

SUMMARY

League of Women Voters of Concord/Carlisle
Environment Committee

Concord and its Natural Resources Series



Wood Thrush

PORTFOLIO I:

A Collection of Information on

ESTABROOK WOODS

Thoreau's Other "Great Wild Tract"

December, 1994
Box 34, Concord MA 01742



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Preliminary Report of the
Environment Committee:

Jan Buerger

Carolyn Davies

Cindy McLean-Greeley

to The Board of

The League of Women Voters of Concord/Carlisle

December, 1994

Box 34

Concord MA 01742

There is art

in celebrating the Earth

Concord Journal Apr 25 '96



Musketagid Earth Day '95 celebrants gather at Emerson Umbrella on Stow Street to line up for the parade.

PHOTO COURTESY OF ELLIE BENNIS



"Our goal is to modernize it but retain the historical flavor."

PORTFOLIO I: ESTABROOK WOODS

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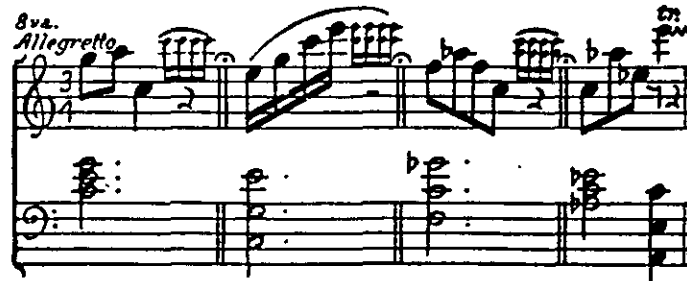
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PORTFOLIO I: ESTABROOK WOODS

Preface

We are fortunate in Concord to live in the haunts of the Minutemen and the Concord Authors. In investigating our surroundings, therefore, it is hard to detach environmental issues from historical ones because they often overlap. This is particularly the case where Henry David Thoreau is concerned. He wrote extensively about the natural resources in Concord and what they meant to those who lived here, in both his famous book *Walden* and many other early published essays.

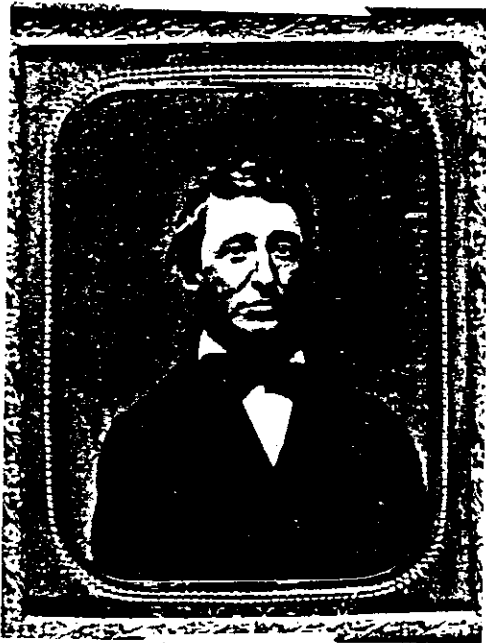
There is also a wealth of information in his *Journals*, which are not as widely read. Most of his journal entries on Estabrook were made after he finished *Walden*, so they represent, in many ways, a more sophisticated naturalist. Many of these are substantial references to water bodies, plants, wildlife and historical remains. There are more than thirty, for example, in 1857 alone (accounting for one fifteenth of the *Journal*), describing ponds, brooks, swamps, old trees, small plants, birds, frogs, and Indian and colonial remains.

This argues, indeed, in favor of the historical and ecological importance of Estabrook Country as a surviving Thoreauvian laboratory, and, thus, a treasure for scholars and Nation alike. Estabrook's position as this key surviving "lab" is even more secured by its undisturbed character relative to the much-trodden Walden Pond area, an obligatory stop for tourists, and Thoreau's two other "Great Wild Tracts," Old Marlboro Road Country and the Great Fields, both long destroyed by development. In any case, Thoreau's writing on Estabrook—with its wealth of detail, couched in and evidence for his eloquent philosophy, and always with a sprinkling of humor—makes for the best introduction of all for our collection of information on Estabrook Woods. The following three quotes from his journal entries of June 10, 1853, October 20, 1857 and October 15, 1859, seem together to compose a seminal enough definition of our subject to warrant highlighting. (Additional quotes and *Journal* references are placed below under the section entitled "Thoreau Country.") What is highlighted here gives us Thoreau's definitions of the boundary of this "Great Wild Tract" (June 10, 1853); an idea of his model comprehensive approach to our natural resources—his attention to the details of history, land use, people, animals, plants (October 20, 1857); and his sense of this area's potential for the town as a forever-wild area (October 15, 1859).

J.B.

Three Quotations from Thoreau's *Journal* about Estabrook Woods.

•Journal, June 10, 1853. "....We continued on, round the head of 'Cedar Swamp,' and *may* say that we drank at the source of it or of Saw Mill Brook, where a spring is conducted through a hollow log to a tub for cattle. Crossed on to the old Carlisle road by the house north of Isaiah Green's, and then across the road through the woods to the Paul Adams house by Bateman's Pond. Saw a hog-pasture of a dozen acres in the woods, with thirty or forty hogs and a shelter for them at night, a half mile east of the last house,—something rare in these days hereabouts.



What shall this great wild tract over which we strolled be called? Many farmers have pastures there, and wood-lots, and orchards. It consists mainly of rocky pastures. It contains what I call the Boulder Field, the Yellow Birch Swamp, the Black Birch Hill, the Laurel Pasture, the Hog-Pasture, the White Pine Grove, the Easterbrooks Place, the Old Lime-Kiln, the Lime Quarries, Spruce Swamp, the Ermine Weasel Woods, also the Oak Meadows, the Cedar Swamp, the Kibbe Place, and the old place northwest of Brooks Clark's. Ponkaw-tasset bounds it to the south. There are a few frog ponds and an old mill-pond within it, and Bateman's Pond on its edge. What shall the whole be called? The old Carlisle road, which runs through the middle of it,

is bordered on each side with wild apple pastures, where the trees stand without order, having, many if not most of them, sprung up by accident or from pomace sown at random, and are for the most part concealed by birches and pines. These orchards are very extensive, and yet many of these apple trees, growing as forest trees, bear good crops of apples. It is a paradise for walkers in the fall. There are also boundless huckleberry pastures as well as many blueberry swamps. Shall we call it the Easterbrooks Country? It would make a princely estate in Europe, yet it is owned by farmers, who live by the labor of their hands and do not esteem it much. Plenty of huckleberries and barberries here."

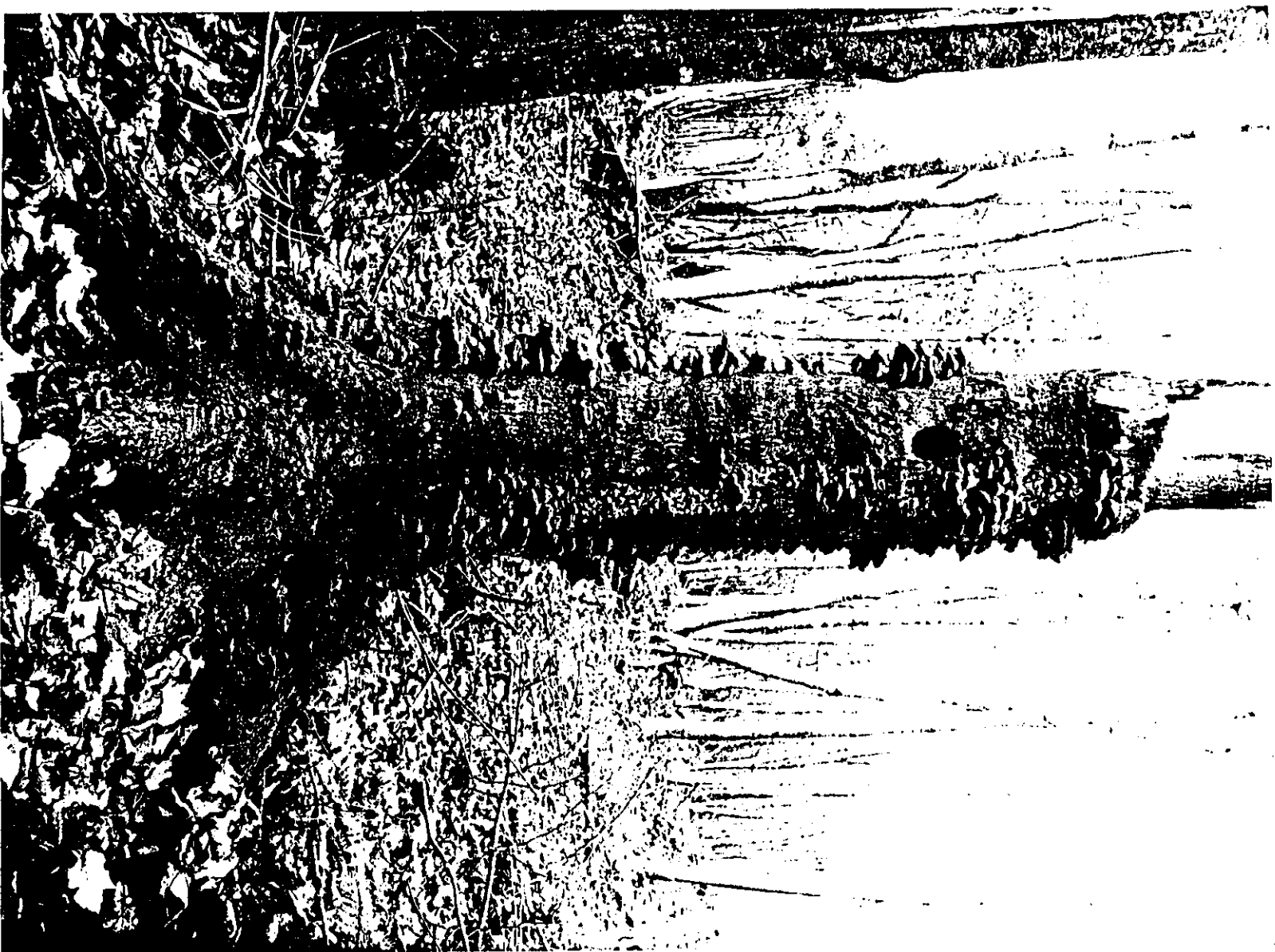
•"Oct. 20 [1857]. P.M. —To the Easterbrooks Country. I go along the riverside and by Dakin the pumpmaker's. There is a very strong northwest wind, Novemberish and cool, raising waves on the river and admonishing to prepare for



Lady's slippers, Concord, Massachusetts

Gleason photo

Old stump and woodpecker's hole, Corner Spring Woods, Concord, Massachusetts



winter.... Apples are gathered; only the ladders here and there, left leaning against the trees.

I had gone but a little way on the old Carlisle road when I saw Brooks Clark, who is now about eighty and bent like a bow, hastening along the road, barefoot, as usual, with an axe in his hand; was in haste perhaps of the cold wind on his bare feet.... When he got up to me, I saw that besides the axe in one hand, he had his shoes in the other, filled with knurly apples and a dead robin. He stopped and talked with me a few moments; said that we had a noble autumn and might now expect some cold weather. I asked if he had found the robin dead. No, he said, he found it with its wing broken and killed it. He also added that he had found some apples in the woods, and as he hadn't anything to carry them in, he put 'em in his shoes. They were queer-looking trays to carry fruit in. How many he got in along toward the toes, I don't know. I noticed, too, that his pockets were stuffed with them. His old tattered frock coat was hanging in strips about the skirts, as were his pantaloons about his naked feet. He appeared to have been out on a scout this gusty afternoon, to see what he could find, as the youngest boy might. It pleased me to see this cheery old man, with such a feeble hold on life, bent almost double, thus enjoying the evening of his days. Far be from me to call it avarice or penury, this childlike delight in finding something in the woods or fields and carrying it home in the October evening, as a trophy to be added to his winter's store. Oh, no; he was happy to be Nature's pensioner still, and bird-like to pick up his living. Better his robin than your turkey, his shoes full of apples than your barrels full; they will be sweeter and suggest a better tale. He can afford to tell how he got them, and we to listen. There is an old wife, too, at home, to share them and hear how they were obtained. Like an old squirrel shuffling to his hole with a nut. Far less pleasing to me the loaded wain, more suggestive of avarice and of spiritual penury.

This old man's cheeriness was worth a thousand of the church's sacraments and *momento mori's*. It was better than a prayerful mood. It proves to me old age as tolerable, as happy, as infancy. I was glad of an occasion to suspect that this afternoon he had not been at 'work' but living somewhere after my own fashion (though he did not explain the axe),—had been out to see what nature had for him, and now was hastening home to a burrow he knew, where he could warm his old feet. If he had been a young man, he would probably have thrown away his apples and put on his shoes when he saw me coming, for shame. But old age is manlier; it has learned to live, makes fewer apologies, like infancy. This seems a very manly man. I have known him within a few years building stone walls by himself, barefooted. I keep along the old Carlisle road. The leaves having mostly fallen, the country now seems deserted, and you feel further from home and more

lonely. I see where squirrels, apparently, have gnawed the apples left in the road. The barberry bushes are now alive with, I should say, thousands of robins feeding on them. They must make a principal part of their food now. I see the yellowish election-cake fungi. Those large chocolate-colored ones have been burst some days (at least).

Warren Brown, who owns the Easterbrooks place, west side of the road, is picking barberries. Allows that the soil thereabouts is excellent for fruit, but it is so rocky that he has not the patience to plow it. That is the reason this tract is not cultivated. The yellow birches are generally bare. The sassafras is Sted Buttrick's pasture near to E. Hubbard's Wood, nearly so; leaves all withered. Much or most of the fever-bush still green, though somewhat wrinkled.

There was Melvin, too, a-barberrying and nutting. He had got two baskets, one in each hand, and his game bag, which hung from his neck, all full of nuts and barberries, and his mouth full of tobacco. Trust him to find where the nuts and berries grow. He is hunting all the year and he marks the bushes and the trees which are fullest, and when the time comes, for once leaves his gun, though not his dog, at home, and takes his basket to the spot. It is pleasanter to me to meet him with his gun or his baskets than to meet some portly caterer for a family, basket on arm, at the stalls of Quincy Market. Better Melvin's pignuts than the others' shagbarks. It is to be observed that the best things are generally most abused, and so are not so much enjoyed as the worst. Shagbarks are eaten by epicures with diseased appetites; pignuts by the country boys who gather them. So fagots and rubbish yield more comfort than sound wood.

Melvin says he has caught partridges in his hands. If there's only one hole, knows they've not gone out. Sometimes shoots them through the snow.

What a wild and rich domain that Easterbrooks Country! Not a cultivated, hardly a cultivatable field in it, and yet it delights all natural persons, and feeds more still. Such great rocks and moist tracts, which daunt the farmer, are reckoned as unimproved land, and therefore worth but little; but think of the miles of huckleberries, and of barberries, and of wild apples, so fair, both in flower and fruit, resorted to by men and beasts; Clark, Brown, Melvin, and the robins, these, at least, were attracted thither this afternoon. There are barberry bushes or clumps there, behind which I could actually pick two bushels of berries without being seen by you on the other side. And they are not a quarter picked at last, by all creatures together. I walk for two or three miles, and still the clumps of barberries, great sheaves with their wreaths of scarlet fruit, show themselves before me and on every side, seeming to issue between the pines and other trees, as if it were they that were promenading there, not I.

That very dense and handsome maple and pine grove opposite the pond-hole on this old Carlisle road is Ebby Hubbard's. Melvin says there are those alive who remember mowing there. Hubbard loves to come with his axe in the fall and trim up his woods. Melvin tells me that Skinner says he thinks he heard a wildcat scream in E. Hubbard's Wood, by the Close. It is worth the while to have a Skinner in the town; else we should not know we had wildcats. They had better look out or he will skin them, for that seems to be the trade of his ancestors. How long Nature has manoeuvred to bring our Skinner within ear-shot of that wildcat's scream! Saved Ebby's wood to be the scene of it. Ebby, the *wood-saver*.

Melvin says that Sted sold the principal log of one of those pasture oaks to Garty for ten dollars and got several cords besides. What a mean bribe to take the life of so noble a tree!

Wesson is so gouty that he rarely comes out-of-doors, and is a spectacle in the street; but he loves to tell his old stories still! How, when he was stealing along to get a shot at his ducks, and was just upon them, a red squirrel sounded the alarm, *chickaree chickaree chickaree*, and off they went; but he turned his gun upon the squirrel to avenge himself ..."

• Journal, October 15, 1859. "Each town should have a park, or rather a primitive forest, of five hundred or a thousand acres, where a stick should never be cut for fuel, a common possession forever, for instruction and recreation. We hear of cow commons and ministerial lots, but we want *men*-commons and *lay* lots, inalienable forever. Let us keep the New World *new*, preserve all the advantages of living in the country. There is meadow and pasture and wood-lot for the town's poor. Why not a forest and huckleberry-field for the town's rich? All Walden Woods might have been preserved for our park forever, with Walden in its midst, and the Easterbrooks Country, an unoccupied area of some four square miles in the north of the town, might have been our huckleberry field. If any owners of these tracts are about to leave the world without natural heirs who need or deserve to be specially remembered, they will do wisely to abandon their possession to all, and not will them to some individual who perhaps has enough already. As some give to Harvard College or another institution, why might not another give a forest or a huckleberry field to Concord? A town is an institution which deserves to be remembered. We boast of our system of education, but why stop at schoolmasters and schoolhouses. We are all schoolmasters, and our schoolhouse is the universe. To attend chiefly to the desk or schoolhouse while we neglect the scenery in which it is placed is absurd. If we do not look out we shall find our fine schoolhouse standing in a cowyard at last."

