Page Pond and Forest

A History and Guide

Daniel Heyduk

Acknowledgements

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Dedication: to Harold Wyatt, who energetically researched Meredith history.

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Cover photo: early autumn in Page Pond and Forest (D. Heyduk)

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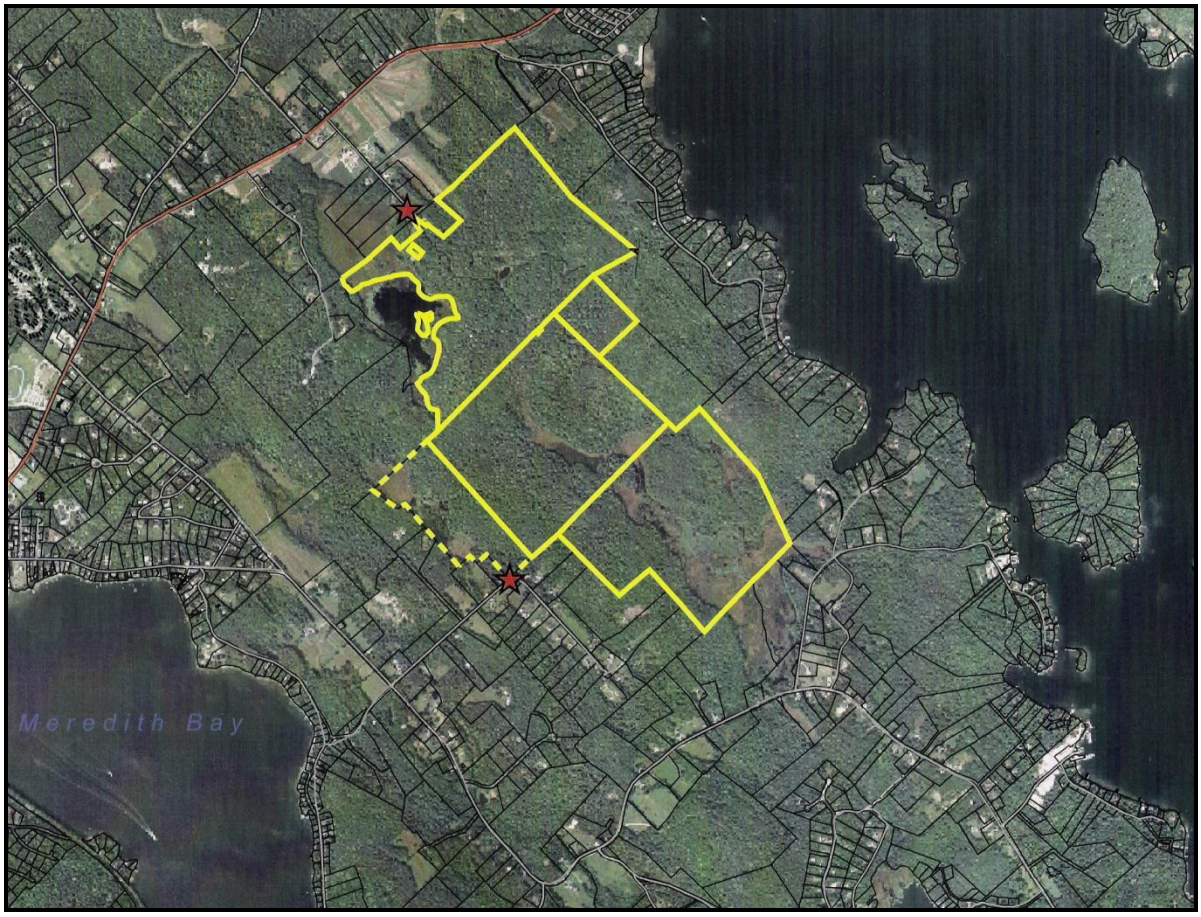


Figure 1: Page Pond and Forest with the Sherman Easement - Meredith Neck, Meredith, NH (Courtesy of the Trust for Public Land)

Page Pond and Forest, within the solid boundary, is 567 acres and is a Meredith Town Forest. Page Pond, also known as Little Pond, contains some 20 acres and is a "great pond" owned by the state. Page Pond is drained to the south and southeast by Page Brook and the larger Page Brook watershed drains most of the surrounding forestland. The Sherman easement, within the dashed boundary, is 53 acres. The elevation of the land varies from 550 to 750 feet. Property features include ponds, streams, forest, wetlands, an abandoned quarry, an old mill dam, old farm cellar holes and stone walls. Marked trails have been created beginning at the two starred access points. Bordering the property on the north is the historic Leavitt family cemetery.

The Land and Water, the Forest and the First People

Each landscape holds a story, written by nature and in most cases also by people. This is the story of what happened to shape the land of Page Pond and Forest and its close surroundings – events as major as an ice age and as minor as placing a stone doorstep. It is also the story of Page Pond and Forest today: its ponds, wetlands, streams, forestlands, birds and wildlife. What follows is meant to give perspective to what we today see and do on this land.

The last major landscaping event that shaped this area was the Wisconsin glaciation. Beginning some 110,000 years ago, a massive ice sheet a mile thick moved over the land from the northwest to the southeast. The top of the glacier was more than two times the height of Red Hill. Carrying rocks, soil and debris, the glacier scoured out the basin of Lake Winnipesaukee and plowed over the surrounding land. On Moultonborough Neck the glacier deposited boulders called "glacial erratics" that it had plucked from the face of Red Hill to the north, but Meredith Neck was too far west to receive these. When the ice had melted from this area by 14,000 years ago, it left a jumbled surface of bare bedrock, and loose rocks, sand, and ground-up stone known as glacial till.

