

STONEWALLS & CELLARHOLES

*A GUIDE FOR LANDOWNERS ON HISTORIC FEATURES AND
LANDSCAPES IN VERMONT'S FORESTS*



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Introduction

If you own woodland in Vermont, you may wonder if your land contains cultural resources, and if so, what limitations or opportunities these resources present. Cultural resources include historic structures and all archaeological resources. Many cultural resources are buried in the ground and the study of them is rather new. As a result, there is very little regulation of these resources on private land, and most people know little about them. Knowing more about cultural resources and their significance may broaden the management and enjoyment of your woodlands. This guide is meant to give you general information, whether you are merely curious, are interested in long-term land management, or are planning a major development. This guide describes different examples of cultural resources found in Vermont, provides advice on protecting them during forest management activities and gives references for further study.

Cultural resources are the *places* containing evidence left behind by people who once lived in an area, whether an Indian village from 1,700 years ago, a charcoal kiln from the 18th century, or the remains of a logging camp from the 1890's. We call these things "resources" because they can help us understand the past. Cultural resources contain information about where people lived, what they had, and how they behaved. Much of this information comes from the relationship between and among objects, rather than the objects themselves. For example, once an arrowhead is taken out of the ground much of its potential information has been lost. How things are collected may be more important than the object or collection itself.

There are three types of cultural resources: structures, archaeological sites, and cultural landscapes. "**Structures**" refers to buildings, bridges, industrial furnaces, and other elements of the "built environment." "**Archaeological sites**" refers to any places left behind by people, be it a trash dump, an old farmhouse location, or an Indian campsite high in the mountains. "**Cultural landscapes**" refers to large tracts of land that, as a unit, preserve the character of a time or lifestyle, including buildings, sites, and land use. Agricultural land in the rural areas of Addison County is a good example of a cultural landscape.

A useful way to think of cultural resources, prehistoric and historic, is as sheets or layers of material covering the entire state with varying thicknesses for each sheet. You can also think of each layer as

representing a particular culture or period in history. Many people mistakenly think Vermont does not have many layers of cultural history, or that there are few archaeological sites. In reality, some of these resources, especially historical ones, can be seen by looking around while walking through your property.

Do not dig to find these; this may destroy cultural resources. By looking carefully at above-ground clues, you will be pleasantly surprised at how much you can learn about your land's history.



A Walk Through The Woods

When people buy woodland, they obtain not only the present woodlot, but also what has gone on in that woodlot for decades and centuries. A question many woodland owners have is: “*What am I likely to see when I take a walk through my woodland? What things of the past might I see?*” This is a large subject area. To narrow it down we’ll discuss some situations and sites found on forest properties. They are the most common cultural resources you might encounter.

Stone walls are found on a majority of Vermont properties. Prior treatment of land as either pasture or cultivated field was widespread and occurred on most woodlots at some time in the past two centuries. Logging also has taken place, certainly when the land was first cleared, and later, as agricultural uses ceased and open land reverted to woods. Foundations of houses, barns, outbuildings, or sugarhouses, and water wells are not uncommon. Abandoned town roads are often found. Other roads, such as old logging roads and farm roads, run through many Vermont properties. Roads, stone walls, and foundations are the most common cultural resources found.

Other resources are occasionally found. They include: lime kilns, charcoal kilns, mill dams, factory foundations, cemeteries, remnants of horse-drawn farming equipment, stage coach roads, and hollow logs used for culverts or waterpipes. On the ground’s surface, within historic site areas, you may see artifacts such as pottery shards, pieces of glass, nails, dishes, horseshoes and other ironware.

To provide you with an idea of potential cultural resources in the forest setting, we have assembled the following resource descriptions and pictures. The pictures are based upon the most common occurrences listed above. Although we do not propose to document the obscure cultural resources or to present complete coverage, we hope this will whet your appetite to learn more about the cultural resources on your land.

1. Foundations of Structures and Sites of Former Buildings

These resources can be among the most noticeable, even when building walls are gone. Often, the outline of the foundation, and the type of surrounding trees, plants and land features provide clues to the past building use. Sometimes, rectangular holes in the ground are the only clues to indicate where buildings once stood.

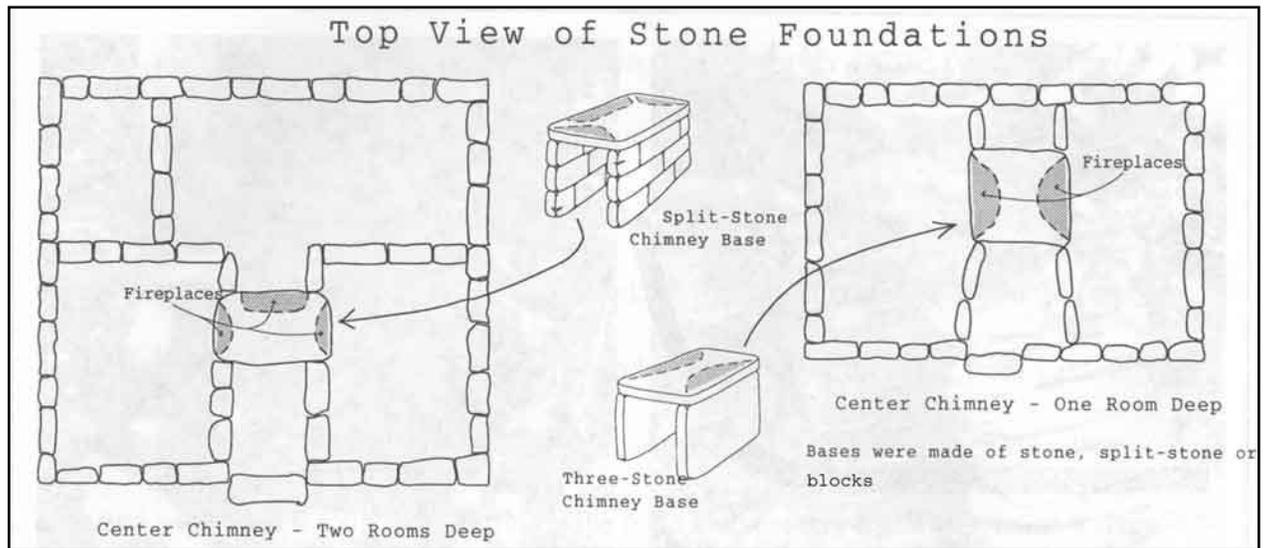
A. House foundations.

Early cabins were placed on the ground with puncheon floors without a foundation or cellar. Houses built in the 18th and 19th centuries had cellars. You will frequently find the ‘cellar hole,’ an excavated pit with foundation walls going 4 to 6 feet into the ground. Even after a century or more, some of these walls still stand straight and erect. Some show the bulges and distortion of decades of frost heaves, the pressure of soils, and the tugging of roots. Houses built in the 18th and 19th centuries were not firmly secured, but merely rested upon their stone foundations. Houses were rarely simply abandoned and left to decay. They were either moved elsewhere or dismantled for re-use of the materials. The remnants you find today in your woodland are the stone work, almost always represented by the foundation.



Cellar-hole-foundation—Chester

The foundation walls give you a good picture of the size and shape of the former house or building. Before 1830, most rural houses were built in a few variations of the “end-chimney or center-chimney house.” Two distinct types of center-chimney houses were developed, a “one-room deep” house and a “two-room deep” house, like the commonly labeled “Cape” house. One-room deep houses are recognized by their narrow width, usually 15 to 20 feet. Two-room deep houses are significantly wider, usually 25 to 35 feet. The houses could be modified into dwellings with one or more stories and rooms on one, two, or three sides of the fireplace (see



the book, *Big House, Little House, Back House, Barn* by Thomas Hubka, University Press of New England, 1984 for descriptions, pictures and diagrams of houses of the 19th century). You can measure the dimensions of the outer walls of the foundation to see whether it was a one- or two-room deep house. Often, the structure was larger than the foundation, due to kitchens, ells, porches, and other additions which sat on sills, footings or low stonewalls. Signs of these additions may be gone now.

Frequently, in the cellar portion of the foundation, you'll see massive blocks of stonework. This is the arch that supported the chimney structure. The most common form of chimney support was two walls of granite stones built up and topped horizontally by long stones on which the chimney was built. This structure has the look of a fireplace, but no hole at the top for the smoke; instead it has a solid horizontal topping called the *split stone chimney arch*. An even more massive block of stonework, perhaps with arches on several sides, represents the chimney support in a house with several fireplaces on the central chimney (the rooms were built around it).