* * *



INTRODUCTION

The League's Study

The Concord/Carlisle League of Women Voters Environment Committee in October of 1993 initiated an inquiry into the state of the protection of the environment in Concord. The League's National Position on environmental protection is based on careful study and local, state and national input. To summarize, it advocates the preservation of the physical integrity of the ecosystem, with maximum protection of the environment. It supports the management of land as a finite resource not a commodity, since land ownership, whether public or private, carries responsibility for stewardship. It supports land-use planning that reflects conservation and wise management of resources. And it supports identification and regulation of areas of critical concern, such as fragile or historical lands, where development could result in irreversible damage to rare or valuable ecosystems, significant wildlife habitats, unique historic areas, and wetlands.

Since 1959, all Concord Long Range plans have identified Estabrook Woods, a mostly-forested, five-square-mile area to the north of town, roughly bordered by Lowell Road, Monument Street, and Route 225 in Carlisle, as a priority for protection. Yet today Estabrook Woods is still almost totally unprotected. Therefore, the committee decided that the first leg of its study should focus on this subject. This *Portfolio* is the first in a series of in-progress informational reports that the Committee hopes to issue as a way of recording progress and discoveries as it proceeds. These may be updated periodically with corrections and/or new information, so the committee invites additional information from those who have expert knowledge on any of the topics under consideration, and will attempt to incorporate any new information into new editions.

There seems a need to look carefully at what is at stake in Estabrook Woods. We found information hard find—fragmentary and spread out in different sources. It was a jigsaw puzzle to be assembled. Thus, the informational portfolio idea. But, despite the voluminous information we've found, it is clear that Estabrook is relatively unstudied with relation to what riches it in reality contains.

Estabrook Woods has long been a recognized town treasure, most obvious in its role in defining the town's rural character, now fast disappearing. On closer inspection, however, its riches are virtually kaleidoscopic. Historically, it is a unique, relatively undisturbed site from pre-colonial, colonial and post-colonial days. It is a natural textbook for geological studies. It contains natural and historical features admired and studied in particular by Henry David Thoreau, who, in

turn, named the area and used it to initiate the fields of modern conservation and ecology. Finally, it holds current ecological significance.

The Historical Estabrook

The historical significance of the Woods, though not yet fully explored, has been recorded over time. The first historical phase was recorded not by man but by the geological features of the glacial age, including glacial erratics, eskers, moraine boulders, lime deposits, and so forth. These were witnesses to a period when the town was uninhabited and its terrain was pushed around by the movement of the glaciers or submerged under glacial lakes.



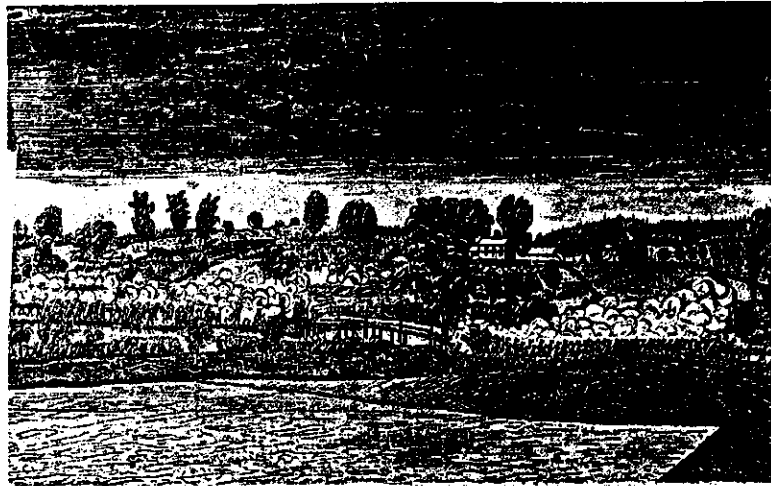
The next phase is that of human occupancy. The known Native American sites around the perimeter of the area have been identified from evidence up to 6000 years old (6000 B.P., or before present) and were located by nineteenth and early twentieth century amateur collectors such as Thoreau, Alfred Hosmer, and Adams Tolman. This has been documented by Shirley Blancke and Barbara Robinson for the Concord Museum's exhibit and catalogue *From Musketaquid to Concord* (1985). Thoreau's additional references to Indian sites in the interior part of the Woods, such as "Indian Rock... Against this the Indians camped...", (Journal, Aug. 29, 1957) are a piece of the puzzle yet to be adequately studied or verified.

Next, Estabrook contains the undisturbed remains of part of the history of Colonial Concord, particularly the area divided in 1677 into twenty lots of twenty acres, known as the Twenty Score. Here are a vast fabric of seventeenth to nineteenth century remains of farmsteads, including wells, stone walls, cider mills, lime quarries and a kiln, and the pencil mill of John Thoreau, Henry's father. Most notable among these are the remains of the important Robert Estabrook family farm sites, after which the area was named. The first one, traditionally called the Estabrook cellar hole, is located at Estabrook Road on Harvard University property, apparently owned but never inhabited by Thomas Estabrook, brother of the third seventeenth-century Concord minister, Rev. Joseph Estabrook. The other farm was the primary eighteenth-century Estabrook farm, known in Thoreau's day as "the Paul Adams Place" after the early nineteenth century owner, husband of Rebecca né Estabrook. This is north of Bateman's Pond on Middlesex School property. At both farms sites a shrewd observer can find traces of the associated

Domestic Apple orchards and landscaping plants of the Colonial period, such as lilacs and Common Privet. In addition to archival documents, vestiges of cultivation and landscaping, and structural remains, we also have a contemporary drawing that shows the "Paul Adams Place" in its heyday (Concord Museum)—an extraordinary combination of historical evidences.



The next phase of the historical Estabrook is the period of the American Revolution. On April 19, 1775 the Carlisle Minutemen marched down Estabrook Road (the Old Carlisle Road) to join fellow Minutemen for the confrontation on the North Bridge, just south of Estabrook Woods, and it is on Punkatasset Hill, on the edge of Estabrook Woods, that the Minutemen waited for the go-ahead instructions. Later, Ebby Hubbard, a land-owner in the Woods at the site of present Hubbard Hill (Ebby Hubbard's Black Birch Hill in Thoreau's day), in 1871 willed to the town of Concord about \$1000 to create a monument to the Minutemen at the North Bridge, which paid for Concord's young Daniel Chester French to create the now famous Minuteman statue at the Minute Man National Historic Park.



Post-Thoreau history is a thing unto itself. Estabrook Woods was to be the last resting place of the original, relocated Walden Pond cabin of Thoreau, removed to Estabrook apparently by the Brooks Clark family, among the individuals who admired Thoreau. The Clarks lived at the base of Estabrook Road. At the turn of the century, Herbert Gleason photographed and mapped the sites in Concord that Thoreau mentioned. In the 1970s, Concordians Mary Fenn and Mary Gail Fenn contributed significantly to the ongoing discovery process of the historical Estabrook Woods by exploring the Thoreauvian citations specific to the various remains still there. Their efforts resulted in the Thoreau Society's special publication of a map of the woods, which has been the basis for all subsequent work, and several Thoreau Society *Bulletin* articles on Estabrook's historical sites.

The general history of the Woods, too, has its contemporary update. In 1973 a young Alice Bemis (Buetti), descendent of one of the families who owned property in the Woods, culled together pieces of the whole Estabrook Woods puzzle for a Concord Academy paper, when, among other things, she located the Concord Museum drawing of the "Paul Adams Place." Harvard University recognized the area as a significant archeological site in 1936 and again in 1975, when undergraduate Alan MacMillan conducted partial investigations of the Kibby and Estabrook cellar holes. And in 1985, Concordian Martha Holland wrote a graduate paper for Harvard University Extension that significantly advanced the proper documentation of the land use and Estabrook family history with relation to the sites in the Woods. Holland found discrepancies in previous historical explanations of the Estabrook cellar hole on Estabrook Road, and, relentlessly pursuing these, unlocked the mysteries of the documents (no mean feat) and confirmed that the main Estabrook farm was not the Estabrook cellar hole site, but rather the "Paul Adams Place" at Bateman's Pond.

Most recently, the Massachusetts Historical Commission, in an attempt to avert the potential adverse impacts on Estabrook's cultural resources at the Middlesex property, asserted that the whole area has "the potential to contribute significant information on the history and development of this part of Massachusetts" and noted that "While remnants of former buildings, roadways, and other landscape features may yet be visible, buried portions of archaeological sites require systematic archaeological survey by professional archaeologists to be fully located and identified." Noted American archaeologist, Ivor Noel Hume, for example, once described the wells of Colonial Williamsburg (the dumps of that period)—which have yielded glasses, dishes, buttons, buckles, fabric, shoes, hog-bristle brushes, spades, fifes, and all sorts of items from daily-life—as "colonial time capsules." Locally, Marjorie Green Winkler's analysis of microfossils of age-old pollen trapped in the stratigraphy of the soil in Walden Pond (Schofield 1993), found evidence (rise in grass pollen, decrease in tree pollen, etc.) of land-use changes which occurred at the time of European settlement in the area, when the wooded area was cleared for habitation use. These examples give some idea of what hidden things the Massachusetts Historical Commission has in mind. What we know today about Estabrook is clearly just the tip of the iceberg.

The Ecological Estabrook

Estabrook's ecological significance is a similar unfolding story of riches, which willing observers have likewise recorded over time. For present enjoyment, it boasts "common" natural features which are all-too-rapidly disappearing in suburban towns: wooded trails, fields, extensive beds of lady slippers in Spring, and remains of old orchards. Our walks in the woods today link us to the nature studies of the past via Thoreau's walks in and study of the Woods, including his anticipation of the importance the area would have for us today and for the future (see Preface).



Colony Seal, 1629-1684

Reproduction, after original of 1629
Archives Division, Office of Secretary of State
Commonwealth of Massachusetts



On the more serious and scientific side, the area is a rare Boston-area deep-forest habitat. It contains locally rare and state-listed endangered species of plants and wildlife, and one of these is a candidate for federal listing. Estabrook contains eleven confirmed vernal pools (habitat for some of the rare wildlife species which breed more successfully in water that doesn't contain fish), and there are an estimated seven to eleven more that have been identified by aerial photography and are under investigation. (There are also two additional sites with rare breeding spotted salamanders *and* fish). Estabrook is the meeting point of two different type of forests, and includes a stand of old growth trees, which is rare in Massachusetts. And it offers a Great Pond, several other ponds, streams, brooks and swamps, and extensive wetlands, many of which form undeveloped headwaters of the Assabet and Concord Rivers. It is also a complimentary upland to the low-lands of the adjacent Concord River, including the Great Meadows National Wildlife Refuge.

It is a natural classroom. Much of its importance in this respect lies in the fact that it has been studied over time and that it remains a large tract of research space in which a student might still conduct undisturbed experiments. In many cases, its significant features are reflected in site or trail names that have accumulated over decades or even centuries (e.g. Tanager Trail, Yellow Birch Swamp, and so forth). There are continuous references to the ecology of the area, especially its bird population, from Thoreau's time until today. This is a rare situation anywhere and one

which adds potential to studies addressing long-term stability/change assessments. Thoreau makes hundreds of references to the area's history, plants and animals in his *Journals* (measurements of old trees, plants, birds, descriptions of wood frogs, or frog behavior during breeding periods, etc.). William Brewster's fifty volumes of journals document the birds in the Estabrook area in the late nineteenth and early twentieth centuries; extracts are published in his well-known book *October Farm*.



Ludlow Griscom followed up in his *Birds of Concord* (1949). Today, the area is covered in the scope of the research of nationally-renowned bird experts in the Concord area such as Richard Walton (Concord) and Wayne Petersen (Massachusetts Audubon Society, Lincoln), and is a site for annual Christmas bird counts and Spring bird walks, which will aid future studies. In the most recent Estabrook-specific bird study (on the Middlesex Woods parcel) Walton identified unusual local colonies of such species as wood thrushes, ovenbirds and Northern Goshawks (see reprint below).

Studies of plants in the area have an equally important series of historical references. Concordians of the last century, Edward and Charles Jarvis, Thoreau, and Minot Pratt all studied the botany of the area, and Thoreau, particularly, wrote extensively about the plants in Estabrook. More recent studies of the plants (Eaton 1974, Angelo 1983, Brain 1994), make references to Thoreau's comments (see reprints below).

In 1962-3, under the leadership of Concordian Tom Flint and former Middlesex School Headmaster Lawrence ("Monk") Terry, Harvard University began a drive to establish a 600-acre Concord Field Station as a continuing ecological study area under the direction of its Museum of Comparative Zoology. The stated goal of this effort was to preserve an "ecological setting that could never be duplicated if once destroyed." In its "desperate race with time and the bulldozer," Harvard also had the help of the Nature Conservancy, the Ford Foundation, and many local residents. The task was accomplished by 1968. In 1974, while the Fenns were revealing the historical landscape of Thoreau's Estabrook, the Museum of Comparative Zoology published Richard Eaton's *A Flora of Concord: from Thoreau's Time to the Present Day*, which devoted a special section to the importance of Estabrook and another particularly to the Bateman's Pond area. In 1954, the *Thoreau Quarterly* published Ray Angelo's Botanical Index to Thoreau's Journals and his ground-breaking assessment of "Thoreau as Botanist," which clarified Thoreau's contributions to the field of botany and ecology. Recently, the Sierra Club, again compelled by the potential destruction of the historical and ecological assets of Estabrook due to the threat of continuing development, issued a statement claiming that "The area known as Estabrook Woods in Concord and Carlisle may be the most important ecological reserve in our region of Massachusetts..." and urging protection.

The Protection Status

Despite the recognition of Estabrook as a unique and valuable town open space, a unique historic area, one of only two remaining Thoreauvian "Wild Tracts" and major Thoreauvian "laboratories," a unique collection of ecosystems

with significant wildlife habitat, including an increasingly rare Boston-area deep-forest habitat; despite its role in a network of major animal and water-protection corridors and patches; despite the continuous historical record of scientific interest in and historic references to the area; despite its identification by Concord Long Range Plans and local citizens as a key open space and a priority for permanent conservation protection; and despite recommendations in Long Range Plans to protect this space; despite this, the area is not under permanent conservation restriction and is vulnerable to on-going damage and threat.

Estabrook's state-recognized natural resources are only partly protected under the U.S. Clean Water Act or the Massachusetts Wetlands Protection Act (overseen by the Natural Resource Commission), and by the Massachusetts Endangered Species Act (administered by the Massachusetts Division of Fisheries and Wildlife). Upland habitat is not protected at all; and no law protects deep-forest habitat *per se*. No Massachusetts law addresses cumulative environmental damage from more than one project (most laws, like the Wetlands Protection Act, provide for reviews of potential damage on a case by case basis, without provision for relating the reviewed project to previous and or subsequent project damage). The U.S. Migratory Bird Treaty Act protects many of the birds in Estabrook, but not the habitat on which they depend. Estabrook's locally rare wildlife is not protected by any Concord by-law.

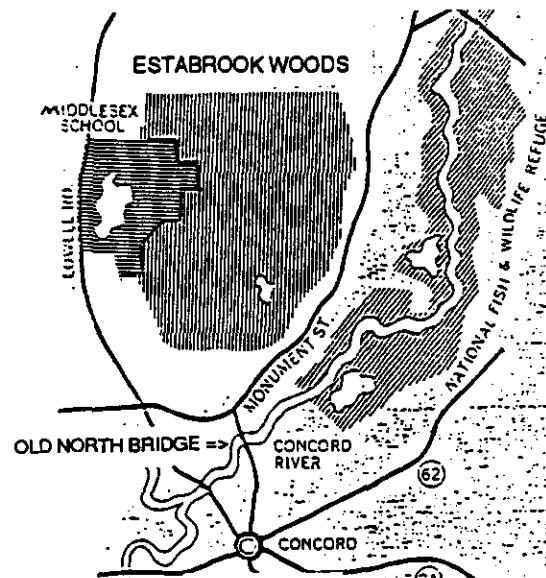
Estabrook's historical sites have not been inventoried by the Concord Historical Commission and are only partly on record at the Massachusetts Historical Commission. Nor would such an inventory fall automatically under legal protection, since these commissions act only in an advisory capacity except in certain cases (if a development requires a federal or state permit or funding) where the state reviews adverse impacts. Estabrook is outside the Historic Districts areas, which are protected by the Concord Historic Districts Commission. Estabrook as a key Thoreauvian lab is not identified under any of the available National, State or local protective designations (such as National Historic Landmark, or Massachusetts Area of Critical Environmental Concern status; Concord has never created any local protective designations or by-laws).

To complicate matters, most of Estabrook Woods is under private ownership and the two core parcels are owned by educational institutions, which are exempt from subdivision regulations under an antiquated phrase in the Massachusetts Zoning Law. Finally, the complexity of the ecological issues of the Woods are not well understood by the general public, including many property owners in the Woods, and it appears that no public educational effort has yet attempted to address this deficiency. Indeed, most efforts to preserve Estabrook Woods have taken place in private conversations and letters, and although the last often be-

come matters of public record through deposit in town files, decades of such efforts are out-of-sight from the community at large, which therefore does not easily follow the issues and progress, at hand or over time. This Portfolio in part addresses this last problem.

