

Middlebury's Bread Loaf Lands: A Story of Nature, Humans, and a Conservation Legacy

By Morgan Forest Perlman '19

Pre-Human — Ice and Woods

To envision Middlebury College's Bread Loaf lands before humans settled the Vermont landscape is to witness what glaciers have left behind. Smooth mountain ridges, roaring brooks, steep ravines, diverse forests and rocky soils — all the of Bread Loaf's landscape features are on some level inextricably intertwined with the legacy of glaciers.

Walking or skiing the Fields surrounding the Inn, as many do today, an astute observer will immediately notice the flat, elevated plane that stands out from the surrounding landscape of rolling forested hills and steep, rocky stream embankments. The Fields are remarkably flat compared to the rest of the landscape. And their elevated position within the landscape makes them drier than the unique seepage forests that border it. The Fields, once a part of the surrounding mixed coniferous-hardwood forest likely dominated by sugar maples and beech were, after all, cleared as farm land because of the fertile soils glaciers left behind.

The open fields exist today as a remnant of a large proglacial lake that once covered the Bread Loaf Campus between 13 and 14 thousand years ago. As the glaciers retreated and water flowed out of the spine of the Green Mountains above the Bread Loaf Lands and the large ice sheets, the many brooks that cover the Bread Loaf Lands, including the prominent Middlebury River were formed and raged with the sudden rush of ice-fed water as the earth began to warm. The only final path for this massive amount of water out of the mountains and off the high plateau of the Bread Loaf lands was down the Middlebury River. Somewhere in this phase of geological transformation, a giant large glacial fragment — essentially a massive chunk of ice — got stuck in the raging ravine of the Middlebury River, just downstream of the Bread Loaf Lands and before what is the now the village of Ripton. The damn of ice didn't allow for the smooth flow of water down from Bread Loaf and into what is today's Champlain Valley. What formed was a giant lake on the Bread Loaf campus. As water backed up into the Bread Loaf campus, it was carrying with it fine sediments that deposited the flat plane of well drained, arable soil that made Bread Loaf's Fields the most productive agricultural parcel in Ripton.

USGS soil survey maps show a "salmon" spodosol soil series in the area that are today's fields. These soils are ranked as agricultural soil of statewide importance, which is rare in Ripton, where most of the land is rocky and unsuitable for agriculture. The closest parcel of "salmon" soil north of Bristol, Vermont beside Route 17, making this a rare soil deposit in this area.

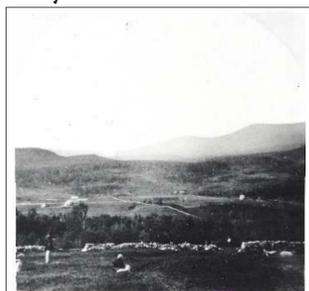


The extent of the "Salmon" soil series marks the boundaries of the Fields around the Inn. Approximately 120 acres. Orange overlay indicates the "Salmon" series. Source: USGS Soil Database.

Early Settlement of Bread Loaf — Working the Soil

Soon after Ripton was first chartered in 1781, New Englanders took to aggressively clearing this mountain landscape for small-scale subsistence farming, settlement, and use of forest wood products. The indigenous Abenaki people may have preceded their history, but would have had a minimal impact on the land compared to European settlement. While many other parts across the Northeast have been manipulated through the indigenous people's use of fire to clear forests on a large scale, Vermont's Abenaki did not make use of the widespread use of fire and thus likely did not have a significant impact on the Bread Loaf lands. Though one could imagine that Bread Loaf's mountain brooks and flat terrain may have provided the Abenaki with some form of settlement and hunting and fishing grounds. Following decades of European manipulation, the area surrounding Bread Loaf soon resembled today's open agricultural Champlain Valley more than the forested mountain lands, as sheep farming became a widespread phenomenon from 1820-1860. Land records and historical photos indicate Ripton was a patchwork landscape of open sheep farms interspersed with scattered forest fragments. The large recovered eastern wilderness that so defines the Bread Loaf Lands were mostly clear-cut lands through the 19th century.

By the early 1800s, today's Bread Loaf campus was a heavily worked farm. Settlers in this mountain landscape were only successful, though, as sheep farmers until wool competition arose from the Midwest. Vermont farmers in the later 19th century were forced to turn to other agriculture practices such as dairying and growing crops, which were unsuitable on Ripton's nutrient-deficient, rocky soils. These mountain lands were soon abandoned for the more productive Champlain Valley. Early settlers here, recognizing the rocky landscape they set foot on, gave this area a name that evokes such a sense of place. The town name Ripton alludes to the word "riprap," referring to rocky river banks like those that line the Middlebury River; Ripton literally means town of rocks.



