this initiative, including tourism providers, government, promotional arms of government, and nongovernmental organizations.

Watchable Wildlife, Ecotourism, and Environmental Interpretation

To better understand the concept of watchable wildlife, let's start with a field trip to Island Pond. It's late May, and we're joining my colleague David Hirth in the UVM Wildlife and Fisheries Biology Program and students in his Field Ornithology course. Camping out at Brighton State Park, we rise early and hike through boreal forests dominated by red spruce and balsam fir trees, among the Yellow Bogs, along various branches of the Nulhegan River, ending up at Moose Bog in Ferdinand. We spot common loons on Spectacle Pond, spruce grouse, boreal chickadees, black-backed woodpeckers, gray jays, and over twenty-six species of warblers that have recently returned to Vermont after wintering in the Neotropics. In their two-week course traveling throughout Vermont and to Cape Cod in Massachusetts, the ornithology students will not see these birds anywhere else except for the Island Pond area. This area has great wildlife diversity because it combines both boreal forests and mixed hardwood forests. Noted ornithologist Frank Oatman of Craftsbury Common, who leads birding tours all over the world, considers Moose Bog one of his favorite birding spots anywhere, and virtually every tourist guidebook describing what to see and do in Vermont and the Northeast Kingdom [1] includes this area.

About midday, I leave Island Pond and drive on a sixty-seven mile round trip, going east on Route 105 to Bloomfield, then north on Route 102 along the Connecticut River to Canaan in the far northeasternmost corner of Vermont, then west and south on Route 114 through Averill and Norton and returning to Island Pond. On that drive, I see seventeen moose. Most are cow-calf combinations, with the cows grazing in the wetlands right off the roads where winter road salt has washed in. Almost all them are near state highway signs warning drivers of moose (including one that says, "Moose crossing, next 14 miles"); it is almost as though the moose can read the signs!

Of course, not just university students and their professors enjoy

watching wildlife. Millions of Americans like to do so as well, and the activity provides a major stimulus to local economies around the country. More than 62 million Americans participated in some form of wildlife viewing or nature tourism in 1996—nearly one-third of all U.S. adults. During 1996, wildlife watchers spent $29 billion on wildlife viewing trips in state and local economies, a 39 percent increase over 1991 spending.[2] Watchable Wildlife, Inc. promotes wildlife viewing as a viable economic and conservation enterprise for communities throughout Canada, the United States, and Mexico by helping local communities realize the economic potential of nature-related recreation while conserving native plants and animals in their natural habitats. The organization provides these opportunities by establishing a nationwide network of quality viewing areas, complemented by uniform directional signing, and a companion series of state wildlife viewing guides known as the Watchable Wildlife Series. Tourism is one of the fastest growing sectors of the economy in the U.S. and throughout the world, and ecotourism (including watchable wildlife tourism) is increasing at a higher rate than any other segment of the industry.

In her book on ecotourism—also called green tourism and nature-based tourism—Martha Honey defines it as "travel to fragile, pristine, and usually protected areas that strives to be low impact and (usually) small scale. It helps educate the traveler; provides funds for conservation; directly benefits the economic development and political empowerment of local communities; and fosters respect for different cultures and for human rights."[3] She notes seven key characteristics of ecotourism. It: 1) involves travel to natural destinations; 2) minimizes impact; 3) builds environmental awareness; 4) provides direct financial benefits for conservation; 5) provides financial benefits and empowerment for local people; 6) respects local culture; and 7) supports human rights and democratic movements.[4] Environmental interpretation is essential for educating ecotourists about the natural history and cultural heritage of the sites they visit.

Environmental interpretation involves communicating about natural history, cultural heritage, and environmental issues to visitors engaged in recreational pursuits in a way that is interesting and entertaining. It translates the technical language of a natural science or related field into terms and ideas that nonscientists can readily understand. Interpreters seek to enhance visitors' recreation experiences while assisting recreation managers in protecting the resources (plants, animals, rocks, fossils, archaeological ruins, buildings, historical artifacts) through the use of interpretive media. The media include personal or conducted activities such as talks, slide shows, guided

tours, living history demonstrations, and puppet shows; and non-personal or independent activities such as self-guided trails, self-guided tours, signs, brochures and pamphlets, exhibits and displays, slide-tape and videotape programs.[5]

Brief History and Background of Island Pond

Because of its inaccessibility and harsh, rugged environment, the Island Pond area remained a small and isolated community until 1853, when the Grand Trunk Railway line opened between Montreal and Portland, Maine, connecting the grain fields of the Midwest with the Atlantic Ocean. This was the first international railway in North America, and Island Pond, located at the midpoint, became one of the most important ports of entry for rail traffic from Canada. It was a stopover point in the days before Pullman coaches. It also housed a customs and immigration office. The railroad brought jobs, prosperity, and a tenfold increase in population to Island Pond. As a result, merchants and businessmen built more than eight hotels, a two-story railway station, rail yards and repair shops, businesses such as a shirt company, the Opera Block, restaurants such as the Stewart House, stately homes, and several churches. Island Pond was a vibrant, bustling community. The railroad also opened up the timber of the northeastern forests, and Island Pond became a lumber town with associated industries as well as a railroad town. Several lumber mills served the area, and at one point, more than 500 loggers worked in the region. The population of Island Pond peaked at 2,500 around World War I. However, its fortune subsequently shifted as a result of the Depression, diminishing forests, the construction of the St. Lawrence Seaway, and fires in town. The railroad declined as well; where formerly thirteen train tracks used to pass through town, with thirty-five to forty trains per day, there are now only two tracks and two freight trains per day. The population dropped to its current level of 1,562, and Island Pond has fallen on hard times.[6]

Evolution of the Project

Island Pond residents identified lack of employment opportunities, high unemployment, slow economic growth, poverty, and outmigration of young people as the biggest problems facing their town in the 1990s. In 1990, the unemployment rate was 28 percent, and many of those who were employed had to commute long distances to get to their jobs. Nineteen per cent of the residents were living below poverty level. [7]

Community leaders and volunteers in the Island Pond community

contacted the Barton office of the Sustainable Rural Community Development Project (SRCD) of the University of Vermont's Division of Agriculture, Natural Resources, and Extension. SRCD provides direct assistance for economic development planning and implementation to communities throughout the Northeast Kingdom of Vermont. It emphasizes local decision making and action supported by technical assistance from the university campus in Burlington. Project goals and methods are: 1) to develop community leadership skills by building local capacity for problem solving, constructive action, and evaluation; 2) to strengthen UVM's ability to foster rural development by linking specific community needs for technical assistance with skills and interests of campus faculty and students; 3) to promote community economic stability by helping rural residents identify and implement short- and long-term strategies using local resources in ways that enhance quality of life for both present and future generations; and 4) to promote policies that support sustainable rural development by fostering links between local, regional, statewide, national, and global issues and strategies.

The SRCD project staff determined that the Island Pond community was ready and willing to make the local commitment of time, leadership, and funding to complete a strategic planning process for economic development using the "Take Charge" model. Local volunteers planned, coordinated, and ran the program, with guidance from project staff and some funds to match those of the community. Program participants representing a broad range of community interests identified, evaluated, and selected goals and specific project ideas and gathered information. They also signed up for committees to complete the chosen projects and develop a work plan to achieve their goals. The project staff provided ongoing support for committees, working with committee chairs on agenda planning, meeting facilitation, and identification of resources.

An Island Pond Take Charge Trails Committee recognized that industry was not likely to relocate to their town, and that even existing industry such as the Ethan Allen Furniture factory might shut down—as indeed it has. They realized that recreation and tourism already played an essential role in their economy, and believed that increasing recreation and tourism would be important to the town's economy. They identified watchable wildlife as a resource that they could draw upon, given the popularity of ecotourism and watchable wildlife viewing nationally and in Vermont, and the appreciation by local residents of the wildlife in their community. When the Island Pond Trails Committee identified needs for specific types of technical assistance, SRCD project staff solicited my participation, and provided grant

funds from the J. W. McConnell Family Foundation to pay for materials and expenses.

In my initial conversations with the chair of the Island Pond Take Charge Trails Committee and Brighton Town Manager Joel Cope, they identified several projects they thought would attract tourists to their area: an attractive, multicolored map and brochure similar to one developed by one of my graduate students for the Moosalamoo Partnership in Addison County;[8] a self-guided auto tour similar to one I developed for Green Mountain National Forest;[9] and a Watchable Wildlife Viewing Guide for Island Pond similar to ones developed for whole states.[10]

I explained the costs of these materials and pointed out that a map, brochure, self-guided auto tour, and Watchable Wildlife Viewing Guide were media of interpretation or specific strategies. I suggested that students in my Environmental Interpretation courses at UVM and I could work with them and their community over the next couple of years to undertake a comprehensive interpretive master planning process for the entire Island Pond area before choosing specific interpretive media. They heartily agreed. Fifteen senior and graduate students in the fall semester, 1996, and twenty students in the fall semester, 1997, participated. The committee charged us with developing materials to show tourists what to see and do in Island Pond, where to see and do it, and to tell Island Pond's story. They wanted these materials to be unique to Island Pond and not tied in with other sites in the Northeast Kingdom like Lake Willoughby.

Objectives, Guidelines, and the Interpretive Master Planning Process

The students and I defined the objectives of the project: 1) to stimulate the Island Pond economy through developing and promoting well-planned, year-round, natural history—and cultural heritage—based recreation and tourism, all the while conserving and protecting the wildlife, other natural resources, scenery, and unique rural character of the town; 2) to develop a master plan to guide the interpretation of Island Pond's natural history and cultural heritage resources, and to implement as much of that plan as finances allow; and 3) to provide a model for sustainable rural community development, ecotourism, interpretation integrating natural history and cultural heritage and their interdependencies, year-round recreation and tourism, and a town-level watchable wildlife viewing guide. We specified year-round recreation and tourism because for twelve weeks in the winter, motels and restaurants in the Island Pond area are at or near capacity because of snowmobiling. Community mem-

bers sought to achieve such occupancy figures year-round by diversifying the economy, building on watchable wildlife.

We arrived at these objectives after meeting with community members at an open meeting in Island Pond in October, 1996. For that meeting, following the advice of Joel Cope, we used the term "Natural History and Cultural Heritage Interpretation" rather than "Environmental Interpretation." Joel felt that because of high unemployment at the time and strong opposition to "heavy-cut" forest legislation, we might raise red flags if we called ourselves environmentalists or in any way indicated that we sought to "preserve" the wildlands in the Island Pond area without allowing traditional uses such as hunting, fishing, trapping, and snowmobiling.

I shared with community members and my students some guidelines that I always try to follow when working with communities on sustainability, environmental interpretation, and environmental education initiatives. The students and townspeople enthusiastically agreed to follow these guidelines, including: coming in by invitation and using existing frameworks and groups within the community to respond to community needs in a bottom-up manner that does not tell local people the answers but helps them to discover, thereby gaining a sense of ownership, democracy, and power sharing; sustainable development integrating ecological, economic, and social factors; capacity building, leadership, and human resource development; active citizen participation or stakeholder involvement so that those who are most affected by decisions and must carry them out are the ones who actually make the decisions; partnership, collaboration, and cooperation; rigorous research, because good decisions demand good information; and celebration of local culture, where solutions grow from place and reflect bioregionality.

