

Baseline Assessment
for the
Davis Corridor



April 26, 2007

Prepared by the
Land Stewardship Committee

A subcommittee of the
Carlisle Conservation Commission

Foreword

This Baseline Assessment has been prepared by the Land Stewardship Committee (LSC), a subcommittee of the Carlisle Conservation Commission (CCC). The LSC, which was formed in January 2006, has a number of core tasks. Two key core tasks are to:

1. Conduct Baseline Assessments of Town-owned conservation properties; and
2. Develop a Management Plan for each of these properties.

The Baseline Assessment involves the collection, evaluation, and presentation of information on several topics, including:

- The acquisition of the property, including reasons for purchase, costs, funding sources, and associated land use restrictions;
- A detailed description of the property (using maps and figures, where appropriate) covering such topics as: boundaries (and abutters), major features (e.g., fields, woods, ponds, wetlands), topography, agricultural use and soil quality, trails, parking, and signs and displays;
- Historic and current uses of the property;
- A description of previous planning documents or other studies of the property;
- Maintenance activities and current condition of the property; and
- A list of issues to be addressed in the formulation of a Management Plan.

The Baseline Assessment is considered a working document and not a final published report. It is primarily designed to organize important information on a Town-owned conservation parcel in preparation for the writing of a Management Plan. It is expected that most of the information in the Baseline Assessment will eventually be used in the Management Plan which – after appropriate review – will be published in both hard copy and electronically (e.g., on the Town's web site). The Baseline Assessment itself, after review and approval by the CCC, will be made available in electronic format to Town committees, boards, property user groups, and the public.

Because the Baseline Assessment is a working document, no attempt has been made to make it look like a formal publication. In addition, there may be a number of errors of fact, or omission, or emphasis which we hope the review process will correct prior to the writing of the more formal Management Plan. Information in this report is derived from Davis Corridor and related files in the Conservation Commission's office in Carlisle Town Hall and Town Meeting minutes, unless specific references are given.

If you have any comments on the content of this document, please send them to Elizabeth Loutrel (loutrel@comcast.net), Judy Asarkof (Rigleyman@aol.com) and Lynn Knight (Lynn.Knight627@comcast.net).

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- A Davis Corridor Plant List by Habitat (*partial*)
- B Acquisition details of Davis Corridor
- C Information about the Davis Corridor from the National Heritage and Endangered Species program identifying this area as Core Habitat, with some Supporting Natural Landscape
- D Maintenance agreement with TTOR for parking lot
- E Digital file of photos and photo-point map (*to be added after completion*)

1. General Description of the Davis Corridor

1.1 Introduction

The Davis Corridor is the name given to a 156-acre parcel that was acquired over a 22-year period (1973 to 1995) and is a combination of 17 individual parcels previously owned by six families and two churches. As shown in Table 1-1, the Town paid a total of \$344,730 for the land (1 parcel was a gift) and received a total of \$147,841 in State Self Help funds. Thus, the net cost to the Town was \$196,899 (or, \$1,255 per acre).

Summary Information on Acquisition*

Year	Number of Parcels	Acres	Purchase Cost (\$)	MA Self Help Funds (\$)
1973	9 (1 a gift)	117.34	128,000	62,116
1977	3	5.75	5,130	2,565
1979	1	10.68	11,600	0
1995	4	23.099	200,000	83,160
Total:	17	156.86	344,730	147,841

* See Section 2 for details on purchases.

In two separate actions (one in 1994 – 1996, a second in 2002 – 2004) all of the Davis Corridor land was placed under permanent conservation restrictions to help protect the abutting ecological research lands of Harvard University, referred to as Estabrook Woods. Now, the combined lands of the Davis Corridor, Harvard’s land, and other abutting conservation land are generally referred to as the Greater Estabrook Woods.

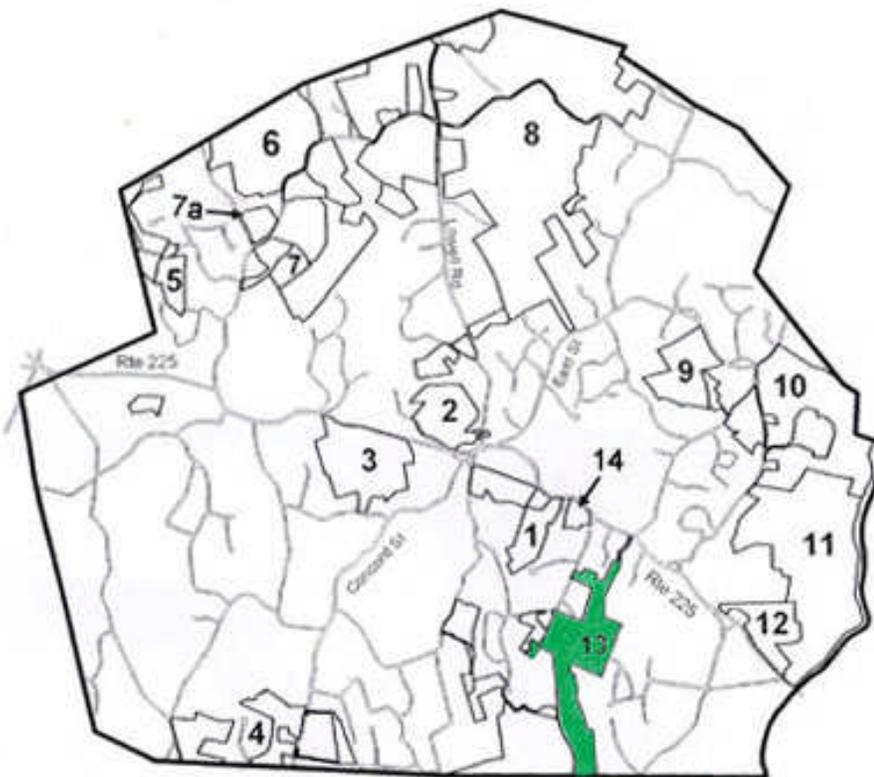
The Davis Corridor lands were of historic importance in colonial days (see Section 3), and included an important road linkage between Billerica, Carlisle and Concord. Today, the property, which is essentially completely wooded, is used primarily for walking, horseback-riding, bicycling, cross-country skiing and nature study on its trails, with many trails linking several neighborhoods and conservation lands on all sides. Its elongated corridor form is unique among Carlisle’s larger conservation parcels.

The trail connection to Harvard’s property and on south to Concord’s Punkatasset Hill conservation land allows an enjoyable hike from Bedford Rd. in Carlisle all the way to Concord’s Monument Street. Near Punkatasset Hill, trails connect west to Concord’s Estabrook Road and to Lowell Road near Bateman’s Pond, as well as north to Carlisle’s Estabrook Road and Baldwin Road.

Note: In general, throughout this report, maps and figures are placed on pages at the end of their section.

1.2 Location

The Davis Corridor is in the southeast section of Carlisle, extending south from Bedford Road (between Red Pine Drive and Canterbury Court) to the Carlisle-Concord town border, where it joins Harvard University's Museum of Comparative Zoology land. It is a part of the Greater Estabrook Woods. The entrance on Bedford Road is about one mile east of the center of Carlisle. See parcel 13 (in green) on the locus map below (Figure 1-1). Figure 1-3 shows the boundaries on a USGS topographic map, and Figure 1-5 shows the boundaries on an aerial photo.