Water from the melting glacier, rain and snowmelt flowed down to fill Lake Winnipesaukee and collected in many pools and ponds on the uneven ground. Annual sediment layers in such ponds can be used like tree rings to count calendar years from this post-glacial period and the pollen in the sediments can reveal the plants that were growing here. Beginning at Gilman Hill north of present route 25, Page Brook flowed south and east down Meredith Neck to empty into Lake Winnipesaukee at Fish Cove. (1)

In the cold and dry conditions in front of the retreating ice sheet, the first plants arrived here: grasses, sedges, lichens and mosses which make up the tundra community. The first forest trees to appear were cold- and drought-tolerant spruce. By 11,000 years ago the climate had warmed and balsam fir, white pine, hemlock and birch had moved in. After 10,000 years ago hardwood species such as maple, beech and oak arrived. There were substantial ups and downs in temperature and precipitation over this time and even a glacial re-advance, and the forest changed to match them. This climate and forest change pattern continued over the next several thousand years, so the 14,000 year-old Page Forest has a long history of alteration by natural forces. (2)

Figure 2: Spruce trees begin to replace the post-glacial tundra (D. Heyduk photo, White Mountains)

Among the first animals to move into the Meredith Neck – Lake Winnipesaukee area after the glacier retreated were tundra and grassland grazers such as caribou, mammoth, and musk ox, and their predators: dire wolves, sabre-toothed and other cats, short-faced bears, and people. The people, known as "Paleo-Indians", were bands of nomadic hunters who followed the grazing herds. They used "fluted" stone projectile points on 5-6 foot-long spears or darts, which were thrown using an *atlatl,* or spear-thrower. (3) Beginning 11,000 to 12,000 years ago, or perhaps earlier, they moved through this land, camping on the terraces - like Meredith Neck - above lakes and rivers and quarrying tool-quality stone from old volcanic outcrops in the Ossipee and Belknap Mountains and Red Hill. In addition to projectile points, their tool kits included stone flake knives for butchering, steep-edged stone scrapers for cleaning hides, and stone awls for punching holes. Their bone and wooden tools did not survive, but undoubtedly included bone awls and needles for sewing, antler hammers for stone-working, and wooden spears, clubs and tent frames. (3)

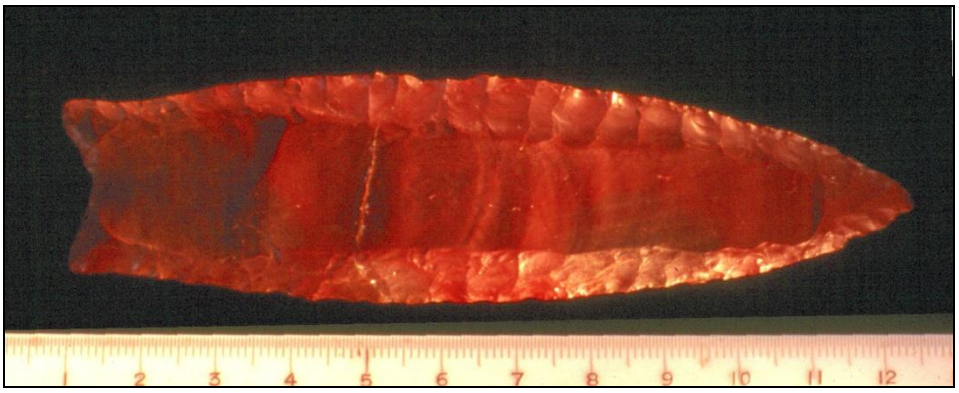


Figure 3: Paleo-Indian fluted projectile point (Richard Boisvert photo, NH Div of Historical Resources)

Figure 4: Point mounted to shaft using the flute channel (Richard Boisvert photo, NH Div of Historical Resources)

Figure 5: Paleo-Indian hunters moved with mammoths and other grazers (D. Heyduk photo, Peabody Museum of Archaeology exhibit)

Figure 6: A camp of nomadic hunters (D. Heyduk photo, Peabody Museum of Archaeology exhibit)

As the climate warmed, the tundra and grassland area was greatly reduced and most of the larger grazing animals such as mammoth, giant bison and elk, the large predator wolves, cats and bears, and animals such as giant beaver and sloth, became extinct. The forest environment that replaced the tundra had a greater variety of plants and animals, and the human adaptation changed correspondingly.

From 9,000 to 3,000 years ago, a period known archaeologically as the Archaic, hunting and gathering became more local and more broadly-based, and human population grew. People hunted and trapped virtually all the animals and birds common today, fished and gathered shellfish, and harvested wild plants, fruits and nuts. They used boats and had regular travel and trade routes. Their chipped stone tools were much more varied than those of the Paleo-Indians, and they made ground stone axe heads, pestles and mortars. Bone and antler were used to make fish spears and fishhooks. The Archaic hunters, trappers and gatherers ranged widely through the Page forest, its varied wetlands, and along Page Brook and its feeder streams. (4)

Figure 7: Ground stone axe heads (D Heyduk photo, Peabody Museum of Archaeology exhibit)

The Archaic Native American people lived in lakeside and riverside settlements, such as one on Stonedam Island which was occupied for thousands of years. (5) They moved seasonally to other locations to take advantage of waterfowl migrations, fish spawning runs, and the shelter and available firewood of the forest in winter.

Around 3,000 years ago pottery-making and horticulture began to be practiced, and archaeologists call this next phase the Woodland Period. The same Native Americans continued to live here and to hunt, fish and gather as before, but they began to grow crops and to make pottery.

The horticulture system arrived here through contact with people to the south and west, and the preferred land for planting was the rich alluvial soil found on river terraces and lake shores – just where settlements were already located. Stone tools are not good for felling trees, so the trees were girdled or burned at the base. Corn, beans and squash were then planted in mounds among the dead trees. After the fertility of this land declined, new fields would be made, and the old ones would return to forest. Settlement size and population increased, but because of the forest/field/forest rotation, the forest remained intact.