My students and I used an interpretive master planning process that I have developed and refined over the past twenty-nine years on local, state, national, and international projects. The steps in the process are interdependent and often take place simultaneously rather than sequentially. They include: 1) establish your team; 2) define your goals; 3) define your audience; 4) know your limitations; 5) carry out your research and conduct an inventory of all interpretive resources; 6) synthesize everything you learned from your research to develop the topics and theme(s); and 7) shape your product.

Results: Development of an Interpretive Master Plan for Island Pond

As we carried out our research and met with community members, we generated a list of questions: What is unique about Island Pond?

What is it known for? What are some of its most interesting features? What can visitors do or see in Island Pond? When is the best time for activities, and where are the best places? To answer these questions, we identified features of interest such as: Bald Mountain, historic townscape, train station and customs house, Island Pond Lake, Spectacle Pond, moose licks, wetlands, Moose Bog, deer wintering yards, and miles of snowmobile trails. We then proceeded to identify superlatives and unusual features of the area, which included: some of the finest birding in Vermont; some of the best moose habitat in Vermont; some of Vermont's most outstanding wetlands; the biggest deeryard in Vermont (twelve per cent of the town area); eighty-five percent of the town is forested; Island Pond is the site of the first international railroad junction in the U.S.; and it is the snowmobile capital of Vermont.

We next identified major interpretive topics, including: the Northern Forest; the Nulhegan Basin; specific sites such as Island Pond Lake, Bluff Mountain, McConnell Pond, Nulhegan River, Clyde River, and Wenlock Wildlife Management Area; natural history; boreal forest; bogs and other wetlands; moose; birds (spruce grouse, loons, gray jay, black-backed woodpecker, boreal chickadee, warblers); winter deer yards; forest history and forestry today; railroad history; and two dozen outdoor sports activities. In one of the most important steps in the entire interpretive planning process, we selected our theme (which some might argue is really three separate themes): Island Pond has a rich diversity of natural resources which provide amazing wildlife biodiversity; a rich railroad and timber history; and an expansive trail system that provides an opportunity for residents and tourists alike to enjoy a wide range of outdoor recreation and sports activities. Further discussion indicated that Island Pond is a unique spot for people seeking a setting with the following characteristics: picturesque, quiet, wild, remote, small scale, friendly, rural; with a maze of back roads, both paved and dirt, to explore by hiking, biking, or motor vehicles; paradise for sportsmen and outdoor enthusiasts.

We then developed three main categories of recommendations relating to media for interpreting that theme: 1) market Island Pond to ecotourists by selecting a logo (e.g., moose and snowmobiler) and tag lines (e.g., "Snowmobile Capital of Vermont" and "Gateway to the Vast Northern Forest"); developing a map and brochure covering the relevant activities and developing a newsletter that includes information on upcoming events to attract return visitors; 2) retain, enhance, and promote existing interpretive media in the area such as the Island Pond Historical Society Museum in the train station; scenic boat cruises on Island Pond Lake; the self-guided trail, auto tour guides,

nature center, and summertime conducted activities at Brighton State Park; interpretive signs along the boardwalk at Mollie Beattie Bog; the description of Moose Bog in numerous nature books and travel guides to Vermont and the Northeast Kingdom;[11] references to two sites in the *Vermont Wildlife Viewing Guide:* Wenlock Wildlife Management Area and Route 114;[12] videotape programs: *Island Pond Remembers*[13] and *Nature Scene;*[14] and 3) develop new interpretive media (e.g., Island Pond Visitor Center in Tanguay Building with a theater or auditorium, large map, raised relief model of the Nulhegan Basin, flatware, and exhibits; a sign on the shore of Island Pond Lake; self-guiding hiking trail up Bluff Mountain; self-guided auto tours north on Route 114 toward Norton and east on Route 105 toward Bloomfield; brochure or information sheet on birding in the Island Pond vicinity; self-guided trail and signs at Moose Bog; and tourist train rides).

We also developed a series of additional recommendations for carrying out this entire project. These included: 1) determine the limits of acceptable change; 2) monitor indicator species; 3) in developing media, steer away from rare, threatened, or endangered species; 4) develop a protocol or ethical guidelines for proper behavior by tourists because ecotourism involves responsible travel (e.g., respect private property rights, protect wildlife and observe wildlife responsibly, practice conservation, responsible stewardship, and minimal impact); 5) monitor participant activities and tourism impacts over all four seasons where possible; 6) encourage ecotourists to make contributions for natural area protection and cultural heritage preservation in Island Pond; and 7) seek partnerships and cooperative working relationships among government, businesses, and nongovernmental organizations. Such recommendations recognize that ecotourism can be an important community development strategy. Tourists want to get off the beaten path and have education-enhanced travel. Ecotourism can bring about economic benefits, where local residents and landowners gain direct monetary benefits, while at the same time protecting and conserving their natural and cultural heritage. But it is also a double-edged sword, and it is important that Island Pond balance competing uses and protect its precious resources from overuse.

Students from the two Environmental Interpretation classes implemented parts of the Interpretive Master Plan for the Island Pond Area by developing interpretive media: 1) a sign installed at Island Pond Lake; 2) a self-guided trail on natural history and cultural heritage for Bluff Mountain; 3) a self-guided auto trail featuring moose; 4) a self-guided auto trail featuring birds; and 5) a self-guided trail for Moose

Bog.[15] In addition, we developed prototypes of exhibits or displays proposed for the Welcome Center in Tanguay House on such topics as: 1) General Information on Things to See and Do, Places to Stay and Eat, etc., in Island Pond; 2) The Boreal Forest; 3) Geology of the Island Pond Area; 4) Vermont's Finest Birding; 5) Island Pond is Moose Country; 6) The Wonders of Island Pond's Wetlands; 7) Beavers; 8) Cooperation in Managing the Rich Natural Resources of Island Pond; 9) Biggest Deeryard in Vermont; 10) Forestry and the Island Pond Economy; 11) Grand Trunk Railway; 12) Island Pond: Paradise for Outdoor Enthusiasts; and 13) Island Pond: Snowmobile Capital of Vermont.

When I presented the final draft of the Interpretive Plan for the Island Pond Area to the Brighton selectboard (including a budget with suggested funding sources and a proposed timetable), I made sure to note some of its limitations. For example, we recognized that not everyone in town favors the goal of attracting ecotourists to Island Pond. While respecting those sentiments, our planning documents reflected our perception of majority views. And while we made efforts to solicit points of view across the spectrum of the community, only ten residents showed up at the open community meeting called for that purpose. To what extent do ten people represent the visions, goals, and aspirations of a community of 1,562? We did rely on a community profile conducted a few years earlier[16] to shape our assessment of both overall popular attitudes and natural resources, but the question of representativeness remains. We know little about the target audience we're trying to attract, and therefore made assumptions. Our planning team lacked certain specialists (landscape architect, graphic designer, local artist) whose input from the beginning would have been valuable. Finally, we had limited time to carry out site analysis, inventory work, and interviews with a diverse array of stakeholders with different interests and perspectives. These are all liabilities in a process that requires the building of trust and social capital.

Our project ended up with several interesting questions or unresolved issues. Are moose hunting and moose watching (and watchable wildlife generally) compatible? Are snowmobiling and watchable wildlife compatible? Are unsustainable forestry practices and watchable wildlife compatible? Who from the Island Pond Take Charge Trails Committee will follow up and "take charge"? Will they succeed in raising funds to completely implement the Interpretive Master Plan? Two of the most active participants—both business leaders—stand to benefit the most if ecotourism takes off in Island Pond. Often business leaders who stand to gain are more progrowth than other residents. Is that the case in Island Pond? What is the future of Champion International's lands?

The final question has since been answered. In 2000, Champion International Corporation sold 300,000 acres in Vermont, New York, and New Hampshire, including 133,000 acres in the Northeast Kingdom. The Conservation Fund of Arlington, Virginia, working in partnership with Vermont Land Trust, The Nature Conservancy, Vermont Housing and Conservation Board, and others, purchased and resold the 133,000 acres of land in Vermont for $26.5 million. The State of Vermont contributed $4.5 million for 22,000 acres, which are now managed as the West Mountain Wildlife Management Area. The federal government purchased 26,000 acres as part of the Silvio O. Conte National Wildlife Refuge. And the remaining 85,000 acres were sold to a private landowner (William Merck of Essex Timber) for logging, subject to certain limits and on the condition that the land remain open to recreational uses. Extensive inventory work is being carried out on all the properties, and a joint committee representing all the various stakeholders is working on a management plan for the entire Champion Lands project. That plan calls for a vast working forest, large areas managed for early successional forest, including many game species, and a 12,500-acre core ecological reserve (West Mountain Reserve) where mature forests provide habitat for game and ideal conditions for many nongame species—all with guaranteed public access. Even though public access on all the former Champion lands is guaranteed and sustainable timber management is assured on the 85,000 acres of privately owned timberlands, a vocal minority of citizens has called the core ecological reserve into question, claiming that it threatens the traditional Northeast Kingdom "hunting camp" way of life.

Conclusion

Was this project an unqualified success? Are there now many more ecotourists flocking to Island Pond to appreciate its railroad and logging history and to watch the abundant wildlife? Have these ecotourists provided an infusion of money into the Island Pond economy and allowed the youth of the village to stay and find meaningful employment in ecotourism-related industries? Unfortunately, there is still no Welcome Center at the Tanguay House, and most of the interpretive media my students developed have not been professionally printed and made available for distribution. This was the last of the McConnell Foundation projects to be implemented; we started up several years after the Island Pond Take Charge Committee had begun, and that hiatus did not help. Also, we did not follow one of our own key guidelines: we did not empower local leaders who would follow through on this project, by writing grants to secure funds to implement the recommen-

dations such as a Welcome Center, and by overseeing the various tasks once the UVM participants bowed out. We are still hopeful that much of the work and many of the ideas that went into this project will be used by the various stakeholders in the joint planning efforts currently taking place. Also, we are encouraged by Businesses for the Northern Forest's recent challenge grant to an Island Pond Recreation Committee to develop a recreation map and business directory and to a Lakefront Committee to plan a welcome center, and hope that both groups will be able to build on our work.

The economy of Vermont's rural Northeast Kingdom in the latter half of the twentieth century has predominantly been an "exit" economy, in which financial capital leaves, human capital (especially the young) leaves, and ecological capital leaves (mostly in the form of raw trees bound for mills in New Hampshire, Canada, or Asia). Time will tell whether our initiative helps draw more tourists to the Island Pond community and helps it keep more of its money, jobs, youth, and trees at home. Time will also tell whether the community adequately monitors and holds in check ecotourism-stimulating developments which have destroyed or diminished the recreational experience and the resource base in all too many other places. Island Pond is already a gateway community to the Northern Forest for snowmobiling during the winter months, and if it becomes a gateway for year-round ecotourism, it is important that planning safeguards are in place so that it does not become a sprawling, out-of-control community like Gatlinburg, Tennessee, Estes Park, Colorado, or West Yellowstone, Wyoming.[17] Some of our major recommendations address that goal, by emphasizing the importance of maintaining the delicate balance between promoting the economy via well-planned ecotourism and watchable wildlife viewing on the one hand, and preservation of Island Pond's unique rural character and resources and protection of what local residents say they value on the other hand, without losing control to outsiders. Ecotourism is not a panacea for Island Pond's economic problems, but rather should be viewed as one component of a diversified economic growth plan.