Left, Example of split arch chimney foundation—Chester; Right, Stone-lined well

Other stonework found around the house include steps. Stone steps, often large, flat stones, may lead down into the cellar. Often you find stone steps leading to the top of the foundation from the outside of the foundation wall; these were the steps up to the front door or side door. (See photo on page 49.)

Around the house, quite often some distance away from the house, is the well. The well may be as deep as 20 to 30 feet, but most were shallower. The round, stone-lined structure kept the walls of the well from caving in. The hand pump in the kitchen sink did not become common until after the Civil War. Piped-in water became common in the latter quarter of the 19th century when lead pipes became commercially available. Wooden pipelines were tried earlier, but never proved satisfactory. You may still find some remnants of wooden pipeline, made from hollowed-out logs, nested end-to-end. The well was the main water source before these changes; you'll find wells near old foundations in many woodlands.

Most early settlers did not bother with amenities such as planting special trees around the house. As the house became part of a settlement or as farmers became more affluent, plantings and landscaping gained popularity.

The so-called "front yard" didn't become widespread until after 1820. You'll find evidence of the front yard around many foundations. One indicator is remnant shrubs and flowers. The shrubs include lilacs, which might have been planted in clumps on each side of the front door, or in a line to form a hedge. By some foundations, you find the front lawn trees, often two sugar maples at either end of the front yard. Other front yard plantings include roses, day lilies, morning glories, hydrangeas and periwinkle. Occasionally you will also find a stone wall foundation defining the front lawn, where the lawn was on a steep bank and had to be built up to make it level and usable. Later in the 19th century, more exotic trees were planted near the house and in the front yard; these included black locust, white poplar, and Lombardy poplar. Old specimens are still found around some cellar holes.



Black locust and sumac near an old foundation—Monkton

B. Barn foundations.

Barn foundations are similar to those of houses except the stone foundation was wider, taller and more substantial (builders used boulders, large stones and slabs of granite).

Barns built before 1800 used the "English" style. These had the barn door on the side of the building, opening onto a central threshing room. There was a bay on either side of this

central room; these barns had no cellar. Post-1850 barns had the main doors on the gable ends. The central passageway went the length of these barns so wagons could be driven through either door. Frequently these barns were built with a cellar where manure or crops could be stored. Barns were often built on split levels, with a ramp leading from a roadway to the upper level. The ramps were buttressed with stone. You will find these ramps quite often; they give you an indication of where the barn door was located; either on the broad side of the barn or the gable ends. Another feature you may find in a barn with a cellar. foundation are steps. These steps lead from the cellar level up to the next floor. The stones used in these steps are much larger and more massive than the steps in a house foundation.

While the foundation is a good indicator of where the barn was, plants are a good indicator of where the barnyard or dump was located. You might find thistles, burdock and nettles growing in the field (or former field). These plant species require rich soils; manure, hay and straw dump sites certainly produce richer soils. Sudden changes in the ground topography, such as a large bump, may also indicate a dump site of manure and straw.

C. Outbuildings and other foundations.

The farm may have had numerous outbuildings including some of the following: pigsties, chicken houses, corn cribs (especially after the Civil War when corn production expanded), root cellar, sugarhouse, icehouse, and pumphouse. During the late 18th century and early 19th century, these buildings were usually separate; later they became add-ons to the barn and house. Stone foundations are visible remains of these buildings; smaller in size than those for houses or barns.

You may find other foundations not directly associated with farmsteads; old factory or mill foundations, for example.

2. Walls and Fences.

The first fences used by early settlers were not stone walls, but fences made of wood. A row of stumps and large log timbers stacked atop each other in zigzag fashion were the first fences. Wood was plentiful and it had to be gotten rid of to make way for fields and pastures. Chestnut and cedar

lasted a long time but they were not plentiful in all of New England. Frequently, oak was used and these fences had to be replaced every seven years or so. As St. John de Crevecoeur noted, “Our present modes of making fences are very bad...they decay so fast, they are so subject to being hove up by the frost, it is inconceivable the cost and care which a large farm requires in that single article,” (*Sketches of Eighteenth-Century America* cited on page 120 of *Changes in the Land*, William Cronon). When the land began to be plowed for fields, and the plow heaved up rocks, the problem of permanent fences was solved and Vermont and New England’s famed stone walls were begun.

A. The single thickness wall.

This is the most common wall found on woodland properties. Walls vary in height and thickness from a couple of feet wide to several feet wide, and from three to five feet tall. Where the ground became steep, the wall might have been blended into ledge. Where the stone wall was built over a ledge, it was made shorter until the ledge could take over the stone wall duties. The wall picked up again at the base of the ledge. Some walls that were built down steep inclines had long, flat stones placed diagonally in the wall to serve as a brace for the stones behind it. How were the walls kept so straight? Even today you can follow many of the walls with a compass and find that they hardly waver from the line for hundreds and thousands of feet. Some of the walls followed survey lines (range line and section lines), but many seem to be the result of a farmer’s ability to line up a wall with just a starting point and an ending point. A good wall was a source of pride to its builders; some walls show a statement of style or status that goes well beyond just the functional needs. To this day, experts can tell if different walls had the same builder.

Walls were built to keep the owner’s animals in or the neighboring owner’s animals out. With the invention of barbed wire, stone walls were not displaced. The barbed wire fence was usually attached to trees along the wall, adding to its height.

B. The double thickness wall with infillings.

These walls may have been built in particularly stony fields or in a field in which crops were cultivated. Two parallel stone walls were built, with a gap left in the middle. This gap was

filled in with smaller stones. One wall probably received all the stones from both of the fields it divided.



Left, Stone wall; Right, Stone wall with infill—both from Shrewsbury.

C. Other uses of stone walls.

The ‘cow path’ walls formed a lane or passageway between the barnyard and the pasture. The cows were driven down this path, and the stone walls kept them out of the fields and mowings, until they reached the pasture.

Stone walls forming small, rectangular or square pens, may be town “pounds” for stray animals or more commonly, barnyard walls, night pen walls, or garden walls. The walled-in area around the barn was where the animals could be separated according to species (horses, cattle) or age (calves, yearlings, heifers). The night pen was a walled area where livestock could be brought close to the house at night for protection against predators. The garden was usually located near the house and was walled to keep animals out of the vegetables, herbs, and flowers.



Animal pen-Chester

3. Town Roads and Other Roads

The first settlers carved a house and farm out of the woods. As more and more people settled there, the area might grow into a town. The main travel way between the farms and the town usually became a town road. A neighborhood supported a road district and a school district. The road district was a cooperative group of farmers who maintained the local road. Farmers were assessed a road tax, which was usually paid by giving days of labor on the local roads. It is not usually possible to distinguish different road types in the field. The following describes the most common ones found in Vermont.

A. Old town roads.

Old town roads are found on many woodlands. They are distinguished from a farmstead access road by evidence of maintenance. Town roads frequently have stone wall buttresses. This is a wall of stone laid up on the downhill side of the road to level the road, and stabilize it to keep it from sliding down the hill. Town roads also may have stone culverts. These might be as simple as two stone walls being built up as the abutments, with large stones placed across the top to form the road surface. Other stone culverts were elaborate walls from four to eight feet high. Long stones were placed horizontally across the top of the wall like the stringers on a bridge.

Large flat stones were placed across the stringers to form the driving surface of the road. Town roads frequently had ditches to direct water runoff to the culverts.

Since stones were removed to smooth the road surface and place culverts, stone walls may line old town roads for miles, even in areas where the walls did not function as a field enclosure. All of these improvements required continual maintenance. When the location of a town road was changed or a road was abandoned, the road condition declined. Erosion caused road surfaces to gradually sink lower and lower. In many places, the old town road is now four to six feet lower than the bottom of the stone wall which was once the grade line of the road surface. The road may now resemble a gulley or old streambed due to years of erosion.

Since the town road linked up the farms and house sites, wherever you find a foundation you will probably find some evidence of an old road. Many old town roads look abandoned, but are actually still legal town rights-of-way, having never gone through the now formal process of being discontinued (“thrown up”) or changed to a “legal trail.”



Left, Stone culvert; Right, Old road–Jamaica

B. Stagecoach roads.

Some woodlands have evidence of through roads called “stagecoach roads”. These roads pre-date the town roads and rarely have the improvements of a town road. They may be identified on old maps or surveys as old stagecoach roads. They look like logging roads but there may be abandoned farmsteads, taverns, and cemeteries along such road remains. Another indication of former use might be a house on the property or in the vicinity identified as a former stagecoach inn.