Woodland Native Americans made pottery to store and cook the new foods, they began to use bows and arrows, and they also made the specialty of the north woods: the birch bark canoe. Canoes were made from naturally waterproof white birch bark, which because of its horizontal grain, could be cut and peeled from trees in large rectangular sheets. The bark pieces were stitched together with the long, flexible roots of black spruce, while the ribs and internal sheathing were made from spruce or cedar, which could be easily split and steam-bent. Harder, more durable, but also straight-splitting ash or maple were used for the rails, thwarts and paddles. Spruce gum was used to seal the stitched seams. Unlike canoes made from logs, the birchbark canoe was light, but could be heavily loaded. It could be easily repaired anywhere in the forest and could be carried overland on the paddler's shoulders. This canoe gave ready access to lakes, rivers, narrow, winding streams and disconnected waterways. The Page Forest probably provided materials for canoes built at the Stonedam Island settlement. (6)

Woodland people hunted, trapped, fished, gathered and planted without altering the land or the trees, plants or animals. Except for dugout canoes, their woodworking involved peeling bark and using small trees, which could be bent or split lengthwise. The clay for their pottery and the stone for their tools came from on or near the surface.

Figure 8: Birchbark canoe (Courtesy of Mount Kearsarge Indian Museum)

The Woodland Period lasted from 3,000 years ago until European contact in the sixteenth century. After 1600 AD Native American life would greatly change. (7)

European Contact and Early Recorded History

The arrival of European colonists was at first vaguely known to Native Americans in the Winnipesaukee region. But even before the first colonists landed at Plymouth, European diseases including smallpox, typhus, influenza, whooping cough, measles and plague were decimating Native American populations, which had no resistance to these infections. A series of epidemics over several generations reduced Native American population by as much as 90 percent. People responded by abandoning settlements and merging tribes.

At the same time, a vigorous trade developed in which furs, and especially beaver pelts trapped by Native Americans, were exchanged for European manufactured goods: knives, axes, blankets and brass pots. As a result beaver were completely eliminated, and their role in shaping the landscape was stopped for more than 200 years. The ponds, forest openings and wildlife habitat that beaver today provide at Page Pond and Forest are the result of a re-introduction in New Hampshire in the 1920s.

Figure 9: Arrowheads made from European trade brass (Richard Boisvert photo, NH Div of Historical Resources)

In 1675-76, King Phillip's War between several New England tribes and the English colonists resulted in the defeat of the tribes and their retreat north. One of the last Native American settlements on Lake Winnipesaukee, Aquadoctan at the Weirs, was

abandoned by 1700. From that time until 1763, when the French ceded Canada to England, hostilities between the French and their Native American allies to the north and the British settlements to the south effectively depopulated the Lakes Region.

Those venturing into the area were Native American raiding parties, British colonial military expeditions, hunters, trappers, and surveyors. The routes they used were ancient: up the Merrimack and Winnipesaukee rivers to Lake Winnipesaukee, and "canoe carries" to Lake Kanasatka, through Wakondah Pond to Squam Lake. From Squam, routes ran west to the Pemigewasset River via the Squam River and east to Ossipee Lake via the Bearcamp River.

Surveyors laid out the town of Meredith in 1754 and 1770. Lots surveyed on Meredith Neck contained 95 acres each. The surveyors stretched a 66 foot-long Gunter's measuring chain straight over the uneven, forested ground along a compass heading, a process called "ranging". A plot ten chains long by one chain wide was an acre. In this way the rectangular lots were laid out in east-west rows called "ranges", with the corners marked with hatchet-blazed trees or stone cairns. Dividing the ranges were east-west "rangeways", intended to become roads. The current Page Pond and Forest falls in the fifth, sixth and seventh ranges and consists of all or most of lots 44, 45, 50, 51 and 60, with parts of adjoining lots as well.

Ownership of the lots was divided among the proprietors, or original colonial grantees of the town. Most lots, or parts of lots, were then sold to men who planned to settle and farm, but this did not happen until after 1763. (8)