- | | |
|---|----------------------------------|
| 1 Banta Davis | 7a Hutchins Field |
| 2 Conant Land | 8 Great Brook State Park |
| 3 Towle Land | 9 Town Forest |
| 4 Bisbee and Benfield Lands,
& Spencer Brook Reservation | 10 Greenough Land |
| 5 Carlisle Pines State Forest | 11 Great Meadows NWR |
| 6 Cranberry Bog | 12 Foss Farm |
| 7 Curve St. Conservation Lands | 13 Davis Corridor & Malcolm Land |
| | 14 Fox Hill |

Source: Modified from Carlisle's 2005 Open Space and Recreation Report

Figure 1-1. Locus Map for Selected Conservation and Recreation Properties in Carlisle

1.3 Access

The land is accessible from eight points along its length. The only entrance point with a designated parking area is on Stearns Street.

Direct roadside entry is available on Bedford Road, across from Brook Street:



(looking south)

photo by Elizabeth D. Loutrel, April 10., 2006

Direct roadside entry is available from Prospect Street at the end of a public walkway, as indicated by a small trail sign:



(looking north)

photo by Elizabeth D. Loutrel April 10, 2006

The photo below is a panorama of the same place (private drive on left) and shows the point where Nowell Farme Road joins from the right the public walkway:



driveway (looking north) public walkway end of Nowell Farme Road
photo by Elizabeth D. Loutrel June 24, 2006

Below is a view of the access from the end of Nowell Farme Road (unmarked entrance path is to the left at end of the road):



(looking west) photo by Elizabeth D. Loutrel June 24, 2006

Similar direct roadside access at the end of Long Ridge Road is available (unmarked entrance path is on the right at end of the road):



(looking west) photo by Elizabeth D. Loutrel June 24, 2006

Direct roadside entry is available on Stearns Street, with an adjacent parking lot:



(looking south)

photo by Elizabeth D. Loutrel April 10, 2006

A trail on an easement from the end of Suffolk Lane connects to the Davis Corridor trails:



(looking west)

photo by Elizabeth D. Loutrel April 10, 2006

Trails also connect to Davis Corridor trails from the Sachs Greenway at the end of Baldwin Road in Carlisle and from the town of Concord via Two Rod Road.

Some abutters have created private trails to link from their land to the Davis Corridor trails. Figures 1-4 and 1-6 show the trails and how they relate to the land and neighborhoods.

The Davis Corridor also abuts Stearns Street near the intersection with Rodgers Road. Because the land is usually under water or very wet, there is no trail access from this location:



(on Stearns St., looking east) photo by Elizabeth D. Loutrel April 10, 2006

1.4 Bordering Property

About a dozen residential properties on Bedford Road, Red Pine Drive and Canterbury Court abut the land along the northern end of the Blood Farms Trail from Bedford Road, and, since the corridor is narrow, some houses are evident from the trail, especially after leaves fall.

Heading south from Bedford Road, after the trail forks, the eastern fork continues as Blood Farms Trail along the edge of a horse pasture and woods. Soon it meets the north-south trail to Prospect Street. Along the eastern side of the trail, about seven residential properties abut the trail.

Along Stearns Street and Patten Lane, 14 residences border the property. To the west of Two Rod Road, the bordering land is Malcolm Meadows, a senior housing complex. South of Malcolm Meadows, the bordering land is Malcolm Preserve, a 10.6 acre parcel owned jointly by The Trustees of Reservations and the Carlisle Conservation Foundation. This parcel of open meadow and forestland is under conservation restriction 53 held by the Town of Carlisle through the Conservation Commission. The next abutters to the south are three residences on Baldwin Road, and then a private 44.4 acre parcel with a home, fields and forestland under conservation restriction 37.

Soon after the Sachs Greenway (conservation restriction 52) trail joins from the west, the abutter on the southern part of Two Rod Road is Harvard University's Museum of Comparative Zoology on the west side. Harvard's land is an ecology research area, not a recreational area. The land on the east side of Two Rod Road abuts about nine residences and open land on Prospect Street and Nowell Farme Road. At the Carlisle- Concord border, the abutter to the south is a residence off Monument Street in Concord.

Figure 1-7 (page 1-16) shows the assessors' map with bordering properties.

1.5 General Land Description

Most of the Davis Corridor is a mature upland forest, with several oak species (mostly northern red oak), red maple, black birch, white pine, and a few hemlocks dominating the upper story. In the under story are huckleberry, swamp azalea, American chestnut, sweet pepper bush, sassafras, etc. Hayscented ferns abound, as well as other ferns, club mosses, partridge berry, wintergreen, lowbush blueberry, starflower, medeola, asters, violets and skunk cabbage. Abundant wildlife, including deer, owls, hawks and flying squirrels, thrive here.

In the section of trail south from Bedford Road, a stream flows northward, down the hill in the rocks of the trail in wet seasons:



(looking south)

photo by Elizabeth D. Loutrel, April 10., 2006

The two central trails linking Two Rod Road to the Blood Farms Trail contain several wide, wet areas. Near Two Rod Road the link trail crosses two small brooks close together. The eastern crossing is shown on the left, the western crossing is shown on the right:



(looking southwest in both photos)

photos by Elizabeth D. Loutrel, April 10., 2006

Approximately east of the junction of Two Rod Road with the Sachs Greenway trail is an old wild cranberry bog filled in with red maples. From about here north to Malcolm Meadows are several wet swamps and probably vernal pools along the east side of Two Rod Road. Almost certainly, vernal pools exist in pockets throughout the land.

Two areas have old fields in the process of reforestation. At Bedford Road, to the west of the entrance, are shrubs and white pines where a field with parking space existed in 1980. Soon after entering from Stearns Street, to the east of Two Rod Road, are old fields filling in with sumac and other shrubs, with old apple trees remaining on the slope.

The land is generally very gently rolling. Some parts are remarkably flat and poorly drained. Sections of the link trails and Two Rod Road have large puddles and deep mud much of the year. See Figure 1-8 and Figure 1-9 (page 1-17) for a sense of the slopes.

1.6 Special Features

Two Rod Road, with its defining double stonewalls two rods (33 feet) apart, is a vestige of Carlisle's early colonial history. Similar old-road, double stonewalls are on the Blood Farm Trail along the Davis Corridor's eastern border, north from Prospect Street.

The stonewalls throughout the land, for example at the southwestern fork in the link from Two Rod Road to the Blood Farms Trail, bespeak the earlier agricultural and silvicultural uses of the land:



(looking northeast)

photo by Elizabeth D. Loutrel, April 10., 2006

Less apparent to the casual hiker are the Native-American stone structures on this land, primarily near wet areas. The land has not been thoroughly explored for these structures. Figure 1-6 (page 1-15) shows one area with indication of Native-American ceremonial use

At the east end of the trail linking Two Rod Road with the end of the public walkway from Prospect Street is an old granite post marking a former Carlisle-Concord boundary:



(looking east)

photo by Elizabeth D. Loutrel, April 10., 2006

Just north of the modern Carlisle-Concord boundary on Two Rod Road is the rusting iron remnant of a portable saw mill from the late 1800s:



(looking east)

photo by Elizabeth D. Loutrel, April 10., 2006

At the modern boundary between Carlisle and Concord is a granite post, with a big C inscribed in it, on the east side of Two Rod Road, close to the stone wall:



(looking northeast)

photo by Elizabeth D. Loutrel, April 10., 2006

An additional feature of the Davis Corridor is the identification of this area as Core Habitat by the National Heritage and Endangered Species program, with some Supporting Natural Landscape (see Figure 1-2 below). The Davis Corridor, as the northernmost part of Greater Estabrook Woods, is part of a large and important area in the region, as well as in Carlisle, for biodiversity conservation.