C. Farm roads.

Farm roads connected up the various activities of the farm. They may be as simple as set of tracks out to the mowing field, or the road between the walls of the fields that connect the farm and house with the woodlot or the back pasture. These roads probably have grown in over the years and may only be visible now as lines of smaller trees in a road-width band (about 8 to 10 feet wide) winding through the surrounding forestland.

The cultural resources discussed in the preceding sections are the most common ones found in Vermont’s woodlands. They are by no means the only ones, as each woodland and each site is unique. Following is a short list of other indicators of cultural resources you may find on your land.

4. Evidence of past land uses: farming and logging.

Just over a century ago, around 80% of Vermont was open land; today around 80% of the state is covered by forest. To keep all that land open, cultivation and pasturing were intense and some evidence still exists to indicate these practices. On the farm of a century ago, the following advice was given as to how to lay out the fields: “The fields closest to the house and barn should be tilled and cultivated. To save labor in hauling manure and prevent loss in getting in the crops...The mowing lots should be next, if the soil permits; as these must be dunged and their crops carted. The lots for pasturage should be next and the wood lots furthest of all the lots from the house.” (Samuel Dean writing in 1791, quoted by Hubka, 1984).

Our present landscape has features that reflect this history.

A. **Fields.**

Stone walls around formerly cultivated fields usually have more cobbles and small stones than do stone walls found around former pastureland. No one cleared their pasture of these small stones, but for easier plowing and better cultivation, cobbles were cleared from cultivated fields and gardens. If the stones were not put in the wall, often they were placed in piles out in the field. This got the stones out of the way for cultivation and saved time and peoples' backs if the rocks were not lugged to the wall. Remember that Vermont's stone walls did not appear overnight, but are the effort of three or four generations of men and women, boys and girls.

Another indication that a field was cultivated is the "dead furrow." As the plow crossed and recrossed a field, each furrow made by the plow would overlap the previous furrow. When the field was harrowed and dragged to make it smooth, all the furrows would disappear except for the last one at the end of the field. Here at the transition between the plowed field and the unplowed field is a "step up" where the last furrow was made. The unplowed ground became higher than the plowed field. This last furrow is still visible in some fields and woodlots decades after the last plowing and exclusive use as a pasture or woodland.

Sometimes a local name indicates how the fields were formerly used: "Potato Hill" in Chester was an area where potatoes were grown. In this formerly cultivated field are found the stone piles with small stones and cobbles.



Stone pile in a former potato field—Chester

B. Pastures.

Most of Vermont was pastured. As the advice in 1791 from Mr. Dean indicated, these lots were further away from the house and did not get loads of manure or careful stone removal. Stone walls around the pastured areas were built up with large stones. The objective of stone walls was to keep the animals in place and away from crops. The stone piles found in the pasture are often anchored by stones too large to be carried to the wall, or left because the wall was too far away, or perhaps because the farmers had more than enough stones to build the wall. Early field clearing may have left the rockiest areas for pasture to avoid continual clearing of endless rocks.

In a pasture where the stone wall came to a ledge, the farmer let the ledge become the fence; the stone wall picked up again where the ledge was no longer suitable for an animal barrier. You can identify an area as former pastureland if most of the rocks were left where they “grew.” The pastures were the poorest, steepest, and rockiest land. Your woodland that is growing on the steep part of the hill or on top of the ridge was probably former pastureland. The stone walls that march up the steep hillsides and go over rock ledge indicate just about all the terrain was pastured.

C. Apple orchards.

Most farms also had an apple orchard. Apples were the main fruit that could be grown in Vermont and were valued because they would keep through most of the winter. Early farmers usually had a small family orchard in close proximity to the house, and some apple trees were usually planted near the “dooryard.” Farther away from the house, usually on the side of a hill and out of the valley bottom where the cold air and frosts settled, was the larger apple orchard. You still find these apple orchards in the woods today. Remnants of apple trees, frequently still found in an even row pattern, are present in many woodlots. The trees are now overtopped by white pines, aspens, or red maples, the trees that come to occupy former open areas, but many of the old apple trees are still alive. Quite often these trees can be brought back into fruit production by pruning them after removing the trees shading them. Some of the old varieties can be perpetuated and will also produce food for wildlife.



Left, Overtopped apple tree; Right, "Monarch Maples" in an old sugarbush

D. Woodlots and sugarbushes.

Beyond the apple orchard and sometimes beyond the pasture or as part of the pasture, is found the farm's woodlot and sugarbush. The woodlot provided firewood and logs. Fireplaces use a great deal of wood. Before the closed cast iron stove of the Pennsylvania Germans was used in New England, as much as 40 cords of wood per year were consumed to cook and heat all the rooms in the house.

An indication that an area has been perpetually used as a woodlot is the absence of walls to keep the farm animals from straying. The presence of old stumps with smooth cut tops indicates that the woodlot was cut off in the recent past. Farmers frequently pastured cows in their woodlot; the animals trampled or ate down the hardwood seedlings. You may find stumps mixed in with larger trees, as well as a lack of hardwood brush in the understory.

The sugarbush or sugar lot is not as hard to detect as the former woodlot. Some areas have remnants of a sugarhouse, such as the foundation of the building or the bricks which held

up the arch. Frequently, pieces of old buckets or the iron doors of the arch, where the wood was loaded, can still be found. Sometimes charcoal can be found in the earth to mark the spot of the former arch. Occasionally the pans in which the sap was boiled down are also seen in the woods. A rare find is old metal pipeline, the predecessor of the current plastic pipeline. A sure indication of the old sugar lot is the “monarch” sugar maples still holding out on the site. These large grand trees are frequently found near the top of the ridge or hill, just beyond a grove of young sugar maples (which have probably seeded in from the old trees).

E. Logging.

Vermont’s woods were cut and burned to make clearings soon after the arrival of the European settlers. Our forest has been cut off at least twice, the first time to make way for agricultural land. This was finished just after the Civil War.

Agriculture declined, so the forest grew back. Much of it was cut again; this was mostly completed by the 1920's and 1930's. This cutting was not as extensive as the initial clearing. Logging has been going on in the “third forest” for some time now.

Stumps are the irrefutable proof that logging has been done on the land in the past. The stumps that are 40 to 50 years old are now rounded-topped mounds, or jagged remnants. In the case of spruce and hemlock which have hard, durable branches, branch stubs are still sticking out of the jagged stump. Some of these stump remnants of 50 years ago may have some smooth tops still left, because they were sawn with a crosscut saw. A tree that falls down naturally will have a jagged, broken-off stump, usually higher than the 12 to 14 inches from the ground which is the standard height of the sawn tree stump. Stumps cut as recently as 25 years ago will be more than half intact. Those from trees cut 5 to 10 years ago will be mostly intact, with fewer signs of decay.

Other indications that logging has been done on the land are the old “skid roads.” Frequently you can tell these old trails by the evenly spaced sets of ruts, which might look like parallel ripples instead of deep grooves. Often the trees along the skid trail have old wounds at their bases, facing the road where logs bumped the tree as they were skidded by it. Early wounds were made during horse logging, then by bulldozer logging equipment, and now with skidders or



Left, Remains of a sugarhouse (note buckets); Right, cut stump, 40+ years old

forwarders. A tree will grow new wood around a wound. The thickness of the callus tissue that grows over the wound is an indication of how long ago the logging injury occurred.

Other indications of past logging activity include structures such as loading ramps and logging camps. Ramps ("headers") were made where the logs were stacked or earth was built up to form a ramp up which logs could be rolled and then dropped down into a truck or wagon. The ramp may also take the form of a bluff at the end of which an opening was carved; a wagon or truck could be driven into that area for loading. Logs were then pushed or skidded out onto the bluff and down onto the truck or wagon.

Logging camps were usually just shacks in the woods built upon the ground with no foundation; these have not survived the years. You may find some iron cable, or skidding rope as it was called, or some evidence of where the dump and cook shack might have been (such as old stove pipes, tin cans or bottles). But usually, to learn if a logging camp was on your land, you need to research the history of your land. Logging camps were most prevalent in the northern part of the state in the spruce and fir areas owned by timber or paper companies.

Farming and logging were certainly the most common land use practices in the past, and most land in Vermont will show evidence of both activities.

5. Some Other Cultural Resources

A. Cemeteries.

Cemeteries are frequently found in the Vermont woods. They are sometimes maintained by the town, and a road usually provides access, even to the small family cemetery. An example of a woods cemetery is the small stone cemetery in the town of Windham (see photo below). The cemetery has a stone wall around it, bounding an area about 20 by 20 feet. A wooden picket gate provides entry into the cemetery.