There are some similarities between our goals and approaches in this project and those of nineteenth-century Vermont landscape painter Charles Louis Heyde. Our interpretation of Island Pond's special natural resources and railroad and lumber history seeks to portray the area's unique sense of place, just as Heyde captured the distinctive sense of place of the beautiful, picturesque landscapes he depicted. Mountains (especially Bluff Mountain), rivers (especially the Nulhegan and Clyde), and lakes and ponds (especially Island Pond Lake and Spectacle Pond), and such natural features as trees, moose, and birds

are some of our subjects. Heyde painted similar subjects. When we began this project, the population of Island Pond was beginning to decline as young people outmigrated; when Heyde came to Vermont in 1852, the landscapes he painted were being depopulated. We sought to balance our interpretation of wild natural areas (especially wetlands) in the Island Pond area with working landscapes that support tourism, just as Heyde balanced the themes of wilderness and working agricultural landscapes. In our project, we constantly experienced tensions between old and new residents, local residents and tourists, rural and urban dwellers, and people with different visions, especially regarding use of the former Champion lands. Heyde, undoubtedly, also experienced tensions between people regarding the landscape. In the catalog accompanying the Heyde exhibit at the Fleming Museum, Nancy Graff and Thomas Pierce illustrate the similarities of the work of the landscape artist and the environmental interpreter when observing that "the pastoral landscape on which Heyde cast a romantic eye has come to be viewed in the Twentieth Century as a national icon of Arcadia. That is at least one reason his work continues to interest us and his landscapes are today much sought after. . . . This exhibition may serve as a mandate to seek and preserve those remaining precious pieces of the pastoral idyll that still exist. For . . . we all own this landscape. The Ultimate Masterpiece is there before our eyes, if only in smaller and smaller frames, for us to glimpse briefly as we hurtle along the paved highways of the Twenty-first Century, further and further from Heyde's bucolic Eden."[18]

Notes

* I would like to express my appreciation to the following people for their participation in this project: Cedric Alexander, Clifford Biron, Harry Burnham, Brian Cleary, Joel Cope, Bob Dexter, John Donnelly, Walter Driscoll, Dick Furbush, Anita Gervais, Cindy Gervais, Bernie Henault, David Hirth, Jim Horton, Jeffrey Hughes, Leslie King, Gordon Lefevre, Brian Machanic, Bridget Mahoney, Frank Manning, Debra Mason, Justin Maxwell, Bob McDonald, Bill McMaster, Carman Murray, Marilyn Pastore, Allan Peterson, Nancy and Phil Sanborn, Peter Sprague, George Wilcox, Bernie Wilson, Jim Woods, and—of course—the thirty-five students in my RM 255 classes at UVM who contributed much time, energy, and creative ideas.

[1] Walter G. Ellison, "Island Pond Region," in *A Guide to Bird Finding in Vermont* (Woodstock, Vt.: Vermont Institute of Natural Science, 1983), 92–98; Gary Ferguson, "Moose Bog," in *Walks of New England* (New York City: Prentice Hall, 1989), 241–244; Ferguson, "Walk #44: Moose Bog," in *New England Walks* (Golden, Colo.: Fulcrum, 1995), 135–138; Stephen Kulik, Pete Salmonsohn, Matthew Schmidt, and Heidi Welch, "Moose Bog," in *The Audubon Society Field Guide to the Natural Places of the Northeast: Inland* (New York City: Pantheon, 1984), 120–124; Larry Pletcher, "Wenlock Wildlife Management Area, Moose Bog," in *Hiking Vermont* (Helena, Mont.: Falcon, 1996), 189–192; Barbara Radcliffe Rogers and Stillman Rogers, "Northeast Kingdom Nature Trail," in *Natural Wonders of Vermont.* (Oaks, Penn.: Country Roads, 1996), 47–54.

[2] Watchable Wildlife, Inc. http://www.watchablewildlife.org/

[3] Martha Honey, *Ecotourism and Sustainable Development: Who Owns Paradise?* (Washington, DC.: Island Press, 1999), 22–25.

[4] Ibid.

[5] Sam H. Ham, *Environmental Interpretation: A Practical Guide for People with Big Ideas and Small Budgets* (Golden, Colo.: North American Press, 1992).

[6] Island Pond Historical Society, *Island Pond Remembers* (videotape). (Island Pond, Vt.: Island Pond Historical Society, 1992).

[7] UVM Natural Resource Planning Graduate Program. 1995. "Brighton Town Plan Recommendations." Burlington, Vt.

[8] Emily Cohen and Dan Coker, "Moosalamoo, Vermont" (brochure with map). (Addison County, Vt.: Moosalamoo Partnership, 1994).

[9] Thomas R. Hudspeth, The *Story Behind the Stump: Self-Guided Auto Tour of Green Mountain National Forest* (Rutland, Vt.: Green Mountain National Forest, 1992).

[10] Cindy Kilgore Brown, *Vermont Wildlife Viewing Guide* (Helena, Mont.: Falcon, 1994).

[11] Walter G. Ellison, "Island Pond Region," in *A Guide to Bird Finding in Vermont*, 92–98; Gary Ferguson, "Moose Bog," in *Walks of New England*, 241–244; Ferguson, "Walk #44: Moose Bog," in *New England Walks* (Golden, Colo.: Fulcrum, 1995), 135–138; Stephen Kulik, Pete Salmonsohn, Matthew Schmidt, and Heidi Welch, "Moose Bog," in *The Audubon Society Field Guide to the Natural Places of the Northeast: Inland*, 120–124; Larry Pletcher, "Wenlock Wildlife Management Area, Moose Bog," in *Hiking Vermont*, 189–192; Barbara Radcliffe Rogers and Stillman Rogers, "Northeast Kingdom Nature Trail," in *Natural Wonders of Vermont*, 47–54.

[12] Brown, *Vermont Wildlife Viewing Guide.*

[13] Island Pond Historical Society, *Island Pond Remembers.*

[14] South Carolina ETV, *Northeast Kingdom* (filmed 4 November 1994) as part of *Nature Scene* (videotape with Naturalist Rudy Mancke). (Columbia, S.C.: South Carolina ETV, 1994).

[15] UVM Environmental Interpretation Class. 1996. "Interpretive Media to Accompany Draft of Interpretive Master Plan for Island Pond, Vermont." Burlington, Vt.; UVM Environmental Interpretation Class. 1997. "Interpretive Media for Island Pond, Vermont." Burlington, Vt.

[16] UVM Natural Resource Planning Graduate Program. 1995. "Brighton Town Plan Recommendations."

[17] Jim Howe, Ed McMahon, and Luther Propst, *Balancing Nature and Commerce in Gateway Communities* (Washington, D.C.: Island Press, 1997).

[18] Nancy Price Graff and E.Thomas Pierce, *Charles Louis Heyde: Nineteenth-Century Vermont Landscape Painter* (Burlington, Vt.: Robert Hull Fleming Museum, UVM. 2001).

Commentaries on Heyde's Vision in the Twenty-first Century: Continuity and Change in Vermont

I. Introduction

I never imagined, when I saw a photograph of Charles Heyde's "Camel's Hump in Winter" on the front page of the "Living" section of the *Burlington Free Press* in January 2001 that it would be the view of Vermont's landscape today! But that is what's so wonderful about this special corner of the universe: The joy of surprise, of the unexpected, of living in an unpredictable landscape.

This panel has a rather amazing and formidable task: to ponder how Heyde's vision of Vermont will be reshaped in the twenty-first century. Formidable, yes, but in some ways the easiest and most enjoyable task of any speaker today. Speculating on the future is both fun and risk free! Who can challenge our prognostications? So come with us, back to the future!

First, let me explain very briefly why I believe this exhibit is so very important to the future of Vermont, to those of us who live here. When one lives in such a magnificent natural landscape it is all too easy to become oblivious to it, to take the unique and wonderful for granted. This is why artists are so important to our community. They not only alert our perceptions, but even help shape public policy. They bring inside what we fail to see outside, and by inside I mean inside us.

This ability to get inside us is an ability that visual artists—the landscape painter in particular—share with poets, performing artists, and children.

Some twenty-five years ago, soon after my family and I moved from Burlington to "The Hollow" of North Ferrisburgh, my then ten-year-old son and I hiked to the top of Mount Philo, where there is a spectacular vista overlooking Lake Champlain and south toward where we lived. "Jonathan," I said to my son as we stood on the summit overlook, "I wish we had a view of the landscape like this from our house." We lived deep in the Hollow, along Lewis Creek. "But Dad!" he exclaimed, "we *are* the view . . . and the landscape." I have never forgotten that remarkable insight. We here today are part of the landscapes we cherish. And the members of this panel are people whose personal and profes-

sional lives are deeply involved in the landscapes that Heyde captured over a century ago to remind us, "we are the view."

CARL REIDEL

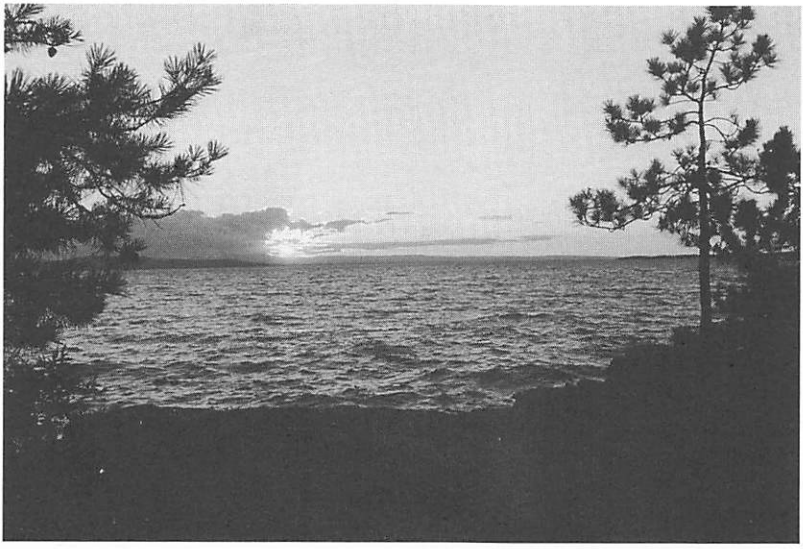
II. HEYDE'S LANDSCAPES: TWENTY-FIRST-CENTURY VISIONS

In an essay written for the current retrospective exhibition of the work of Charles Louis Heyde, I focused on two recurring themes in the painter's oeuvre: Mount Mansfield and Lake Champlain. For our generation, as well as Heyde's, I noted, these unique and scenic landscapes have been viewed as "Places of Delight"; landscapes whose qualities and configuration appear to have remained relatively unchanged over the past two hundred years.[1] Upon closer viewing, however, this unique geographical area of northwest Vermont—generally defined as the Lake Champlain Basin—has witnessed unparalleled growth and change since Heyde first painted here in the 1850s. While it is true that the general features of the mountains and the lake remain relatively unchanged—many of us can still imagine ourselves capable of walking into a Heyde painting today—what in reality lies between the mountains and the lake are back-to-back towns whose yearly growth gnaws away at once profitable farmland, leaving a middlescape carpeted with suburban sprawl. Subdivision and shopping malls rather than thoughtfully planned communities have sprouted to accommodate a burgeoning population. Why, we might ask, have we been unable to find alternatives to this suburbanization of the unique landscape in the Champlain Valley, especially when we have been so politically and environmentally attentive to the problems in front of us?[2] Two explanations come to mind.