View around Bread Loaf in the 19th century, with cleared sheep pasture. Area was largely deforested. Source: Middlebury Special Collections and Archives.

At Bread Loaf, though, the rich, fine, silty, rock-free soils deposited by a large glacial lake thousands of years ago, kept the Bread Loaf lands alive as a dairy farm through the latter part of the 19th century. Through the early and mid 1800s a modest white farmhouse stood on the approximately 270 acres of fields and bordering woodlands. A man by the name of Arnon Atwood owned the farm through the 1860s. It was a beloved farm by many farmhands. Entire families would spend summers working on the Atwood farm in exchange for modest pay and room and board in this refreshing mountain landscape. Atwood sold the farm briefly to a man by the name of Joseph Parker in 1865. The next year the land would be acquired by a Vermont conservationist who would have an enduring legacy on the future of

Joseph Battell (1839-1915) Comes to Bread Loaf — The Resort Era

Battell — a freshman dorm, a centerpiece red brick block of downtown Middlebury, a mountain — his name is ascribed to many local monuments, but his legacy on the Bread Loaf lands and larger forested Vermont landscape is far greater, even without his name attached to them. Son of wealthy parents, his father Phillip Battel came from a rich mercantile family from Norfolk Connecticut and his mother, Emma Seymour Battell, was the daughter of a local lawyer and US Vermont Senator Horatio Seymour. In 1856, he enrolled in Middlebury College. Suffering from severe asthma and poor health, he was encouraged to take a break by his doctors. He dropped out of Middlebury and never graduated.



Horse and Buggy Outside Bread Loaf Inn on Route 125. Late 1800s. Source: Middlebury College Special Collections and Archives.

After spending a few years traveling in Europe and suffering continued poor health, his best friend, classmate, and future Middlebury College botany professor and president Ezra Brainerd convinced him to spend some time at Joseph Parker's newly purchased farmhouse at Bread Loaf, suggesting the mountain air would be good for his lungs and spirit.

Battell rented a room in the farmhouse, helping Parker to pay off his new mortgage. Battell fell in love with Bread Loaf and used his inherited wealth to

buy outright the 270 acre farm and forestland from Parker in 1866. The Vermont landscape at the time was becoming quickly overtaken by humans; entire mountains had been cleared. Distraught and inspired, Battell went about buying up thousands and thousands of acres of mountain lands that surrounded the Bread Loaf farm.

He simultaneously turned the little white farmhouse into a resort by hiring locally famed Victorian architect Clinton Smith to construct the Bread Loaf Inn and guest houses. After he invited more and more friends and family members to his mountain residence, word of Bread Loaf spread and vacancy at the Bread Loaf resort became rare.

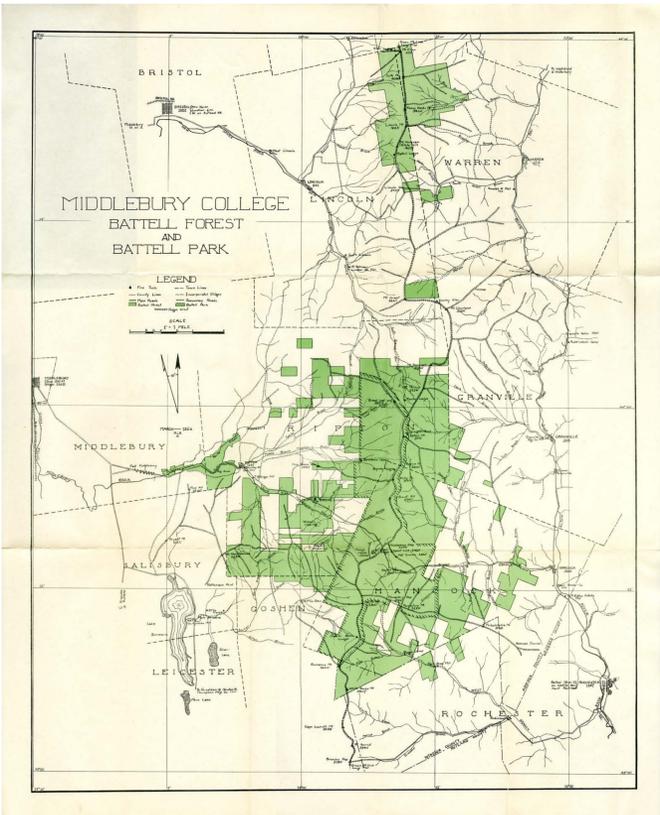
The Bread Loaf farm was primarily a productive dairy operation throughout Battell's ownership. Maple sugar was extracted from the surrounding forest land, along with wood products to build and maintain the resort's buildings. As the resort grew, a primitive well was inadequate. Mountain-fed Brandy Brook became Bread Loaf's main water source. Later, Bread Loaf also became a breeding facility for Battell's beloved Morgan Horses that were showcased at his Morgan Horse Farm in Weybridge, VT.