Only two stones are present. One reads: *Dea. John Woodburn, Died,*

Jan 11, 1851, Age 73 years. The other stone reads: *Mercy, Wife of Dea. John Woodburn, Died, Jan 14, 1851, Age 69 years.* The local legend is that the deacon and his wife took in an itinerant who happened to have a contagious, infectious disease and that they were also infected and died. They were buried in their own cemetery, away from town because of the fear of contagion. A cemetery is a wonderful source of information about a property. It tells which families lived in the area, and often is your best source for tracing down who lived on your land. It is also a source for tracing living relatives of the former residents.



Left, Woodburn gravesite in Windham; Right, Old cemetery–Mendon

B. Lime kilns, charcoal kilns and blast furnaces.

Lime kilns were common in the early to mid-19th century. A lime kiln is a circular structure made of stones and/or bricks. Limestone was placed in the top of the kiln, a fire was built under it, and the limestone was heated until it turned to powder. The powdered lime fell to the bottom of the kiln and was removed to a wagon or cart. Its primary use was to fertilize the fields or for mortar mix. The odd structure you may find on your woodland might be the remnants of a lime kiln. It usually will be surrounded by white limestone remains (see *200 Years of Soot, Sweat and Toil*, by Vic Rolando, Archaeological Society of Vermont, 1992, for a complete description of the charcoal, limestone and iron industries in Vermont).

The charcoal kiln was usually a circular structure, sometimes with a base of brick or stone, but often just a circular depression cut out of a bank. In early charcoal production, logs were piled up in a conical shape and covered with dirt to keep the pile almost airtight. Vents were placed in the structure to allow enough oxygen to support minimal combustion. The wood was slowly burned until it became charcoal. Later, kilns were made of brick or stone. If your woodland supported a kiln at one time, you might not see indications of the stone or brick structure, but you might find the charcoal; due to its slow decay, the charcoal stays intact for centuries. Blast furnaces were used to produce iron. If you have a blast furnace on your



Left, Lime kiln fire opening (note charcoal)–Weathersfield; Right, Top of blast furnace–Dorset

property, you will find pieces of slag, the molten iron waste. Furnace remains are rare, however, and are almost always associated with a source of water, which was piped or channeled into the site.

C. Dams.

Along streams, you may find remains of “diversion dams.” These were placed in a stream to divert water into a channel so that it would flow over a waterwheel. The waterwheel supplied power for a sawmill, gristmill, or maybe a cider mill. Some properties have evidence of large dams and millponds which supplied energy for commercial grain mills or large sawmills

Artifacts associated with mills may still be present such as grindstones, the large circular stones that were turned to pulverize grain to convert it to flour. The most durable parts of a mill are stone dams and causeways; these are the remnants you’ll likely find. If the dams were made of wood cribbing and earth, these are probably gone; years of spring floods have washed out or rotted out these structures.



Remains of a sawmill–Bartonsville

D. Water pipes.

Water pipes were logs or pieces of wood (or occasionally soapstone), which were bored or augered, and used to carry water from the spring or well to the house or barn. Most wooden pipes have rotted, but occasionally a preserved one is found in a swampy area where the conditions are not favorable for oxygen-dependent decay-causing bacteria. Sometimes a water line can be found leading from the well to the house or barn. This is usually marked by a long depression in the ground still visible even after the passage of decades or even a century or more.

E. Stone posts.

Stone posts are exactly what the name implies; small upright stone slabs. Sometimes fasteners were placed in the post through which wooden or iron poles would be placed to bar a gateway. Stone posts were often found near the barn. They served as the gate posts for the gate which was used for letting the cattle out into the cow path. Stone posts with iron rings were used for hitching animals.



Left, Remains of a wooden pipe; Right, Stone post with drilled hole.

F. Boundary lines and boundary marking.

“Colonial claims to ownership of land in New England had two potential sources; purchases from Indians or by grants of the English Crown. The latter tended quickly to absorb the former” (William Cronon, *Changes in the Land*, p. 69). In Vermont, towns were usually established by grants from the Crown through colonial governors. Early real estate speculators later sold parcels to individuals to settle and farm. With the advent of private ownership of land came the need to mark or define the boundaries of ownership.

The boundary lines of a property were first described by topographic features: “The mowing field between the two brooks.” Land ownership was described based on whose lot it adjoined; “Bounded on the north by the Hall Lot.” Two and a half centuries later, surveyors may still be searching for the Hall Lot boundary lines. Surveying with a compass by following bearings and marking measured distances along the line was the method used on the ground to leave legal evidence of these descriptions. The marked boundary lines are what you are likely to find in your woods. Ax blazing of trees was the most common method used to mark the boundary line. A tree located along the line was hacked at breast height, fore and aft, facing the respective corners of that property line. You may find an oval-shaped scar on a boundary line tree with just a narrow vertical gap still visible because the tree has grown around the blaze. Look closely at that slit and you might see old ax hack marks. The hack marks distinguish the boundary line blaze from an ordinary tree wound. Stone walls or old barbed wire imbedded in trees may also indicate boundaries; landowners wanted to keep their livestock “to home,” and the fences or walls served both as boundary marker and livestock control.

Trees marking the corner of a property are blazed on four sides, with from one to three vertical sets of blazes, one above the other. Sometimes corner trees are scribed with the number or names of adjacent lots. “Witness trees” were often marked at boundary corners, so as to have more than one tree indicating a corner’s location.

Markers other than trees were also used to indicate corners. Triangular or cylindrical rocks were sometimes set in the ground. A cairn of stones was also used to mark corners (rocks were piled in a pyramid or beehive shape). Incidentally, stone cairns were also used by early

explorers and settlers to mark sentry positions. In cedar country, cedar posts were set in a cairn of stones to mark the corner, but usually whatever wood was available was used to create “stake and stones,” later “post and stones” corner markers.

One Vermont surveyor told of following a stone wall boundary line until it disappeared into a beaver pond. Another stone wall approached at a right angle; it disappeared into the pond, too. The surveyor got a canoe and paddled out to where he could see the walls meeting underwater. Clearly visible was a cedar post embedded in a cairn of stones: the property corner.

Today, you may find the ax blaze lines replaced with paint. You will often find the cedar posts replaced with metal rods. The triangular stone corner marker may be half painted. Look closely on old boundary lines, and you might still find evidence of the original line markings.



Left, Property boundary corner marker; Right, Fence wire imbedded in trees can indicate boundary evidence.

G. Special plantings.

Sometimes two evergreens, such as white cedar in northern Vermont, or spruce in the southern part of the state, were planted at the entryway to a cemetery. Evergreen trees were thought to represent ‘eternity’ because they were always green, always appeared to be living. Sometimes “marriage trees” are found, a pair of trees that were planted outside the married couple’s house. The trees were to grow along with the marriage. These trees were often sugar

maples. They were sometimes called “coffin trees,” as each one might be cut upon the death of “its” person, and made into a coffin.

You frequently find sumac around old cellarholes and around the dooryard. A sunlight-loving species, sumac was able to thrive after the farmstead fell into disuse. When farmers became more wealthy and began having more formal front yards, the yard off the kitchen became the dooryard, or the workyard. Here equipment was repaired, and sheep might be sheared. The soil in the dooryard took a pounding. A layer of hardpan, or almost impenetrable soil, formed here. Sumac is frequently found growing now in the former dooryard because it can grow on these poor soils.

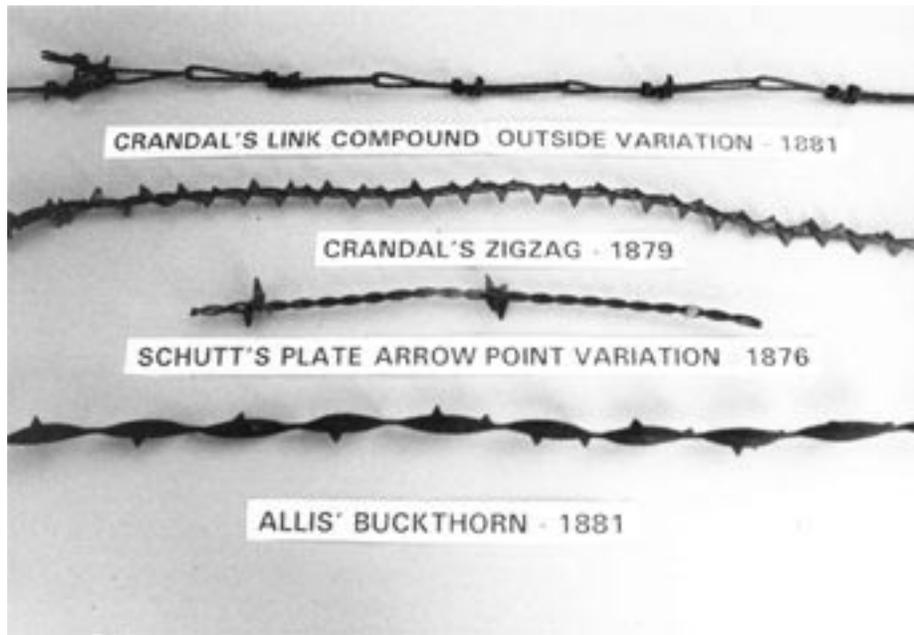
Tansy is a very aromatic herb, and was planted around many dooryards. The garbage was chucked out the back door, and tansy helped mask the smell of decaying vegetables and other foodstuffs. Tansy also is a hornet and yellow jacket repellent. Other herbs and many flowers may still be found around some old foundations. Daylilies and lilacs are two of the most common plant indicators of past homesteads.