The first has to do with the power of the myth and the sentimentalization of Vermont perpetuated by outsiders and insiders alike. It is a myth, to paraphrase Dona Brown's study of regional tourism in New England, that has been "invented" and fostered by painters (like Heyde), poets, photographers, magazines, tourists, and residents, who prefer edited views of the landscape emphasizing an older, pre-industrial, rural,

[1] William C. Lipke, "Places of Delight: Mount Mansfield and Lake Champlain. Major Motifs in the Paintings of Charles Louis Heyde," in Nancy Price Graff and E. Thomas Pierce, eds., *Charles Louis Heyde, Nineteenth-Century Vermont Landscape Painter: With Catalogue Raisonée* (Burlington, Vt.: Robert Hull Fleming Museum, University of Vermont, 2001), 20–27.

[2] Obviously, these observations and concerns aren't new. They were expressed clearly and succinctly at a similar series of conferences and symposia held throughout the state in conjunction with the "Vermont Landscape Images, 1776–1976" exhibits, funded by the National Endowment for the Humanities some twenty-five years ago. See William C. Lipke and Philip N. Grime, eds., *Vermont Landscape Interpretations, 1776–1976* (Burlington, Vt.: Robert Hull Fleming Museum, 1976).



Lake Champlain Sunset from Oakledge Park, Burlington. 2000. Photo by William Lipke.

neighborly Vermont. The myth is "a reverse image of all that [is] most unsettling about [late-twentieth-century] urban life."[3] It is in part rooted in that dreamy belief that in every season a simpler, more compelling relationship to our natural environment is possible. These images and ideas fuel the very myths upon which Heyde's paintings depended for their appeal, both to his contemporaries and to audiences today.

The second explanation is related to the first, because it concerns the magnificent natural scenery we confront each day in Vermont. Like the tourists of yesterday traveling in this region in pursuit of scenery, we, too, are often guilty of practicing "conspicuous aesthetic consumption"—the phrase is from Raymond Williams—which aids and abets a kind of blindness. Thus we fail to see the more deadly kinds of slow change in our immediate environment over which we in Vermont seem to exercise little control. Kirk Johnson, writing in the *New York Times* on March 26, 2001, noted that "acid rain in the Northeast is not just about lakes without fish, but also about forests losing

[3] Dona Brown, *Inventing New England: Regional Tourism in the Nineteenth Century* (Washington, D.C.: Smithsonian Institution Press, 1995), 9.

Mount Mansfield from Williston. 2000. Photo by William Lipke.

their trees and soils that hoard acid before leaching it back out to contaminate local water all over again . . . the red spruce and the sugar maple [have] been hurt in different ways by [these] acidified soils."[4] As removed as we sometimes feel we are from "from the rest of the nation's problems" we know all too well that there is "no hiding place" up here in Vermont. Our desire to invent a mythic preindustrial, rural, agrarian Vermont can make us blind to the real, even catastrophic change in the built and natural environment that makes us look more and more like Anywhere, USA. Accelerated growth and change in the last decade in the Champlain Basin undeniably has brought us face to face with that reality.

Jan Albers, in her seminal study of the Vermont landscape, *Hands on the Land,* correctly notes that Vermonters are no longer geographically or culturally remote from the rest of the country as we were in Heyde's day. "For much of its history," Albers observed, "Vermont's economy was highly localized, limiting development but also helping to preserve a cultural heritage. . . . The second half of the twentieth century has seen the greatest period of economic change, as the Interstates and the

[4] Kirk Johnson, "Harmful Effects of Acid Rain Far-Flung, A Study Finds," *New York Times,* 26 March, 2001, B: 1.

Internet have finally linked Vermont to the larger national and global economy. It is a situation both fraught with peril and filled with promise."[5] That promise is possible if we protect and preserve this magnificent scenery for succeeding generations, not only by drawing and retaining more sharply divided lines between the urban and rural landscape, but by being mindful of the distinction between the myth and the reality of Vermont.

WILLIAM C. LIPKE

III. HEYDE'S VISION AND CHANGE IN THE TWENTY-FIRST CENTURY

I don't think the landscapes of my youth were much different from those that Heyde experienced. I grew up riding my bicycle along dirt roads and cow paths that overlooked Shelburne Bay. Often I was going out with my friend to bring in his father's cows for evening milking. From the kitchen windows of my childhood home I could see the sky aglow as the sun set on Mt. Marcy or Whiteface with Lake Champlain stretched out below. Turning to look east I could see moonrise over Mt. Mansfield, with its slopes all rosy in the reflected glow of the late afternoon sun. In the living room, in the quiet light of evening, I literally had the view of Mt. Mansfield before me again. On the south wall above the blanket chest hung one of Heyde's paintings of the mountain from Underhill.

As I grew older I spent time working at the University of Vermont's Proctor Maple Center on Mt. Mansfield's western slope, above Pleasant Valley. Each day I would travel there up along the Browns River, which offered scenes almost the same as Heyde must have sketched them. But during this time most of the foreground of the Heyde landscapes that I'd known as a child was being inexorably altered by our constant commercial and residential incursion into the scene.

When I graduated college I immediately moved around the mountain to the northeast, to escape what I was experiencing on the landscape of my childhood. The mountain remains, as always, my touchstone of home; and where I live now, as I look west toward Mt. Mansfield, my reference is only different by the compass. The attraction is the same. Now, what lies below and in the foreground is much more like what I knew as a youth, but now also, I know there is no more escaping and that how I react if I really care about Heyde's vision in the twenty-first century must be completely different from how I reacted

[5] Jan Albers, *Hands on the Land: A History of the Vermont Landscape* (Cambridge, Mass.: MIT Press for The Orton Foundation, 2000), 332.

thirty years ago. My concern is not solely about a diminished aesthetic. It is about the loss of inherent natural values and a challenge to our very livelihood and well-being.

I am a maple sugar maker. That has defined who I am. But as our business has grown many dimensions have been added to my work. We now manage tens of thousands of acres of woodland for private owners in Vermont. In our Morrisville packing plant we process and sell about 200,000 pounds of honey and nearly 200,000 gallons of maple syrup purchased each year from dozens of other farms, in addition to the production of our own farm enterprises in Johnson and Barton. So, I have a lot at stake in sustaining not only our own farm but the farms of many others as well, in what we now call the working landscape.

Without a concerted effort to change the direction of our society's view of landscape, I believe Heyde's vision will become only a historical perspective on Vermont. His background may remain unchanged, but the real possibility exists that there will be little place left where we can rise above the foreground and be similarly inspired as he was. Nor do I think that many places will remain where we can practice economic agriculture or manage a working forest. What I see now on our landscape is the same vision of man as master of nature and conqueror of each of its elements that Heyde depicted in many of his works. I am not a student of art history or of Heyde, so I don't presume to know his vision, but I doubt it ever included a concern about misplaced development, or the carrying capacity of the land, or our relationship to natural communities. Today those are necessary concerns if working landscapes, wild natural places, and inspirational scenery are to be part of our vision for the twenty-first century. These landscapes are part of my vision, and I want them available to my children's children.

For nearly forty years I have watched and helped manage the reforestation of one mountain pasture into part of a working sugarbush. As I marvel at the transformation I dream of forestry and agriculture that are restorative, that don't consume resources, that fit into the world around, and that are in harmony with the living systems that share our place. I dream of a society with a conservation ethic that values resources without exhausting them, and metes them out only as needed to further the human condition—and most importantly, without tarnishing the human spirit. Heyde's vision was just one moment in history, but over all human time we have made slaves of our surroundings, other people, animals, landscapes, earth, air, and water. Eventually though, bit by bit, we do, or will, determine the essential wrongness of this attitude.

For me a conservation ethic represents respect and a sense of honor for the life giving of our ecosystems. It is recognition of the inherent

value and essential purpose of all biota and their life-support systems. It recognizes that humans are not dominant or all knowing, but only part of an intricate web of life, death, evolution, growth, and struggle that is yet to be understood.

Our human needs, aspirations, survival, and spirit require economic activity and community support of individual and societal values, but these cannot now, nor could they in Heyde's time, exist independent of the world around us—the earth, sky, water, and life that give us sustenance and ultimate worth. Our conservation must not be of commodities but that which is of deeper value.

I have no expectation that a conservation ethic can ever be fully developed unless preceded and accompanied by a reasonable social ethic. If people don't treat each other with respect and seek to be at peace with one another, how can we expect them to respect and be at peace with other living organisms and that which sustains them? What harmony can there be with the natural world when we live in disharmony with our fellow humans?

These are two daunting aspirations, but they are what give meaning to humanity and help define a higher purpose for humankind. The cultivation of these conservation and social ethics would ensure that Heyde's vision was of a yet more special place.

DAVID R. MARVIN

IV. CONTRASTS AND CONTINUITY

When Charles Heyde lived on Pearl Street in downtown Burlington in the late 1860s, the landscapes he viewed from the Champlain Valley were awe inspiring. Today, Mount Mansfield, Lake Champlain, Otter Creek, and the view from Rock Point still take our breath away. As Charles Smith notes in his preface to the catalogue produced for this exhibit, the light, the sunsets, the crisp edges of the mountains against the sky, the clear-running streams, remind us as Vermonters that in landscape and character we have inherited something special.[6] How would Charles Heyde's approach, and mine as secretary of commerce for the State of Vermont, differ or coincide over the 150 years that separate us? Here are a few points of contrast and continuity to ponder.

[6] Charles P. Smith, "Sponsor's Preface" in Nancy Price Graff and E. Thomas Pierce, eds., *Charles Louis Heyde, Nineteenth-Century Vermont Landscape Painter: With Catalogue Raisonée* (Burlington, Vt.: Robert Hull Fleming Museum, University of Vermont, 2001), 9.

In the 1860s Burlington was a thriving commercial center, one of our nation's largest lumber ports. Today, although the lumber port is gone, Burlington remains the economic engine of Vermont. Instead of lumber barons, Burlington has the barons of IBM, IDX, General Dynamics, and the University of Vermont and its medical school.

As photography of landscapes gained favor over landscape painting, Heyde supported himself by patching together several jobs. Today many Vermonters do the same to make ends meet. Thus, our focus in the Agency of Commerce and Community Development has been on creating meaningful employment opportunities for all Vermonters.

Charles Heyde's scenes of the Vermont countryside captured the majesty of the mountains and the incomparable beauty of the lakes and streams in the nineteenth century. Today the significant features remain much the same, however, the foreground is very different. The space between UVM and Mount Mansfield is filled with South Burlington and Williston. Trails are now highways and power lines crisscross the landscape. Television and telephone towers occupy a portion of the Mount Mansfield ridgeline, slightly distorting the view. The views from Rock Point and Shelburne Point are punctuated by the residential and industrial growth surrounding Burlington's urban center. The people who fill these homes and populate these villages and towns are less likely to be farmers and more likely to be bankers, lawyers, and small business owners, maybe manufacturers, but probably service providers.