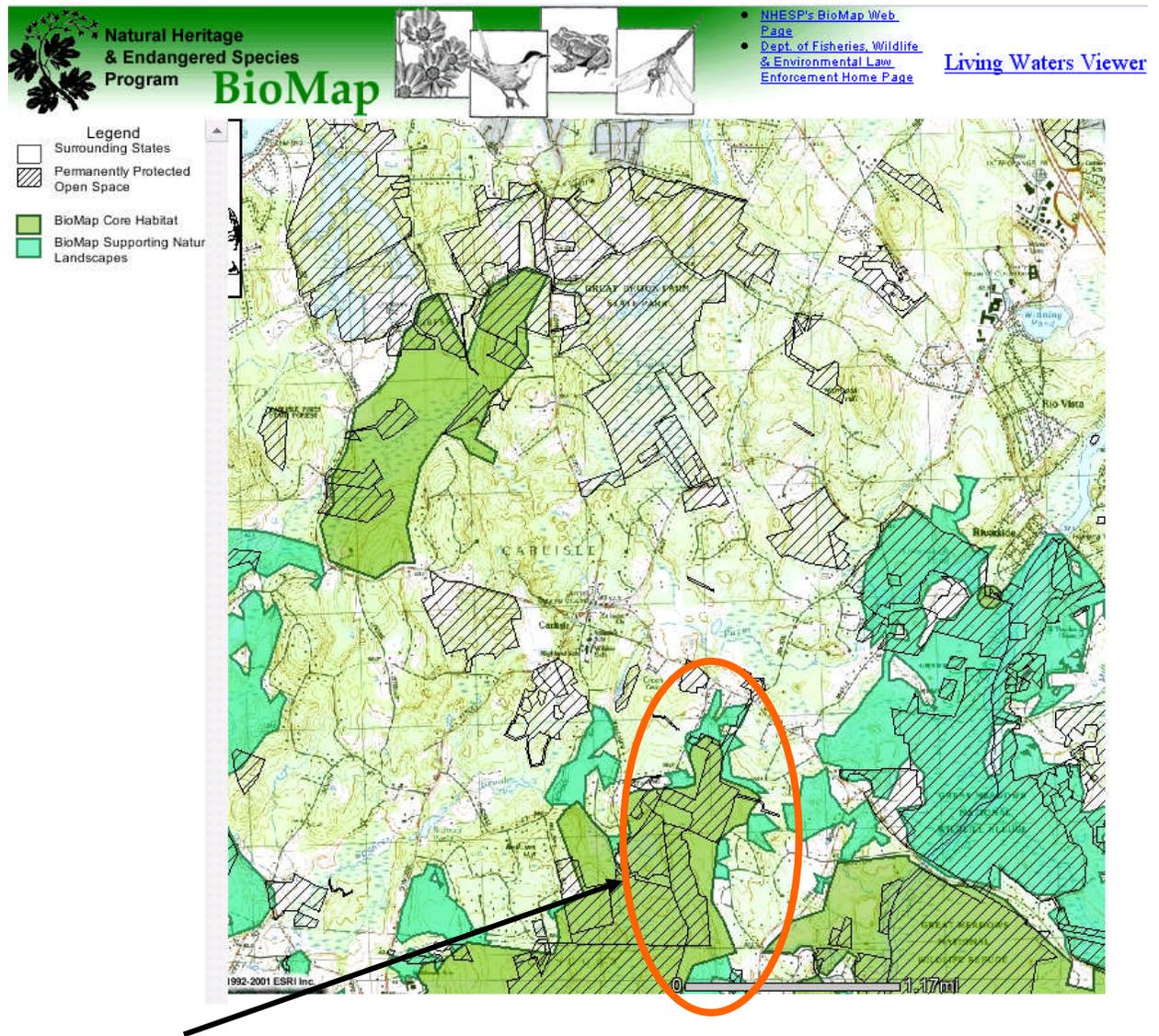
On Oct 5, 2001, the Massachusetts Secretary of Environmental Affairs Robert Durand announced BioMap: Guiding Land Conservation for Biodiversity in Mass. He said, "This is a blueprint for protecting the state's biological biodiversity and is an exciting new planning tool to help focus our land conservation efforts." The BioMap identification process is based on extensive biological data and a "systematic evaluation of over 7000 site-specific records of rare plants, rare animals, and natural communities gathered over the past 22 years in the Natural Heritage database...The BioMap identifies those areas of Massachusetts most in need of protection to conserve biodiversity for generations to come."

These priority areas are called CORE HABITATS. One of these core habitats BM592 is the entire Estabrook Woods and includes most of the Davis Corridor. Appendix C contains material supplied in September, 2006, by Natural Heritage about the characteristics and species on this land.

Figure 1-2 Natural Heritage and Endangered Species Program BioMap

Source of map: Natural Heritage web site, June 2006:

<http://maps.massgis.state.ma.us/BIOMAP/viewer.htm>



Davis Corridor on the National Heritage and Endangered Species Program BioMap

Figure 1-3 Davis Corridor boundaries on USGS topographic map

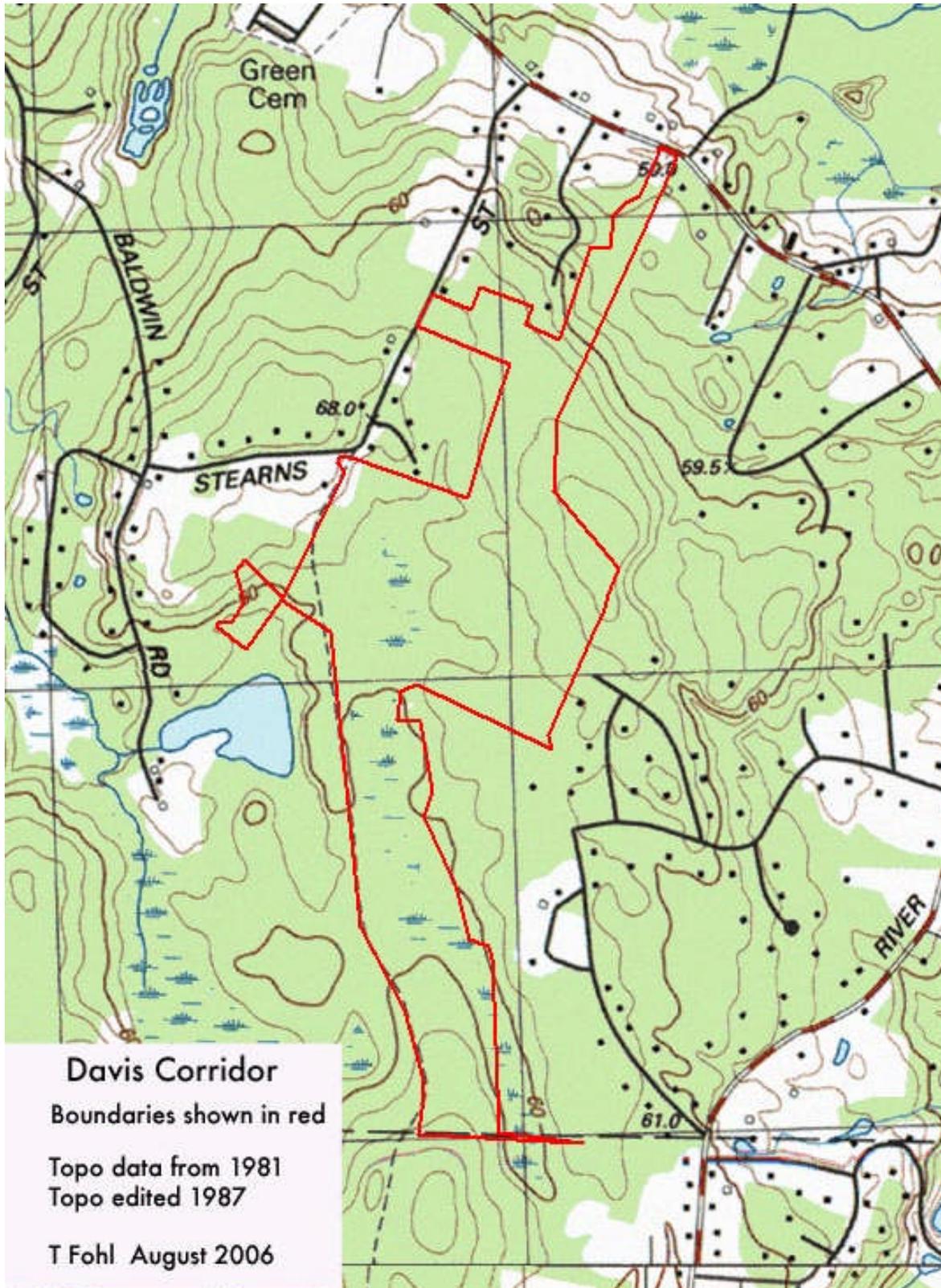


Figure 1-4 Davis Corridor boundaries and trails on USGS topographic map

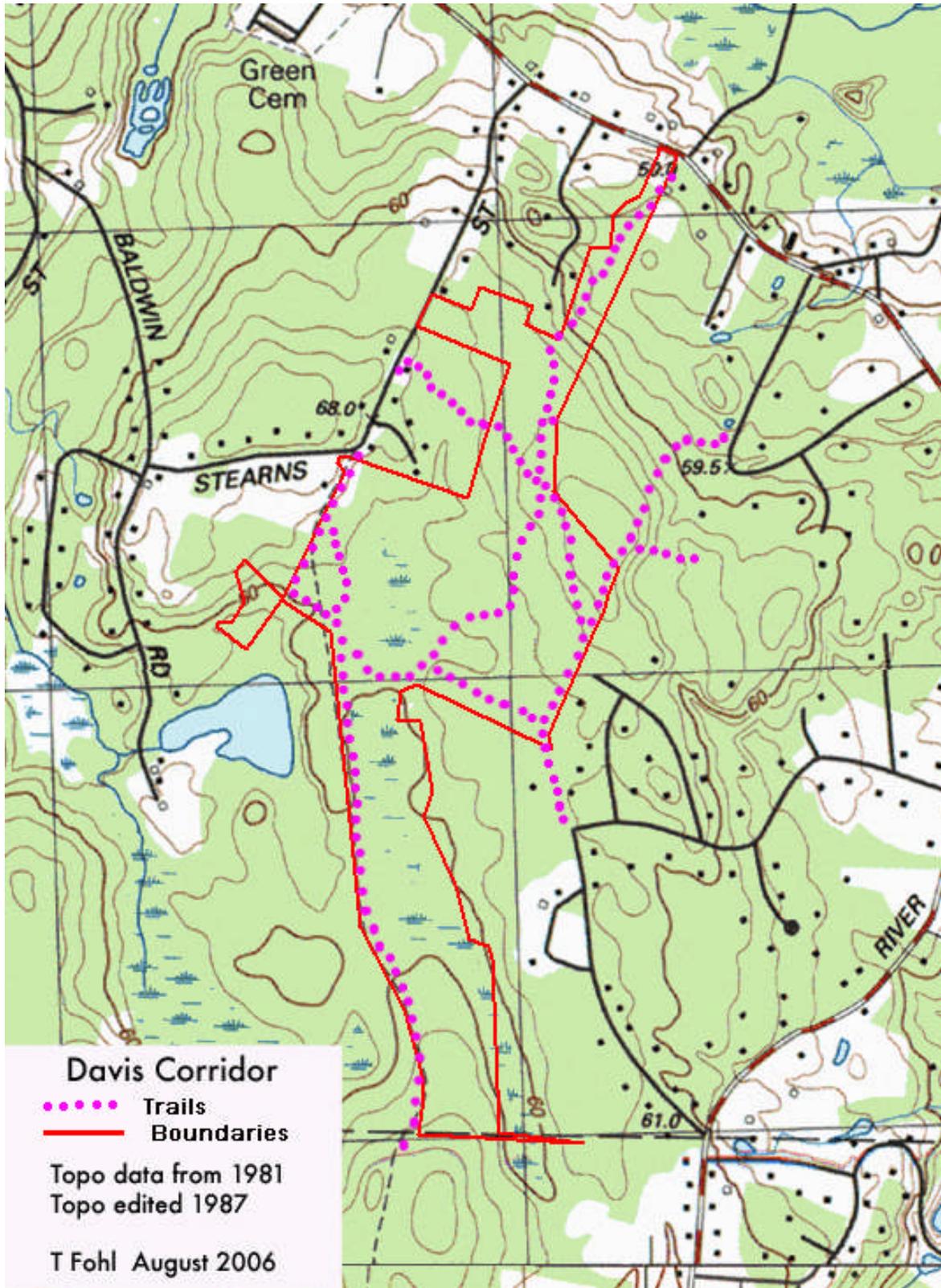