The Forest Fragmentation Issue

The critical issue in preserving the natural environment of Estabrook Woods is open-space- and, particularly, forest-fragmentation. "Fragmentation" is the generally undisputed theory that sub-division within a large expanse of contiguous woods through piecemeal development can cause a breakdown of the kind of deep-forest habitat and ecology that is so special about Estabrook Woods. Specifically, such deep-forest habitat appears critical for population maintenance of certain wildlife species. Recent scientific studies contend that deep-woods environments can be permanently altered even by small and incremental piecemeal encroachments, which can affect major non-point (non-localized and cumulative) damage to the overall environmental system of a deep-woods parcel through the domino-effect. In other words, fragmentation in *one* part of Estabrook Woods, might well affect the survival of area-sensitive animals and dependent ecosystems *elsewhere* or even *everywhere* in the Woods; a development on the Monument Street (east) side of the Woods could affect the animals and ecology of the whole forest, including at the Lowell Road/Bateman's Pond/Middlesex School (west) side, and vice versa. Recent tradition has abbreviated Estabrook Woods as "Harvard University's land" - the virtual forest - but this is only the central portion of the Woods. A much broader real forest was defined by Thoreau, extending generally from Lowell Road to Monument Street, and is all inter-related and cannot be managed ecologically as independent parcels.



Forest fragmentation as a major environmental concern is discussed in layman's terms in Massachusetts Audubon's *Sanctuary*, Jan./Feb., 1994, Edward Wilson's *Diversity of Life* (Harvard University Press, 1992), etc. A more detailed and alarming work by Chandler Robbins et al. (1989) has suggested acreage-needs for the survival of populations of vulnerable species of woodland birds, ranging from 1100 acres for the wood thrush, to 7000 acres for the scarlet tanager. While the risk factors for woodland birds is still in the research stage, the National Audu-

bon Society's Migratory Bird Conservation Program uses the Robbins figures as a point of departure.

Birds, again, can serve as an example in the Estabrook ecology puzzle. In the case of area-sensitive birds that require woodland habitat, as development eats away at edges of the Woods, the needed deep-forest acreage is reduced or lost, and further losses are posed as more common "edge" species move further into the remaining forest to compete with "deep-forest" species. Birds naturally recognize the edge of their preferred wooded habitat, but do not as easily recognize our artificial property boundaries. Animals generally operate based on "real" as opposed to "fictitious" boundaries, to use instructive Early American terms. Forest fragmentation in any part of the Woods, according to the forest fragmentation theory, damages the ability for these species to survive in other parts of Estabrook Woods or even in Concord. As Thoreau, in simplicity, put it, "He who cuts down woods beyond a certain limit exterminates birds." (*Journal*, May 17 1853).

The fisher and ovenbird, species which the *Open Space Plan* suggested are deep-forest habitat indicators, may accordingly ultimately need all of the space in Estabrook Woods to survive. Both of these, and many other deep-forest animals, occasion more populated areas of town, but places like Estabrook Woods appear

N°9

Plate XLJ



Drawn on Stone by W. E. Hitchcock

Putorius *Marston* or *Fisher*.

Given from Nature by J. T. Fitch, 1853.

Life of the Fish by J. T. Fitch, 1853.

to provide a important "cove" of comfort that enables them to maintain populations in the area. The "whys" of this are not clear at present. Ecological research is, indeed, complex. Stephen M. Roble recently cautioned, for example, that for animals breeding in vernal pools "stronger measures are needed to protect adjacent upland habitat that is just as critical (as wetlands) to their continued survival" ("Life in Fleeting Waters," *Massachusetts Wildlife*, Spring 1989). Despite alerts from scientists, however, laws lag behind the propensity of evidence on the issue of habitat preservation, and, unregulated, we continue to alter the landscape despite potential risk.

Today, fragmentation is a grave concern for Estabrook Woods, where deep-forest habitat is tentative and development has eaten away the edges for some time and is now feared to be at a critical stage. Indeed, not even 1100 acres (Robbins' suggested requirement for both J.J. Audubon's and Thoreau's favorite song-



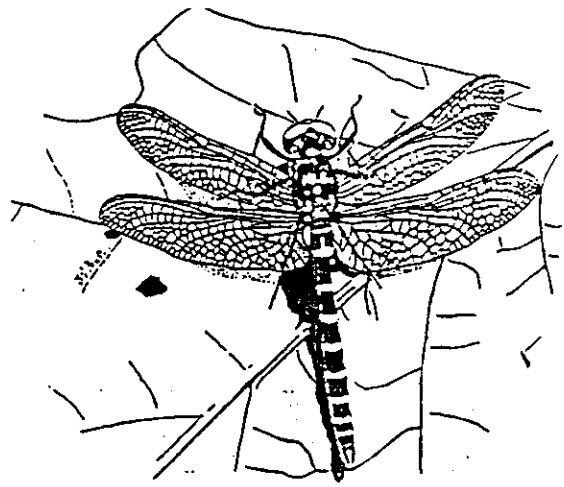
ster, the wood thrush) is firmly protected in Estabrook Woods, and, if Robbins' study is right, the National Audubon Society's caution should be applied to any further development in Estabrook, since such development would result in critical irreversible habitat losses (a key issue under the LWVUS Natural Resources position). Many of the area-sensitive birds identified in Estabrook theoretically require every acre of what contiguous forest is left. Recent amateur field research suggests that the wood thrush may be at particular risk.

The *Open Space Plan* of 1992 reiterates thirty-five years of Concord Long Range Plans, hired consultants' reports, and recent scientific assessments: "Lands owned by both Harvard and Middlesex School can be considered as 'core' parcels - i.e., their development would destroy the ecological values and functions of the entire Estabrook Country area... [and] could erode the integrity of the area." The information gathered here, which goes substantially beyond the 1992 *Plan*, confirms that each of these two core parcels contain half the historical *and* half the ecological puzzle of Estabrook Woods.

What does the evidence to date suggest?

Are we to heed, then, the ever-increasing propensity of evidence in relation to Estabrook? Historically, we know that European settlement eventually caused the loss of many once-common species in the local area which were recorded by William Wood in 1634 - lion, bear, moose and the like (see Woodruff, *Introductory Notes* to the Concord Field Station, 1974, below). And despite Thoreau's warnings and consternation, we have seen, *in our own century*, the extinction of the Passenger Pigeon, once common in Estabrook. When Edward Forbush wrote his classic study *Useful Birds and their Protection* (1913), he still hoped for the artificial cultivation of the useful wood thrush by homeowners' at their bird feeders, but this has proved impossible.

And finally, the additional information that has revealed itself between the first (January 1994) and this second (December 1994) edition of our Portfolio suggests listening very carefully to the *drift* of the evidence. The plot is only likely to thicken: four verified vernal pools identified in January, eleven to possibly as many as twenty-two identified in December; the addition of one state-listed species; the expansion of the habitat outline for another state-listed species, a species so endangered that it is now a candidate for federal-listing; the addition of area-sensitive bird information; the addition of Native American sites; the discovery that there are two Estabrook farms rather than one, that the main "Estabrook farm" is on Middlesex School rather than Harvard property, that its history goes back to the eighteenth rather than just the nineteenth century, that even its landscaping features still in part survive, and that it is intricately associated with its sister site on Harvard property; the addition of the significance of the archaeological sites; and the discovery of the extensive nature of Thoreau's study of the area as recorded in his *Journal* (many substantive references not known of at the time of the first edition). Also there is a long list of yet unpursued leads that will further enrich our knowledge.



This all suggests that we proceed with *assertive* caution.

The Current Situation

Yet development still legally continues to eat away at Estabrook's fringe. Current examples are the ongoing Monument Farm subdivision on the east side of the Woods, and even a proposed Middlesex School campus expansion on the west side on one of the two "core parcels" of the Woods (*Open Space Plan* 1992). This last is of a particularly critical nature because it would breach the natural ecological barrier of Bateman's Pond and its surrounding swamps and wetlands, which Richard Eaton identified in 1974 as one of Concord's "most exceptional areas of botanical interest," and which contains the ever-enlarging state-listed "Area(s) of Ecological Significance," and which forms the edge of the deep-forest area-sensitive animal habitat, especially for certain identified nesting birds. In immediate danger on the proposed Middlesex campus expansion locus is the nesting area of the "conspicuous and magnificent" Northern Goshawk and several area-sensitive birds such as wood thrushes, ovenbirds and scarlet tanagers, about

which the National Audubon Society's Migratory Bird Conservation Program expresses concern based on Robbins' study. The historic "Paul Adams Place" (the main Estabrook Farm), too, is directly on the Middlesex locus and will be destroyed if the expansion proceeds as planned. Naturally, as with ecological interconnectivity, issues of historical interconnections with other colonial remains in Estabrook Woods, including the Harvard Estabrook farm, or their meaning for the history of this part of Massachusetts, have importance beyond the immediate locus.

All these developments involve potential action on private property. And any perception of affecting "private property rights," as Thomas Lepisto noted recently, "can still spark controversy" ("Protecting Endangered Habitats," *Sanctuary* Nov./Dec. 1994). This has the affect of deterring a considered assessment of potential damages in respect to irreversibility. Thus, the freedoms and limitations of private property rights are important Estabrook Woods preservation issues.

Significantly, Middlesex School's proposed expansion represents a reversal of the School's historical role as *protector* of the Woods. It played a key role in the 1960s campaign to preserve the Woods by placing a significant portion of it under the stewardship of Harvard University's Museum of Comparative Zoology for ecological research, both through leadership in the campaign (through former Headmaster Monk Terry) and financial loans.

The history of Harvard University's stewardship must also be seen realistically. Harvard's land, the other "core parcel" of Estabrook, is not secure either. In 1969, a short time after Harvard Concord Field Station was established, Massachusetts General Act Chap.184, Sec. 31-3 provided a vehicle for a conservation restriction that was binding in perpetuity. The restrictions that were placed on property deeded to Harvard for the Field Station were temporary and have either expired or will expire in 1996 and 1997. Despite repeated efforts on the part of those who were involved in the original campaign to establish the Station, the University has not replaced the earlier restrictions with the currently available restrictions-in-perpetuity.

All Concord Long Range Plans presumed schools to be part of de-facto preserved "open space" or "public or semi-public reservations" (i.e. separate from space zoned for normal development) but educational institutions are, in fact, legally exempt from site review under the State Zoning Act (M.G.A. Chap.40A, Sec.3). The town of Concord has removed some of its own school property from "reservation" status, under pressure to establish low income housing, and this property has been redefined as developable. This increased pressure, due in large

part to the rise in land values in recent years, caused the 1987 Long Range Plan to express growing alarm:

... For a long time, there was a general sense of comfort that most of these key parcels would remain open. Recent events, however, have raised real prospects of their loss, and ... just a few development projects... could change forever the open and rural heritage that we enjoy today.

On the map that accompanied their report, the committee highlighted the Estabrook Woods problem in particular (see under "Maps," below).

The vulnerability of Middlesex School's and Harvard University's two "core parcels," and the absence of available protective designations on or by-laws regarding semi-public (educational) reservations or this specific area, have long-term ramifications for the town's goals regarding Estabrook. While long-term attempts have been made to persuade private, semi-private and public landowners in the Woods to place permanent conservation restrictions on their property, this method has so far failed to achieve deep-forest habitat and ecosystem protection. In fact, little Estabrook Woods land is currently under protection. With both core parcels of this town treasure still essentially vulnerable, citizens and town officials have, legitimately, been concerned.

A few model stewardship stories point to real potential. Both the Town of Concord and private citizen dollars have established challenges to fellow Estabrook Woods owners. The town acquired the 100-acre Punkatasset Hill Conservation Land in 1971 and the Concord Land Trust acquired 14 acres along Two Rod Road the same year. Michael Christian donated a permanent restriction on 28 privately-owned acres south of the Middlesex property that same year, and the Raymond Emerson family restricted the adjacent 161 private acres in 1977. The Hutchins Farm's, and recently-announced Lawrence family's agricultural restrictions, on the Monument Street side of Estabrook Country, are other examples of efforts that have been taken to preserve the landscape of the area. The ongoing herculean efforts of Marian Thornton, of the Concord Land Trust, who has coordinated a recent conservation restriction effort among Estabrook Woods owners, is particularly praiseworthy. Nonetheless, the interconnectedness of the different parcels within Estabrook leaves the whole area still vulnerable to ecological damage.

The Estabrook preservation issue points to a combination of cumulative problems which spells out the current dilemma: lack of effective long-range planning implementation; increased suburban sprawl and development pressures; extreme increases in property values which encourage owners to sell rather than preserve; issues of public and private stewardship; institution-specific exemptions



Golden-Crowned Wagtail (Thrush.)
 Male 1. Female 2.
 Plant Woody Nightshade.

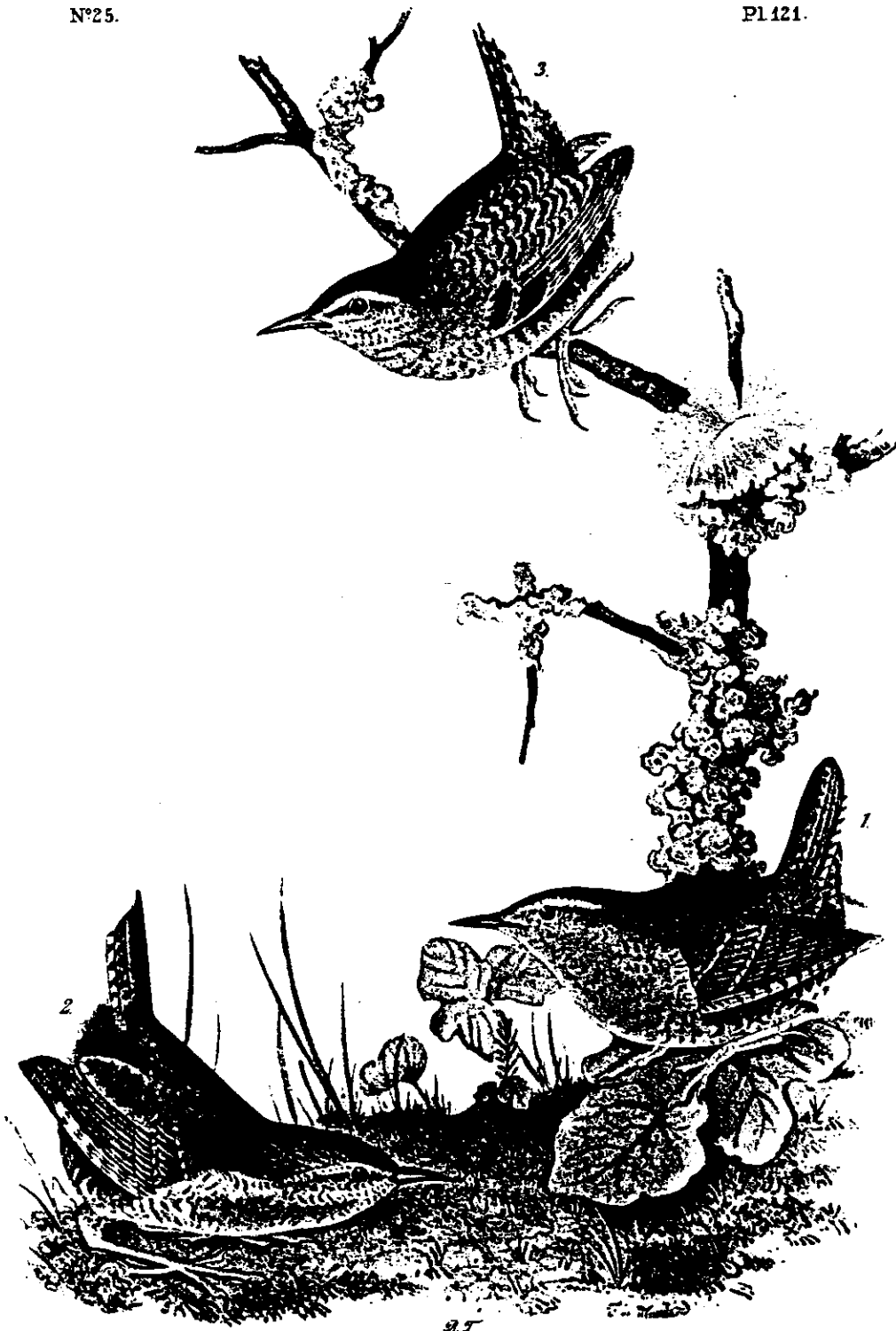
Drawn from nature by J.J. Audubon F.R.S.E.L.S.

Lith. & Printed by Endicott New York

ovenbird

Nº25.

Pl 121.



Winter Wren.

1. Male 2. Female 3. Young

Drawn from Nature by J. J. Audubon F.R.S.E.L.S.

Engraved & Col'd by J. T. Bowen Philad.

from laws that apply elsewhere; the failure of enough protection under national and state law for our ever-diminishing natural resources; the absence of local by-law protection; holes in research on the history of this area of town; and, finally, the noteworthy absence of historic-sites protection in a town of such national historic importance as is Concord. The town, Harvard University, and Middlesex School are very fortunate that Estabrook is, in 1994, as intact as it is. "In history, unlike heredity," wrote Howard Mansfield (*In the Memory House*, ca. 1993), "we choose our ancestors. We choose with monuments, markers, and history books. We choose also with bulldozers, by what we remove." We all must use every available persuasion and tool to meet the challenge of complete preservation of this area, which was initiated by Tom Flint and Monk Terry and the citizens of Concord in the 1960s. Given the pressures at hand, we will need unprecedented commitment from citizens, town, and institutions to achieve our goal.

The vulnerability of Estabrook, moreover, has ramifications for Concord's Long Range Plans in general, which include many other as-yet unachieved goals. How do we in the long term meet the community's needs (preserve the community) and still respect individual rights? George Washington addressed this very issue when he said "For our nation to flourish, there must be a respect for justice and good government but also a pacific and friendly disposition among the people, to make those natural concessions which are requisite to the general prosperity, and in some instances, to sacrifice their individual advantages to the interests of the community." We must address this as a community, united, determined, and thoughtful.