In the 1860s town and village centers were the undisputed hearts of their communities. Some of our vital downtowns and village centers are struggling to retain that role today. We now have legislation in place to assist that effort.

In Heyde's time our working farms dominated the landscape. Today they are dwindling in number.

Heyde sold his paintings through the local merchants on Church Street. Today our locally owned businesses are side by side with national and international corporations.

In the 1860s Vermont's people were recognized for their spirit of independence and strong work ethic. In 2001 Vermont is still known for those characteristics.

In the middle of the nineteenth century Vermont's rolling hills were relatively untouched, although the industrial age was well underway. Today the state's image still provokes a vision of pristine lakes and mountainsides, farms dotting the countryside, interrupted only by small villages and towns. Today this vision supports a $4 billion tourism industry.

A coveted quality of life and the extraordinary sense of place that people enjoyed in Heyde's time are still the signatures of Vermont.

We begin the twenty-first century with an array of new opportunities that the people of the nineteenth century could not even imagine. The emergence of technology is beckoning even Vermont's smallest businesses to worldwide markets. The growth of industries likely in this century—information technology, engineering, and financial services—fits Vermont's goals of environmental and job quality. Traditional industries such as lumber and agriculture are adding value to their products.

A consensus is emerging about the vision for Vermont. It is a vision that includes the preservation of Vermont's fine heritage while promoting energetic, healthy communities. It is a vision that makes wide use of our land and natural resources and supports the development of our economic potential.

Tom Slayton, in his introduction to the *Vermont Life* publication, *The Beauty of Vermont,* wrote, "Vermont happens to look beautiful today because it is a place where humanity and nature have worked together for more than two centuries."[7]

Let us hope that 150 years from now, poets like Walt Whitman, artists like Charles Heyde, and Vermonters like your great grandchildren and mine will gather to celebrate the results of our stewardship of this very special place—this Vermont that we are privileged to call home.

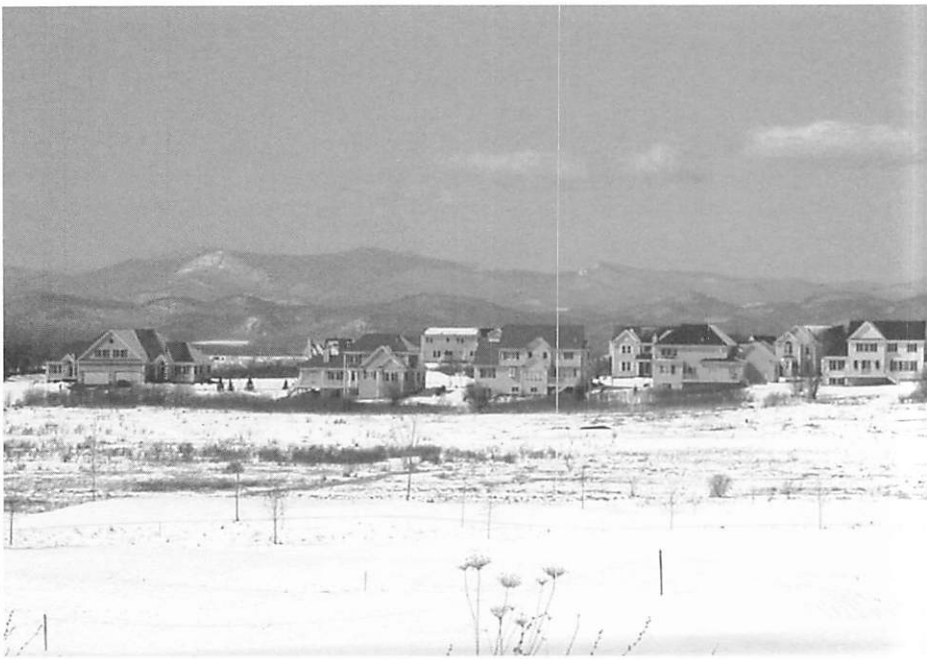
MOLLY LAMBERT

V. CHARLES LOUIS HEYDE: LESSONS FOR 2001

It has been fascinating to view the paintings of Charles Heyde and think about them in the context of Vermont's landscape today. When I got beyond my first impressions of Heyde's paintings and focused on what he was portraying in the landscape of his period, intentionally or not, I began to draw some parallels to our contemporary countryside and how we perceive it.

At first glance, Heyde's romantic view of nineteenth-century Vermont shows humanity as just a footnote in a larger natural world. The landscape is revered—"a national icon," he calls it in one of his essays. Some of his paintings, however, reveal another side of the Vermont landscape—one in which people become the sculptors of the land and

[7] Tom Slayton, *The Beauty of Vermont* (Montpelier, Vt.: Vermont Life, 1998), 8.



polluters of its pristine environment. We see forests on steep hillsides hacked away; erosion from clearing and grazing along streams and roads; dams blocking streams where anglers fish. Still, all of these details appear minor in comparison to the overall beauty of the scenes he paints.

A present-day view by John Douglas of Mt. Mansfield—the subject of several Heyde paintings—shows clearly that humanity's hand on the land has expanded since Heyde's time. And in photos taken in Dover and Cambridge, Vermont, by Julie Campoli we see that agrarian settlement and forest lands have been taken over by suburban development where people no longer live off the land but rather sleep on it when they aren't pursuing work, recreation, and education somewhere else.

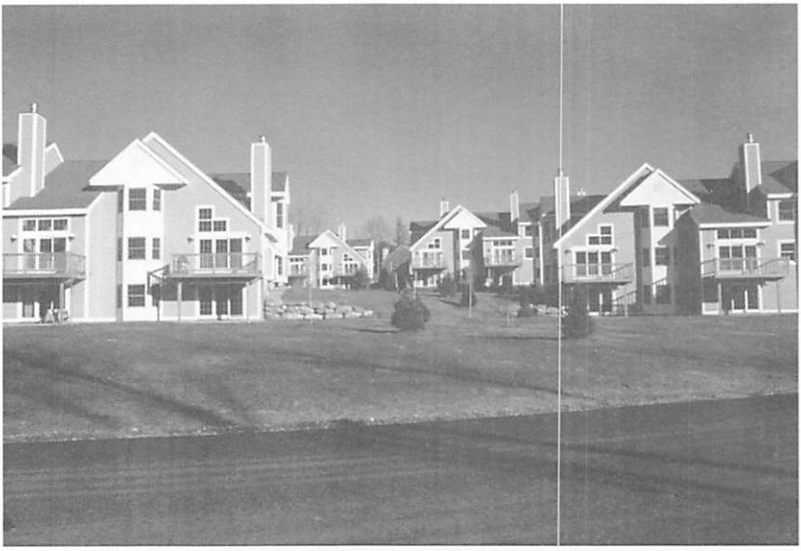
Yet there are some similarities between how Heyde viewed the landscape and how we see it today. I was struck by a painting of the Burlington waterfront in which he omitted the lumber port in favor of a more bucolic scene. Vermonters today also ignore the changes taking place on the land and continue to perceive our state as a rural paradise, while all around us the scene has altered.

A poll by the Vermont Forum on Sprawl revealed this strange inconsistency. Overwhelmingly, Vermonters support the idea of a settlement

Mt. Mansfield. Photo by John Douglas.

pattern of compact centers with a mix of homes, shops, and services, connected by a wide range of transportation options, and surrounded by a landscape of open fields and forests. Yet, when asked where they themselves would like to live given a choice, the vast majority chose a home in the countryside, even though they would have to drive everywhere as a result.

Our choices have altered the landscape that we profess to love. We continue to think of our woodlands as pristine forests where we can hike or birdwatch, when in fact they are gradually being fragmented by large-lot developments accessible only to a few. We think that inaccessible remote areas will be spared from development, yet a place near a wilderness area and adjacent to bear habitat now manufactures sporting equipment and has its own special exit off the highway. We think that we have abundant access to the outdoors: open spaces where we can hunt, ski, hike, go snowmobiling or horseback riding, just like the ones Heyde portrayed in his scenes of people fishing, sailing, canoeing, and rowing in rural parts of Vermont. Yet vast ex-



Dover, Vermont. Photo by Julie Campoli.

Cambridge, Vermont. Photo by Julie Campoli.

panses of flat, arable land that once sprouted wheat and corn now grow houses at the end of long driveways. It seems that today's families have given up on the idea of maintaining common open space for all to enjoy and have decided instead to grab onto a small piece of it for themselves.

As I viewed Heyde's paintings I wondered about the condition of the environment in his scenes. Today Vermont is about 85 percent forested, whereas in Heyde's time it was about 85 percent open. His paintings show old growth forests chopped down to make way for settlement—grazing, crop lands, homes, and villages. Extensive deforestation and the overgrazing of livestock resulted in substantial erosion and siltation of streams, one of the big—though quiet—environmental disasters of Vermont's history. But the light, color, and setting of Heyde's paintings minimize the environmental damage and economic hardships that we can detect in the details. How did the people in his scenes live? Was there severe poverty? Was there filth? And I thought of Vermont families today. We often forget, as we view acres of farmland converted to safe and adequate single-family homes, that others are not so fortunate.

Today, as Heyde did a century and a half ago, we perceive our agrarian landscape as a romantic place where people make their living off the land and maintain the pattern of forests and fields with wonderful old barns for everyone to enjoy. Yet we often fail to acknowledge the struggle of farmers to hold on to their livestock and land, and the pressures they face to meet the demands of the market.

And what of settlement? The tiny villages in Heyde's scenes may still be found in Vermont today, but growth in our state has given rise to a type of development never envisioned in his paintings. Although urban settlements with main streets, railroad service, compact neighborhoods, offices, and industry existed in his time, as they do today, the destructive patterns of suburban sprawl did not.

A poem by Heyde quoted in the exhibit posed for me the pivotal question:

> Old summits, far-surrounding vales beneath,
> Of fruitful culture, undulating shores,
> Wave of the coolest depth and purest breath,
> O'er which the eagle from his eyrie soars,
> And, above all, man's lifted soul adores.

We need to ask ourselves, "What of today's and tomorrow's landscape will lift our souls?"

ELIZABETH HUMSTONE

BOOK REVIEWS

The Passion of Abby Hemenway: Memory, Spirit, and the Making of History

By Deborah Pickman Clifford (Montpelier: Vermont Historical Society [Distributed by the University Press of New England], 2001, pp. x, 350, $40.00; paper, $24.95)

Deborah Pickman Clifford has aptly titled her account of the life and work of the editor of the *Vermont Historical Gazetteer*, *The Passion of Abby Hemenway.* After stints teaching school in Vermont and Michigan, Hemenway dedicated herself to capturing the essence of Vermont and its people in poetry and prose with the idea that she could support herself through these literary endeavors. The editorial and financial success of *Poets and Poetry of Vermont* (1858; rev. ed. 1860), an anthology selected from hundreds of submissions by published and amateur poets, doubtless encouraged Hemenway to pursue her next idea. She proposed a magazine of the history and literature of Vermont—the *Vermont Quarterly Gazetteer.* Her plan to recruit authors and a sales force to enlist subscribers beginning with the towns of Addison County was disarmingly simple, but Hemenway felt that she had the resources to do it successfully. Challenged by Middlebury College faculty that success was impossible, Hemenway set out with verve and determination to prove them wrong. And here, another passion story unfolds as Hemenway's life and literary perspective become bound up in Catholicism, to which she converted in 1864. The increasingly heavier editorial and financial burdens she endured in her efforts to complete the publication of a history of each of the counties of Vermont became Hemenway's road to Golgotha.