H. Quarries.

Quarries from which slate, granite or soapstone were taken in the past may be found in some woodlands. Drill holes are present in the rock walls. Quarried stone may also be found in some house foundations. These stones can be identified by the drill marks and by the square edges of the corners (see photo on page 37).

I. Wire fences.

Barbed wire became common in Vermont in the late 19th century. Depending on the type of wire, you can research when it was used. A good source for identifying wire is Robert T. Clifton’s book, *Barbs, Prongs, Points, and Stickers, A Complete and Illustrated Catalogue of Antique Barbed Wire* (University of Oklahoma Press, Norman, 1973). Another way to date the use of wire is to look at the growth of the tree that appears to have occurred after attachment of the wire.



Barbed wire from Vermont woodlots (collection of Jim Philbrook, Rutland County Forester).

J. Prehistoric cultural resources.

These are seldom visible to the untrained observer. They are most likely to be found along lakeshores, river valleys and other water sources, although they can be anywhere. Buffer zones called for in *Acceptable Management Practices for Maintaining Water Quality* and the Wetland Rules help to protect some of these resources. The primary information value of prehistoric sites is contained in the spatial relationship between artifacts, features, and their environmental context, rather than in the artifacts and features themselves. These sites are easily disturbed and impossible to reconstruct. Like historic sites, prehistoric resources are “pollutable” and non-renewable. A thorough discussion of these resources is beyond the scope of this guide. Further information about them can be found in the bibliography and from the Division for Historic Preservation.

Logging and Cultural Resources

The best protection for cultural resources during logging is to avoid disturbing them. This can be done through designation of a special management area. Generally, the bigger the area, the better the chances that all parts of the cultural resource are being protected. The more that is known about the particular resource, the easier it is to determine an appropriately-sized area. A special management area should include the resource to be protected and a buffer zone around it. The management area can be one in which all disturbances are prohibited, or where limited activities are allowed. Of course, the easiest special management area to administer is one in which all activities are prohibited.

To understand why a large area of protection might be appropriate, try to visualize an average 19th or early 20th century farm. What is left today are the *visible* remains of that farm, the cellar hole being the most noticeable. However, most of the farm's important archaeological deposits are found outside the cellar hole. A typical farm had a well, dumps or refuse pits, outbuildings, paths, drives, roadways, a vegetable garden, and landscape plantings such as trees, shrubs, cedar hedges, and day lilies. Other features may include animal pounds or grave sites for family members. A search for these features during an initial visit to the site enables mapping and associated management design early in the project.

To truly protect cultural resources, think about the function and original characteristics of that site. Plan a management area size and shape that can protect the integrity of the entire site. If incursions into the area must be made, keep them to a minimum by using existing access corridors. It is your land, and your decision; what follows are suggestions for your consideration. Since some of these suggestions may impact your timber sale value, it is important to work out a suitable balance between deriving an income and having your land use reflect your values and management desires. Select foresters and loggers who are sensitive to your needs.

Recommended Practices to Protect Cultural Resources During Logging

- Work with a forester who is sensitive to cultural resources and their protection. Make your concerns and objectives for cultural resources part of your overall land management plan.
- Have a written contract that clearly spells out cultural resource protection measures *before* any logging or other vegetation alteration is begun.
- When the property is being evaluated or mapped for timber reconnaissance or inventory, include cultural resource locations and issues (e.g. stone walls, cellar holes, stone pens, wells, cultivated plants). Damage to these resources is rarely malicious or intentional; most often it is a result of operators not knowing about site locations or their value.
- If archaeologically sensitive areas are known or discernable, include them in your list of cultural resource locations.
- Decide if you want to designate protective “not-to-be-disturbed” buffer zones around cultural resources. You and your forester should decide on and designate a “special management area” around the resource. Flag and map the site and buffer.
- Flag plantings, trees, or groups of trees that have cultural resource value, to protect them during harvesting or road building activities.
- Determine, with your forester, whether special equipment is needed; this may affect your choice of contractors.
- Show the contractor and the crew locations of cultural resources within cutting areas. Review protection procedures with *all* who will work on the site before harvesting begins.
- If possible, conduct skidding operations around cultural resources when the ground is frozen and covered with snow. If this isn’t feasible, avoid soil disturbance within the protective buffer. Place landings and skid trails outside buffer areas.

- Mark and flag vulnerable cultural resources before logging begins. This will help prevent accidental destruction of walls, cellar holes, and other surface features.
- Designate skid trails on a map and with flagging on the ground.
- Decide with your forester and contractor if a restricted log length is needed to protect specific areas, or just reserve the right to restrict log lengths.
- Decide with your forester and contractor whether directional felling of trees is needed for specific areas.
- If a tree must be removed even if it is in a special management area, consider using extra protective measures. One is to require contractors to winch logs out of buffer areas to avoid ground disturbance. Horses, tractors, or pick-ups can be used rather than skidders; this is particularly appropriate for recovering firewood that might otherwise be left on the site. Keep in mind that operator skill and machinery capability, *not* equipment size, are the keys to resource protection! You can require additional measures, such as using fabric mats to cover a special feature (such as a dump site) to protect it from compaction by equipment or logs. Consider these in special cases, on the advice of your forester and the Division for Historic Preservation.
- Avoid placing debris, slash, or garbage in cellar holes, quarry sites or depressions associated with cultural resources.
- Place landings, yards, skid trails and access roads outside special management areas.
- Use pre-existing skid trails, and roads wherever possible, unless the roads themselves are resources you wish to designate as special management areas.
- Avoid skidding over stone-faced bridges or culverts whenever possible. Ensure the contractor is aware of such features. If existing roads and bridges are to be used, exercise care to avoid damage to structures from impacts or erosion. Where crossings are necessary, you can use a deck to cover a stone culvert in special circumstances. This may become a safety issue, so work with your forester and contractor if you decide to require protective decks.

- If stone walls must be crossed, use existing openings (“barways”) if possible. Limit number of crossings, and cut out only the minimum width needed. Make clean cuts and store the removed stone next to the wall for possible future restoration.
- Do not pile or burn slash within the protective buffer zones. Require loggers to pull unmerchantable wood, slash and stumps outside the buffer to bury or burn.
- If streams in prehistoric sensitive areas must be crossed, disturb the minimum amount of land possible. Remember that *Acceptable Management Practices for Maintaining Water Quality* must **always** be followed!
- If you think a cultural resource will be destroyed, you may wish to photograph it first. In fact, documenting the cultural resources on your property can be a facinating activity regardless of your land management intentions. Please call the Division for Historic Preservation if you have questions or want information on documentation methods.