Local League Application of National League Positions

The League of Women Voters of the United States "supports identification and regulation of areas of critical concern—fragile or historical lands, where development could result in irreversible damage (such as shorelands of river, lake and streams...; rare and valuable ecosystems and geological formations; significant wildlife habitats; unique scenic or historic areas; wetlands...)...." Estabrook is certainly all of these. The LWVUS has done its task.

The League of Women Voters of Concord/Carlisle and the citizens of these towns, however, must apply state- and locally-specific, Estabrook-specific steps toward definitive protection of our treasure-at-risk. This is our task.

This portfolio offers something toward our own local education, and an encouragement not just for us to educate and involve ourselves in the creation and implementation of community goals, but to act as stewards of the land—as the LWVUS suggests, "whether public or private." It is a matter of rising to the challenge of applying the LWVUS positions to the local problem. Thoreau wrote:

"Misfortunes occur only when man is false to his own genius....." Our more immediate predecessors were not unaware of this. As they stated in the first Concord Long Range Plan (1959), even before so many of the new protective designations were added to our list of potential tools:

A program of action is necessary if Concord is to evolve according to the Plan.... A long range plan necessarily calls for a program that progresses by stages to its final goals.... **If [our] tools are used wisely...Concord can guide its own development to produce results that are compatible with community goals.** If these tools are used indiscriminately, the results are likely to be haphazard and inconsistent with the needs of the community.

If our heirs are to benefit from the Estabrook Woods we know today, educated action is necessary. The next, and perhaps the final, step in the Estabrook puzzle, is ours.



Passenger Pigeon (Ectopistes migratorius) EXTINCT SPECIES
 John James Audubon, American, 1785-1851
 Watercolor, gouache, graphite and pastel; 26 $\frac{3}{4}$ x 18 $\frac{1}{4}$ in.; 1824
 © 1993 The New-York Historical Society
 Reproduced in conjunction with the Museum of Fine Arts, Boston
 1863.17.062 08/93

Summary of Contents

Estabrook Woods, about a five-square mile open space in north Concord, extending into Carlisle, is a key town open space that is identified as a priority concern in all town long-range plans (1959-1992). All long range plans suggest that this open space (early reports also include in this designation "reservations," or semi-private or educational properties) is a key property in defining the rural character of the town and therefore is a property that should be kept as open space or preserved as conservation land in perpetuity.

It has been characterized in various town and other studies as:

- 1) **a key to the rural character of Concord, and an area of scenic beauty and recreation possibilities**, all of which the town wishes to preserve
- 2) **an area of historic importance** due to its undisturbed archaeological sites back to Indian and pre-colonial times; due to its identification with Thoreau, who named it, and to Thoreau's discussion of it—an example is his discussion of the Cornus Florida Ravine, which he named (Middlesex property), and the white-flowering dogwood he noted there, which is locally rare, and perhaps a unique site in Concord (Eaton 1974); and due to continuous study of it over the years (Jarvis, Thoreau, Channing, Pratt, Brewster, Griscom, Eaton, Angelo, Robbins, Fenn, Blanding, Brain, Walton, etc.)
- 3) **an area of ecological importance** due in main part to its great expanse and deep-forest habitat, identified as "high value and unprotected" and with a stand of old forest trees (*Open Space Plan*, 1992) but also due to the co-existence within a relatively small area of many different types of ecosystems, ideal for educational studies and scientific research, with potential for further investigation. This is what made it particularly attractive as a site for Harvard University's Field Station, which the town is proud to have (Flint, *Ecological Study Area for the Biological Community of Harvard University*, ca. 1964). Research already conducted identifies the ecological significance of the area as great: the rare existence of a suburban forest that has deep-woods habitat, indicated by such animals as the fisher and ovenbird (which would be at risk if further development took place within its area causing forest "fragmentation"); the meeting of two forest types; locally unusual calcareous sites (unprotected); wetlands habitat (partially protected by the town's Wetlands Conservancy District and Massachusetts Wetlands Protection Act); upland habitat (unprotected); important undeveloped headwaters of the Concord-Sudbury-Assabet watershed area, a Great Pond, several ponds, swamps and streams (partly protected), and wetlands habitat, including vernal pools (partly protected).

4) an ecological area in which there are special small-plants and animals. Most significantly for urgent protection are several state-listed and federal-list candidates of **rare and endangered plants and animals** in Estabrook (concentrated on the Middlesex School portion). Animals include ringed boghaunter (or banded bogskimmer) dragonfly, *Williamsonia lintneri* (MA endangered; candidate for US endangerment listing; primary habitat shown as on Middlesex's project area); the blue-spotted salamander (MA special concern); spotted turtle (MA special concern); and the elderberry longhorn borer beetle (MA special concern). Plants, for example, include the violet wood-sorrel (MA threatened).



Locally rare species can also be cited. Plants include locally rare pale *Corydalis* (Eaton 1974); common polypody fern, a favorite of Thoreau, not common in Concord but frequent in Estabrook Woods (Eaton 1974); tufted loosestrife at Calla Swamp, reported by Thoreau in 1857 and locally uncommon (Eaton 1974); sweet white violet, locally rare and uncommon (Eaton 1974); white trillium, introduced from Asa Gray's garden collection, which is no longer in existence (Brain, 1994).

5) **habitat for an above average diversity of breeding birds** (Walton 1994); with years of nesting records (Walton 1994; Brain 1994). The birds but not their habitat are often protected under the US Migratory Bird Treaty Act. Included are: nesting wood thrushes, which are favorite songsters, including of Audubon and Thoreau (Mathews 1921/1967; Boucher 1992; Thoreau *Journal*, May 17 and June 22, 1853), which are area-sensitive, requiring 1,100 acres for population maintenance (Robbins 1989), declining in numbers locally (Walton 1994), and long identified as useful birds (Forbush 1913); one pair of nesting Northern Goshawks with three babies, unique in Concord in 20 years except for one other pair (Walton 1994), uncommon statewide (Veit/Petersen 1993) and would be diminishing and headed for extirpation in Massachusetts if development continued to destroy its habitat (Petersen, conversation 1994); the veery, which has fewer than a half-dozen nesting sites in Concord (Walton 1994), and rose-breasted grosbeak, white-breasted nuthatch, scarlet tanager, red-eyed vireo - which is declining locally (Walton 1994) - and hairy woodpecker, all area-sensitive (Robbins 1989) and useful birds (Forbush 1913); the ovenbird, which is area-sensitive (Robbins 1989) and declining in the Northeast (Breeding Bird Surveys), represented in a locally unique nesting "colony" (Walton 1994), and a useful bird

(Forbush); black-throated green warbler - which is declining in the Northeast (Breeding Bird Surveys) - and winter wren, both associated with the deep-forest and therefore uncommon to rare in the area (Walton 1994), and useful birds (Forbush 1913), etc.

6) a **wildlife, and water and human corridor**. The most specific of the Concord town reports is the most recent, the *Open Space Plan* of 1992. This report goes into some detail about the ecological importance of the area, and includes documentation on several sub-areas classified by the State as "Areas of Ecological Significance." The area is defined as a patch in this report (corridors connect patches of land). Implied in this report, however, is the area's service as a wildlife and water protection corridor, since it connects to other corridors and patches (the Annursnac/Strawberry Hill Road conservation area, the Spencer Brook conservation corridor to the Assabet River, and the Sawmill Brook corridor to the Concord River and to Great Meadows National Wildlife Refuge). Estabrook, in other words, might also be seen as a corridor.

7) an **area of geological significance**, containing the calcareous habitat of the quarry, "high value and unprotected" (*Open Space Plan* 1992); and one of two remaining eskers in Concord (the *Open Space Plan* of 1992 identifies three, but the Concord Country Club partially destroyed one of these in 1993), *roches moutonnées* (sheepbacks) on the cliffs at Middlesex School, etc.

It should be noted that the ecological issues cited here are drawn from recent research which was readily confirmable for 1994. Mammal population data, and bird and plant population data outside the Middlesex School property is sometimes 20 years old and has therefore not been used in this overview. A more inclusive review of the available research must wait for the next edition of the Portfolio. In addition, new research in these and other areas are coming up daily, with an increasingly broader overview of and fresh insights about the treasures of the Woods. Likewise, the plotted areas of Indian sites are drawn primarily from early Concord collectors' records, which generally relied on finds turned up by accident of the plow, i.e., in former farmland, while most of Estabrook was historically former woodland, pasture and orchard (not plowed). No complete archaeological survey has been done of Estabrook to verify certain Thoreau references or determine whether other sites exist; however, were they to exist, they would be valuable undisturbed sites. Little detailed information exists on the early colonial upland settlement roughly identified on the maps included here; a complete archaeological investigation of such an undisturbed site might be invaluable. The lime quarry/kiln site was recognized as of major historical importance by the Concord Historical Commission in 1987 (see under "Historic Issues," below), but this has not yet been pursued.

SUMMARY MAP KEY

Summary Map (partial plotting of significant sites)

- - - - -	Dotted ovals	"Areas of Ecological Significance" (includes Massachusetts Endangered or protected Species Categories)
1 - 12	Numbers	rare species of plants and animals
●	black circles	historic sites
★	star within circle	additional important ecological sites
*	asterisks	geological features
➡	large arrows	connections to other water and wildlife corridors
▨	cross-hatching	general areas of identified Native American sites
★	star	probable historic site
☆	empty star	general area of additional state species of concern currently under study
●	small black circles	additional locally rare plants
—	solid black ovals	State High Priority Sites of Rare Species Habitats and Exemplary Natural Communities

SITES

Note: The summary map of sites in Estabrook Woods is based on information currently available, confirmable at the present time. A reader should take into consideration that other sites of importance may exist but not be plotted, due to the absence of current knowledge. Many additional Harvard University property sites might have been plotted if time had permitted confirmation, for 1994, of sites identified by research published in the 1970s or 1980s. The immense concentration of sites at the Middlesex property is due in part to the richness of the site and in part the current higher level of interest in and consequent recent information regarding this site due to the School's proposed expansion plan. However, as more research is conducted or confirmed there and elsewhere in the Woods we will undoubtedly discover other sites on Middlesex property or equally rich sites outside the Middlesex property which should be added to the map.

Readers are urged to contribute new information or corrections to the LWV Environment Committee for subsequent editions of the portfolio.

ESTABROOK WOODS FEATURES

PONDS

Bateman's Pond (A Great Pond)

Mink Pond

Hutchins Pond

Thoreau Pond

Turtle Pond

(Bateman's Pond and its outlet are tributary to Spencer Brook, a tributary of the Assabet River)

STREAMS

Dakins Brook

Sawmill (Wigwam) Brook

North Brook

Thoreau Brook

Water Thrush Brook

Marigold Brook

(Sawmill Brook is a tributary of the Concord River: Sawmill - Hutchins Pond - Water Thrush Brook to Mink Pond, or Thoreau Brook to Thoreau Pond - Red Wing Swamp - north to Carlisle Swamp)

SWAMPS

Calla Swamp

Yellow Birch Swamp

Red Wing Swamp

Carlisle Swamp

ESTABROOK WOODS
Historic Features Summary Fact Sheet

[for additions or corrections, please call Jan Buerger 369-4204]

- * photo exists
- ** contemporary drawing exists
- *** map, plan or sketch of layout exists
- **** contemporary source information exists

NOTE: An overview of the significance of this landscape can be found in the introduction of the League of Women Voters of Concord/Carlisle, Estabrook Woods: Thoreau's Great Wild Tract, Concord, 1994.

General Landscape *, **, *** (aerial photos 1991 (UMA/DEP); latest USGS and parcel maps; historical maps: general location of Musketaquid 17th c. (Wood), Colonial period (Walcott), 1830 (Hale/Shattuck), 1852 (Walling), 1852 (Thoreau/Hunt Woods, Batemans Pond), 1906 (Gleason); early USGS, 1947-50 (Emerson), 1970 (Fenn), 1973 (Harvard core parcel), 1992 (Open Space Plan), 1994 (Brain), 1994 (Blancke) etc.

Mink Pond * panorama
Hutchins Pond * panorama

Early Site Names, examples

Punkatasset Hill (Native American)
Wigwam Brook (now Sawmill Brook)
Two Rod Road (1744, 33 ft. between bordering stone walls)
Estabrook Road (see below, Minuteman route) *

Glacial Age remains *, ***

geological: moraine boulders, eskers, etc. *
animal: Mystic Valley Amphipod (Middlesex property) ***

Ancient remains ***, ****

old growth trees

Colonial landscaping remains **, ****

Domestic Apple orchard remains, Paul Adams Place
Common Privet hedge "
Wild apple trees, Estabrook Cellar Hole *
Lilac " *

Stone chamber, for solstice observation *, ***

with associate ritualized rocks (with quartz), walls and circular stone pile, possibly Native American (Harvard University property, see Mark Strohmeyer sketch)

Patches of Native American sites identified in plowed areas at Wood edges ***

pioneer, settler hunting and base, and farmer camps, and probable planting fields (Dakin Farm Site, Wigwam Brook Site, Hunt Site, etc.) See Shirley Blancke's maps

Indian Rock (where the Indians camped), (**** by Thoreau)

Indian Corn-hills (**** by Thoreau, Daniel Brooks Clark)

site near Paul Adams Place (Middlesex property), identified by Thoreau as old and used as cow pasture in his day, confirmed by PAL archeologically in 1995-6, ca. 13/18th centuries; cited by MA Historical Commission in 1996 (relative to continued use in Colonial times) as "unique as far as can be determined at this time."

site on Daniel Brooks Clark property (**** Clark's diary July 5, 6, 1847 as on side hill east of house, which he plowed over (ref: Steve Ells)

Lime Quarry, in use by early Colonial period (17th c.) *,****

Lime Kiln (Colonial) ****

(lime kiln pasture referred to by Thoreau, Clark in Oct. 26, 1849 and others, ref. Tom Blanding, Steve Ells)

Stone Pile Site, north of lime quarry, of thirty-odd pointed stone circles *,***
with associated stone walls and Large Stonepile Site A. Possibly a quarry-related charcoal site.

Large Stonepile Site B (Middlesex property) and C (HU)

Vast fabric of stonewalls networked north-south, with north walls oriented to magnetic north *,***
(see HU Concord Field Station map of 1973 for parts)

Rod-wide Stonewall (Middlesex property)

Common Hog Pasture and Hog Shelter (**** as east of Paul Adams Place, by Thoreau)

Robert Estabrook Farm I remains (Estabrook Cellar Hole) *,****

cellar hole, stone walls, animal pens, apple trees, lilacs
(HU property, see Alan McMillan excavation report)

Robert Estabrook Farm II remains *,**,**,**** (Paul Adams Place, married Rebecca Estabrook), 1861 Melvin drawing in Concord Museum; historical deeds cite drainage ditches and path right of ways related to current trails; 1856 "J.D. Brown Farm" plan located at deeds office shows cosway and path boundaries (noted in deeds from 1741) near current rare rod-wide stonewall and ditch; small as-yet archaeologically-unlocated building to left in Melvin drawing; homestead enclosure and garden (perhaps Betty Estabrook's deeded garden of 1814?); orchards and woodlots to east of homestead enclosure (noted in deeds from 1834), etc.
Archeologically identified cellar holes, barway (with rare rod-wide element), stone walls, well, dump site with "staggering" finds; on-site identification of Colonial Domestic Apple trees and Common Privet hedge elements (id. Walter Brain)
(Middlesex property, see Martha Holland HUEX paper for deed traces, PAL Inc. Phase I survey 1995, "staggering" finds, Phase II survey for barway and additional cellar hole, Steve Ells sketch for location)

Boaz Brown Cellar Hole

Brooks Clark House * (destroyed 1995)

Black Birch Cellar Hole

Samuel Kibby Cellar Hole (1745, Carlisle) ***,**** with remains of cider mill site (McMillan excavation report)

Isaiah Green Cellar Hole

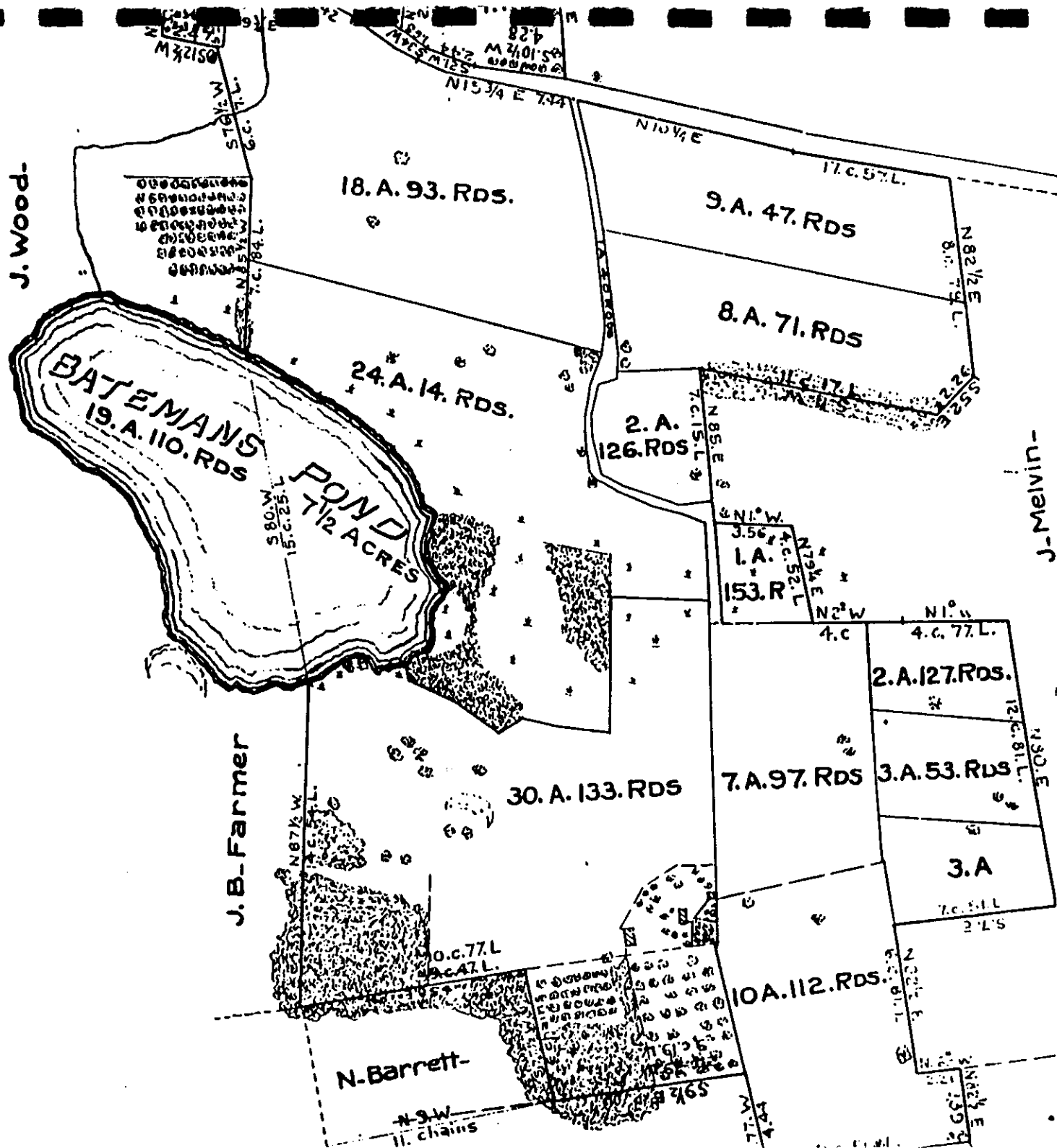
Minuteman route (Estabrook Road) *, only one surviving in its original form, with associated Muster Place (Punkatasset)

John Thoreau Pencil Mill site

Thoreau "Great Wild Tract" (named and defined Journal, June 10, 1853, philosophy expanded in "Huckleberries") **,***
over 150 substantive references in Journals, Natural History essays, etc. (see Ells reference compilation) on geology, geography, history, trees, plants, animals and animal behavior, ecology. See Gleason, Fenn, Bueti/Bemis, Brain, maps.