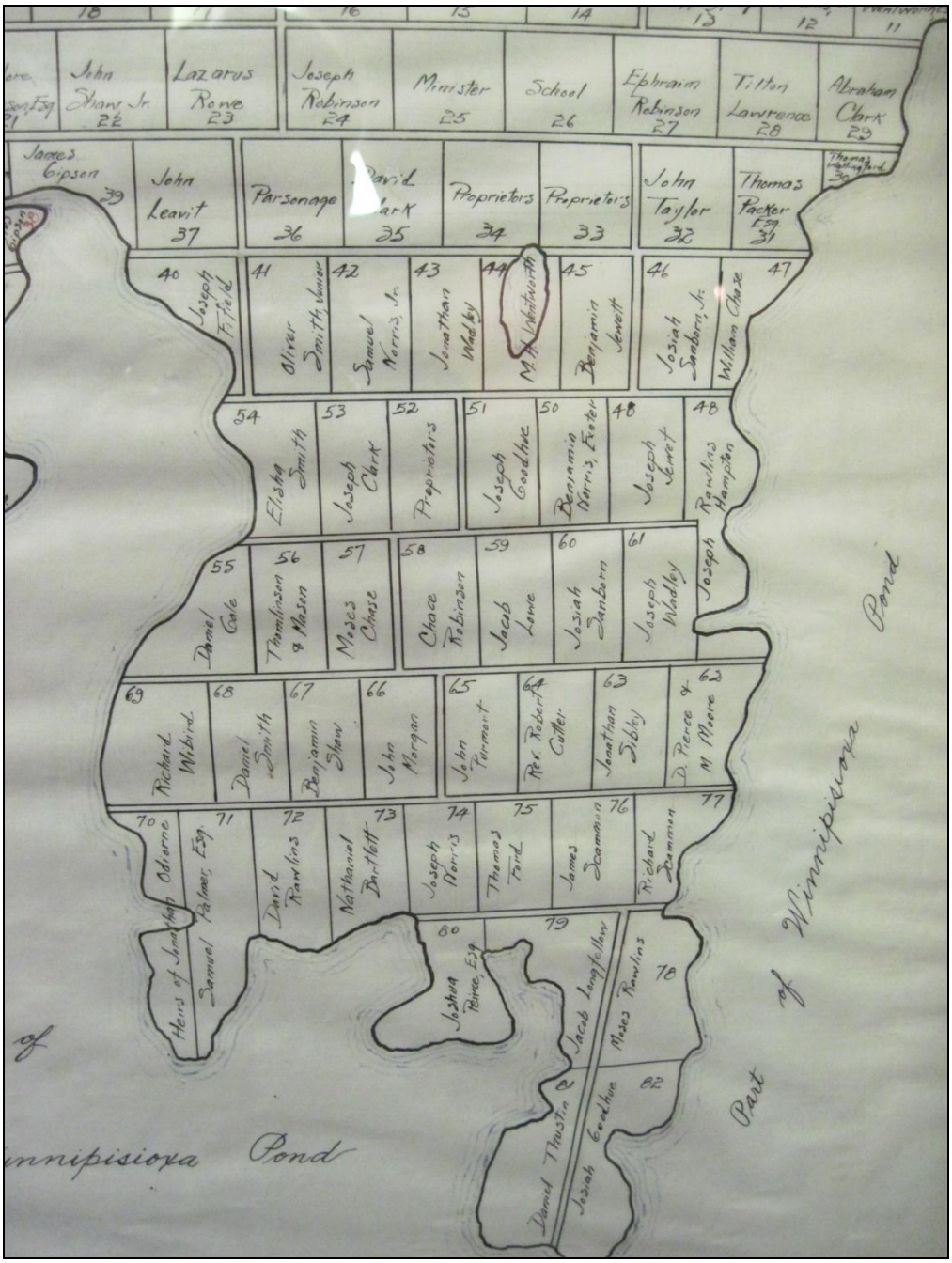


Figure 10: Copy of of the original 1770 survey of Meredith Neck, with proprietor's names. Page Pond is shown in lot 44 (D. Heyduk photo, Meredith Historical Society)

Settlement

Settlers began to come to Meredith, which at that time included Laconia, in the 1760s, but Meredith Neck was not settled in this first wave. Whereas the proprietors had drawn lots blindly from a survey map, the prospective farmers were interested in the quality of the land. This was judged by the trees growing on it, beech and maple being considered indicators of good soil. The Native Americans had favored the same land, but they had been absent for sixty to over one hundred years, and even their settlement sites had returned to forest. Beaver had been gone for almost one hundred years, so their regenerative activity was lacking, and their former ponds and meadows had probably also returned to forest cover.

When a prospective settler had scouted the territory, looking for relatively flat, rock-free and dry land with good soil, he would negotiate to purchase a particular number of acres from the proprietor owning the lot. At this time there usually was no road to the lot and the settler would have to clear the land and build a house – the work of several years. Trees might be girdled and crops planted Native-American style, but sooner or later these mature forest trees were felled with axes, and the limbs cut to lie next to the trunks. After drying for at least several months, the trunks and limbs were burned, then the remainder was pulled together, and burned again. The ashes from this burning were sold as potash, or were left as beneficial fertilizer for the crops. Later the stumps would be laboriously pulled from the ground and from the field. Oxen were very important for this work, and most new farmers owned them. (9)

The proprietors had decreed that roads which were rangeways were to be four rods wide (66 feet), and roads between rangeways were to be two rods in width (33 feet). While this defined the right-of-way, the road was normally cleared just wide enough to allow passage by an ox-cart, and not even this was done until a settler had requested it.

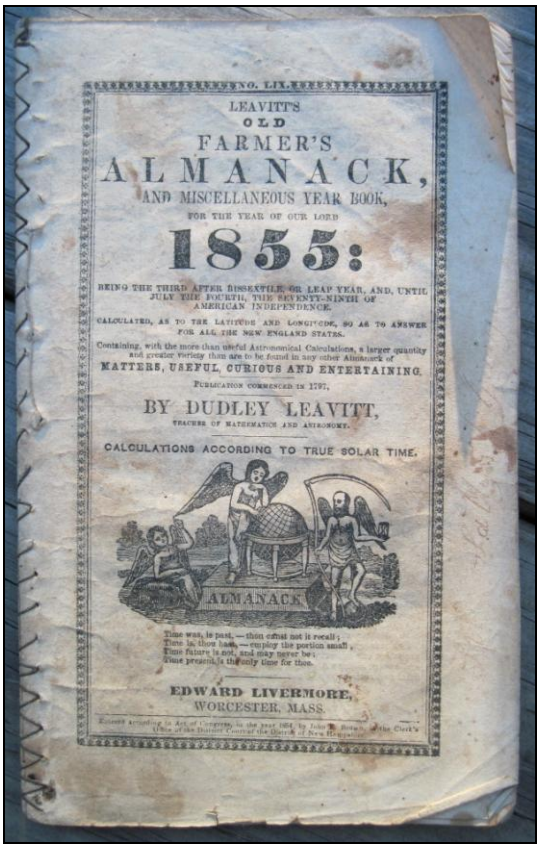
A north-south road is said to have run through the present Page Forest, passing to the west of Page Pond, crossing Page Brook, and reaching current Meredith Neck Road near where it crosses Page Brook. The current east-west portion of Blueberry Hill Road is a range road, and originally extended further east between lots 50 and 60 to meet the above mentioned north-south road. Current Quarry Road is an original cross-rangeway road which ran north-south to the rangeway between lots 33 and 45, meeting the

rangeway just north of the Leavitt cemetery. The rangeway then ran east, following the current north boundary of Page Pond and Forest. An extension of Quarry Road is also said to have run south through Page Forest from the vicinity of the Leavitt cemetery to Blueberry Hill Road. According to several deeds, Blueberry Hill Road was once called Page Road, for John Page who lived there and for whom Page Brook and Page Pond are also named. (10)