APPENDIX A

BIBLIOGRAPHY FOR VERMONT CULTURAL RESOURCES GUIDE FOR FOREST OWNERS

General Vermont History, Archaeology, and References

- Allen, Ira. *The Natural and Political History of the State of Vermont*. Originally published in London in 1798 by J. W. Myers; reprinted in 1969 by Charles E. Tuttle Co., Inc., Rutland, Vermont. This book is of unique interest because it consists of a first-hand account of historical events in which the author, youngest brother of Ethan Allen, played a prominent role.
- Bassett, T. D. Seymour (ed.), *Outsiders Inside Vermont: Travelers' Tales Over 358 Years*. An anthology compiled and edited by T. D. Seymour Bassett. The Stephen Greene Press, Brattleboro, VT, 1967. Includes observations of such travelers as Champlain, Ira and Ethan Allen, Luigi Castiglioni, Horace Greeley, Nathaniel Hawthorne, Thoreau, Henry James, Kipling, and Allistair Cooke, among others.
- Bogart, Walter Thompson. *The Vermont Lease Lands*. Vermont Historical Society, Montpelier, Vermont, 1950. This authoritative study is concerned with land grants in the State of Vermont, popularly known as the "lease lands." These grants are for "public, pious and charitable use." There are few towns in the state which do not contain some of the lands and in each instance, present some special historical peculiarity. Includes definition of glebe lands and gores, historical background, jurisdiction, legislation, and administration of lease lands.
- Child, Hamilton. *County Gazetteer and Directory of Windham County 1724-1884*. Compiled and published by Hamilton Child, Syracuse, NY, Journal Office, July, 1884. Available at the Town Clerk's Office in South Londonderry, and many other libraries.
- Crockett, Walter Hill. *History of Vermont*. The Century History Co., Inc., NY., 1921. A comprehensive study of Vermont from geologic times through World War I in four volumes.
- Dexter, Warren W. and Barbara C. Hanson. *Vermont: Wilderness to Statehood 1748-1791*. Published by Academy Books, Rutland, VT, 1989. Primarily a photographic essay of information gleaned from gravestones, meeting houses, churches, and markers still in existence.
- Duffy, John. *Vermont: An Illustrated History*. Picture research by Faith Learned Pepe, 1985, Windsor Publications, Inc. Contains chapters on The Abenakis - "People of the Dawn" or "the Ordinary People", New France to New England, Revolution, Republic and Statehood, Boom Times, Fifty Years of Social Dynamism, and the Shaping of Modern Vermont.
- Haviland, William A. and Marjory W. Power. *The Original Vermonters: Native Inhabitants Past and Present*. University Press of New England, 1981. This is the most comprehensive book written to date about the native inhabitants in Vermont.
- Huden, John C. *Archaeology in Vermont*. Compiled by John C. Huden, Monograph Three, August 1960, University of Vermont, Burlington. This monograph is a compilation of many authors which includes the study of native inhabitants and relics in Vermont.

- Johnson, Charles W. *The Nature of Vermont: Introduction and Guide to a New England Environment*. The University Press of New England, 1980, Hanover, NH. This book is illustrated with photographs, pen and ink drawings and maps and is set in the context of Vermont's geologic and human pasts. Discusses human impact on landscape, birds, wildlife, and plants as well as the development of forestry and wildlife management and Vermont's agricultural tradition. Also lists 80 areas that readers may visit to see examples of Vermont's beautiful and diverse environments.
- Merrill, Perry H. *Vermont Under Four Flags: A History of the Green Mountain State 1635-1975*. Written and published by Perry H. Merrill, designed and printed by Northlight Studio Press, Inc., Barre, VT, 1975. This book is a composite history of little-known facts about Vermont's past, including a Dutch Colony, immigration and emigration, women's suffrage, and the history of skiing.
- Morrill, Philip and Robert G. Chaffee. *Vermont Mines and Minerals Localities*. Published by the Montshire Museum, Hanover, NH, 1964. Reprinted by Dondero's Rock & Mineral Shop, N. Conway, NH.
- Mussey, Barrows. *Vermont Heritage: A Picture Story*. Published by A. A. Wyn, Inc., New York, 1947; composition by E. L. Hildreth & Co., Brattleboro, VT. This book is illustrated with over 170 old engravings from The Museum Society, Brattleboro. It includes stories of the Green Mountain Boys, travel from Vernon to St. Albans and of work and play - indoors and out, in early Vermont.
- Neudorfer, Giovanna (Peebles). *Vermont's Stone Chambers: An Inquiry into Their Past*. Vermont Historical Society, Montpelier. This book is a rational examination of the pseudo-scientific belief that ancient Celts and other European peoples constructed stone chambers in Vermont thousands of years ago. Her study is a valuable example of the use of scholarly inquiry to deal with popular culture issues and myths.
- Orton, Vrest (ed.). *And So Goes Vermont: A Picture Book of Vermont As It Is. 200 Photographs of the People, The Life and The Scenery*. Foreword by Charles Beecher Hogan, The Countryman Press, Weston, VT and Farrar & Rinehart, NY, 1937.
- Peebles, Giovanna. *A Rich and Ancient Heritage: Vermont's Archaeological Sites*. Division for Historic Preservation, Montpelier, VT. 1989. A nine page response to common questions about archaeology in Vermont
- Peebles, Giovanna. *Archaeology Projects Idea List*. Division for Historic Preservation, Montpelier, VT 1989. A six page handout on fun ideas for learning about archaeology.
- Rolando, Victor R. *200 Years of Soot and Sweat: The History and Archeology of Vermont's Iron, Charcoal, and Lime Industries*. Vermont Archaeological Society, Manchester, VT. 1992. This book is the definitive reference for anyone interested in the history of these industries. It is also a recommended source for all who are interested in Vermont archaeology.
- Starbuck, David (Ed.). *The Journal of Vermont Archeology*. Vermont Archaeological Society. Burlington, VT, 1994. This volume was published in honor of the 25th anniversary of the Vermont Archaeological Society. Articles range from prehistoric land use to lime kilns.
- Stilwell, Lewis D. *Migration From Vermont*. Vermont Historical Society, 1948. Primarily a composite biography of 8,000 people who left Vermont in the early years. Includes life in Vermont between 1760 and 1860 and the Great Migration of 1830-1840.
- Thomas, Peter A. and Lauren A. Kelley. *The Preservation of Vermont's Archaeological Resources*. Division of Historic Preservation, Montpelier, VT, 1980. Addresses preservation, federal and state legislation, the planning process for protecting archaeological resources, and suggestions for citizen participation. Available in some libraries, but may be hard to find.

Thomas, Peter A. and Lauren A. Kelley. *An Archaeological View of Vermont's Past*. Division for Historic Preservation, Montpelier, VT, 1980. This document includes an outline of Vermont's Prehistory, studying ways of life of the native inhabitants, understanding cultural processes and an archaeological view of the last 250 years in Vermont.

Vermont Division for Historic Preservation. *Vermont Historic Preservation Plan*. Division for Historic Preservation, Agency of Development and Community Affairs. April, 1993. The plan is being developed as a management tool for preserving and promoting Vermont's cultural heritage.

Wilgus, William J. *The Role of Transportation in the Development of Vermont*. Maps by Earle Williams Newton and the author, Vermont Historical Society, Montpelier, 1945. The effects of primitive transport, railroads, steamboats and 20th century transportation on the economic, social, political, and cultural development of Vermont.

Wilson, Harold Fisher. *The Hill Country of Northern New England: Its Social and Economic History 1790-1930*. Columbia University Press, 1936. This book includes chapters on the coming of the railroad, the sheep industry, the rise of the dairy industry, forest products, and summer recreation, as well as population, production, and farm statistics.

NOTE 1: We have left out technical reports and archaeological journal articles. These often require specialized training to fully understand. The Vermont Division for Historic Preservation or an academic or consulting archaeologist could help you with further questions about such references, some of which are also included in the bibliographies of the books listed in this manual.

NOTE 2: Due to the interests of space, this list is not comprehensive; there are many more sources.

Books for Children and Young Adults

- Bailey, Bernadine. *Vermont*. Albert Whitman & Co., Chicago, 1961. Short history of interesting facts about Vermont.
- Bishop, Alicia R. *My Little Vermont Book*. Maps by The National Survey, Chester, VT, 1966. 73 page book about the geography, government, history, resources, and industry of Vermont.
- Blake, Noah. *Diary of An Early American Boy*. Wilfred Funk, Inc., NY, 1962. Written by Noah Blake at age 15 in 1805. Put together by Eric Sloane, with over 90 illustrations by him. This book gives a real flavor for pioneer life.
- Brown, Slater. *Ethan Allen and the Green Mountain Boys*. Random House, NY, 1956. An account of Ethan Allen's life.
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- Calloway, Colin G. *The Abenaki*. Chelsea House Publishers, New York. 1989. Informative general description of the Abenaki in New England. Valuable for adults as well as children.
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- Cheney, Cora. *Vermont: The State with a Storybook Past*. The New England Press, Shelburne, VT. 1986.
- Collins, Edward Day. *A History of Vermont*. The Athenaeum Press, 1903. A comprehensive study of the history of Vermont with geological and geographical notes, bibliography, chronology, maps, and illustrations.
- Fradin, Dennis B. *Vermont in Words and Pictures*. Illustrations by Richard Wahl, maps by Len W. Meents. Children's Press, Chicago, 1980. A brief introduction to the land, histories, cities, industries, and famous sites of the Green Mountain State.
- Greene, Grace W. *Green Mountain Sampler*. Vermont Department of Libraries, 1990. An annotated bibliography of books about Vermont, Vermonters, Vermont-related subjects, or with Vermont settings. All books listed are owned by the Vermont Department of Libraries (28 pages of listings).
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- Long, Laura. *George Dewey: Vermont Boy*. 1952. Bobbs-Merrill, Co., Inc., NY. Fictional account of Commodore Dewey's life.
- Mellen, Jeanne. *The Morgan Horse*. With illustrations, The Stephen Greene Press, Brattleboro, VT, 1961. The history and descendants of the Morgan horse.