Route 125 (The Middlebury Gap) in the late 19th century. It was a horse carriage way before it was paved. Source: Middlebury College Special Collections and Archives



People gathered outside the Inn in 1870. Source: Middlebury College Special Collections and Archives



1926 map of Battell's forestland to be managed by the College after his death. Source: Middlebury Special Collections and Archives.



1900s. Fertile fields surrounding the Inn, with corn being grown. Source: Middlebury College Special Collections and Archives

Changing Hands on The Land — Forest Management and Conservation Through Time

"I therefore further give these lands...to said president and fellows of Middlebury College and their successors forever, in trust as a park for the benefit of said Middlebury College... And it shall be the duty of said trustees to preserve as far as reasonably may be the forests of said park, and neither to cut nor permit to be cut thereon any trees whatsoever except such as dead or down; ... it being a principle object of this devise to preserve intact said wild lands... as a specimen of the original Vermont forest." Battell had written into his will.

By the time Battell passed away in 1915, much of Vermont had already been cleared. But Battell's 35,000 acres of land spanning the spine of Green Mountains extending from Brandon Gap north to Camel's Hump had been largely preserved in their original state. These forests were remarkably intact with old growth characteristics. Dominated by mature uncut red spruce, beech and sugar maples, the Bread Loaf forest surrounding the Inn was very different. Most of the mountain land Battell amassed has since been cut over, perhaps multiple times.

Crucial to determining the fate of these lands after Battell's death was the execution of his will. Middlebury College was bequeathed 25,000 acres surrounding the Bread Loaf Inn, 9,000 of which were specially restricted to be managed as the "Battell Park." 1000 acres around Camel's Hump were to be preserved to the State of Vermont to be preserved as a state park for the citizens of Vermont, and about 5,000 acres stretching from Mount Abraham north to Mount Ellen were to be transferred to the US Federal Government's Department of the Interior to be a National Park. As intended, the transfer of land occurred as stipulated in his will. But, the Department of the Interior denied his request for a National Park because there was no legal mechanism by which the government could accept land as a Park from a private landholder; a National Park requires an act of Congress. Those remaining 5,000 acres were ultimately added to the College's 25,000 acres.

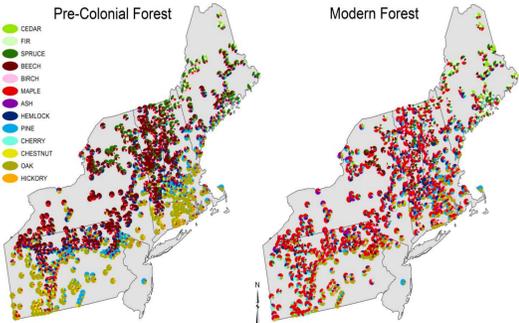
Today, however, very little remains on the Bread Loaf lands "as specimen of the original Vermont forest." The age structure of today's forests is reminiscent of second or even third growth forests, with little age diversity. Old growth forests would be comprised of trees with diverse ages — very old trees interspersed with young and middle-aged trees. Some parts of Bread Loaf also show the signs of human-made plantations, where there are several hundred acres of single-aged red pine and Norway spruce stands. Additionally, original forests surrounding Bread Loaf likely had much more red spruce than is evident today. Spruce, as a later successional species, were outcompeted by the faster growing beech, sugar maple, and red maple that dominate Bread Loaf today. Patches of old growth eastern hemlock, which were not valuable timber species, are about the extent to which old growth remains within the vicinity of the Bread Loaf Inn.

The College became the largest landholder in Vermont and was faced with making sense

of Battell's will and how to manage Battell Park. As it turns out, the College and those tasked with executing Battell's will struggled with the unfamiliar concept of leaving forests and land untouched for the purposes of biological conservation; a concept for forest preservation was nonexistent in the early 20th century.