The first to settle in current Page Pond and Forest was Revolutionary War veteran James Gilman, who bought all 95 acres of lot 51 for forty-eight pounds in 1789. James also bought lot 57, outside Page Forest. James, Deborah and their children moved from Newmarket to settle on this land in 1790. The Gilman family and farm grew and James also acquired lot 50. His grandson James 3rd married Susan Mead in 1836 and in that same year purchased one half of lot 60. The farms later passed to David Gilman. The cellar of the farmhouse where David and Lucy Gilman and their children lived, the sill of a barn, and a stone-lined well are still to be seen in Page Forest. (11)

On the north side of Page Pond and Forest the Leavitt family were prominent landowners. Schoolmaster and Farmer's Almanac founder Dudley Leavitt, his wife Judith and their children moved to Meredith in 1806, buying some 47 acres of lot 45. Leavitt bought more parcels between 1813 and 1829, bringing his farm to some 115 acres, which he actively farmed together with teaching in the public and his own school, writing textbooks and researching and writing the almanac. Two years after moving to Meredith, Dudley Leavitt was signing the town tax inventory as a selectman. He wrote the annual Leavitt's Old Farmer's Almanack from 1797 until his death in 1851, and left manuscripts for the years through 1857.

The farm passed from Dudley to his son Isaac, grandson Arthur E., and great-grandson Dudley. These and other members of the Leavitt and Bartlett families are buried in the walled cemetery just east of the Quarry Road entrance to Page Pond and Forest. Sadly, the cemetery was created by Dudley and Judith in 1813 for the burial of one of their children. Another child was buried there in 1819. The original Leavitt lot was sold and the house where Dudley and Judith originally settled and raised 11 children, was moved. Great-grandson Dudley Leavitt died in 1945 and in his will deeded land to the town to become Leavitt Park. (12)



LEAVITT'S
OLD
FARMER'S
ALMANACK,
AND MISCELLANEOUS YEAR BOOK,
FOR THE YEAR OF OUR LORD
1855:

BEING THE THIRD AFTER BISSEXTILE OR LEAP YEAR, AND UNTIL JULY THE FOURTH, THE SEVENTY-NINTH OF AMERICAN INDEPENDENCE.

CALCULATED, AS TO THE LATITUDE AND LONGITUDE, SO AS TO ANSWER FOR ALL THE NEW ENGLAND STATES.

Containing, with the more than useful Astronomical Calculations, a larger quantity and greater variety than are to be found in any other Almanack of
MATTERS, USEFUL, CURIOUS AND ENTERTAINING.

PUBLICATION COMMENCED IN 1797.

BY DUDLEY LEAVITT,
TEACHER OF MATHEMATICS AND ASTRONOMY.

CALCULATIONS ACCORDING TO TRUE SOLAR TIME.

ALMANACK

Time was, is past, — thou canst not it recall;
Time is, thou hast, — employ the portion small;
Time future is not, and may never be;
Time present, is the only time for thee.

EDWARD LIVERMORE,
WORCESTER, MASS.

Figure 11: The almanac had a circulation of over 60,000 (Courtesy of Peter Miller; D. Heyduk photo)

Figure 12: The Leavitt family cemetery (D. Heyduk photo)

The Quarry

The now abandoned quarry operated to quarry and crush "traprock", a dark, igneous rock that contains high levels of iron and magnesium and low levels of silica. These components make the crushed rock useful for building up road beds and railroad beds. The much more common granite of the area, which has high silica and low iron and magnesium, is not as suitable. From at least the early 20th century, the traprock of Page Forest was quarried and crushed on site and then transported from the area via Quarry Road. The quarry was privately owned until 1920, then owned and operated by the state Department of Transportation, and finally returned to private ownership in 1945, before being abandoned. (13)

The Mill

In 1830, James Gilman sold a parcel of land on Fish Brook "a few rods southwesterly of the outlet of the little pond" to Sewall Leavitt. Title to this land included a mill privilege, or right to impound the stream: "flowing the land or farm on which Doctor Jeremiah Morgan now lives in each year until the 20th of May". Leavitt built a substantial dam and sawmill, which he operated until selling the mill and the 2 ½ acre mill lot to John Page in 1836. Page operated the mill until 1855, and the brook became known locally as Page Brook. The mill then passed to James Bickford, who sold it in 1879 to David Gilman, great-grandson of James Gilman. The 1879 deed does not mention a mill building, nor do subsequent deeds, including the sale of the Gilman land north of Blueberry Hill Road in 1904 for its "wood and timber" to the Meredith Shook and Lumber Company.

Measured today, the dam is 96 feet long, 16 feet wide and 18 feet high at the spillway. The sluice opening is 5 feet wide and 9 feet high. The walls of the spillway which carries water from the sluice are 53 feet long. There was a second, smaller dam upstream of the millpond, thus creating two water storage ponds to serve the mill. It is said that the mill was powered by an undershot waterwheel. (14)

Edwin Moulton, the late owner of Moulton Farm, was told by his grandfather that the carriage that held the logs was operated by two chains from the waterwheel axle – one to pull the carriage ahead toward the single up-and-down saw blade and the other to pull it back. He was also told that the up to 50 foot-long beams used to build nearby barns came from this mill. It seems likely that the 53 foot-long stone wall along the spillway from the dam was the foundation for the mill. (15)