- Myron, Robert. *Mounds, Towns and Totems: Indians of North America*. World Publishing, Co., Cleveland, 1966. "When we neglect the heroic past of the American Indian, we thereby weaken our own heritage" - John F. Kennedy.
- O'Neil, Mary J. *Growing Up in Vermont*. Illustrated by Lucy H. Doane; 2nd edition, Charles E. Tuttle, Co., Rutland, VT, 1960. How it Happened - Vermont's state bird, flag, flower, seal, and tree. Also includes Furry Friends, Merry Music, and Vermont leaders.
- Slocum, Harold W. *The Story of Vermont*. Scribner's Sons, NY, 1926. An overview of the early history of Vermont.

Film and Video

- It's a Love of the Land*. 16 mm. 29 min. Milk Production Serv., Inc. 1977. Portrait of early Vermont settlers.
- A Rich and Ancient Heritage, Vermont's Archaeological Sites*. Video recording, 27 min. VT Division for Historic Preservation, Vermont heritage series. 1991. This video examines Vermont's archeological history beginning with the arrival of the Paleo-indians around 12,000 AD. It documents the importance of archeological sites and artifacts found in Vermont. There are also other videos in the series that also pertain to cultural resources and Vermont history.

Further Information: Vermont Department of Libraries, 828-3261 or 828-3268

Examples of Local Histories

- Armitage, Peg. *Historical Markers on the Crown Point Road*, illustrated by Peg Armitage, maps by Carl E. Hollender, Crown Point Road Assoc., 1965. 85 mile monument of the memory of early settlers & soldiers that stretches from the banks of Connecticut River to shore of Lake Champlain.
- Barney, Keith Richard. *The History of Springfield, Vermont 1885-1961*, by the William L. Bryant Foundation, 1972. This is a comprehensive study of Springfield with illustrations and maps.
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- Wiley, Edith. *Doings in Derry* by Edith Wiley and the Londonderry Historical Society, 1992. Whimsical history and local color with drawings and photographs.



Abandoned slate quarry' note vertical drill marks

Selected Topics and Sources

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- Calloway, Colin, G. *The Western Abenakis of Vermont 1600-1800*. University of Oklahoma Press: Norman and London. 1990. This book helps dethrone the myth of Vermont being empty prior to White settlement. A useful and highly readable summary of this period of history.
- Cronan, William. *Changes in the Land: Indians, Colonists, and the Ecology of New England*. Hill & Wang, NY, 1983. This book has become standard reading for people interested in New England landscape history.
- Curtis, Jane & Will, and Frank Lieberman. *Green Mountain Adventure - Vermont's Long Trail: An Illustrated History*. Green Mountain Club, Montpelier, VT, 1985. Contains old and previously unpublished photos and three maps. The Club was founded in 1910 and undertook cutting a trail 265 miles long from Massachusetts to the Canadian border.
- Hobka, Thomas C. *Big House, Little House, Back House, Barn*. University Press of New England, Hanover, NH. 1984. This book describes farmsteads and houses in New England. It will help in interpreting the patterns left by stone foundations, and is a nice reference the whole family could enjoy.
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- Sloane, Eric. *Our Vanishing Landscape*. Ballantine Books, NY, 1955. Classic collection of drawings and descriptions of trees, farms, roads, tools, and other features and artifacts of the 18th and 19th century New England landscape. Eric Sloane's other books on barns, tools, and history are also good references and fun reading.
- U.S. Corps of Engineers. *Water Resources Development in Vermont*. U.S. Corps of Engineers, New England Division, 1989. Includes flooding in New England, natural resources management, dams & reservoirs, local protection projects, and navigation.
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- Vermont Land Trust. *Quarterly Reports of the Vermont Land Trust*. Contains timely articles on conservation, forest lands and stewardship. Available from the Vermont Land Trust.
- Vermont Natural Resources Council. *Liability and the Landowner in Vermont*. Agency of Environmental Conservation, Waterbury. 1977. A ten page booklet that nicely describes general principles of liability.

Maps

The following are some examples and types of maps that are commonly used in archaeology and the study of cultural resources:

Beer Maps: F. W. Beers and his associates published county atlases in the mid 19th Century. These often provide the location of specific houses and commercial structures, with associated owners' names. For example, in Windsor County, the reference is:

Beers, F. W., A. D. Ellis, and G. G. Soul. 1969. *Atlas of Windsor County*, Reprinted by the Charles E. Tuttle Company, Inc., Rutland, Vermont.

Most town libraries have one or more of these atlases; they are invaluable references.

Bird's Eye Maps: In the late 19th Century itinerant artists created and sold "bird's eye views" of towns. If they exist for your town, they are most likely to be found in the library, museum, or town offices.

County Maps: Walling, Shields, and other cartographers published county maps in the mid to late 19th Century. Many towns such as Springfield and Newbury have framed originals of these maps posted in their town offices. These maps can be used to match names with structure locations. Tracings and photographs can be taken, but the condition of these maps usually prohibits individual handling.

Geological Survey Maps: The Vermont Geological survey periodically publishes maps and associated texts. These are useful in the study of cultural resources. One commonly cited reference is:

Doll, C. G., D. P. Stewart, and P. MaClintock (eds). 1970. *Surficial Geology Map of Vermont*. Vermont Geological Survey, Montpelier.

Specialty Maps: Natural resources, soils, railroad, and other specialty maps may exist for your area. Historical maps often are referenced in local histories. Modern specialty maps are available through the regional planning commissions.

U.S.G.S. Maps: The United States Geological Survey has published quadrangle maps (7 minute and 15 minute scales). These can be used to compare locations of roads and houses between successive editions. These maps can be found at libraries and local, state, and federal government offices.

APPENDIX B

Vermont Laws

Vermont laws pertaining to archaeology and cultural resources generally apply to projects on state land or that receive public monies. The principal law regulating private land is Act 250.

Act 250: Large commercial developments (on more than 10 acres if the town has permanent zoning and subdivision regulations, otherwise on more than one acre) require Act 250 permits, as do subdivisions of ten lots or more, subdivisions with over 800 feet of shared road, and any activity above 2500 feet in elevation. 10 V.S.A. §6086(a)(8) (aesthetics) requires that permits be issued only upon determination that the project will not “have an undue adverse effect on...historic sites...” Section 6001 defines historic sites as any site, structure, district or archeological landmark which has been officially included in the National Register of Historic Places and/or the state register of historic places or which is established by testimony of the Vermont Advisory Council on Historic Preservation as being historically significant.

Vermont Historic Preservation Act: This act (22 V.S.A. Chap. 14) established the Division for Historic Preservation, and set up terms, duties, and provisions for the state to manage cultural resources on its properties. The state archaeologist can designate archaeological landmarks. However, this cannot be done on private land without the consent of the landowner. The act directs state agencies to cooperate with each other and the state archaeologist in appropriately treating archaeological and historic sites.

APPENDIX C

Federal Laws

Federal laws primarily tell the federal government how to treat cultural resources on federal land. Consequently, these laws will not affect the private or municipal landholder. However, receiving federal money for a project may require compliance with these laws. The National Historic Preservation Act of 1966 is worthy of mention because it helped define terms and qualifications for archaeology, cultural resource assessment activities, and other impacts of material history.

Below are the main federal historic preservation laws. Further information on these laws can be found at your local library and at various state and federal offices.

Laws Governing National Historic Preservation Programs

Historic Sites Act of 1935

National Historic Preservation Act of 1966, as amended

Laws Governing National Historic Landmarks

Historic Sites Act of 1935

National Historic Preservation Act of 1966, as amended

Section 8 of the General Authorities Act Amendments of 1976

Section 9 of the Mining in the National Parks Act of 1976

Laws Governing the Federal Archeology Program

Antiquities Act of 1906

Archaeological and Historic Preservation Act of 1974

Archaeological Resources Protection Act of 1979

Abandoned Shipwreck Act of 1987

Laws Governing Federal Preservation Tax Incentives

Certified Rehabilitations: Section 48(g) of the Internal Revenue Code

Conservation Easements: Section 170(h) of the Internal Revenue Code

Other Major Federal Historic Preservation Laws

Transportation Act of 1966

APPENDIX D

For the Developer: Consumer Tips in Hiring a Cultural Resources Firm

Normal use and management of woodlands does not require the services of a cultural resources firm. This section is only for owners who may be contemplating a large commercial or residential project, and for the curious. If you have a development that requires cultural resources assessment, you will need to hire someone to do the cultural resources work. The first question to ask is if the nature of the threatened cultural resources is known. If it is solely with a building or structure, then a firm with architectural capabilities is needed; if it deals with a question of archaeological sites, then an archaeologist is needed.