Figure 1-5 Davis Corridor boundaries on aerial photo

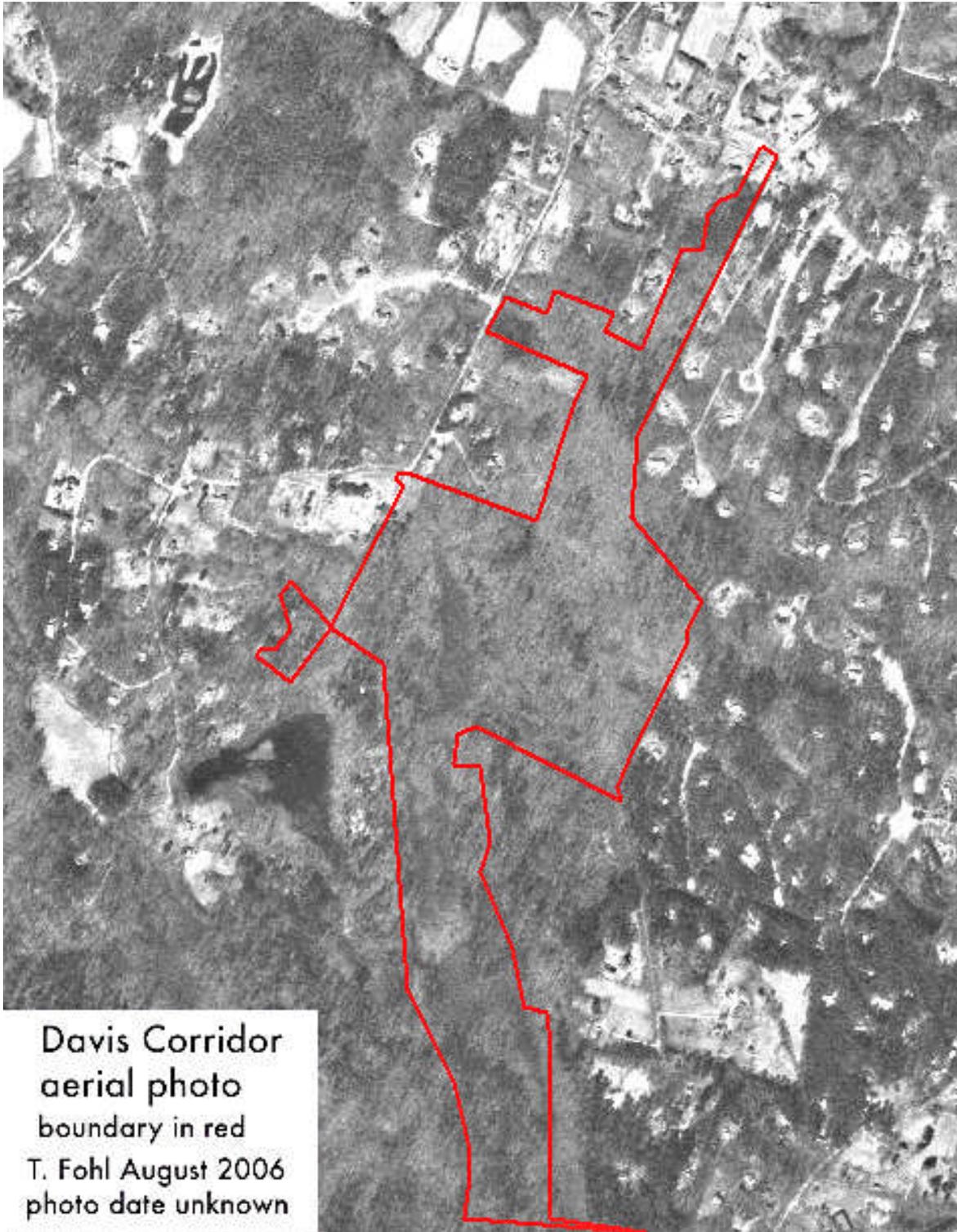


Figure 1-6. Aerial photo with trails, wetlands (from the town assessors' maps) and an Indian ceremonial area

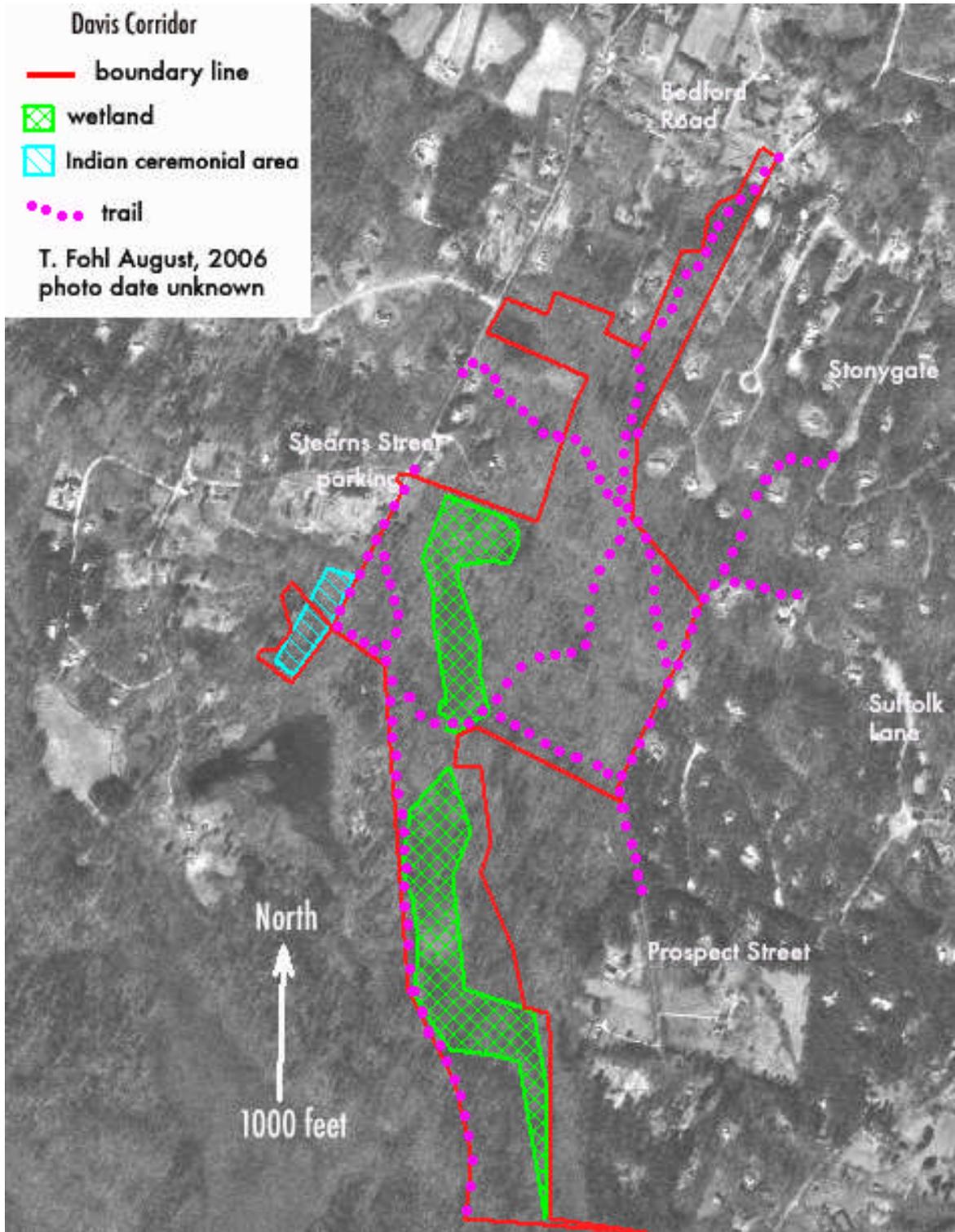


Figure 1-7 Assessors' map with bordering properties (Davis Corridor in yellow)