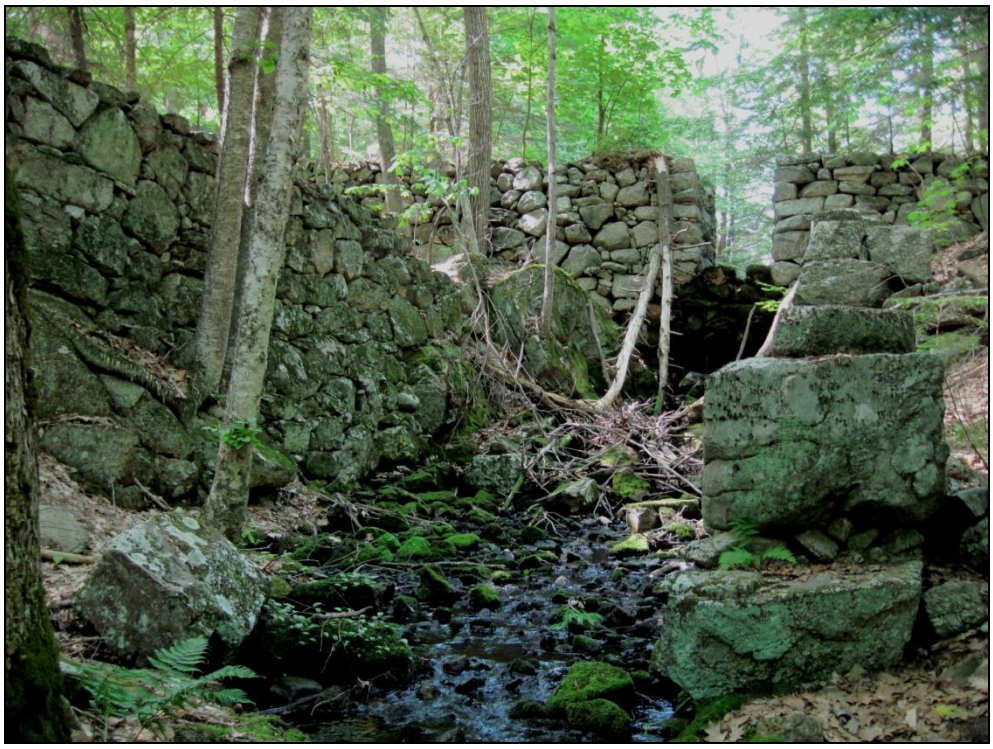


Figure 13: The Page Brook milldam from the spillway – compare below (D. Heyduk photo)

Figure 14: This water-powered sawmill uses a box sluice rather than a waterwheel, but the construction and the up-and-down saw are typical of the 1830s. (D. Heyduk photo, Sturbridge Village)

Settlers made many changes to the land: clearing forest for roads, homes, crops, pasture and mowing, introducing non-native plants and animals, selecting which native plants and animals to use and which to discourage or eliminate, and impounding Page Brook and excavating the quarry. Early settlers eliminated wolves, bears, and mountain lions through bounties and reduced or eliminated deer, moose, martin, fisher, turkeys and other woodland-dependent animals through habitat loss. Page Forest was mostly cleared, and most of the cleared land was for pasture and mowing to support the cows, oxen, horses and sheep which were essential to every farmer. Sheep became especially important. Today there are some 6,000 sheep in New Hampshire, but during the merino sheep boom in 1836 there were 3,276 sheep just in Meredith and 465,179 sheep in the state. From the 1820s to the 1850s farmers cleared forestland to create sheep pasture. Mills in Northfield, Franklin, Campton, Holderness, Bristol and Rochester bought the wool. (16)

Figure 15: Merino ewe and lamb (D. Heyduk photo)

Page Pond and Forest Today

Approached from the north via route 25 and Quarry Road, Page Pond and Forest is partly bounded by the Moulton Farm conservation easement, which protects this farmland from development. This farm has been owned by the Moulton family since 1883 and has its own interesting history. Approached from the west via Meredith Neck Road and Blueberry Hill Road, an old rangeway provides access. The Sherman conservation easement protects privately owned land in this area from development. Trails begin from both these access points. As of 2010, the Meredith Conservation Commission manages Page Pond and Forest, maintains the trails, and has issued a map of the property. The Commission asks visitors to respect the rights of the conservation easement landowners whose land remains privately owned.

Current Page Pond and Forest is the result of combined natural forces and human management. Both are still at work. As a Town Forest, part of the property is managed for sustainable forestry and the improvement of wildlife habitat, while other portions are protected as ecologically or historically sensitive. The property measures some 1 ½ miles from northwest to southeast and some ¾ of a mile from west to east. It is a varied mosaic of types of wetland and forest, several of which can be seen within a short distance.

Page Pond

Page, or Little Pond is a "great pond" owned by the state. In addition to the 19 acre open pond there are 80 acres of "emergent marsh" with very high wildlife density. Despite the milldam downstream and active beaver, Page is a natural pond. The pond is 8-10 feet deep with a combination of forested and marsh/shrub shoreline. It is a warm water fishery with chain pickerel, yellow perch, horned pout and golden shiners. Birds to be found at the pond are great blue heron, little green heron, osprey, Canada geese, ringnecks, mallards, black ducks, wood ducks, blue- and green-winged teal, buffleheads, common goldeneye, and hooded mergansers. The pond is "perhaps the largest migratory stopover habitat for shorebirds in Meredith" with killdeer, solitary and semi-palmated sandpipers, snipe and woodcock. Dragonflies and damselflies are common. Painted and snapping turtles live here and muskrat, black bear, moose, deer, and mink are to be seen. (17)

Figure 16: Page Pond – forested and marsh/shrub shoreline (D. Heyduk photo)

Page Wetland

The larger 281 acre Page wetland is "the largest and most significant prime wetland in Meredith", providing water storage and filtration, flood control, wildlife habitat and a nursery for finfish and shellfish. The prime wetland also includes Quarry Pond east of Page Pond, "two perennial streams, beaver marshes, floating fen mats, forested and scrub-shrub wetlands, a heron rookery, deer wintering areas, and migratory waterfowl nesting areas." These natural areas are distributed over the Page Pond and Forest property and the Sherman easement. (18)

Vernal pools are seasonal pools that are not part of a flowing drainage. They fill in the autumn or spring and dry up during the summer. Because they lack fish, vernal pools are important breeding sites for amphibians such as wood frogs, spotted, blue spotted, and Jefferson's salamanders, which migrate to these pools in the spring. After hatching and growing in the vernal pool, these amphibians return to the forest. Fairy shrimp also breed in vernal pools and many animals, including spotted and Blandings turtles, great

blue herons, and raccoons visit the pools to feed on the insects, crustaceans and amphibians living there. Such pools are found in the southern part of the forest. (19)