Samuel Estabrook Cellar Hole (before 1747, Carlisle) (Lapham)

1854



Acknowledgements

Even in this draft edition of the Portfolio, the Committee must acknowledge a great number of debts. First, there is no way to adequately explain the miracle of the community effort this represents. Our project, it seems, has caused the dam to break, and information pours forth faster than we can cope. We acknowledge, therefore, a snowball effect that makes it necessary to warn the readers of the many references in hand that are yet to be pursued.

We follow in the tracks of groundwork laid by the Concord-Carlisle League of Women Voters Growth Committee. Anne Bidstrup and Ann Chapman particularly made excellent start-off suggestions. Dan Monahan, Natural Resources Coordinator, kindly pointed us to the NRC files on Estabrook Woods. Mike Farny helped out with a U.S.G.S. map of the area until the committee could get hold of its own. Professor Richard Taylor, Director of Harvard University's Concord Field Station, provided material produced by the Station and permission to reproduce it. Marian Thornton, of the Concord Land Trust, provided a map of the Woods that identifies parcel by parcel protection status. Walter Brain provided an overview of the plant life in the area, with site identifications. John Andrews, of the Thoreau Group of the Sierra Club, gave us valuable information on forest fragmentation. John Dolan, coeditor of *The Thoreau Quarterly* at the University of Minnesota, gave permission to reproduce Ray Angelo's ground-breaking article "Thoreau as Botanist". Leslie Wilson guided us on our first foray of the Special Collections at the Concord Free Public Library. Brian Ladd, of the National Audubon Society's Migratory Bird Conservation Program, in Boulder, Colorado, promptly responded to our inquiries about area-sensitive bird studies. Geraldine and Benita Robbins opened Roland Robbin's files to us in our search for archeological references. Massachusetts Audubon Society staff members Wayne Petersen (birds), Peter Dunning (plants and trees) and John Mitchell (Audubon literature and Estabrook history) gave advice and permission to reproduce pertinent excerpts from Audubon Society publications. And initial consultations with officers of the U.S. Environmental Protection Agency and the MA Departments of Environmental Protection and Environmental Management have also guided our direction.

Shirley Blancke provided information and maps from her research on the Native American sites. Tom Blanding opened his Estabrook files to us and provided a rich assortment of additional information on the Estabrook- and Thoreau-related historical issues. Bryan Windmiller contributed information about vernal pools. Carol Dwyer provided quotations about Estabrook from Thoreau's *Journals*, financial aid toward the first edition of the portfolio, and an all-important guided walk (our first) in the Woods. Steve Ells provided expert advice, practical guidance, maps, computer work, and coordination of the Thoreau *Journal* quotes of Carol Dwyer and others. If it were not for the moral and practical support of these two, this Portfolio would never have seen the light of day.

Ellie Bemis and Alice Bemis Buetti stand in a class of their own. Descendants of one of the major donors of land to the Harvard Field Station, and familiar with the Woods, they offered a sense of connection to the past and future, contributing both knowledge and wisdom to our efforts. Finally and especially, I want to thank Lila Buerger for her patience and forbearance.

Much of the material here is comprised of excerpts edited from various other sources for the purpose of assessing the history of Concord's goals in regard to the environmental protection of the property: the Concord *Long Range Plan* of 1959, the report of the Comprehensive Town Plans Committee of 1973-4, the *Long Range Plan* of 1987, the 1987 Concord Map, and the *Open Space Plan* of 1992. Here, the bulk of these are presented in chronological order. Each of these reports was in turn compiled by dedicated town committees who are listed along with the information taken from the reports. All Concord citizens, like us, are indebted to these few for their labor-intensive efforts.

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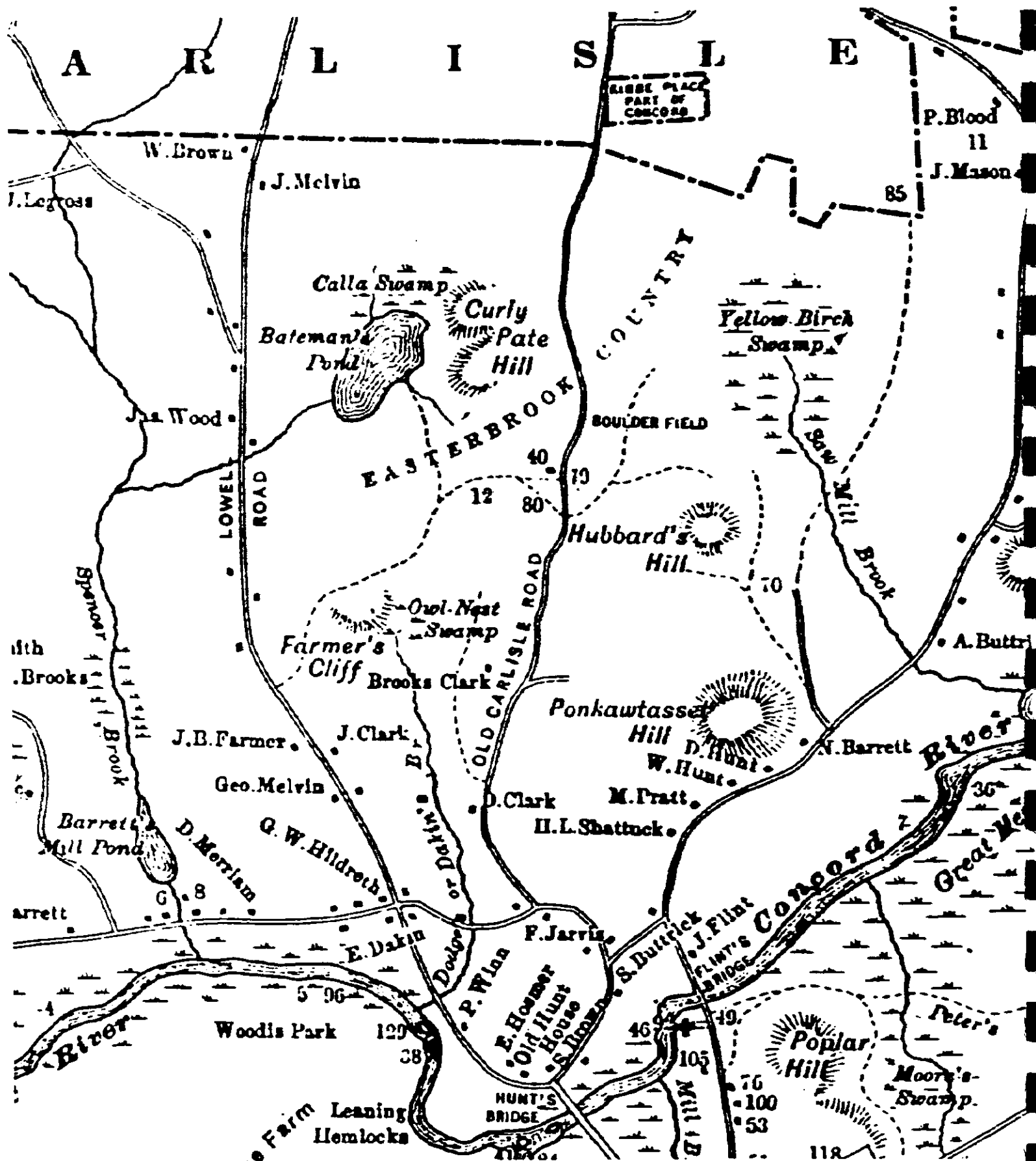
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Thoreau Sites, Gleason Map (detail)



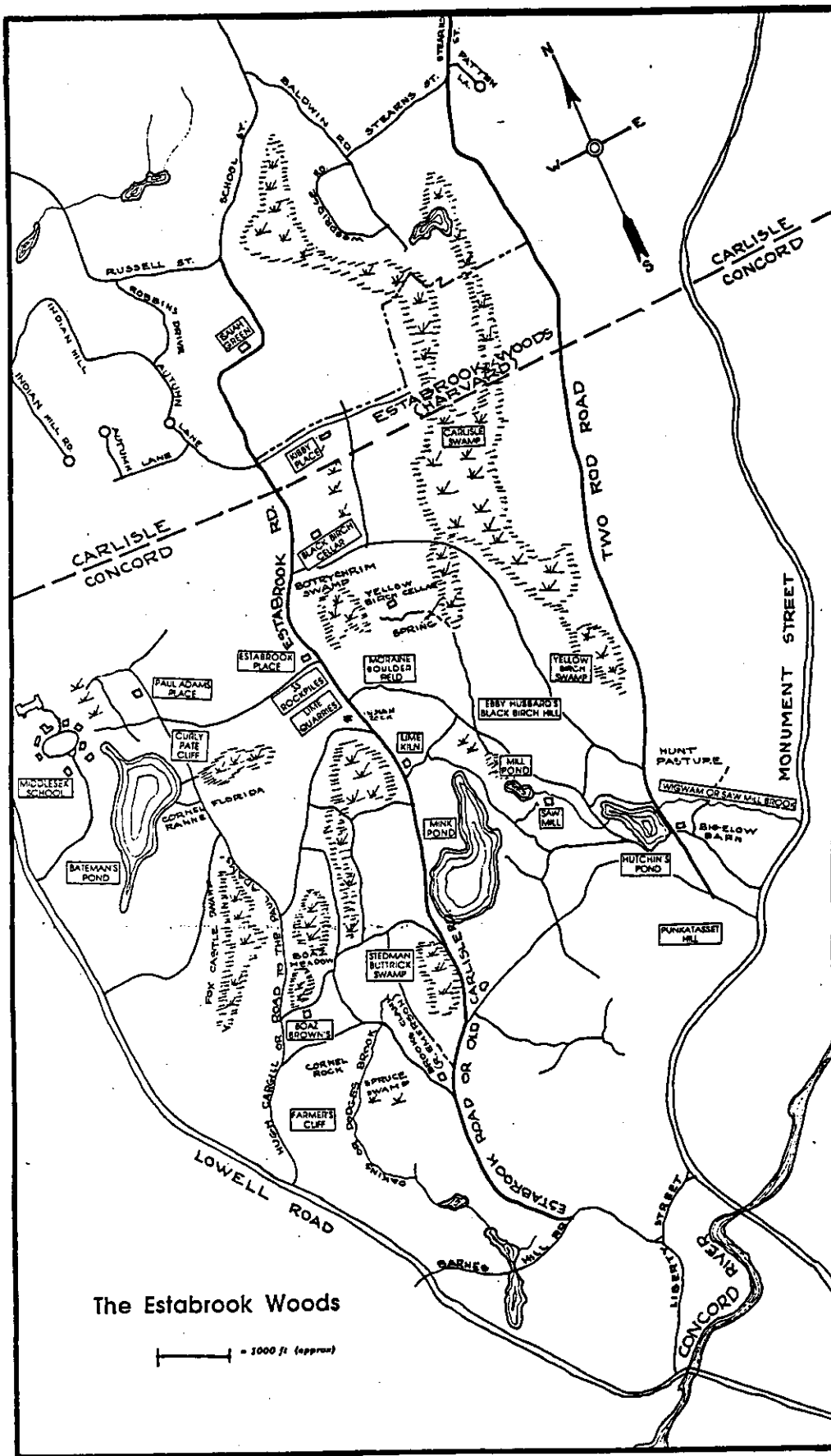
INDEX TO MAP OF CONCORD

Figures in parentheses correspond with figures on the map. A letter and figure combined indicate the space within which the locality may be found, this space being determined by the intersection of imaginary lines drawn from the corresponding letter and figure in the margin.

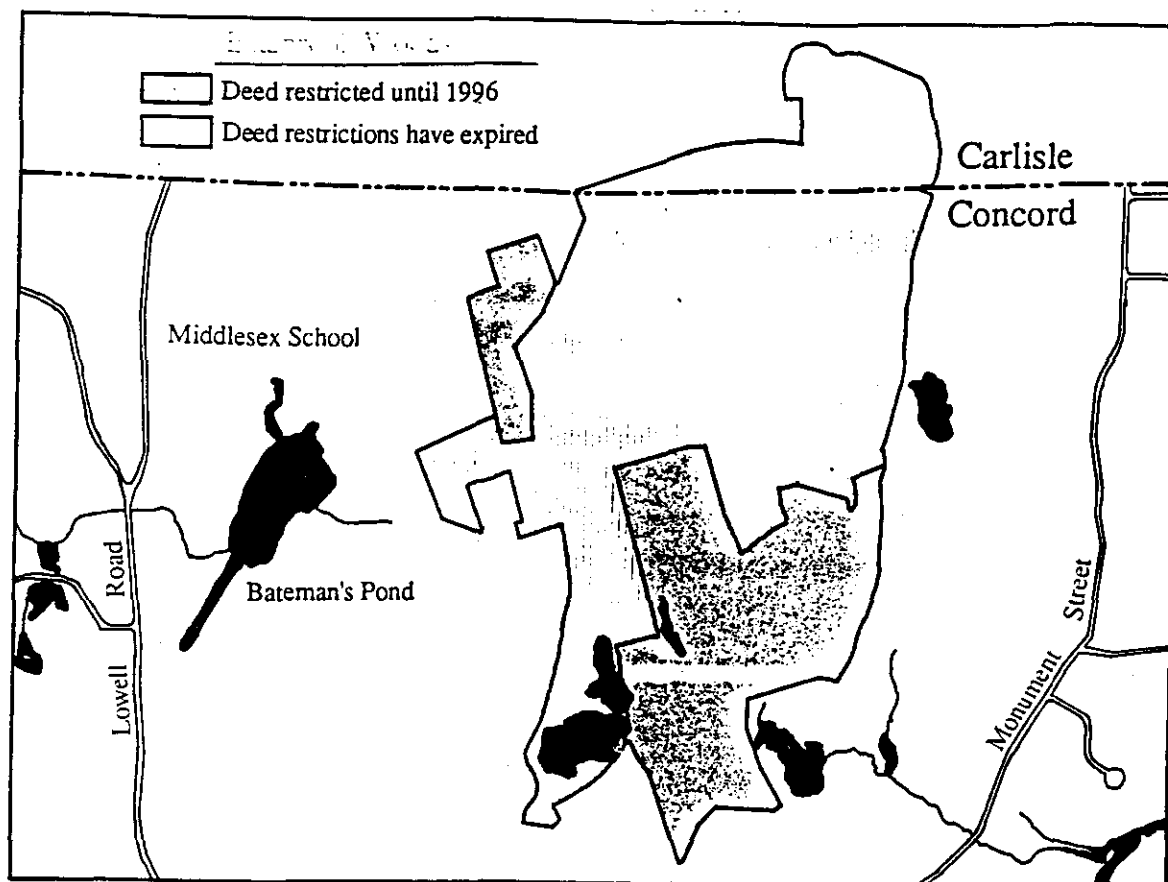
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(2) Almshouse. G 8	Buttrick, Abner. D 8	Echo Wood. (See Holden Wood.)
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(15) Britton's Camp. H 9	(35) Dennis's Lupine Hill or Promontory. G 5	(58) Heywood's Wood-lot. H 8
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		Hosmer, Abel. F 4