Vermont, like other states (and commonwealths), has a list of cultural resources consultants. You can get a copy of the list by calling (802) 828-3226 or by writing:

Division For Historic Preservation
Montpelier, Vermont 05602

That list includes cultural resource consultants who have worked in Vermont. However, Vermont does not yet have licensing of these professionals; developers can choose other firms from outside the state, many of which may be eager to establish clients in Vermont.

With a list of contractors, work with the Vermont Division for Historic Preservation (DHP) to develop a "Scope of Work." A "Scope of Work" is a work order. The Federal agency may require that you have the cultural resources work done; however, it is the DHP that must be satisfied. If you work with the DHP in developing a Scope, you can address DHP's concerns at the outset. This makes a smoother review process.

Armed with a Scope of Work, send it out to a number of firms as a "Request for Proposals" (RFP). Make sure that you specify the date you want the firms' RFPs returned to you. The DHP will help you so that you include details about matters that those firms will need to address to submit a bid to you.

You may or may not receive a large number of bids. It is very hard to estimate ahead of time what the costs might be. Just as a very general "ballpark" possibility, a Phase I exercise over relatively level property might cost around \$1,000 to \$5,000 per acre for the first few acres. This is more than enough area to cover most projects, since an entire tract seldom needs testing. A Phase II might cost around \$5,000 to \$20,000 per acre of identified archaeological sites. The costs are real, and they are legitimate; this is a land development expense comparable to running water mains or sewer lines, and is considered just as seriously.

Select from the submitted bids the three firms whose costs and qualifications statements appear best suited to your needs. Make sure that they are bonded or otherwise fully insured; make sure as well that they have workman's compensation. Check their references, asking especially about their record of having the DHP agree with the firm's findings. Then, ask for their "best-and-final" offer. Work closely with the Vermont DHP.

APPENDIX E

For the Curious: How is Land Checked Prior to Development

The "cultural resources process" refers to the process of checking land to make sure that cultural resources deemed important to the community are not inadvertently destroyed during construction or other ground-disturbing activity. In Vermont, this may be required for land use development permits under Act 250 (Land Use and Development Law, Title 10 Vermont Statutes Annotated Chapter 151). The District Environmental Coordinator is the person to contact with questions about Act 250 and whether or not it affects a development or activity you may be planning. One of Act 250's review criteria includes historic sites.

The laws governing cultural resources are meant to give the community, of which you are a part, a chance to record what is present before it is destroyed. Sometimes it turns out that it is cheaper to avoid destroying something than it is to record all that should be recorded, but this is a case-by-case issue. The government regulators — both state and federal — are interested in win-win situations, where both the resource base AND the landowner come out ahead.

The cultural resources process generally involves three steps or "phases." Phase I is the lowest level of examination. The purpose is to see if the land contains cultural resources. Archaeologists usually check the land by walking over it to record the visible historic archaeological resources, by digging small test holes (called "shovel tests"), in areas suspected to have buried sites or features, and by examining the character of the forest growth, and so on for evidence of use by past peoples. Structures on the property are also examined. Historical and site file research of municipal and state offices is done to see if anything had previously been recorded for the land.

Phase II is the next investigation level. Phase II is done if Phase I work reveals archaeological sites are present, or if there are structures that could be eligible for the National Register. Phase II is less common than Phase I. Phase II is a testing step; it's done to evaluate the resource.

Phase III is the last step. It is called data recovery; its purpose is to recover enough information from the cultural resource to help mitigate its loss. Phase III goes into effect when (1) the cultural resource is determined to be eligible for listing on the State or National Register of Historic Places and (2) there's no way to redesign the project to avoid destroying or severely damaging the cultural resource.

For archaeological sites (both historic and prehistoric), Phase III data recovery usually consists of a full-scale archaeological excavation. Field time can be between three to six months, with approval from the state and federal agencies. A developer may be allowed to start a land alteration project at the end of the field time, provided an adequate letter report has been submitted. The process of a Phase III investigation is rather expensive and time consuming.

APPENDIX F

A Statement on Excavation

Excavation should be for two purposes; emergency "salvage" of a site about to be lost, or to address academic research questions. Preliminary site examinations may be necessary to determine whether an excavation is warranted. In all cases, no subsurface exploration should be undertaken without direct, on-site supervision of a professional archaeologist. A professional archaeologist is one who has at least a Master's degree in archaeology, or anthropological archaeology, or equivalent, and who meets the federal and state guidelines for professional qualifications. The Division for Historic Preservation maintains a list of archaeology consultants, although there may be other qualified archaeologists in Vermont. Many sites have been lost to well-meaning students and amateurs. Adequate professional supervision is necessary to protect the resource base and maintain the respect of the public for the archaeological profession.

APPENDIX G

Researching and Documenting Cultural Historic Resources: A Family Project

If you are interested in learning more about the cultural resources on your property, there is much you can do on your own. A good place to begin is at your local library. During the bicentennial of our country, many town histories were compiled. Although many weren't formally published, they still can be found on local bookshelves. A general history of your town helps to give "flavor" or context to the specific history of your property.

A project to research the history of your property will involve library work, a walk through your woods, interviews, map comparisons, sketches, photographs, and other activities. The appendices in this guide can point you toward some sources. They may also give you some ideas about what types of maps and books can be found and where to go for them.

A fairly inexpensive and quick way to get started is to find a Beers atlas and various U.S. Geological survey maps. By comparing them for different years, you may be able to see if roads or structures appear on your property, and if so, when, where and for how long. This makes it easier to "read the landscape" by giving you some idea of what might have been there. The Beers atlas will usually have a name listed along with the structure. This is also true for the county maps of the late 19th century. A name gives you something to look for in the written histories, which generally do not have much in the way of maps of their own.

Neighbors, historians, local historical societies, and old-timers of the town may have early photographs. Most people are very willing to share this sort of information and talk to you about the past. Take notes based on your conversations.

You can also make your own documentation by drawing maps, measuring structures, and taking photographs. If you do these things, the results can be used by you and future Photographs should be of more than one perspective and include detailed as well as general views. You can mark where the picture was taken, and the angle on a map. In general, when you document, be sure to include names, dates, and sources: as much of the "who, why, what, when, where," as you know.

The results of your inquiries and documentation can be compiled for you and your family to share. It might be of interest to local libraries and historians. Imagine if someone had done this same thing for your property a hundred years ago and you were to discover it! You could create a valuable resource for the future that also increases your present enjoyment of your property.



Stone Bridge

APPENDIX H

Where to go for more Information: Agencies, Offices, and Societies

Green Mountain National Forest

231 North Main Street

Rutland, VT 05702

(802) 747-6700

Source of information for cultural resources within the Green Mountain National Forest.

Historic Windsor, Inc.

Preservation Institute for the Building Crafts, Inc.

Windsor House

PO Box 1777

Windsor, VT 05089

(802) 674-6752

The institute offers workshops in preservation building skills and architectural history for teachers, builders, historians, and other interested people.

National and Regional Archaeological Associations

There are many general and specialized archaeological associations. The Vermont Archaeological Society or the Division For Historic Preservation can provide information on these associations. Some of the references in this bibliography also provide names and addresses of various organizations.

Vermont Archaeological Society

PO Box 663

Burlington, VT 05402-0663

The society publishes a newsletter, disseminates information, and sponsors programs and education on Vermont archaeology.

Vermont Division For Historic Preservation

National Life Bldg. 6th Floor

Montpelier, VT 05620-501

(802) 828-3211

This office is the logical starting place for inquiries about cultural resources. Archaeologists, historians, and other experts work for the division and can answer your questions and provide guidance. The division has useful brochures, leaflets, and ideas.

Vermont Historical Society

Pavilion Building

Montpelier, VT 05602

(802) 828-2291

The Vermont Historical Society is a non-profit educational organization founded in 1838. The Society publishes Vermont History, Vermont History News, and books and pamphlets. The Society operates The Vermont Museum in Montpelier and maintains a historical reference library.

Local Offices: *In addition to local libraries, museums and town offices, some towns have historic preservation commissions. As of the date of this manual (1994), the following towns have “certified local government commissions”:* Bennington, Burlington, Hartford, Rockingham, Shelburne, Williston, and the Mad River Valley Planning District (consisting of the towns of Fayston, Waitsfield and Warren).



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