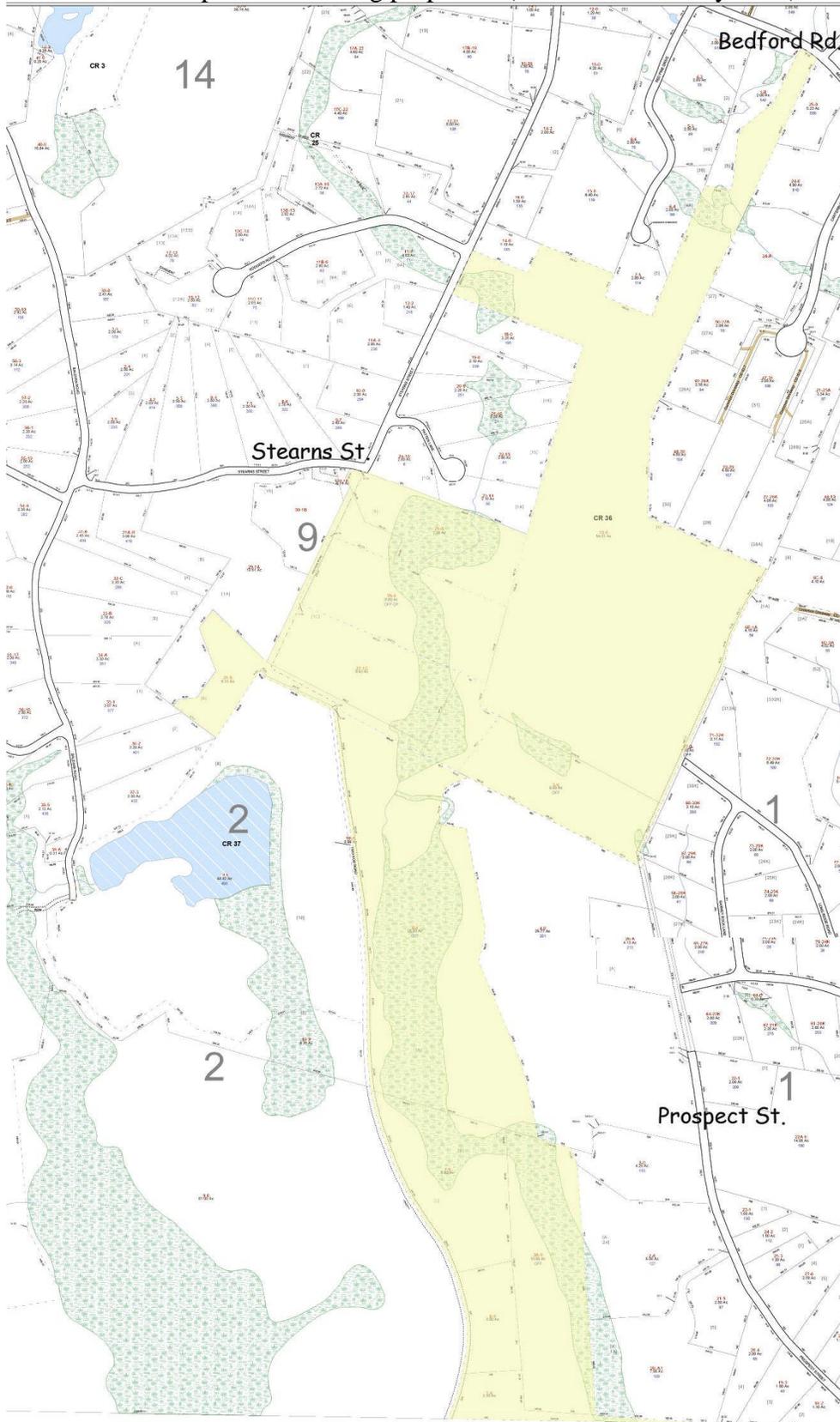


Figure 1-8. Aerial photo, view looking west, with the vertical dimension exaggerated so as to highlight the slopes on the land. Red lines are boundaries, yellow lines are trails, green lines are wetlands, and blue are areas with rocks from Indian activities. Bedford Road is at the right edge, and the town border with Concord is at the left edge.

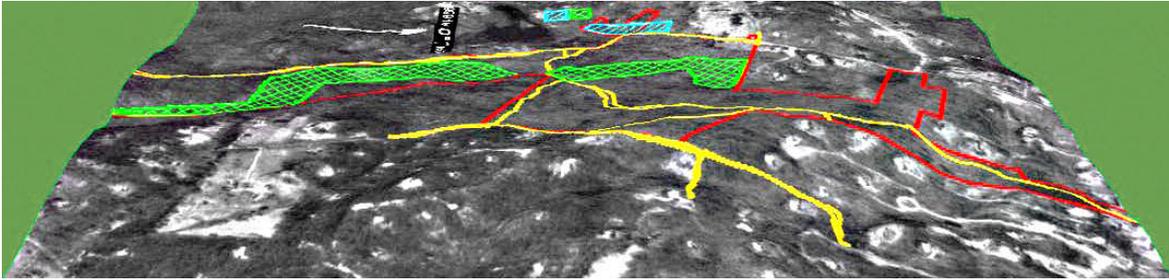


Figure 1-9. USGS topographic map, view looking southeast, showing the relationship of the Davis Corridor land with the town center on the left and the Concord River in the background. The vertical dimension has been exaggerated. Boundary lines are red, trails are yellow, wetlands are green.



2. History of Acquisition of the Davis Corridor

2.1 Davis, Fleming, Clark and FRS parcels

The impetus for the formation of the Davis Corridor may have been the Massachusetts' legislature's decision in 1971 to declassify forest land, affecting about 1,000 acres in Carlisle. Forest land valuation went from \$5.00/acre to \$22.00/acre. In reaction, the Carlisle Conservation Commission wrote a letter of protest to the state, citing the tendency to force owners to sell forest land to developers. The commission also considered offering conservation restrictions to affected landowners to compensate for the effect of declassification. The commission requested that Chairman Ben Benfield contact Oliver N. Clark of Bedford and John A. Davis of Bedford Road, Carlisle, to ask about their interest in selling their lands to the town for conservation. In fact, Oliver Clark had already contacted the commission in October, 1971, to offer his parcels for sale. (*Conservation Commission minutes, Nov. 15, 1971*)

The Conservation Commission continued discussions about these lands with their owners through 1972. At the September 18, 1972 Conservation Commission meeting, John Davis stated that he would like to sell his land to the town for conservation, rather than to a developer. At this meeting the concept of a conservation corridor emerged, and Davis pointed out that his land had trails that almost met trails leading all the way to Punkatasset Hill in Concord. The commission decided to pursue the purchase of the First Religions Society land (between Two Rod Road and the Davis land) and the Burbank land (for access from Prospect Street) and to add these to the concept of a conservation and historical corridor. (Refer to Figure 2-1 on page 2-5 for the location of these original Davis Corridor parcels.)

Through the fall of 1972, appraisals of the Oliver N. Clark land and the Burbank land were conducted, and land belonging to William Guy Clark, Jr. was also quickly appraised. In December, the Conservation Commission decided to notify John Davis that they gave top priority to the acquisition of his land and planned to put it before the next town meeting.

The process of agreements, tours and applications for Massachusetts Department of Environmental Services Self Help reimbursements culminated with a special town meeting vote on November 5, 1973 to purchase the following lands for conservation purposes. The Town Meeting vote was 256 YES and 82 NO for the Davis, Fleming and Clark land. The First Religious Society land was voted separately: 205 YES and 92 NO.

Table 2-1. Davis Corridor Acquisition 1973 and Massachusetts Self-Help Reimbursement

Original owner	Parcel name or earlier name	Acres	Cost	MA Self Help
John A. Davis	Parcel A	55.27	\$85,000	\$40,616
John A. Davis	Parcel B	2.87		
John A. Davis	Parcel C	1.58	gift	
Frederick J. Fleming	William Lee et al.	8.02	\$7,500	\$3,750
heirs of Henry N. Clark	Parcel A	27.9	\$28,000 for all	\$14,000 for all
heirs of Henry N. Clark	Parcel B	8.6		
heirs of Henry N. Clark (in north part of Parcel B)	Parcel C Ox Pasture Lot, Waldo Wilson & Ethlyn Gerow	1.1 12		
First Religious Society	(Unitarian Church)	8.93	released \$7,500	\$3,750

2.2 Clark-Carruthers parcels

The next additions to the Davis Corridor were the Clark and Carruthers lands, voted at town meeting in May, 1975. The vote was 144 YES and 6 NO. Again the purpose of the acquisition was conservation. Town meeting voted to apply for Self Help funds for these parcels in June, 1979.