The College appointed a committee to decide how best to manage the Bread Loaf lands. Writing a letter to the college president in the 1920s, College forester E.J. Terry described the incredible assets of old growth red spruce and hardwoods that had been preserved. He made recommendations to the college that managing the lands for their optimal value would include strategic logging to preserve its potential for multiple uses, including hiking access to the Long Trail, hunting, and fishing. Referencing the US Biological Survey report of 1917, Terry remarked biologist George Wilton Field's assessment of the Bread Loaf Forest, who thought that Bread Loaf could be the greatest hunting asset to the State of Vermont and surely "great value to the whole nation." Stocking Bread Loaf's forest with martin and its wetlands with beaver were among the management considerations. Terry even suggested that managing Bread Loaf as a premier recreation and hunting preserve could boost the prestige of the College and attract more students.

In 1929, when the Great Depression placed financial challenges on the College, the Middlebury Board of Trustees was forced to evaluate its assets and made the decision, with court permission, to log large tracts of the Bread Loaf forest and ultimately to sell most of the land off to the Forest Service. The College's Forest Hall is a reminder of the College's financial hardships during the Depression, as the lands proceeds made possible its construction. Hence, it is the only dormitory on campus not named after a person. The courts had to struggle with how to balance the legal tensions of both following the language of Battell's will while ensuring Middlebury's Board Trustees execution of their fiduciary duty. Furthermore, executing Battell's conservation vision was difficult in a time when such a philosophical idea of wilderness conservation didn't exist. In time, Battell's intent for preservation, even on the restricted lands, was somehow lost in the transfer to the Forest Service, and their management plans thus involved the heavy logging of the forest throughout the 1900s. Some of the 5,000 acres that were intended to be a National Park is today cut with ski trails, where Sugarbush Resort operates on a Forest Service permit on both Mount Ellen and Lincoln Peak. Today, though, we can also be grateful that much of this land has been allowed to rewild and, inspired by the legacy of Battell, is now conserved as federally designated Wilderness Areas — The Breadloaf Wilderness (est. 1984) to the north of Bread Loaf and the Joseph Battell Wilderness (est. 2006) to the south.



Thompson et al. (2013) show that the Northern Forest has changed in species composition since European colonization. One of those significant changes is notably less spruce and beech and more maple. Bread Loaf likely had a more mixed spruce and hardwood forest in Battell's day than is apparent today, where hardwoods dominate.

Battell's Management of the Forest

Battell likened his collection of land to art: "Some folks pay \$10,000 for a painting and hang it on the wall where their friends can see it while I buy a whole mountain for that much money and it is hung up by nature where everybody can see it and it is infinitely more handsome than any picture ever painted." He quickly became the largest land holder in Vermont.

His best friend Ezra Brainerd and Middlebury math professor Thomas C. Boyce became close personal assistants to Battell's prolific and aggressive land acquisitions, advising him on new parcels to acquire and assisting with their boundary markings, surveying, and future preservation.

Throughout his lifetime, Battell amassed nearly 35,000 acres of mountain lands, stretching as far south as Brandon Gap and as far north as Camel's Hump. He cared deeply about managing the forest for its natural beauty, where visitors at the Bread Loaf Inn could look out at thousands of acres of "not a single tree cut" — a rare sight anywhere in the Northeast at the time. Battell was emotionally troubled by a changing landscape where "timber butchers," as he called them, were cutting without, in his view, any sensible limits. Battell had a steadfast rule that no tree that could be seen from the Inn or the Silent Cliff overlook atop the Middlebury Gap could be logged. He enforced that rule aggressively. Likewise, he was disturbed about the increasing use of automobile traffic up the Middlebury Gap and would often send trees and other obstacles down over the road to create earthen barricades to limit travel to horse and buggy.

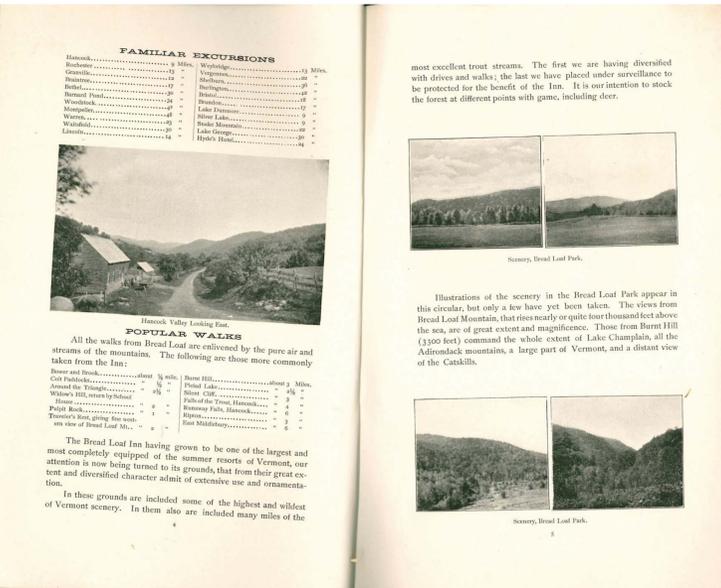
Battell and Brainerd would spend time together marking the protection boundaries of his land, going to such great lengths as climbing tall, old-growth hemlock trees in the Middlebury Gorge in East Middlebury to see if the Inn was in view of the tree canopies and building fires in the mountains above Bread Loaf and observing for the sight of smoke from the Inn.