Clifford has parsed out the circumstances of the writing, editing, and production of the *Gazetteer.* Vermont already had a body of local history writing when Hemenway began, but it was a derivative of the "Allen brothers' carefully orchestrated propaganda campaign" that depicted Vermonters as "freedom-loving" and "had solidified the myth of Ethan as

a selfless war hero" (p. 111). Hemenway would instead compile the stories of everyday life that would sell subscriptions, although she found herself relying on these published sources when filling a gap. Clifford offers many examples of Hemenway's editorial eye for details and the treasures that are buried in the town histories. She recruited women and men to write fresh material and sometimes less than "flattering" accounts (p. 211).

The Civil War plays a dual role in Hemenway's story. The town histories show how the patriotic excitement as Vermonters enlisted evaporated as the shattering cost of the war in human life became apparent. (Hemenway included a moving personal letter from John Ufford explaining why he missed his deadline, along with his account of Fairfax.) During the war it became apparent that the plan for producing the *Gazetteer* in quarterly installments was too ambitious and too costly. After six issues appeared between 1859 and 1863, Hemenway suspended publication for the remainder of the war, even though five additional issues were already set in type. Published in 1867, they were soon followed by the imposing first volume containing the histories of five counties. By then, Hemenway's fortunes had apparently improved. For the first four years that she lived with an elderly Catholic friend, Lydia Meech of Burlington, she was comfortable and productive. After 1872, she nursed her ailing friend for two years, but when she inherited life interest in their house, Meech's estranged son challenged it and a four-and-a-half year legal battle ensued. The effort cost more in legal fees than was gained by the victory. All the while, her publishers' bills were mounting and obstructing her ability to distribute the work that she had prepared. Some relief came from the Vermont legislature, but on terms that were not generous.

To prepare her final volumes, Hemenway left Vermont for Chicago, where she edited and set the type for volume 5 and town histories she hoped to issue first in pamphlet form, but she continued to be dogged by misfortune. An 1886 fire destroyed the printing plant and 857 pages of typeset text and pages that had already been printed. Hemenway refused to give up and worked ceaselessly until she died in February 1890. Volume 5 was completed and published by her sister, Carrie H. Page. Material for the sixth historical volume was returned to William Portus Baxter in Vermont. After his death the material was shipped to his niece in North Carolina, prompting the Vermont Historical Society to act, but the papers had already burned in a house fire. In those lost trunks were the bulk of Hemenway's unpublished text, papers, books, and historical materials, complicating even further the task of her biographer. Clifford observes the irony in the complaint of the VHS librarian in 1914, after spending $12,000 granted by the legislature for a staff to index the *Gazetteer,* that it "has all along seemed too prodigious for any man to undertake" (p. 308).

Clifford does a fine job of crafting the linked stories of Hemenway's life and *oeuvre.* If only she had been served as well by her designer's idea of Victorian graphics and clutter (the intrusive sidebars from the *Gazetteers*). The choice of a Gothic type could have been inspired, but is, at best, confusing as a guide to the reader, who should know that there is a list of the contents of the *Gazetteer* volumes included with the bibliography.

CAROLINE F. SLOAT

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Vermont Hero: Major General George Stannard

By George S. Maharay (Shippensburg, Pa.: White Mane Books, 2001, xiv, 308, $19.95 paper).

In Vermont history George Stannard and the Battle of Gettysburg have become inseparable. The role of Stannard and the Second Vermont Brigade is well documented and often praised for assisting in shattering the Confederate assault against the Union line on Cemetery Ridge on July 3, 1863. However, there is substantially more to the man's career than one day's heroics.

Stannard served Vermont and the Union for nearly the duration of the Civil War. He suffered five wounds, the last costing him his right arm. Some accounts state that he was the first Vermonter to volunteer for military duty, but even if that claim is unsubstantiated, his career was indeed worthy. He first served as lieutenant-colonel in the Second Vermont Regiment, then as colonel of the Ninth Vermont. A promotion to brigadier-general led him to the command of the Second Vermont Brigade climaxing with the events at Gettysburg. After the brigade's discharge Stannard had an assignment in New York City. In early 1864 he again assumed command of a brigade in the Eighteenth Army Corps and then was promoted to leading a division. While commanding this last unit he led a successful attack against Fort Harrison near Richmond, Virginia and in defending the fortification the next day he received his debilitating wound. This injury prevented him from any further active duty. In just over three years Stannard had risen from the rank of lieutenant-colonel to that of major general.

Stannard's story, like that of several other noteworthy Vermont Civil War figures, has gone unnoticed by writers. Perhaps one reason is the lack of a collection of Stannard correspondence.

George Maharay, in his book *Vermont Hero,* has elected to fill the void with a biography of the general. One might have hoped the book would detail most of Stannard's sixty-five-year life, but it primarily emphasizes the military career. Though this period of Stannard's life was exemplary it is difficult to comprehend the man's character solely on the basis of five years of military service. With the exception of several brief mentions of his involvement in the prewar state militia, the reader learns nothing of the first forty years of Stannard's life. How did he earn a promotion to the rank of a militia colonel? How did his early years influence his military service? After the Civil War and his retirement from the military Stannard worked as collector of customs for six years until a discrepancy in accounts forced his resignation. The author covers this subsequent black mark on Stannard's record and the remainder of his years in only one short chapter.

Maharay does provide an excellent synopsis of Stannard's military career, despite the lack of personal correspondence. He might have become too enamored with his subject, for he glosses over any negative comments and gives Stannard the persona of the perfect officer. The writer opens each chapter with an abstract of the chapter contents that could be eliminated. The chapters are brief and could be combined.

The greatest weakness in the book is attributable to the publisher and its editorial staff. A competent editor would have recommended changes to the author and picked up on errors in spelling and dates. For example, in "Gettysburg—Pickett's Charge" (chapter 18), Stannard's official report is printed separately, whereas including it in the text would have enhanced the story. However, in "Fort Harrison—Stannard's Attack" (chapter 26), this strategy is reversed, as the official report is inserted into the text with little or no paraphrasing. Accounts by other participants are likewise overused with no editing. Stannard's service in New York City is covered in chapter 20, but on two separate pages (pp. 184–185) the author presents multiple dates for the New York City draft riots. Also, the actions of General Canby are confusing (pp. 185–186, 188). Finally, the text is plagued by too much passive voice.

Maharay does Civil War historians a service by providing the first full study of Stannard's military career. The effort would have been better if he had covered a greater span of the man's life. A reader will gain some understanding of the general but must be willing to ignore the editorial weaknesses sprinkled throughout the pages.

DONALD H. WICKMAN

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Charles Louis Heyde: Nineteenth-Century Vermont Landscape Painter

Edited by Nancy Price Graff and E. Thomas Pierce (Burlington, Vt.: Robert Hull Fleming Museum, The University of Vermont, 2001, pp. 100, $45.00; paper $28.95).

Vermont, like France, is—metaphorically and all too often literally—every American's second home. As such, the rediscovery of any aspect of the region's historic identity is a welcome addition to the understanding of the state's charismatic aura. In addition to raising stimulating questions about regional culture, this monograph and catalogue raisonné of the oeuvre of nineteenth-century landscape painter Charles Louis Heyde also provides a service to anyone interested in the purported "look" of Vermont 150 years ago.

This handsome publication, the project of a scholarly team, was produced for an exhibition of the artist's work held at the University of Vermont's Fleming Museum in 2001. It faithfully documents the career and extensive output of an artist whose heretofore-principal claim to fame was his marriage to Walt Whitman's sister. Unfortunately, despite the museum's well-intended efforts, little has been achieved, either by the exhibition or the resulting publication, to dispel that reputation.

Heyde's myriad views of Mount Mansfield and Lake Champlain, though not without appeal, scarcely deserve the praise shed upon them by the authors; at best they are provincial variants of the more sophisticated Hudson River School canvases; at worst they are formulaic productions of a not overly gifted hack. This is not to suggest, however, that Heyde's painting lacks interest, only that the interest lies elsewhere than suggested by the text of the catalogue.

One of a handful of practicing artists who made Vermont their full-time residence during the nineteenth century, Heyde produced his conventional tableaux, not for the metropolitan center (i.e. Boston and New York) but, *faute de mieux,* for local consumption. Exhibiting his works in the lobby of a Burlington hotel, Heyde no doubt hoped to snare the occasional tourist or visiting businessman, but, as the narrow provenance of his many canvases suggests, this seldom occurred. Little insight, therefore, is gained by comparing his paintings with views of Mount Mansfield by such New York luminaries as Jerome Thompson and Sanford Gifford. The latter painted for overstressed urbanites in need of the perennially consoling fiction that Vermont was a rural Eden; Heyde painted for Vermonters who, then as now, clung to no such illu-

sions. The romantic or theocratic visions of nature imparted to Heyde by comparison with the poetry of William Cullen Bryant and the paintings of Thomas Cole, *inter alia,* do not stand up to closer scrutiny of his canvases. To be sure, Mount Mansfield looms majestically over verdant vales and cadmium-induced twilights are reflected in the limpid waters of Lake Champlain, but the foregrounds of these landscapes are emphatically marked by signs of human presence. Houses, fences, cultivated fields, bridges, manmade stumps, and, on at least one occasion, a steam engine pulling freight cars through the Winooski Valley, produce a cognitive dissonance not easily reconciled with the Knickerbocker cult of wildness. The substitution of a Wal-Mart—as any current resident of Burlington can attest—for a covered bridge or a millhouse in the foreground of several of his compositions would not significantly disturb the equilibrium between nature and culture.

In the instructive instance of the railroad painting (color plate 27), the machine may have penetrated the garden (*pace*: Leo Marx) but it is far less readily assimilated to the rubric of the "middle landscape" than to the triumphalist notion of "progress." In short, the catalogue's incessant claim (citing pantheist-painter Asher Durand) that Heyde subscribed to the notion of "the power of uncultivated Nature to teach 'lessons of high and holy meaning'" (p. 23) seems literally at loggerheads with several of the dominant paradigms of his canvases.

Rather than striving to position Heyde's oeuvre within the ideology of the nineteenth-century cult of wilderness and reverence for nature, the authors would have been better advised to look in their own past and present backyards. The eccentric painter James Hope, for example, a near contemporary and, like Heyde, another strident booster of Vermont's rural industry, provides a far more compelling analogue than the poets and painters of New York's Century Association. Hope, a native of Castleton, took provincial pride in celebrating Vermont's emergent industries of quarrying, tourism, and transportation. In a word, he was a utilitarian with no discernible devotion to the preservation of scenic wilderness. On balance, neither artist displayed much interest in staging Vermont as a rural retreat for nostalgic reflection upon the nation's preindustrial innocence. Quite the opposite, both seemed anxious to record the technics and processes of industrial and social transformation. How else to explain Heyde's one genuinely original pictorial invention, "Canyon of the Devil's Chute" (color plate 28), a busy scene of a logging operation (replete with stumps, lumberjacks, and a steaming Satanic mill)? Commissioned by a Canadian lumber merchant, this dynamic canvas suggests that Heyde was neither an environmentalist, a transcendentalist, nor an anti-industrialist. As a consequence, Heyde is best viewed,

not as a pale reflection of metropolitan concerns, but as a determined chronicler of Vermont's passage from innocence to experience.