(66) Hosmer, Edmund (before 1853). G 9	(86) Miles's Mill, Warren. H 4	(108) Seven-Star Lane. J 5
Hosmer, Edmund (after 1853). E 6	Miles's Run, Charles. H 5	(109) Shattuck, D. F 6
Hosmer, Jesse. G 4	Miles Swamp. H 4	Shattuck, H. L. D 7
Hosmer, John. G 5	Mill Brook. F 9	(110) Shrub Oak Plain. J 7
Hosmer, Joseph. F 4	(87) Mill-dam. F 7	Sleepy Hollow Cemetery. F 7
Howard's Meadow. (See Heywood's Meadow.)	Mill Road. J 4	Smith, C. H 10
Hubbard, C. G 6	Ministerial Swamp. H 3	Smith, J. A. D 4
(87) Hubbard, Ebby. F 7	Minn's Place. K 8	(111) Smith, J. M. F 6
(88) Hubbard's Bath. G 6	Minott, Abel. K 7	Smith's Hill. G 10
Hubbard's Bridge. H 6	Minott, Geo. F 7	South Bridge. (See Wood's Bridge.)
Hubbard's Brook. G 6	(89) Money-Diggers' Shore. G 5	Spanish Brook. (See Well Meadow Brook.)
Hubbard's Close. G 8	(90) Monroe, Francis. F 6	Spencer Brook. C 5
(69) Hubbard's Grove. G 5	(91) Monroe, Wm. F 6	(112) Squam Harbor. D 9
Hubbard's Hill. C 7	Moore, J. B. F 8	(113) Staples, Sam. F 7
Hunt, D. D 7	Moore's Swamp. E 8	Stone Bridge. F 6
Hunt, Wm. D 7	Mt. Misery. K 7	(114) Stow, Cyrus. F 7
Hunt House, Old, or Winthrop House. E 6	Mt. Tabor. K 10	Strawberry Hill. B 3
Hunt's, or Red, Bridge. C 7	Nashoba Brook. E 2	Sudbury Meadows. L 5
(70) Hunt's Pasture. E 8	Nawahawtuck, or Lee's, Hill. F 6	Sudbury Road. H 5
Hutchinson, Peter. E 6	Nightshade Pond. (See Clematis Pond.)	Sunset Reach. (See Clamshell Reach.)
(71) Indian Field. E 6	North Branch. (See Assabet River.)	(115) Swamp Bridge Brook. G 6
(72) Inn kept by Thoreau's Aunt. F 7	(92) North Bridge, Site of Old. E 7	Tarbell, D. G 4
(73) Island, the (at high water). F 6	(Battle-Ground.)	Tarbell, W. C 9
(74) Jail. F 7	North Bridge, Present. (See Flint's Bridge.)	(116) Tarbell's Spring. G 4
Jarvis, Francis. E 7	Nut Meadow Brook. H 4	Temple's Place. D 4
Jones, Mrs. D 7	One-Arch, Eddy, or Assabet Stone, Bridge. E 4	Thoreau's Birthplace. E 10
Kalmia glauca, or Holden Spruce, Swamp. H 6	(93) Orchis Swamp. J 7	(117) Thoreau's Boat-Landing. F 6
Kettell Place. E 10	(94) Orthodox Church. F 7	(118) Thoreau's Grave. F 7
(76) Keyes, J. R. F 7	Owl-Nest, or Fox Castle, Swamp. C 6	Thoreau's Hut, Site of. H 7
Kibbe Place. B 7	(95) Painted-Cup Meadow. E 4	(119) Thoreau's Home in the Village. F 6
(77) Laurel Glen. H 7	Peter's Path. E 8	(120) Thoreau's "Texas" House. F 6
Leaning Hemlocks. E 6	Pine Hill (in Concord). E 10	Three Friends', or Lincoln, Hill. J 10
(78) Ledum Swamp. H 4	Pine Hill (in Lincoln), or Bare Hill. J 9	(121) Town Hall. F 7
Lee Farm. E 5	(96) Pinxter Swamp. E 6	(122) Trillium Woods. H 7
Lee, I. S. K 6	Pleasant Meadow. J 7	(See Bittern Cliff.)
Lee's, or Corner, Bridge. K 6	Pole, Creel, or Bidens, Brook. K 6	Tuttle, Aug. G 8
Lee's Cliff. K 6	Ponkawtasset Hill. D 7	Union Turnpike. F 5
Lee's Hill. (See Nawahawtuck.)	Poplar Hill. E 7	(123) Unitarian (First) Church. F 7
Legroza, J. B 4	Potter, Jonas. G 6	Virginia Road. E 9
Lexington Road. (See Boston Road.)	(97) Potter's Field. H 6	Walden Pond. H 8
Lily Bay. (See Willow Bay.)	(98) Potter's Swamp Meadow. H 6	Walden Road. G 7
(79) Lime-kiln. C 6	(99) Pout's Nest, or Wyman Meadow. H 8	(124) Walden Woods. H 7
(80) Lime Quarry. C 6	Pratt, Minot. D 7	Warner Pail Factory. F
(81) Linnea Hills. H 4	(100) Prescott, G. L. F 7	Well Meadow. J 7
Little Goose Pond, or Ripple Lake. H 9	(101) Prichard, M. F 7	(126) Well Meadow, or Spanish, Brook. J 7
(82) Little Truro. G 5	Powder-Mills. H 1	Weston, Daniel. J 10
(83) Lonely Graveyard. G 6	Puffer, B. H 5	Wetherbee, L. B 4
Loring's Pond. F 3	(102) Purple Utricularia Bay. K 7	Wharf Rock. H 10
Lowell Road. C 5	(103) Railroad Depot (Concord). F 6	Wheeler, Cyrus. K 5
Mackintosh, W. J 9	Railroad Depot (Lincoln). L 9	Wheeler, F. A. J 5
(84) Mantasket Point or Rock. E 6	Red Bridge. (See Hunt's Bridge.)	Wheeler, Samuel G. F 5
Marlborough Road, Old. H 3	Rice, Israel. L 5	Wheeler, T. F 6
Mason, J. B 8	(104) Rice, Reuben. F 7	White Pond. J 4
Maynard's Place. J 2	(105) Ripley, Mrs. ("Old Manse"). E 7	Willis, J. G 2
Melvin, Geo. D 6	Ripley Hill. (See Poplar Hill.)	(128) Willow Bay, or Lily Bay. G 5
Melvin, J. B 5	Ripple Lake. (See Little Goose Pond.)	(129) Willow Island. E 6
Melvin Preserve. (See Easterbrook Country.)	Sandy Pond. (See Flint's Pond.)	Winn, P. F 6
Merriss, D. E 5	Saw Mill Brook (N. E.). C 7	Winthrop House. (See Old Hunt House.)
Merriss, J. F 9	Saw Mill Brook (S. E.). G 9	(130) Witherell Vale or Glade. G 5
(85) Merrick's Pasture. F 6	(106) School where Thoreau taught. F 7	Wood, Elijah. F 5
Miles, Charles. H 5	Second Division Brook. J 2	Wood, Jas. C 5
Miles, J. L 5	(107) Second Division Spring. H 2	(131) Wood's, or South, Bridge. F 6
Miles, Martial and Warren. H 4		Wood's Park. E 3
		(132) Wood Thrush Path. H 10
		Wright, J. G 9
		Wyman Meadow. (See Pout's Nest.)
		Yellow Birch Swamp. B 3

2711



This map of the 3000-acre "Estabrook Country" shows all major trails plus the historic and geologic features mentioned in Henry David Thoreau's Journals for 1851 through 1859. Harvard University's 672-acre Estabrook Woods reserve lies between Two Rod Road and the Estabrook Road trail extending north from Punkatasset Hill to just over the Carlisle line. About 770 additional acres in Concord and Carlisle are permanently protected by their owners. The map is adapted by Harold Shneider from those of Alice Bemis Buett and Mary Gail Fenn of Concord.



Estabrook Woods unprotected

"What a wild and rich domain that Easterbrooks Country!" So wrote Henry David Thoreau in 1857 and so it remains 130 years later. Estabrook Woods is full of natural and historic treasures: banks of lady slippers, golden yellow birch trees, and sassafras, and the rare American chestnut; huge glacial boulders, esker ridges and drumlin hills; an ancient lime quarry and kiln, 17th century cellar holes and rock walls, and the old road to Carlisle.

In 1968, when Estabrook Woods was threatened with development, Concordians raised funds to protect a large portion of the area by supporting Harvard University's establishment of a biological preserve on 650 acres. However, the only

legal covenants remaining to protect this area expire before the year 2000.

No other single area of Town is as important to Concord's open space goals. The Town's purchase of 92 acres at Punkatasset Hill in 1971, and the Emerson family's important permanent restriction on development of 161 acres along the Old Estabrook Road in 1977 protect two portions of this large natural area. But Harvard University's acreage in the middle of the woods and Middlesex School's extensive holdings west of Bateman's Pond need to be protected.

RECOMMENDATION: the permanent protection of Estabrook Woods.

Method

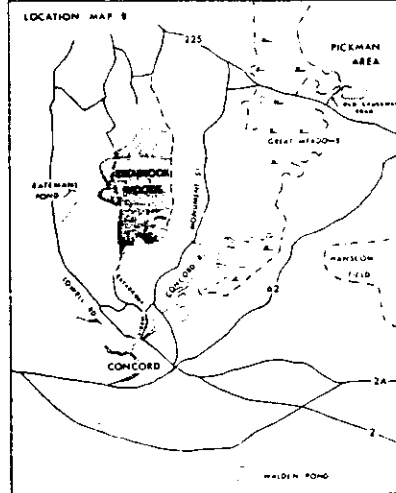
- Legend**

(10/15/94) 10 A.M.

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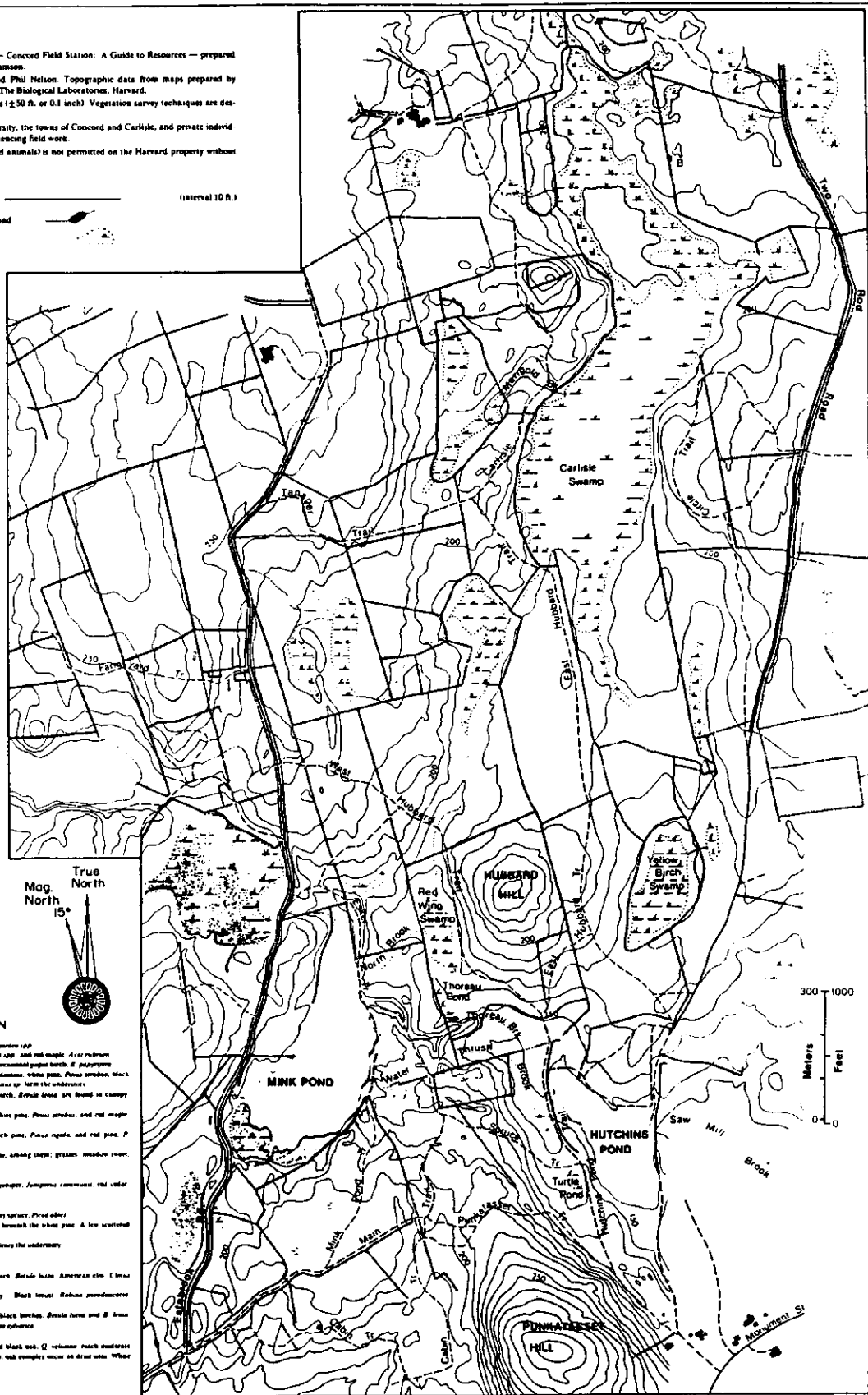
swamp



KEY TO VEGETATION

- BOG:** *Sagittaria*, *Potamogeton*, *Najas*, *Scheuchzeria* spp. and modern *Sagittaria* spp.
OPEN SWAMP: Various open areas with some emergent vegetation, sedges, Sails spp. and red maple. *Acer rubrum*.
OAK - WHITE BIRCH: oaks: *Quercus* spp. + white birch, *Betula pumila*, occasional paper birch if peatlands
MIXED OAK: same as above, but includes Chokeberry, *Cornus*, *Amelanchier*, viburnum spp., Pinus strobus, black
 bark Birch, *Betula lenta*, yellow Birch & Silver red maple, *Acer rubrum* and oak frequent up here the understory
MIXED OAK - BLACK BIRCH: both oaks Quercus spp. + Black birch, *Betula lenta* are found in canopy
 Understory birch
BLACK BIRCH: *Betula lenta* dominates canopy and understory. A few oaks, white pine, Pinus strobus, and red maple
Acer rubrum
MIXED OAK - PINE: both are canopy trees. Generally white pine but both pine, Pinus rigida, and red pine, *P.*
resinosa, may be less abundant red maple, *Acer rubrum*
ORCHARD: cherry orchard, *Prunella* spp., *Rubus* spp., *Malus* spp., *Elaeagnus angustifolia*, hawthorn, dogwood,
 Japanese sp. Magnolia, *Fraxinus* spp. and occasional *Asclepias* species
OPEN FIELDS: see on Harvard property
OLD FIELD: blackberry, Vaccinium up back/better, Cystopteris up + dirt patchy, Juniperus common, red violet
 + yarrow, grey birch, Betula pumila and red pine clearly and site upper wet
ASH: Presence of dominant canopy and understory
WHITE CONIFERS: white pine Pinus strobus and red pine P. resinosa and Norway spruce Picea abies
WHITE PINE - RED MAPLE: red maple, *Acer rubrum* appear equally between the white pine + a few scattered
 oaks
WHITE PINE - BLACK BIRCH: Pinus strobus forms the canopy. *Betula lenta* forms the understory
WHITE PINE: plantations with little understory
HEDMUCK: Traps connected with little or no understory
RED MAPLE SWAMP: small red maple, *Acer rubrum* swamps with a few white birch, *Betula lenta*, American ash E. fraxinea
 and European ash Fraxinus excelsior, Chokeberry, *Cornus*, and ash Fraxinus
RED MAPLE - OAK: *Acer rubrum* and Quercus spp. form the canopy. Black birch, *Betula pendula* scattered
 common locally
LOW MIXED HARDWOODS: red maple, American ash, red yellow and black birches, *Betula lenta* and E. fraxinea
 and *Fraxinus americana*

* **OAKS:** several species occur throughout the Woods. Red oak, *Quercus rubra*, and black oak, *Q. velutina*, reach maturity and may hybridize. Specimens of the latter, *Q. macrocarpa*, and pin, *Q. prinus*, oak samples occur as driftwood. White oaks, *Q. alba* and swamp white oaks, *Q. bicolor* are scattered, locally abundant.



Nature Preserved

Agreement protects natural character of Estabrook Woods



Photo by Jon Chase

A protection agreement preserving undeveloped land surrounding the Estabrook Woods, where Harvard's Museum of Comparative Zoology has a field research station, was celebrated during a reception on Monday at the MCZ. Pictured around a map of the Estabrook Woods area are (from left) Trudy Coxe, Massachusetts Secretary of Environmental Affairs; MCZ Director James McCarthy; Wesley Ward, Trustees of Reservations; Russell Robb III, representing private land owners; Marian Thornton, Concord Land Conservation Trust & Carlisle Conservation Foundation; Frederic Winthrop Jr., Trustees of Reservations; and Harvard President Neil L. Rudenstine.

By Susan Peterson
GAZETTE STAFF

What a wild and rich domaine," Henry David Thoreau wrote of the wooded land in Carlisle and Concord. The area today remains relatively untouched and is still known for its rich natural resources of wildlife, ponds, and fields.

And now, an agreement by the towns of Concord and Carlisle and some property owners will preserve a large section of the Estabrook Woods. More than 400 acres of undeveloped land surrounding a 672-acre tract owned by Harvard University has become a permanent buffer to preserve the Woods' natural resources. The Woods are the central core of a conservation corridor in Concord and Carlisle, where Harvard's Museum of Comparative Zoology has a field research station.