Table 2-2. Davis Corridor Acquisition 1975 and Massachusetts Self-Help Reimbursement

Owner	Earlier name and/or parcel name	Acres	Cost	MA Self Help
William Guy Clark, Jr.	Guy Clark formerly land of Tilly Green, Carruthers Trust	3.4	\$3,230	\$2,565 for Clark and Carruthers together
Olive B. Carruthers	Stedman Buttrick Trustee. Parcel A	0.5	\$1,900	
Olive B. Carruthers	Stedman Buttrick Trustee. Parcel B	1.85	for both	

2.3 Hodgman parcel

At town meeting June 13, 1979, the Roy B. Hodgman land was accepted for purchase for conservation purposes, using money from the conservation fund, with no self help application. The vote was 116 YES and 22 NO.

Table 2-3. Davis Corridor Acquisition 1979

Owner	Earlier name and/or parcel name	Acres	Cost	MA Self Help
Roy B. Hodgman, Jr.	Harriet F. Burbank (1972)	10.68	\$11,600	\$0

2.4 Malcolm parcel

The most recent addition to the Davis Corridor involved cooperation with the developer of Malcolm Meadows (the senior housing complex on Stearns Street) and the Trustees of Reservations in the purchase of the Allan L. Malcolm land, willed to the Carlisle Congregational Church. This land includes an easement from Stearns Street to the parking lot (maintained by The Trustees of Reservations). Town meeting voted on April 11, 1995 to support the purchase of this land for conservation purposes. Funds came from the state Self-Help program, the sale of 80 Russell Street, funding from the Carlisle Conservation Foundation and a grant from the Trustees of Reservations.

Table 2-4. Davis Corridor Acquisition 1995 and Massachusetts Self-Help Reimbursement

Owner	Earlier name and/or parcel name	Acres	Cost	MA Self Help
Carlisle Congregational Church	Allan L. Malcolm. Parcel A	7.163	\$200,000 for all	\$83,160 for all
	Allan L. Malcolm. Parcel B	6.3094		
	Allan L. Malcolm. Parcel 1C	9.4336		
	Allan L. Malcolm. Parcel 1D	0.1928		

Copies of all deeds are on file in the town hall.

To protect these lands further, the Davis Corridor parcels are under two conservation restrictions. The parcels acquired before the Malcolm land purchase are on Conservation Restriction 36. The motivation for the CR-36 was pressure in the mid 1990s to expand the area in permanent conservation holdings to meet Harvard University's requirement for putting the Harvard University holdings in permanent conservation status. CR-36 was accepted by vote of the Conservation Commission in 1994, by the town selectmen in 1995 and by the Massachusetts State Legislature in 1996. CR-36 is in perpetuity; the Conservation Commission is the grantor; the Trustees of Reservations is the grantee.

Conservation Restriction 52 on the 23.1-acre Malcolm land was accepted by vote of Town Meeting in May 2002 and by vote of both houses of the Massachusetts State Legislature prior to the Governor's signature. The Governor signed the local petition in July 2004. The Conservation Commission voted to accept the restriction in August 2004. CR-52 is in perpetuity; the Conservation Commission is the grantor; the Trustees of Reservations is the grantee. This conservation restriction completed the Town of Carlisle's commitment to Harvard College in return for their 1997 Statement of Public Charitable Obligation, which permanently protects their 672 acres of the Estabrook Woods.

A proposal in 2000 to place a cell phone tower on the Malcolm land led to an outline by Joel Lerner, Director of the Executive Office of Environmental Affairs, of the process of converting conservation lands to non-conservation use if Self-Help funds were used to purchase the land. These are the steps, in summary from Article 97, which protects

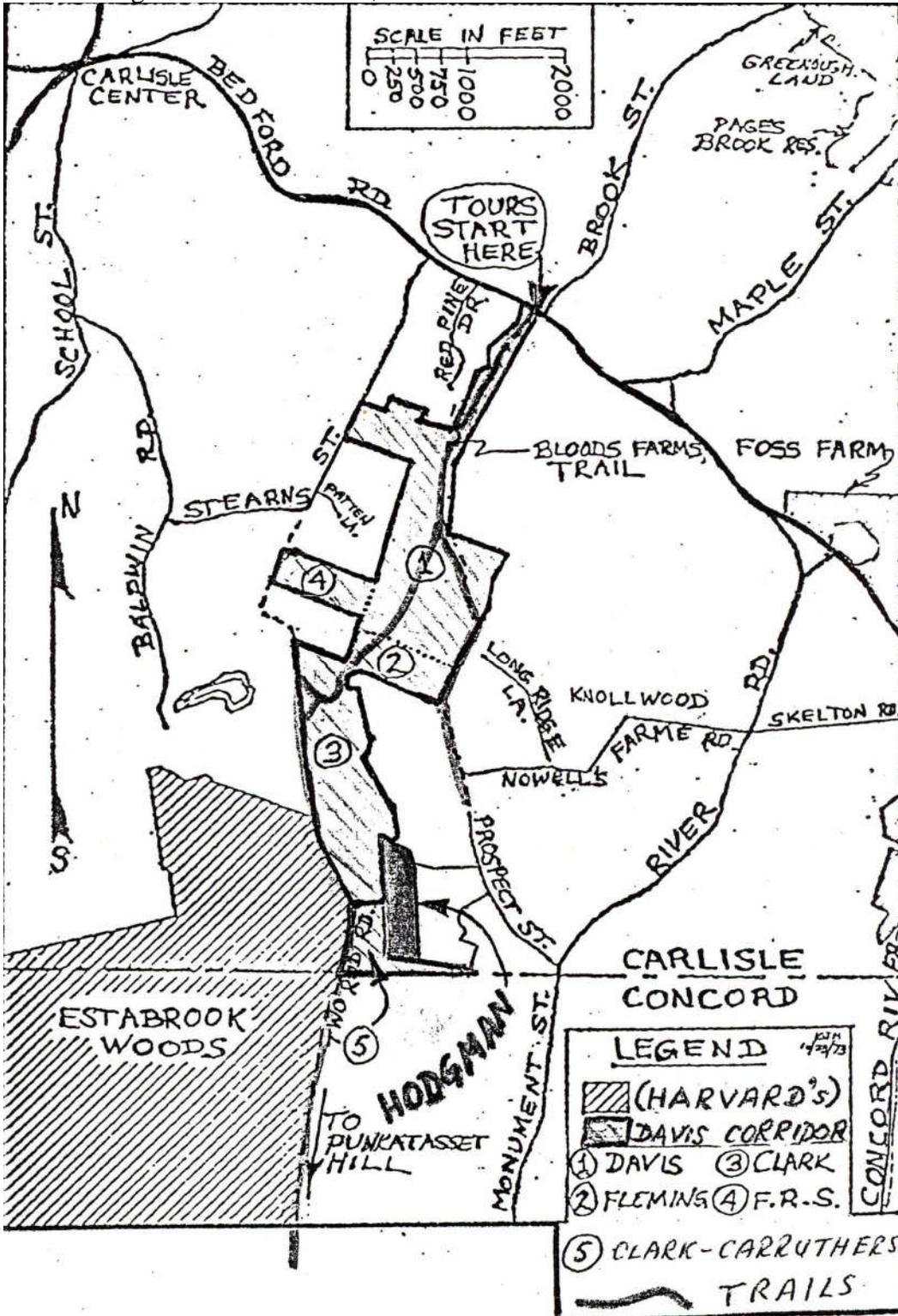
Massachusetts conservation land, from a letter of October 22, 2001 to Sylvia Willard, Carlisle's Conservation Administrator:

- 1) Obtain unanimous votes from the conservation commission to convert the land from the conservation use.
- 2) Obtain a two-thirds affirmative Town Meeting vote to convert the property.
- 3) Obtain a two-thirds roll call vote of the state legislature to convert the property.
- 4) Submit an Environmental Notification Form with the Massachusetts Environmental Policy Act office.
- 5) Provide suitable compensatory land of equal monetary value and conservation utility as outlined in the Self-Help program project agreement and regulations.