ROBERT L. MCGRATH

Robert L. McGrath is professor of art history at Dartmouth College. His latest book, Gods in Granite: The Art of the White Mountains of New Hampshire, *was published by Syracuse University Press in 2001.*

Stowe, Vermont History and Genealogy: The Susan W. Downer Collection

Arranged by Patricia L. Haslam (Stowe, Vt.: Stowe Historical Society, 2001, pp. 578, $50.00; paper $40.00).

Papers compiled and collected by amateur family historians can be, at the same time, both the bane and delight of the inquiring genealogist. The struggle to decipher faded penmanship, the needle-in-a-haystack search for an elusive family connection, can be amply rewarded by the freshness of the material and the window that it offers into both the life of the compiler and his or her times.

Susan Whittemore Downer (1870–1935) was born and educated in Stowe. After graduating from Stowe High School, she worked in Boston for many years, returning to Stowe later in life to help her mother care for her grandmother. Never married, and employed at H. A. Slayton & Co. in Morrisville as a bookkeeper and stenographer during the 1920s and 1930s, she was an avid amateur historian, knowledgeable about many of the early Stowe families whose descendants she interviewed. She carefully compiled her interviews and her research into public records and cemetery inscriptions in notebooks, five of which were given to the Stowe Historical Society. The Society, under the able hand of genealogist Pat Haslam, has reproduced and published these documents, making them both available, and more importantly, accessible through meticulous indexing, to researchers.

In her informative introduction, Haslam notes that much of the material in the Downer collection was included, "at times word-for-word" (p. x), in Walter Bigelow's *History of Stowe, Vermont 1763–1934.* While Bigelow seems to have given Susan Downer passing credit, it is likely that she was the person responsible for most of the research for his book. Susan's brother, Harry Downer, wrote in his own copy of the Bigelow history the name of his sister beneath Bigelow's name as author. Indeed, on the last page of her fifth notebook is a note by Susan Downer designating W. J. Bigelow as "keeper" of her work.

The sheer quantity of the material compiled by Downer—clippings, typed and handwritten genealogies, letters, stories, essays, and photos—provide rich prospecting for genealogists searching for Stowe family connections. But there is also great charm in this collection. Miss Downer's abilities as a stenographer with a fine ear for dialogue have given us lively accounts by some of the residents she interviewed. In her interview with Dan Luce, we are offered a vivid description of Thomas Luce's wife. "Tom's wife, Lucinda, was short and plump and wore her gray hair in two braids brought around under her chin and the two ends tied together with a piece of woolen yarn. She was a great lover of canaries and flowers and the house and yard were overrun with them.... When they went abroad they used a two-seater carryall that even then was ancient, and a horse as old as the vehicle. Mrs. Luce sat in front and drove while Tom rested in the back and their appearance would be hailed, 'Here come Mis' Tom and the birdcage!'" (p. 47).

Some of the material on local families will attract interest from people whose primary focus may not be on Vermont history alone. The pages on the Dutton family contain unique material on the life of Brother Joseph Dutton. Born Ira Dutton, Brother Joseph was a Catholic lay missionary internationally known for his work with the famous and revered Father Damien in the leper colony on the Island of Molokai. This material, which includes photographs, clippings, and reproductions of notes and letters, should be of interest to those studying the lives and work of these extraordinary men. The pages include a letter in Dutton's own hand written to Susan Downer in response to her request for reminiscences of his childhood in Stowe. Penned just a few years before his death, he writes of his failing eyesight and of the difficulties he has had in keeping up with correspondence. Still, his memories, as he painstakingly wrote them, are lively. "As to any house in Stowe cannot recall anything except that in a considerable space . . . I used to run about with a dog—something of the Newfoundland type—and a building there by itself with an outside staircase. This I can recall quite plainly and of running up and down—at least part way . . . playing with the dog as it capered about around the stairway" (p. 185).

In his prologue, the president of the Stowe Historical Society, Dr. Edwin Lang, emphasizes "the importance and permanence of records in matters of history." The Society should be commended for its work in producing this handsome volume of Susan Downer's research, thus making a valuable collection of documents widely available to those with an interest in Stowe history and genealogy.

HILARI FARRINGTON

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Textiles in New England II: Four Centuries of Material Life The Dublin Seminar for New England Folklife Annual Proceedings 1999

Edited by Peter Benes (Boston: Boston University Scholarly Publications, 2001, pp. 240, paper, $30.00).

For twenty-four years the Dublin Seminar for New England Folklife has met "to explore everyday life, work, and culture in New England's past." In conjunction with the Program in American and New England Studies at Boston University, a collection of papers on textile studies presented at the 1999 conference has been published in the book, *Textiles in New England II: Four Centuries of Material Life.*

The broad field of textile studies examined in this publication serves as an umbrella for studies of material culture (tangible objects), primary research (letters, diaries, account books, etc.), and social history. Many New England historical societies, museums, and families still have collections of textiles and other artifacts in trunks, attics, or, as Laurel Thatcher Ulrich said in her keynote address, "in the garrets and ratholes of old houses." If we are lucky, scraps of paper attached to these items give us some idea who made, wore, or used them. When this information is missing, how does one begin to find out more about the artifact? This book contains research that will be useful to historians, museum curators, and individuals digging into the study of New England textiles, women, or early textile production processes.

The papers are organized into seven sections: 1) Coverlets; 2) Beds, Bed Hangings; 3) Millinery, Woven Rugs; 4) Textile Technology; 5) Textiles and Women's History; 6) Commemoratives and Memorialization; and 7) Reproductions. Ninety-three photographs, illustrations, and graphs embellish and expand the information in each article. The bulk of the papers explore textiles in the nineteenth century, with a few focused on the eighteenth century.

Melinda Talbot's article, "Mary Anne Warriner, A Rhode Island Milliner," tells the story of a woman in the bonnet business, based on her daybook of daily business transactions and accounts from 1835 to 1841. (The term "millinery" originally meant "one from Milan" and came to be associated with the sellers of fashionable items that Milan was famous for—bonnets and other dress accessories.) Bonnets were ubiquitous during the nineteenth century. They were so prevalent and popular

that it is not uncommon to read diaries and letter references about buying a new bonnet or refurbishing one with new ribbons and flowers. Talbot describes the milliner's profession, bonnet fashions, and materials used to make bonnets, and includes a number of photographs of bonnets, a print of a milliner's shop, and a fashion plate from *Godey's Lady's Book* to support her paper.

Sandra Rux's article, "Rag Rug Carpet Weaving in Connecticut, 1850–1880," documents the use of rag rugs in Connecticut in both urban and rural settings. Rux's extensive use of primary documents to support her theory reveals the manufacture and popularity of a rug type previously believed to be out of style well before 1850. Although extant fragments of rag rugs from this period are yet to be found and documented, her research firmly establishes the rag rugmaking industry in the last half of the nineteenth century.

Kathryn Clipinger Kosto's "'Some work . . . to be kept': Textiles and Memories of Victorian Domesticity" will be interesting to readers who may have examples of textile diaries, "a form of homemade documentation which uses textiles to chronicle personal events" (p. 183), or who have surviving examples of family textiles and needlework. Kosto says, "Textiles were a common fabric in women's experience, linking worlds of philanthropy and domestic service, mourning and celebration, commemoration and the latest fashion" (p. 173). Three generations of Longfellow women (Henry Wadsworth Longfellow's mother, wife, and daughters) used textiles to document their lives and remembrance of each other. For example, Frances Appleton Longfellow (1817–1861), Henry Wadsworth Longfellow's wife, mounted swatches of dress silks and cottons used to make clothing for her children by arranging and dating them chronologically onto Merrimack Mills swatch cards (Frances's father owned Merrimack Mills in Massachusetts). Her textile diaries together with a written diary create snapshot memories of her children's lives.

On a broader note, Lynne Zacek Bassett's paper, "'A Dull Business Alone': Cooperative Quilting in New England, 1750–1850," dispels myths about the romantic social history of quilting and quilting parties based on her comprehensive investigation of diaries from across New England.

Other articles in the book talk about patents on the Connecticut Chair Wheel and the Hibbert-Townsend Latch Needle; the importance of beds and bedding, bed rugs, and bed curtains; Shaker textile production; the poet Mercy Otis Warren's needlepoint card table, where she established herself as an aristocrat through her needlework skills, yet challenged prevailing political ideas with her pen; Tryphenia Newton Cooke, a seamstress for Elizabeth Porter Phelps of Hadley, Massachusetts, who continued to sew for other people while raising a large family; textile

commemoratives and broadsides; Mary Saltonstall Parker, a sampler maker in the Colonial Revival era; and Plimoth Plantation's research methods for its reproduction clothing program.

A useful twenty-page textile studies bibliography is also organized by topic: periodicals, general works, local collections, decorative textile arts, coverlets, quilts, bed rugs, lace, clothing, hand production and technology, textile imports, outwork and factory production, knitting and hosiery machinery, and mills. This bibliography also includes sources used in papers from the Dublin Seminar's 1997 conference, *Textiles in Early New England: Design, Production, and Consumption,* previously reviewed in *Vermont History,* 68 (203–205).

Textiles in New England II includes plenty of resource ideas for anyone interested in textile studies. The book offers an intimate look at the subject, specifically in Massachusetts, Connecticut, Rhode Island, and New Hampshire, the textile industry, its textile artifacts, the men and women involved in textile making, and needlework, based on primary documentation.

ELIZABETH SHATTUCK BLESS

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American Towns: An Interpretive History

By David J. Russo (Chicago: Ivan R. Dee, 2001, pp. xiii, 350, $28.95).

Every so often some intrepid academic writes a book on the broad subject of American towns. The two best-known examples are Page Smith, *As a City Upon a Hill: The Town in American History* (1968) and Richard Lingeman, *Small Town America: A Narrative History, 1620–Present* (1980). David Russo's *American Towns: An Interpretive History* updates the work of Smith and Lingeman. Russo is well qualified for the task: His previous scholarship includes monographs on family and community, on local historical writing in the United States, and on the origins of local news in country presses. The new book should receive the same level of attention as its predecessors. *American Towns* is carefully organized, clearly written, thoughtful, and thorough. Readers interested in the history of Vermont towns, however, may end up disappointed in Russo's latest work.

First, a summary. *American Towns* contains a preface, six roughly equal-length chapters entitled "Founding," "Sites," "Political Life,"

"Economic Life," "Cultural Life," and a brief conclusion labeled "The Town in Myth and Reality." The preface spells out intent and methodology. By "Interpretive History" Russo means that he is focused on what he calls "patterns of life among those who lived in American towns—what connects them rather than what separates them . . . what town dwellers have shared" (p. ix). Russo emphasizes that articles and books written by others have provided his main source of raw material and that he considers *American Towns* "a synthesis of existing scholarship" (p. x), not a work based on his own primary research in town history. The preface also addresses the fundamental question of what the word "town" means—Russo refuses to be bound by any simple definition—and briefly discusses regional differences and town types. The preface ends with a paragraph noting that towns, whatever the definition, differ from cities.