Three other wetland types to be found are wet meadows, marshes and shrub wetlands, often with one type grading into the other. Wet meadows are characterized by a cover of grasses and sedges and are home to ribbon snakes and spotted turtles. Marshes have plants such as cattails, pickerelweed and water lilies and are important for Blanding's turtles, black duck and red-winged blackbirds. Shrub wetlands have both shrubs and young trees and are preferred by spotted turtles, Canada warblers, New England cottontails and woodcock. Characterized by flowing water for at least part of the year, these communities have breeding fish, amphibians and waterfowl. (20)

Page Pond and Forest also has peatlands. Peat is a spongy organic material formed by partially-decayed wetland plants and is associated with acidic or stagnant water. Among other peatlands, a fen and larch swamp are found in the Sherman easement. (21)

Figure 17: Beaver pond with a fen and larch swamp – early autumn (Ralph Pisapia photo)

Page Forest

The Page Forest is a mixed lowland type dominated by hemlock, white and red pine, red and white oak and beech, which vary in dominance based on soil, water table, exposure and prior forest management. Hemlock dominates streamsides, while oak is more prevalent on rocky upland portions of the forest. Two rarer components of the forest community mosaic are a black ash – red maple seepage swamp and an appalachian oak-pitch pine forest. The former is favored by raccoon and mink, woodcock and barred owl, while the latter is preferred by squirrels, mice and chipmunks, black bear, turkey and ruffed grouse, and raptors seeking the resident rodents. Forestry management by prior owners, the last in 1986, and a 2010 forestry and wildlife habitat operation by the Town of Meredith have created areas of forest succession. Here grasses, wildflowers and shrubs or young forests provide cover and food for deer, moose, New England cottontail rabbits, woodcock, ruffed grouse and eastern towhee, among many others. These pockets of forest succession provide another wildlife-dense environment. Together the Page forest and wetlands are ranged by moose, bear, deer, coyote, gray and red fox, fisher, mink, otter, muskrat, beaver, weasel, snowshoe hare, porcupine and bobcat and are important to over 55 species of songbirds. (21)

Conclusion

The future composition of Page Pond and Forest will be governed by natural forces: changes in temperature, precipitation, storm patterns, invasive species, diseases, and migration of species. Management of the forest will be guided by a "stewardship plan" which the Conservation Commission will implement. The plan will cover the property's roads, trails and boundaries, its geology and soils, timber management, wildlife management, water resources, recreation and education, rare species, exemplary natural communities, and cultural resources.

No history is ever finished, nor any guide complete. There is always more that we might know and share. Those who can add to the information provided here are urged to contact the author and the Meredith Conservation Commission.

Figure 18: A lodge recently refurbished by the resident beaver (D. Heyduk photo)

References and Notes

1. For a description of geological history, see Caduto, Michael J., 2003, A Time Before New Hampshire, University Press of New England, Hanover. Also useful are Goldthwait, James Walter, 1950, "Surficial Geology of New Hampshire" (map), New Hampshire State Planning and Development Commission; and Potter, Jane S., 1994, "New Hampshire's Landscape and Environment", The New Hampshire Archeologist, 33/34 (1).

2. There are several studies of post-glacial plant and forest succession. The ones used here are: Oswald, W. Wyatt; Faison, Edward K.; Foster, David R.; Doughty, Elaine D; Hall, Brian R.; and Hansen, Barbara C. S., 2007, "Post-Glacial Changes in Spatial Patterns of Vegetation across Southern New England", Journal of Biogeography, 34(5): 900-913; and: Shuman, Bryan; Newby, Paige; Huang, Yongsong; and Webb III, Thompson, 2004,

"Evidence for the Close Climatic Control of New England Vegetation History", Ecology, 85(5): 1297-1310.

3. The Paleo-Indian period is described in Boisvert, Richard A., 2008, "Boisvert, SCRAP, and the Paleoamericans of New Hampshire", Mammoth Trumpet, 23(2): 9-12; and more technically in Boisvert, Richard A., 1999, "Paleoindian Occupation of the White Mountains, New Hampshire", Geographie Physique et Quaternaire, 53(1): 1-16. Note that two dating methods are used: carbon dating and calibrated carbon dating. The first, and older, method uses measurement of the decay of a radioactive isotope of carbon and is reported as "radiocarbon, or C-14, years before present". The second also measures radioactive decay, but then "corrects" that date by comparison to tree rings, annual sediment layers, and other known calendar year sources. Calibrated carbon dates are reported as "years before present" and for the Paleo-Indian period are 1,000 to 1,600 years earlier than carbon dates. Thus, a carbon date of 10,000 years ago, when calibrated, is 11,600 years ago in calendar years. Both have +/- margins of error.

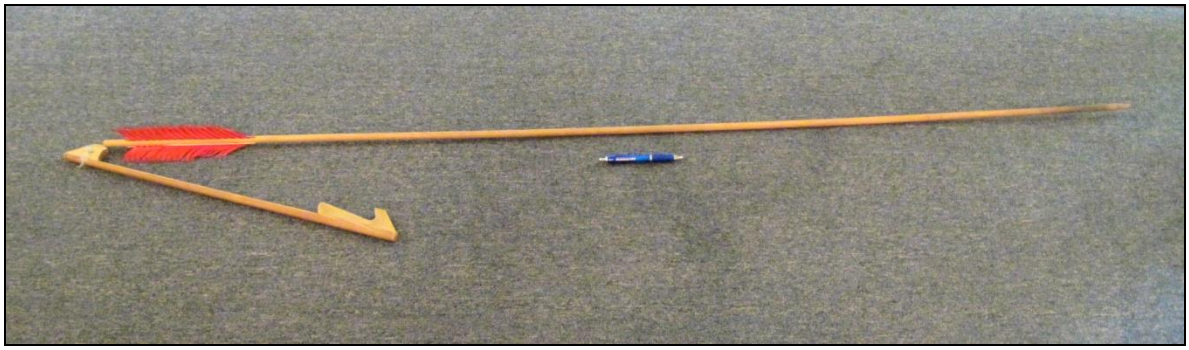


Figure 19: A modern spear without a prepared point and an *atlatl* throwing stick which fits in a socket at the fletched end of the spear shaft. The *atlatl* is gripped in the hand and gives the arm greater length and the throw greater force. (D. Heyduk photo, Peabody Museum of Archaeology)

4. The Archaic Period is described in Caduto (see 1. above); and in Starbuck, David R., 2006, The Archeology of New Hampshire, University of New Hampshire Press, Hanover.