The undeveloped land, which is owned by Concord and Carlisle and families in the communities, adjoins the 672 acres used for the field research station. Harvard has worked on the preservation effort with a number of organizations, including the Concord Land Conservation Trust, Carlisle Conservation Foundation, The Trustees of Reservations, as well as many citizens.

The occasion was marked by a reception Monday at the Museum of Comparative Zoology, with various Harvard administrators, faculty, community volunteers from Concord and Carlisle, and representatives

"This is a wonderful example of what can happen when communities work together. Rare is it these days that ways can be found to increase the amount of open space in our cities and towns. And rare is it that so many people are willing to look to the future as they have in this project, and to give so much of their time and energy toward an effort as good and important as this."

—Neil L. Rudenstine, PRESIDENT

of the state and federal governments and private foundations in attendance.

"This is a wonderful example of what can happen when communities work together," said President Neil L. Rudenstine. "Rare is it these days that ways can be found to increase the amount of open space in our cities and towns. And rare is it that so many people are willing to look to the future as they have in this project, and to give so much of their time and energy toward an effort as good and important as this."

The Museum of Comparative Zoology's property, known as the "MCZ Woods," serves as a research base for studies in environmental biology. The additional land will permanently maintain the natural character of the Estabrook Woods and ensure that these lands will be protected from development and for teaching and research.

Museum Director James McCarthy, Alexander Agassiz Professor of Biological Oceanography in the Museum of Comparative Zoology, described the preser-

vation as an act of altruism for the future.

"When I think of the progress that we are celebrating," he said, "the major advance toward the preservation of the Estabrook Woods for teaching, research, and conservation, I am struck by the complementarity of the approaches that made this possible. The selfless, tenacious, singular fixation on the future is truly inspiring."

Others attending the reception included Trudy Coxe, Secretary of Environmental Affairs for the Commonwealth of Massachusetts.

"This is a step of permanence," Coxe said. "There is housing in the area, but this agreement means no more. It lends itself well to guaranteeing the natural resources and ecosystem base without fear of being disturbed in the future."

"This is a visionary concept. This extraordinary laboratory, rich in diversity of plants and animals, intact and close to one of America's largest cities, will be preserved forever."

THE COMMONWEALTH OF MASSACHUSETTS

In the Year One Thousand Nine Hundred and Eighty-eight

RESOLUTIONS HONORING HENRY DAVID THOREAU.

WHEREAS, HENRY DAVID THOREAU, A SON OF MASSACHUSETTS, HAS ACHIEVED WIDESPREAD AND EVER-INCREASING RECOGNITION FOR HIS WRITINGS ON CONSERVATION AND ECOLOGY; AND

WHEREAS, POLITICAL LEADERS FROM MAHATMA GANDHI TO MARTIN LUTHER KING, JR., HAVE PAID HOMAGE TO THOREAU FOR HIS PROFOUND INFLUENCE ON THEIR PHILOSOPHIES OF SOCIAL JUSTICE; AND

WHEREAS, SIGNIFICANT NATURAL SITES ASSOCIATED WITH THOREAU ARE SOURCES OF EDUCATION AND ENJOYMENT FOR THE CITIZENS OF THE COMMONWEALTH, AS WELL AS SOURCES OF INSPIRATION AND FELLOWSHIP FOR THE PEOPLES OF THE WORLD; AND

WHEREAS, DEVELOPMENT INCREASINGLY IMPINGES ON THE NATURAL BEAUTY OF SIGNIFICANT THOREAU SITES AND IMPAIRS THEIR IMPACT AS PARADIGMS OF THE HARMONIOUS INTERRELATIONSHIP OF MANKIND AND THE LAND; THEREFORE BE IT

RESOLVED, THAT THE MASSACHUSETTS HOUSE OF REPRESENTATIVES RECOGNIZES THE IMPORTANCE OF SITES SIGNIFICANT IN THE LIFE AND WRITINGS OF HENRY DAVID THOREAU AND SUPPORTS EFFORTS TO PRESERVE AND PROTECT THESE UNIQUE RESOURCES AND THOREAU'S INVALUABLE LEGACY FOR FUTURE GENERATIONS AND THE WORLD; AND BE IT FURTHER

RESOLVED, THAT A COPY OF THESE RESOLUTIONS BE FORWARDED BY THE CLERK OF THE HOUSE OF REPRESENTATIVES TO THOREAU COUNTRY CONSERVATION ALLIANCE.

HOUSE OF REPRESENTATIVES, ADOPTED, JULY 28, 1988.

George Keverian
SPEAKER OF THE HOUSE

Robert E. MacQueen
CLERK OF THE HOUSE

OFFERED BY:
John H. Loring
REPRESENTATIVE JOHN H. LORING



THE COMMONWEALTH OF MASSACHUSETTS

In the Year One Thousand Nine Hundred and Ninety-five

RESOLUTIONS RECOGNIZING THE VALUE OF PRESERVING SITES SIGNIFICANT IN
THE LIFE AND WRITINGS OF HENRY DAVID THOREAU.

WHEREAS, HENRY DAVID THOREAU, A SON OF MASSACHUSETTS, HAS ACHIEVED WIDESPREAD AND EVER-INCREASING RECOGNITION FOR HIS WRITINGS ON CONSERVATION AND ECOLOGY; AND

WHEREAS, POLITICAL LEADERS FROM MAHATMA GANDHI TO MARTIN LUTHER KING, JR., HAVE PAID HOMAGE TO THOREAU FOR HIS PROFOUND INFLUENCE ON THEIR PHILOSOPHIES OF SOCIAL JUSTICE; AND

WHEREAS, SEVERAL NATURAL SITES, OF WHICH THOREAU PROMOTED THE PRESERVATION, ARE SOURCES OF EDUCATION AND ENJOYMENT BY THE CITIZENS OF THE COMMONWEALTH AS WELL AS SOURCES OF INSPIRATION AND FELLOWSHIP FOR THE PEOPLES OF THE WORLD; AND

WHEREAS, DEVELOPERS ARE INCREASINGLY IMPINGING UPON THE NATURAL BEAUTY OF THESE SITES AND POSE A DANGEROUS RISK OF DESTRUCTION TO THESE PARADIGMS OF THE HARMONIOUS INTERRELATIONSHIP OF MANKIND AND THE LAND; NOW THEREFORE BE IT

RESOLVED, THAT THE MASSACHUSETTS SENATE HEREBY RECOGNIZES THE PRECIOUS VALUE OF SITES SIGNIFICANT IN THE LIFE AND WRITINGS OF HENRY DAVID THOREAU AND HIS INVALUABLE LEGACY FOR FUTURE GENERATIONS AND FURTHER SUPPORTS EFFORTS TO PRESERVE AND PROTECT THESE UNIQUE NATURAL RESOURCES; AND BE IT FURTHER

RESOLVED, THAT A COPY OF THESE RESOLUTIONS BE TRANSMITTED FORTHWITH BY THE CLERK OF THE SENATE TO THE THOREAU COUNTRY CONSERVATION ALLIANCE.

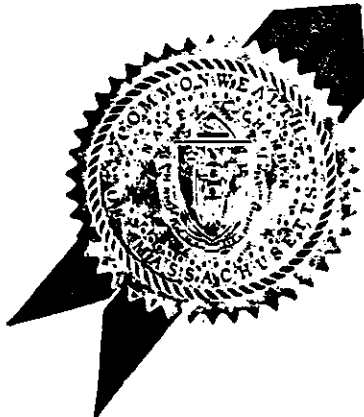
SENATE, ADOPTED, NOVEMBER 27, 1995.

William M. Bulger
PRESIDENT OF THE SENATE

Edward B. O'Neill
CLERK OF THE SENATE

OFFERED BY:

Lucile P. Hicks
SENATOR LUCILE P. HICKS



Senate votes to support Thoreau Country preservation

By Belina Asano

On Nov. 27 the Massachusetts Senate unanimously resolved that it "recognizes the precious value of sites significant in the life and writings of Henry David Thoreau and his invaluable legacy for future generations and further supports efforts to preserve and protect these unique natural resources."

Sen. Lucile Hicks offered the resolution on behalf of the League of Women Voters of Concord-Carlisle (LWVCC), which requested it in connection with its Estabrook Woods Protection Project. Estabrook is Thoreau's last undisturbed "Great Wild Tract".

The resolution was written in 1988 by the late then-Rep. John Loring and Thoreau scholar Tom Blanding of the Thoreau Country Conservation Alliance (TCCA). Loring offered it to the House of Representatives when

development was threatening Walden Woods, and it passed unanimously.

Helen Bowdoin, executive director of TCCA, responded, "It's a wonderful confirmation of what we've always believed."

Said Blanding, "It's good to see that the seed we planted seven years ago at Walden Woods is now bearing fruit in the Estabrook Country. It sounds like Thoreau's principle of forest succession." (Blanding refers to Thoreau's precocious research in the then-unknown area of ecology, recently published in the book "Faith in a Seed.")

"The League was pleased to assist in this TCCA initiative at a time when the town's focus on Thoreau Country has expanded to Estabrook," said Ruth Lauer, president of LWVCC. "The Resolution underscores the town's intent to preserve Estabrook, which was prioritized in the Long Range Plan of 1987 and the Open

Space Plan of 1992. We're grateful to Senator Hicks for recognizing and supporting our goals."

Senator Hicks commented "I was pleased to work with the League of Women Voters and TCCA by adding the Senate's voice in honoring Thoreau and his contribution to our cultural heritage."

Marian Thornton of the Concord Land Trust also weighed in with her pleasure about the resolution. "It's perfect timing to highlight the importance of the Concord Land Trust's Harvard Challenge in Estabrook Woods. We have nearly reached our goal of preserving 400 acres of additional land around Harvard University's 672 acres at the Concord Field Station. When that goal is obtained, Harvard will record its charitable obligation to keep its land open for research and education in perpetuity. In fact, we expect to reach beyond our original goal of 1,072 acres and get 1,200."

"That, in turn, is great news," responded Jan Buerger, LWVCC Estabrook Project Specialist. "Critical parts of the ecosystem require large tracts of forest to survive, including Thoreau's favorite songster, the Wood Thrush."

The League began a study of Estabrook in 1994 and published "Estabrook Woods: Thoreau's Great Wild Tract" in 1995. This paints a picture of an unusually significant

land with many site-specific, town, regional, national and international levels of importance, both ecological and historic. Included are a summary of Thoreau's journal references to the Woods; works on various aspects of the Woods and on Thoreau as a naturalist; wildlife lists, archeological and geological sites in the Woods; and references to Estabrook in Town reports and the media.

Thoreau's hundreds of journal references to Estabrook's plants, animals, geology and history definitively illuminates this parcel as a richer-than-normal Thoreauvian legacy - virtually a living Thoreauvian laboratory and a mecca for scholars today.

The League study begins with Thoreau's seminal passage on "Esterbrooks Country": "Each town should have a park, or rather a primitive forest ... a common possession forever, for instruction and recreation. Let us keep the New World new..."

One hundred fifty years later, with most new in the New World gone, Thoreau's credo to save this remarkable remnant of it for future generations looms ever larger. The Senate and House Resolutions now make the legislative intent in regard to this land clear.

Belinda Asano is on the board of the League of Women Voters of Concord-Carlisle.

Text of the resolution

Resolutions recognizing the value of preserving sites significant in the life and writings of Henry David Thoreau.

Whereas, Henry David Thoreau, a son of Massachusetts, has achieved widespread and ever-increasing recognition for his writings on conservation and ecology; and

Whereas, political leaders from Mahatma Gandhi to Martin Luther King, Jr. have paid homage to Thoreau for his profound influence on their philosophies of social justice; and

Whereas, several natural sites, of which Thoreau promoted the preservation, are sources of education and enjoyment by the citizens of the Commonwealth as well as sources of inspiration and fellowship for the peoples of the world; and

Whereas, developers are increasingly impinging upon the natural

beauty of these sites and pose a dangerous risk of destruction to these paradigms of the harmonious inter-relationship of mankind and the land; now therefore be it

Resolved, that the Massachusetts Senate hereby recognizes the precious value of sites significant in the life and writings of Henry David Thoreau and his invaluable legacy for future generations and further supports efforts to preserve and protect these unique natural resources; and be it further

Resolved, that a copy of these resolutions be transmitted forthwith by the Clerk of the Senate to the Thoreau Country Conservation Alliance.

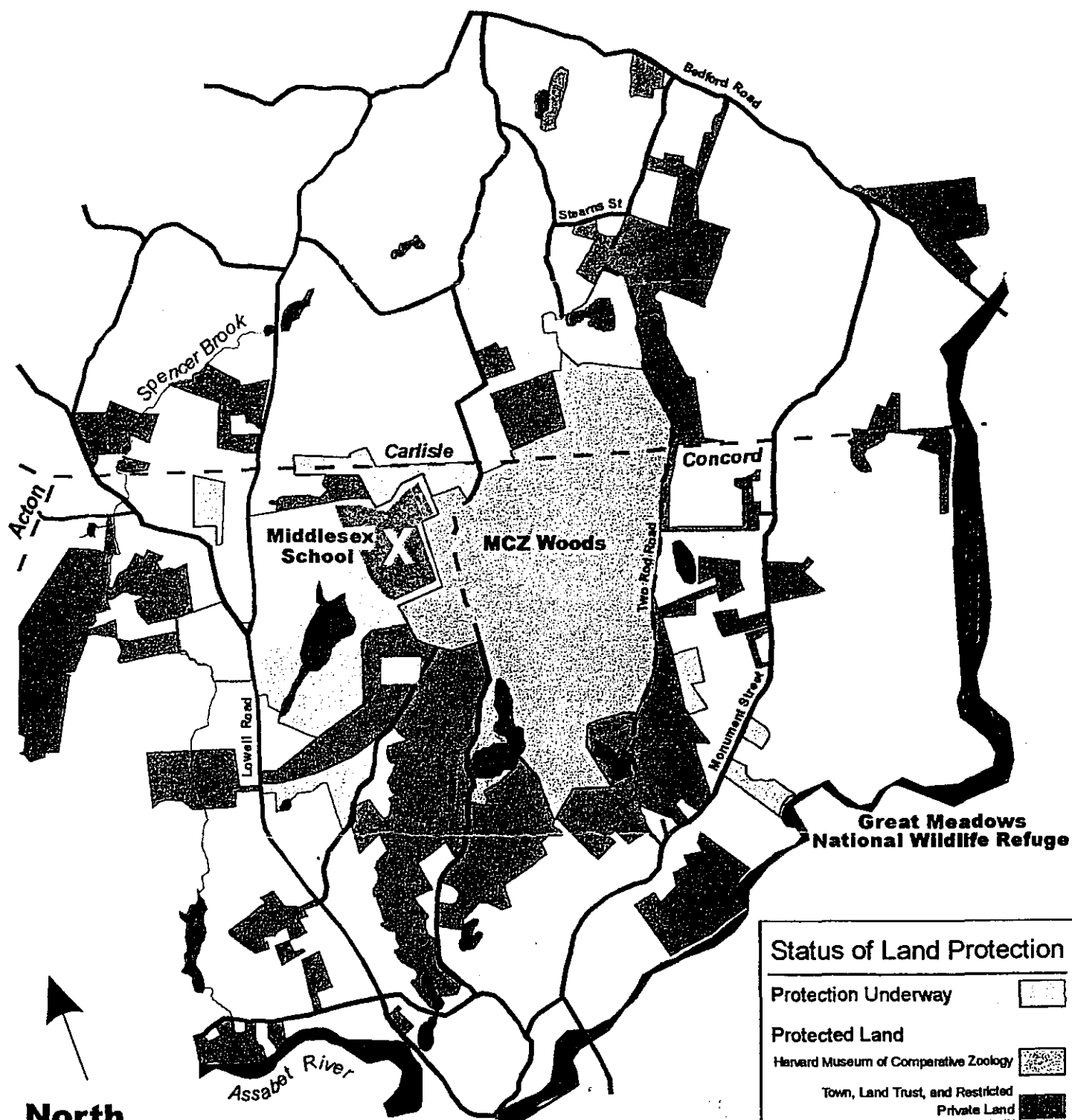
Senate, Adopted, November 27, 1995.

[signed by]

William M. Bulger
Edward B. O'Neill
Lucile P. Hicks

Protection of Estabrook Woods

Concord and Carlisle, Massachusetts



North

Approx. Scale: 1"=3,000'

Minuteman National
Historic Park
and The Old Manse

Status of Land Protection

Protection Underway

Protected Land

Harvard Museum of Comparative Zoology

Town, Land Trust, and Restricted
Private Land

Middlesex's
Proposed
Development
Area

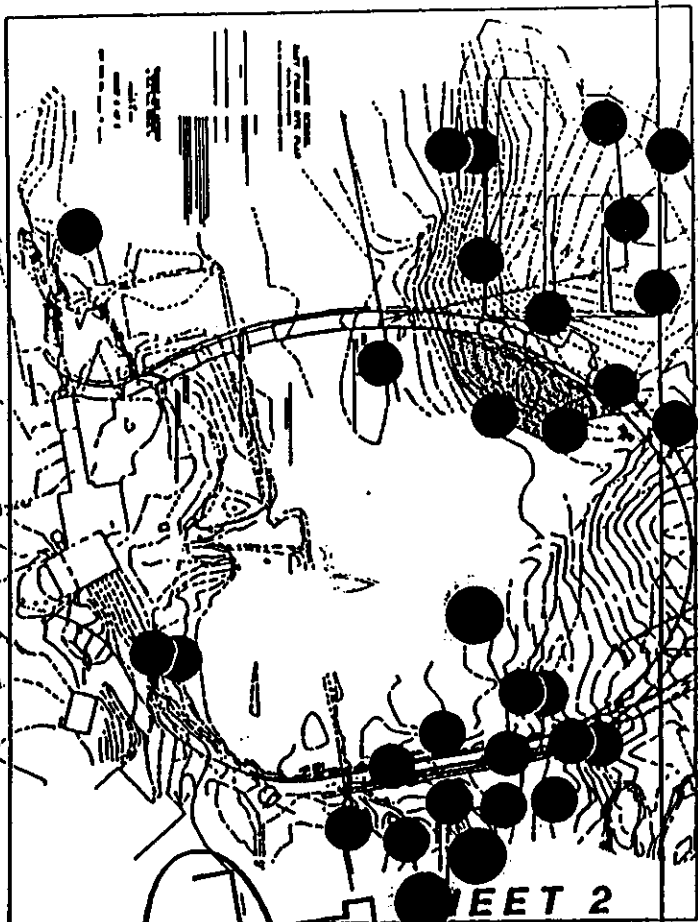


BUERGER Estabrook: A Magnified Sample Map
Middlesex Unprotected

red: nesting breeding birds at risk (a sample of 10 of 40 species present)
green: locally rare plants
yellow: historic sites
blue: Thoreau laboratory sites (from Journal references)
big black: state-listed wildlife (endangered or special concern), native habitat, exceptional wildlife community

● birds at risk (10 of 40 species)
● locally rare plants
● historic sites, etc.
● Thoreau sites
● Endangered wildlife, rare habitat, etc.