All six chapters have the same internal organization. In each, Russo devotes a page or two to aboriginal communities, then systematically goes through the European/American subject matter century by century. Readers will soon recognize that in general the author considers any significant clustering of human population a town as long as it isn't too big or "urban." He is less interested in towns as incorporated units of governance and geographical spaces with precise boundaries than he is in what occurred in concentrations of population. Thus, many people living within an incorporated town get separated out as "rural neighbors" (p. 171). Occasionally, however, Russo does the opposite by expanding the definition. The chapter on politics includes a good deal about county governance and ends with a commentary on local government in which the towns and counties of rural America are joined as one. The chapters on social and cultural life do consistently emphasize population center activities. These two units are subdivided into traditional academic and institutional categories, such as "social structure," "churches," "schools," and the like. The conclusion both summarizes and laments what Russo sees as having taken place over time. "By the late twentieth century," he writes, "towns had become pale copies of cities, though slower to accept change and much smaller" (p. 295).

Most readers of *Vermont History* will not learn a great deal about regional communities from Russo. The central problem is that looseness of definition and the ambitious attempt to cover all of the United States allows him to all but ignore the special nature of things New England. He never, for example, deals with the difference between incorporated villages and towns, both central to the functioning of Vermont. From his perspective Bellows Falls (an incorporated village in the Town of Rockingham) is a town, not a village, and folks out in the Upper Meadows or

Brockways Mills don't count. Yet these folks vote at town meeting, count as town inhabitants in census figures, go to town schools, and think of themselves as living in the Town of Rockingham. Russo, at a minimum, should discuss regional variations in what the term "town" means legally. He doesn't.

Two final observations. One is that Russo's methodology helps explain his low level of interest in local variation and consequently in Vermont (and New England) specialness. By deciding to emphasize what town dwellers throughout the country had in common he had to limit coverage of the region. After all, New England has less than five percent of the nation's population; Vermont has about one-fifth of one percent. Moreover, the academic world on which Russo relies has all but ignored the postcolonial history of New England towns, and Vermont, of course, didn't exist in colonial times. The other observation can be stated simply. I have physically been in the vast majority of Vermont towns, have lectured in about seventy-five of them, and have discussed both town and state history with thousands of Vermonters. Vermont towns are not "pale copies of cities," and never will be.

JERE R. DANIELL

Jere Daniell is the Class of 1925 Professor of History at Dartmouth College. He teaches a course in the history of New England and lectures widely on the general subject of New England towns.

River Days: Exploring the Connecticut River from Source to Sea

By Michael Tougias (Boston: Appalachian Mountain Club Books, 2001, pp. 175, paper, $14.95).

As a lifetime part-time to full-time resident of the Connecticut River Valley, the expertise I bring to this review is based on experience rather than scholarship. On the other hand, this fact puts me well within the apparent target audience for Michael Tougias's chatty tome about the Connecticut River. From the magnetic mysteries at the river's source to the majestic melding of river and sea at Old Saybrook, Tougias takes us on a picaresque ride through wilderness and urban decay. This is a short book full of delightful light touches and tips about a little bit of everything, ranging from where to canoe and camp to where to buy fly fishing equipment. There is a smattering of historical anecdote along the way.

So this is a nice book. The problem with it, however, is that the author never entirely decides what kind of book he is writing. The diverse seems to devolve to the scattered. Is this book about history? Is it a travel book? Is it a camping book? Is it a memoir? Only Michael Tougias knows for sure. One senses in the pages a certain reluctance about the project. Spread over two years, with some long gaps in focus on the project, it all feels a bit unwieldy. The text is a bit reminiscent of a coffee table book—but without pictures. Nevertheless, the river rises to the occasion and the author's affection for the Connecticut does shine through. Whatever else one may say, you will know more about this storied stream when you are done with the book than when you began, and it's a pretty painless trip. You will emerge without blisters or sunburn, and undamaged by damp.

PETER T. MALLARY

Peter T. Mallary from West Newbury is the publisher of Behind the Times *and* It's Classified *based in Bradford, Vermont. He is the author of two books on New England architecture and history and serves as President of the Vermont Historical Society.*

Granite and Cedar: The People and the Land of Vermont's Northeast Kingdom

By John Miller and Howard Frank Mosher (Vermont Folklife Center and Thistle Hill Publications, 2001, 96 pp., 70 photographs, $35.00).

In this beautifully written and photographed book, Howard Frank Mosher and John Miller have presented a frank and unsentimental portrait of a way of life in Vermont's Northeast Kingdom that is now all but forgotten. In the late 1970s and early 1980s John Miller worked systematically to record the remnants of an agrarian culture in this part of Vermont that is unique even in a state known for its uniqueness. Drawing on the photographic influences of Edward Weston, Paul Strand, and Walker Evans, as well as his own original vision, Miller has created a moving document of both historic and artistic value. His finely crafted images reflect his obvious commitment to technical excellence and aesthetic integrity. As in all good photography, the quality of light in a scene is of paramount importance to the creation of these images. I particularly appreciate his approach to his subject matter, which reflects his desire to honor both person and place.

In his acknowledgments for the book, Miller mentions the advice he

received from two prominent, regional photographers: Lotte Jacobi and Ralph Steiner. Jacobi suggested that he concentrate on portraits, while Steiner thought he should emphasize architectural and landscape aspects of the region. Happily, he has retained both suggestions and in a real sense has combined them into the same imagery.

The people Miller portrays are as flinty, gritty, and hardscrabble as the landscape and buildings they shaped and inhabit. In a sense these are reflections of each other, as in turn they each have shaped the other. The book is replete with examples of this duality of image.

Consider for example the photograph on page 95. It takes several minutes of looking to realize that the gargoyle-like apparition standing in the shadow is actually a man: a living ghost inhabiting a world more grounded in the past than in the present. Or in the photograph on page 31, which is more weathered, the man's face or the boards in front of which he stands? The image of the woman in the photograph on page 21 is broken into a patina of weathered resignation by the rusting screen in front of her. Finally, in one of my favorite photographs in the book (page 51), I see a line of old men making their way up a hill through a bleak and exhausted landscape. The fence posts there are as worn and old as the men who set them in place.

All these images seem to me to be a combination of portraiture and landscape that quite literally ties a people to the land that they inhabit.

The text by Howard Mosher perfectly complements Miller's photography. The sparseness and succinctness of his words create an appropriate captioning to the visual work. The brevity of the chapters works nicely to leave the flow of images unimpeded.

I think this document leaves unanswered the question of whether the end of a way of life is a tragedy to be mourned or the natural end to a culture that has served its purpose and is now being replaced. The book does, however, serve a greater purpose. If nothing else, it is a beautiful testament to a simpler way of life. We can't change the past. We can only remember it and try to learn from it. After all, as Jane Hubbell says at the end of Howard Mosher's text, "The photographs aren't a present. They're a legacy"(p. 101). On the other hand, as presented in this book, the photographs are both a gift and a legacy.

ANDREW KLINE

Andrew Kline has worked as a fine art photographer in Vermont for over thirty years.

My Declaration of Independence

By Senator James Jeffords (New York: Simon and Schuster, 2001, pp. 136, $14.95).

A few years ago my wife and I were visiting Ireland, and when we told someone we were from Vermont, they would ask us what state that was in. More recently my daughter was in Ireland, and when she said she was from Vermont people asked if she knew Jim Jeffords. The obvious explanation is that in the interim Senator James Jeffords had bolted the Republican Party to become an Independent, thus converting a closely divided Republican-led United States Senate to Democratic leadership. Within a few hours of taking that step he was elevated from his accustomed role as an obscure senator from a small state to international celebrity status. *My Declaration of Independence* is Jeffords' account of the immediate causes for his leaving the party of his birth. And whether one applauds or deplores that decision, this thin volume makes interesting reading.

Central to Jeffords' decision was conflict over funding for special education, specifically the Individuals with Disabilities Education Act (IDEA). Jeffords advocated increased spending of $200 billion over ten years, while the Bush administration placed a higher priority on $1.6 trillion in tax cuts over the same period. The Vermont senator's arguments that the national interest would be better served by a greater investment in education and a smaller tax cut failed to persuade either the Senate leadership or the White House. They also served to encapsulate his growing estrangement from his party's programs and leadership.

Many readers, Vermonters in particular, are already familiar with much of this story from radio, television, and print accounts. *My Declaration of Independence* also presents revealing material about Senate operations and personal relationships that adds further color to events. In December 2000 Jeffords had voted for Pete Domenici against fellow Singing Senator Trent Lott for majority leader thereby poisoning an already difficult relationship. Jeffords considered Lott's leadership combative and ultra-partisan, and pages of *My Declaration of Independence* read like an indictment. Yet in spite of Lott and more calculated political irritants, Jeffords maintains that he left the Republican Party to promote causes he believes in, and he concluded from high constituent approval ratings that most Vermonters supported his decision. The May 24, 2001 Burlington address formally announcing his defection is reprinted in its entirety. The speech ranks among Jeffords' more successful oratorical

offerings. For those unfamiliar with the senator's speechmaking prowess, he cites Bill Mares and Frank Bryan, who suggested that submitting someone to a Jeffords speech was tantamount to committing a felony.

For historians, a longer view of Jeffords' defection is as fascinating as its contemporary impact. The senator was not unmindful of his impeccable Republican credentials. His father, a Republican of course, had been Vermont chief justice and Jim Jeffords occupied the longest continuously held Republican seat in Congress. These were among the factors he weighed in making his final decision. But other factors, including a personal history of thirty years in periodic conflict with his state and national party, although not dealt with at any length in *My Declaration,* are likely to have diluted such influences. Readers may also reflect on the absence of any explicit reference to potential threats to the Republican majority posed by the advanced age of Senate cohorts. Did the possibility of a closing window of opportunity ever enter Jeffords' calculations? Senate President Pro Tempore Strom Thurmond was approaching his ninety-ninth year, and his state's Democratic governor was poised to appoint a successor. Had he been able to do so, news of Jeffords' defection might well have been buried on a back page rather than becoming a page one headline. And it must be noted that under Democratic leadership the Senate failed to increase funding for IDEA to Jeffords' satisfaction.

From the founding of the Republican Party until Jeffords' defection, Vermont always had a Republican in its congressional delegation. One of the first, Justin Morrill, in 1854 refused to endorse the Republican platform, ran as a Whig, and won over Republican and Democratic opposition. When he took his seat in the House of Representatives, however, he chose to sit as a Republican. What goes around comes around.

SAMUEL B. HAND

Samuel B. Hand is professor emeritus of history at the University of Vermont. Among his many publications are the forthcoming Vermont Encyclopedia, *edited with John Duffy, and* The Star that Set: A History of the Vermont Republican Party 1854–1974.

MORE ABOUT VERMONT HISTORY

Recent Additions to the Vermont Historical Society Library

BOOKS

Abajian, Paul G., *Vermont Postal History: The Machine Cancels of the Green Mountain State, 1897–1940.* Essex Junction, Vt.: Vermont Philatelic Society, 2001. 193 p. Source: The publisher, P.O. Box 475, Essex Junction, VT 05453. List: $22.00 (paper).

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*Fuller, James R., *Men of Color, To Arms!: Vermont African-Americans in the Civil War.* San Jose, Calif.: iUniversity Press, 2001. 236 p. List: $29.95 (paper).

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