Battell, meanwhile, allowed logging in areas out of the Inn's view. The southern side of the prominent Bread Loaf Mountain — one of the most distinct mountain features seen from the Inn — was left as a virgin forest while the northern side of Bread Loaf mountain, known by Battell as "Pope's Heaven," was used to supply the Bread Loaf campus with necessary wood products and also local lumber mills, as it was out of sight of the Inn.

Back at the Inn, Battell would tout his forest's incredible opportunities for hiking, hunting, and fishing. The Bread Loaf Inn published a series of pamphlets advertising the hiking and camping opportunities on the Long Trail, the fishing along Bread Loaf's many pristine mountain brooks, and the exceptional game that thrived on these large protected lands. Although, there were likely far less wild game such as deer and moose than there are today; these species were nearly extirpated in Vermont after settlement and clearing of land. Hence, Battell suggested the release and management of deer in Bread Loaf's forest. Battell even stocked Lake Pleiad, on what is now the Middlebury College Snow Bowl, with trout for recreational fishing and to supply the Inn's restaurant. Guests would come back to the Inn from a day of hiking, amazed at his land's grandeur, grateful for such a conservation vision.



Joseph Battell, circa 1860, when he was about 21 years old. Source: Middlebury College Communications



An excerpt from a 1895 tourist guide Battell made for his guests. Pictured here are descriptions of local hikes and destinations. Source: Middlebury College Special Collections and Archives.

History as a Context for Bread Loaf's Conservation Today

Whether it be nordic skiing through its old-growth hemlock forests by winter, appreciating the bobolinks and meadowlarks in its fields by Spring, studying literature by summer at its English School and Writers' Conferences, or admiring its forest's striking autumn burn off the side of Route 125 by fall, the natural beauty and character that define Bread Loaf inspire many different visitors and users in a multitude of ways. But we rest assured that what we value in its natural character will be here in when we next return? The history of this place helps underscore the need for deliberate measures to protect Bread Loaf, as we know it today.

The story of Bread Loaf, illuminated by the dominance of today's second and third growth forests, is deeply intertwined with human manipulation and exploitation. Like much of the surrounding Vermont landscape, it has shown resilience in its inadvertent recovery, but, without a perpetual conservation easement, could again be altered in environmentally negative ways. There was the monetization of the lands following the Great Depression. And, even before the Depression, other profit-seeking uses of the land were explored. For example, foresters such as E.J. Terry recommended turning the Bread Loaf lands into a game management area that would attract national attention of hunters and maybe even bolster the prestige of the College. A forestry school in partnership with Yale's School of Forestry was also seriously considered by the College after acquiring much of Battell's land. Managing the forest for maximizing continual logging profits was a primary objective in the early 20th century; that was the common paradigm of conservation back then. In the 1920s, assessments of the timber value of the lands and forestry recommendations for optimal harvesting of Bread Loaf's old hardwoods reveal past monetary management priorities of the forest. The spiritual and cultural value of these woods in their natural state was starkly missing from past approaches to managing Bread Loaf. Likewise, also missing after Battell's passing, was the value in protecting these lands for the greater-than-human world — the wild nature of Bread Loaf. But Middlebury has changed that trajectory.

If Bread Loaf's story tells us anything, it is that what we value at Bread Loaf today can change in different historic, political, and economic contexts, potentially putting its natural character at risk. Another financial crash like the Great Depression, for instance, could face Middlebury's Board of Trustees with a similar fiduciary obligation to sell off the land and/or develop it. Without a legally binding conservation easement, nothing would ensure Bread Loaf is protected.

Middlebury College, its Board of Trustees, and generous benefactors such as Louis Bacon '79 have changed the trajectory of Bread Loaf's future by recognizing its current values as an undeveloped, natural landscape.

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- Middlebury GIS Specialist Bill Hegman, for his help with geographic data and guidance in source material
- Middlebury College Lands Ecologist and Professor Marc Lapin for his unparalleled expertise in the ecology and natural history of Bread Loaf
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Author's note: This project was undertaken in the fall of 2017 and winter of 2018 as an Independent Study in Middlebury's Program in Environmental Studies, with the help of Marc Lapin as an advisor.