SHEET 4



SHEET 2

THOREAU LABORATORY SITES
HISTORIC SITES
LOCALLY RARE PLANTS
BIRDS AT RISK
STATE-LISTED WILDLIFE

THOREAU LABORATORY SITES
HISTORIC SITES
LOCALLY RARE PLANTS
BIRDS AT RISK
STATE-LISTED WILDLIFE

SHEET 3

SHEET 1

MIDDLESEX SCHOOL
EAST FIELDS SITE PLAN
CONDUCT SITE SURVEY
AND FIELD WORK
SHEET 1 OF 3

Note: Absence of at-risk wildlife where thinning of woods was executed in preparation for this plan, probably a forecast of future extinction
DRAWING KEY
Birds plotted here represents sample (25%) of the



The Commonwealth of Massachusetts

William Francis Galvin, Secretary of the Commonwealth
Massachusetts Historical Commission

November 26, 1996

Ted Lento
Regulatory Division
New England Division
US Army Corps of Engineers
424 Trapelo Road
Waltham, MA 02254

RE: Middlesex School Expansion, Concord, MA. MHC #RC.14450. CENED-OD-R-1992-01672.

Dear Mr. Lento:

The Massachusetts Historical Commission is in receipt of new and supplementary information concerning the proposed project referenced above.

This information pertains to the continuing concern voiced by interested parties that the proposed project may impact significant historical landscape features. MHC recommends that this information should be reviewed and taken into account by the project proponents, their consultants, and the Corps in the identification, evaluation, and effect-assessments efforts for the project.

At the onset, we must note that this information indicates that Middlesex School has agreed to place conservation restrictions on sections of their property to protect important natural and historical characteristics of portions of Estabrook Woods under their ownership. Middlesex School's efforts and generosity to donate conservation restrictions and including historical features (e.g., portions of the Paul Adams Place and the Hilled Field) within the conservation areas should be recognized as an important means to reduce the impacts of the project on significant historic features located within these conservation areas.

From our review of the information submitted to us (see enclosed), primary historical documents and observations of surface findings indicate that there appear to be several historical cultural landscape features that may be affected by the project, but that have not been sufficiently located, identified, and evaluated. These features, according to the enclosed information, are outside areas designated for conservation. The enclosed information from Janet E. Buerger summarizes these findings.

Buerger's letter indicates that the historical boundaries of the Paul Adams Place, a late 18th and 19th century farm, are likely not simply defined by the concentrated archaeological deposits containing subsurface artifacts and features around the remains of the domestic and agricultural structures, but also include former orchards, woodlots, planting fields and gardens, livestock enclosures, road networks, and stone fences that separate functional areas and property boundaries. For purposes of identifying boundaries of historical archaeological sites (and historical landscapes), federal guidelines recommend

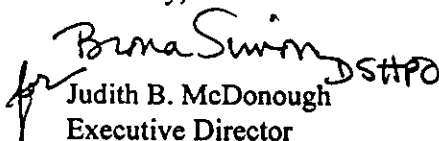
locating cultural features that are integral to the historical landscape associated with such sites through documentary research and field reconnaissance. As you may recall, MHC (7/15/96) requested more information on the interpreted archaeological site boundaries of the Paul Adams Place. This most recent information suggests that orchards, woodlots, a garden, animal enclosures, roadways and paths, a second barn, and "other buildings and landmarks" such as ditches, stone fences, and natural features mentioned in documentary sources, are historically associated with the National Register-eligible Paul Adams Place.

Other landscape features mentioned in the enclosed information may be contributing elements of the Estabrook Woods area. As you may be aware, an effort is being made to have Estabrook Woods (a larger landscape within which the project is located), nominated for listing in the National Register of Historic Places as a rural historical landscape. In our last letter on the project (MHC 7/15/96, copy enclosed), we noted that the effects of the project on Estabrook Woods should continue to be considered by project planners. The enclosed information includes a letter from the Concord Historical Commission, which mentions that Estabrook Woods contains "the major intact stonewall-and-former-field network of Concord, and one of the important networks in the Boston region because of its size and historical documentation....The rod-wide stonewall, apparently crossing the proposed central athletic field [which may still or longer be the case because of changes in project design], is unusual in the Northeast, and perhaps unique in the Concord area." Buerger's documentary research located references to roadways, cartways, paths, and right-of-ways, one of which may be a route used by Minutemen.

MHC recommends that this information be taken into account by the Corps in their review of the project. We recommend that an identification survey be scoped to locate and identify significant cultural landscape features that may be affected by the project as it is currently redesigned. As always, MHC staff are willing to assist in preparing an adequate scope for the survey, which should be conducted under a permit (950 CMR 70) from the State Archaeologist.

These comments are offered to assist in compliance with Section 106 of the National Historic Preservation Act of 1966 as amended (36 CFR 800) and MGL c. 9, ss. 26-27C (950 CMR 70). Please feel free to contact Edward L. Bell or Allen Johnson of my staff if you have any questions or need more information.

Sincerely,


Judith B. McDonough
Executive Director
State Historic Preservation Officer
Massachusetts Historical Commission

Enclosures

xc: James A. Saltonstall, Middlesex School
Richard T. Westcott, Westcott Site Services
Deborah C. Cox, PAL, Inc.
Kate Atwood, USACOE/NED
DEP/NERO
Concord Historical Commission
Concord Natural Resource Commission
Helen Bowdoin, Thoreau County Conservation Alliance
Janet E. Buerger



The Commonwealth of Massachusetts

William Francis Galvin, Secretary of the Commonwealth
Massachusetts Historical Commission

July 15, 1996

James A. Saltonstall
Business Manager
Middlesex School
1400 Lowell Road
Concord, MA 01742-9122

RE: Middlesex School Expansion, Concord, MA. MHC #14450.

Dear Mr. Saltonstall:

Staff of the Massachusetts Historical Commission have reviewed the draft report, "Results of an Intensive (Locational) Archaeological Survey of the Middlesex School East Fields Project Area and A Site Examination Survey of The Paul Adams Place" prepared by the Public Archaeology Laboratory, Inc., received by the MHC on May 29, 1996.

The results of the archaeological investigations indicate that the Paul Adams Place, a late 18th and 19th-century farmstead, contains intact archaeological deposits relating to several sequential occupations. Separate occupations can be discerned in these deposits, and analysis of the findings have yielded important information unavailable from documentary sources on society and economy in Concord during the Early Republic. The Paul Adams Place meets the eligibility criteria (36 CFR Part 60) for listing in the National Register of Historic Places under Criteria A, B, and D at the local level of significance.

The Blue Salamander Site appears to be a diffuse, low-density deposit of lithic material from stone tool manufacture, maintenance, or repair activities. One diagnostic stone tool, a Levanna-style projectile point, indicates a Native American presence in this portion of the project area during the Late Woodland to Contact and First Settlement Period, from ca. 1,300 to 400 years ago. Because of the low density and low diversity of deposits at the Blue Salamander Site, it does not meet the eligibility criteria for listing in the National Register of Historic Places.

The Hilled Field, a relict agricultural landscape of round hillocks, is interpreted to date from the 18th century, and may be associated with the ownership of Robert Estabrook during that time. While the European adoption of Native practices for planting in hillocks is noted in 17th-century documents, the survival of surface evidence for the practice is unique as far as can be determined at this time. Archaeological investigation of several of the hillocks indicate that the field has yielded important information on agricultural practices in 18th-century Concord. The Hilled Field meets the eligibility criteria for listing in the National Register of Historic Places under Criteria A, B, C, and D at the local and state levels.

MHC staff have reviewed current project plans (dated 2/27/96) alongside the results of the

archaeological investigations.

Archaeological deposits and features associated with the Paul Adams Place are in close proximity, and may be within, the impact area for construction of the proposed roadway. The PAL, Inc. needs to provide to the MHC a more detailed plan showing the site boundaries and extent of archaeological deposits in relation to project plans.

Archaeological deposits at the site could be inadvertently impacted during roadway construction, unless a suitable protection plan is prepared in advance. The proposed snow fence at the edge of the road construction zone could be part of a proposal to avoid and protect the Paul Adams Place during construction.

Both the Blue Salamander Site and the Hilled Field appear to be located outside current project impact areas. The Hilled Field should be protected and avoided during construction. Given the significance of the Hilled Field, Middlesex School may consider incorporating the landscape within a combined preservation/conservation easement, which we understand have been granted for other areas in the project area vicinity.

The project area is within the area known as Estabrook Woods, a natural and cultural landscape with historical associations with Thoreau and Emerson. The effects of the project on the Estabrook Woods and steps taken to avoid, minimize, or mitigate the impact of the project should continue to be considered by project planners.

Thank you once again for your cooperation and assistance in this review. These comments are provided to assist in compliance with Section 106 of the National Historic Preservation Act of 1966, as amended (36 CFR 800) and M.G.L. Chapter 9, ss. 26-27C, as amended by Chapter 254 of the Acts of 1988 (950 CMR 70-71). Should you have any questions or require further information, please feel free to contact Edward L. Bell of my staff.

Sincerely,

for Bruna Surin DSHPD
Judith B. McDonough
Executive Director
State Historic Preservation Officer
Massachusetts Historical Commission

xc: Dierdre A. Ling, Middlesex School
Richard T. Westcott, Westcott Site Services
Deborah C. Cox, PAL, Inc.
Karen Kirk Adams, USACOE/NED-Regulatory
Kate Atwood, USACOE/NED-Regulatory
DEP/NERO
Concord Historical Commission
Concord Natural Resources Commission
Helen Bowdoin, Thoreau Country Conservation Alliance

WORKING INDEX TO 1994 LWV PORTFOLIO "ESTABROOK WOODS"

General descriptive: Walter Brain 109-111; Seba Gaines 333; Fenn School 359; John Mitchell 361;

ACEC 57+;

Bateman's Pond: Fenn 105;

Bibliographies: Intro 36; Brain 163; 1992 patches & corridors 473; 1987 Geographic Historic Inv: 475; 1974 MCZ: 477-485.

Birds: Brain 139-141; HDT. On Birds 172-4; Walton 179-85; acreage 186; (See, Endangered.)

Botany: Ray Angelo 127 et seq.; Eaton 136; Brain 139-164; MCZ 308; on Mx. devel. 316e.

Brewster, William: 175-176;

Calla Swamp: Fenn: 102, 105,

Channing, Ellery: Pocket Diaries, extracts 108-108c;

Concord: long range plans intro 25, geographic historic inventory 89-92, chronology since 1664 90, site by site 92, site map 95; Long Range Plan 1959 362-372; 1983 Comp Plan 373; 1987 Concord 396-438; 1992 Open Space Plan 439-472 (esp., 1992 Special Sites Map 446-445 and 458-60);

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Development examples: intro 24; NRC permits John Hill 61-62, Costello 63;

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Estabrook Road, named for: Fenn 102; Fenn 107a (TE house built in 1670);

Estabrook Woods or Country: general descriptive: Walter Brain 109-111; Seba Gaines 333; Fenn School 359; John Mitchell 361;

Estabrooks Geneology 86, 109, 107A;

Fauna: MCZ 310;

Fragmentation of forest: 21, Dunwiddie 166; EO wilson 167; 186; MACC 358;

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Historic Commission, Mass: 16, letter 357,

History, Native American: Map 81, Watt article 82, p. 82 (corn hills quote 11/13/57); MCZ 305;

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MCZ intro 19, covenants expire 60-1, 60d-g, 88a, restrictions expire map 88c; hist. 278-9; Harvard committee rpt 280; draft terms of gift 288; plans for research 291-297; map of predecessor owners 298; MCZ map 300; Guide to Resources 301; Luby 336; Concord town plans 397;

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Old Carlisle Road:(see Estabrook Road)

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Pratt, Minot: 132;

Punkatasset: Fenn 105;

Sierra Club: statement 355-56;

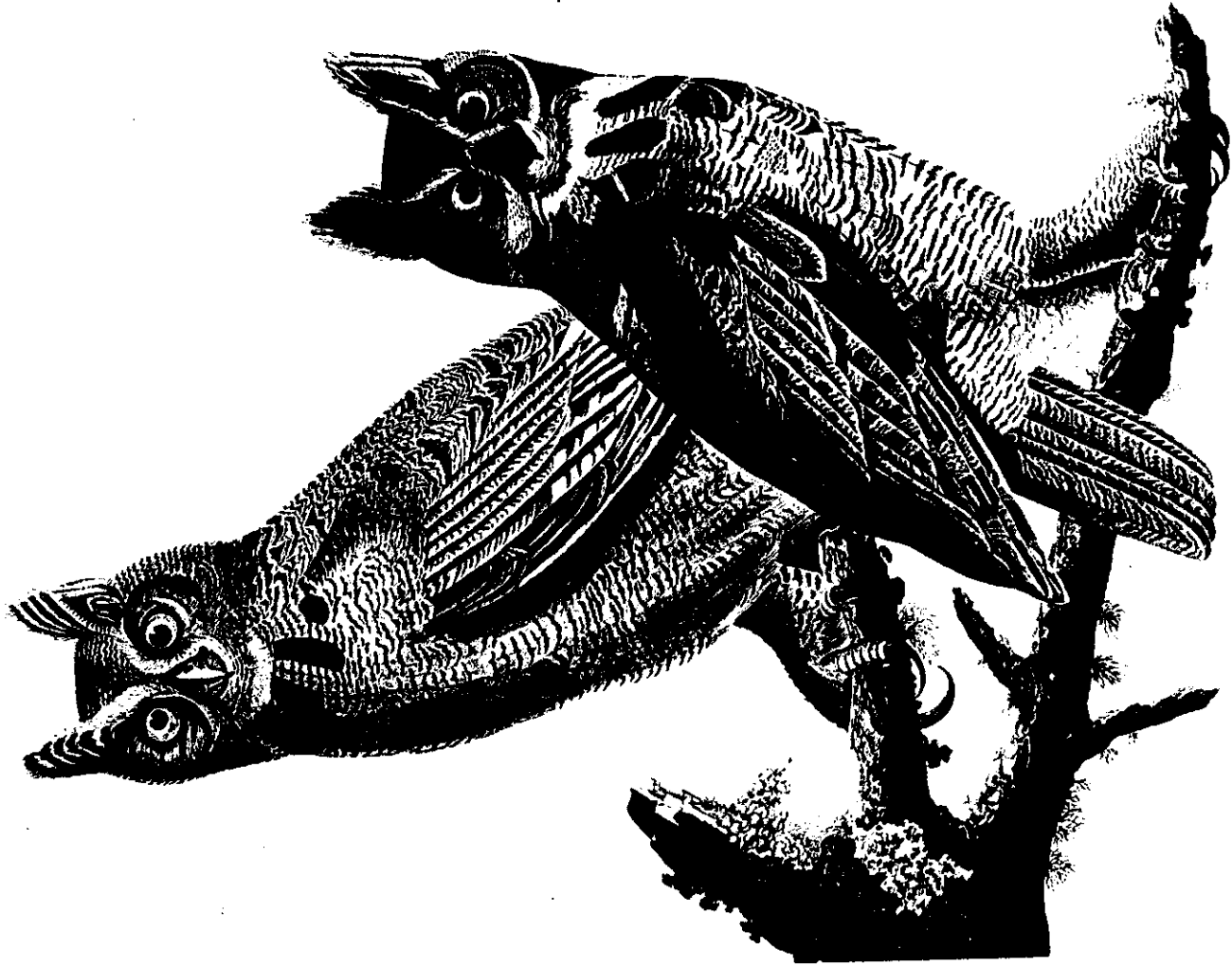
TCCA: Kirvan & report letter 349-354;

Thoreau quotes (some): Journal: gen'l 8, p. 9: 6/10/53 (great wild tract); p. 9: 10/20/1857 (shoeless Brooks Clark, wild & rich domain); p. 12, 10/15/89 (each town should have a park); p. 89(a): 6/10/53 (paradise for walkers); Ells list 115; other lists 123; Marx 124-126; Gleason 126a-b; Wood thrust 6/22/53;

Thoreau legacy: MCZ 313; John Mitchell 361;

Vernal pools: intro 24; Peter Arnold article 241-244; Nat Herit 245-253; Tynning 247;

Yellow Birch Cellar Hole: Fenn 104,



Great Horned Owl
[BUBO VIRGINIANUS]