5. Richard Boisvert, personal communication.

6. For a thorough description of Native American canoe-craft, see Adney, Edwin Tappan and Chapelle, Howard I, 1964, The Bark Canoes and Skin Boats of North America, Smithsonian Institution Press, Washington, DC.

7. Woodland is the Native American culture that Europeans found when they reached New England. See Starbuck (4. above) for an archaeological description, and Caduto (1. above) for a somewhat idealized folk history.

8. Several local histories offer information about the European contact and pre-settlement history of the area: Meredith Historical Society, 1968, Early Meredith, Meredith News, Inc.; Hurd, D. Hamilton, ed., 1885, History of Merrimack and Belknap Counties, New Hampshire, J.W. Lewis & Co., Philadelphia; Hanaford, Mary E. Neal, ed., 1932, Meredith NH Annals and Genealogies, The Rumford Press, Concord.

9. An eye-witness description of clearing the forest is: Runnels, Moses T., 1882, History of Sanbornton, New Hampshire, Vol. 1 – Annals, Alfred Mudge & Son, Boston, p. 116.

10. Wyatt, Harold G., 1994, Some Meredith History, MS, Meredith Public Library, pp. 2-4 to 2-9, 024, 076; and 1981, Road Histories of Meredith, NH, MS compiled and edited by Esther C. Wyatt and Rita A. Polhemus, Meredith Public Library, pp. 26, 180. The descriptions of Blueberry Hill Road and Quarry Road (except the extension south) are confirmed by Woodford, E.M., 1859, Map of Belknap County, New Hampshire, Smith & Peavey Publishers, Philadelphia. Page Road is mentioned in Belknap County Grantor/Grantee Book 112, p. 116 and Book 130, P. 221. The other descriptions are undocumented and are probably based on oral history.

11. For the Gilman family: Briggs, Thomas H., 1957, Meredith Neck, Meredith Historical Society; Hanaford (see 8.), pp 236-237; U.S. Census records; and deeds recorded in Belknap County Grantor/Grantee Book 2, p. 169; Book 5, p. 9; Book 16, p. 549; and Book 16, p. 550. The Gilman houses as of 1859 appear on the Woodford map. (see 10.)

12. Dudley Leavitt and other members of the family are described in: Moulton, Ruth, nd, Dudley Leavitt, Meredith Historical Society; and Rice, Franklin P., ed, 1891, Memorials of Meredith, Massachusetts Record Society, Worcester. Dudley Leavitt's landownership is recorded in Belknap County Grantor/Grantee Book 6, pp. 26, 582; Book 8, p. 20; Book 11, p. 16; and Book 12, p. 568. His service as selectman is shown by the original 1807-08 Meredith tax inventory in the New Hampshire State Archives.

13. Wyatt, Harold, 1981, Road Histories of Meredith, (see 10.); and Hanaford (see 8.): 104. The quarry does not appear on the 1909 USGS topographic map, so quarrying was probably started shortly thereafter.

14. The history of the mill can be traced through deeds: Belknap County Grantor/Grantee Book 13, p. 382; Book 16, p. 94; Book 28, p. 43, Book 66, p. 315, and Book 112, p. 116. Waterwheel information is from John Sherman. For the history of sawmills, see Williams, Michael, 1989, Americans and their Forests, Cambridge University Press. This mill should not be confused with the Roberts-Lovejoy saw and shingle mill, which was located further down Page Brook and outside Page Forest.

15. Edwin Moulton, personal communication to Peter Miller, 1990.

16. Benton, C. and Barry, S.F., 1837, Statistical View of the Number of Sheep in the Several Towns and Counties of New Hampshire, Folsom, Wells and Thurston Publishers, Cambridge. Also on Google Books. Historic Meredith tax records were not available as of this writing, but contain the acreage of cleared and forested land, number of each type of livestock and size of orchard for each farm.

17. New Hampshire state survey report, 1951; Wildlife Biologist Kristine M. Bontaites' memo, 2000; and Van de Poll, Rick, 2009, "Natural Resources Inventory – Phase II of the Town of Meredith", Ecosystem Management Consultants; and "Conservation Values of the Page Pond Forest in Meredith, NH", memo (quote). In New Hampshire, all bodies of water of more than 10 acres are owned by the state as "great ponds".

18. Van de Poll, Rick, 2009, "Natural Resource Inventory", (see 16.): p. 18.

19. "Vernal Pools", Habitat Stewardship Series, New Hampshire Wildlife Action Plan.

20. "Marsh and Shrub Wetlands", Habitat Stewardship Series, New Hampshire Wildlife Action Plan.

21. Van de Poll, Rick, 2009, "Natural Resource Inventory", (see 16.): p. 18; and "Peatlands", Habitat Stewardship Series, New Hampshire Wildlife Action Plan.

22. Van de Poll, Rick, 2009, "Natural Resource Inventory" and "Conservation Values", (see 16.); and "Floodplain Forests", "Appalachian Oak-Pine Forests", and "Shrublands", Habitat Stewardship Series, New Hampshire Wildlife Action Plan. Also see the Town of Meredith Conservation Commission map of the forest.