A thin sliver, lot 69 on Carlisle Assessors' map 1, is the 16.5-foot wide walkway easement intersecting the ends of Nowell Farm Road and Long Ridge Road. In the Planning Board easement file are the records showing that the developers of the Nowell Farm subdivision granted this easement from lot 31 to lot 22 (these are the developers' lot numbers), being the westerly boundary of the subdivision and the centerline of Blood Farm Trail, to the Town of Carlisle on June 5, 1972 for a nominal fee under \$100. (On the key plan dated April 4, 1972, this strip is shown as a 16.5-foot walkway easement intersecting the ends of "Woodstock Road" and "Long Ridge Lane." The names changed shortly afterwards.)

Appendix B summarizes in tabular form the details of acquisition of these properties.

Figure 2-1. Map showing “new” Hodgman parcel (1979) (in black, near the bottom) on a map used in 1973 to identify the original parcels for tours and vote at town meeting. Trails through the land are shown, in addition to the boundaries.



3. Historic and Current Uses of the Davis Corridor

3.1 Cultural History of the Davis Corridor: Colonial Era

The Davis Corridor is wreathed in Carlisle's colonial history. Below is a brief summary from histories of Carlisle by Ruth Chamberlin Wilkins¹ and by Donald Lapham², along with references to maps from their books. See Figure 3-1 Historical Map of Carlisle and Figure 3-2 Historical Carlisle Houses Map, both at the end of this section on page 3-5 and 3-6.

Sometime before 1683, Robert and John Blood came to Carlisle from Lynn and built their home east of today's 454 Bedford Road, southeast of the intersection of Stearns Street with Bedford Road ("45" on the Wilkins historical map of Carlisle excerpt and also shown on the Lapham map excerpt). In eastern Carlisle, the two brothers bought three grants of land: 500 acres from Rev. Thomas Allen, 500 acres from Increase Nowell and 400 acres from Atherton Hough. They also acquired large holdings in other parts of town.

Over the years following these acquisitions, the Bloods were involved in boundary and tax disputes with Concord and Billerica. The difficulties of trying to establish boundary lines through almost impassable swamps, undergrowth and woodland caused lengthy disputes and litigation. In addition, Robert claimed that his property was not part of any town, and he had heated encounters with tax collectors. Eventually Robert did pay taxes to both Concord and Billerica for protection against the Indians and for his share of the building and upkeep of the Concord Meetinghouse and the Concord bridge over the river.

Four of Robert's twelve children and many of their descendants were the builders of a number of houses on the east side of Carlisle, particularly on today's Bedford Road, River Road, Prospect Street, Maple Street and Brook Street. In the 1600's, Robert Blood and his sons improved old Indian trails or built new cart paths connecting the many Blood farms. The Lapham map excerpt shows the Blood family houses in this area.

In 1744, Jonathan Blood, one of Robert's sons who is thought to have built the Ruetters' house (453 Bedford Road), or part of it in 1734, requested a road from his house to Concord. This road is now Stearns Street and Two Rod Road, which is an extension of Stearns Street through the Malcolm land down to Hutchins Pond and out by Punkatasset Hill to Monument Street in Concord. This was the road used for early travel between Billerica and Concord, and the Old Revolutionary Tavern ("25" on the Wilkins map) was on Stearns Street, between the Jewell's house (108 Stearns Street) and the Andrew Dennison's house (78 Stearns Street). Two Rod Road, meaning a right of way two rods (33 feet) wide, often bordered by two walls, is the western border of the southern half of the Davis Corridor.

Also, an old road connecting Prospect Street to Maple Street appears on early maps as "Old Road from Concord to Billerica." and may have predated Two Rod Road. "Old Road from

¹ *Carlisle : its history and heritage*. By Ruth Chamberlin Wilkins. The Carlisle Historical Society, Inc. : Carlisle, Mass. c2002 2nd ed.

² *Carlisle, composite community : historical facts concerning the settlers in present Carlisle, Massachusetts, in the Colonial Period*. By Donald A. Lapham. [S.l., 1970?]

Concord to Billerica.” is today’s Blood Farms Trail in the Davis Corridor and forms part of the eastern border of the Davis Corridor. Both the Wilkins and Lapham map excerpts show these old roads up to the current Concord-Carlisle border. Prospect Street is the unlabeled branch off “the River Road “on the Wilkins map excerpt.

The Bedford Road bridge, connecting Carlisle to Bedford, was not completed until 1795, so these north-south roads connecting Concord to Carlisle to Billerica were important early colonial transportation routes.

3.2 Cultural History of the Davis Corridor: ca 1850

Moving ahead to 1852 and 1853, we find references to J. Mason’s pasture in Henry David Thoreau’s *Journal* (erroneously identified on Gleason’s 1906 map at item 85 as Merrick’s Pasture). Stephen F. Ells in his book³ presents a map of Estabrook Woods that shows Mason’s pasture in the southern-most portion of today’s Davis Corridor, east of Two Rod Road, just north of the Concord-Carlisle border. This pasture may be part of the holding of “Oliver Barron 1744” shown on Lapham’s map.

Thoreau’s *Journal* gives a sense of the vegetation and land use in this area. Some excerpts follow (taken from Ells’ book, pp. 30-35) (small italics in brackets have been added):

June 23, 1852

“To the [Mountain] Laurel in Mason’s pasture in Carlisle via the old Carlisle Road.... [*Thoreau’s route began on Estabrook Road in Concord, and he followed chiefly the fields or pastures parallel to Estabrook Road.*] These are very agreeable pastures to me – no house in sight – no cultivation.... [*Just north of the Carlisle border, he turns east to pass near the old Kibby place and then follows a path he cut the previous fall through Cedar Swamp to Two Rod Road,, a bridle road in Thoreau’s time,, and south to Mason’s pasture.*] The Mt laurels in Mason’s pasture have not a blossom – they appear to have been partly killed by the winter or else late frosts – the leaves many of them are turned red & dead -- & yet they sometimes blossom for I see the remains of former flowers. They grow in the open pasture.”

June 5, 1853.

“The young pitch pines in Mason’s pasture are a glorious sight, now most of the shoots grown six inches, so soft and blue-green, nearly as wide as high. It is nature’s front yard. The mountain laurel shows its red flower-buds, but many shoots have been killed by frost. A *Polygonatum pubescens* [Hairy Solomon’s Seal] there two and one-half feet long... There is a track of pasture, woodland, orchard, and swamp in the north part of town [*Concord*], through which the old Carlisle road [*Estabrook Road*] runs, which is nearly two miles square, without a single house and scarcely any cultivated land on it, -- four square miles.”

June 10, 1853

“To Mason’s pasture in Carlisle [*with the poet Ellery Channing*].... The mountain laurel will begin to bloom tomorrow. The frost some weeks since killed most of the buds and shoots, except where they were protected by trees or by themselves, and now new shoots

³ *The Seasons in Estabrook Country : an anthology about the cycle of the year and this landscape, from the writings and words of fifty people (farmers, schoolteachers, philosophers, a homemaker, naturalists, school children, a trapper, poets, professors and a ne’er-do-well), from 1653 to 1991.* [Written and compiled] by Stephen F. Ells. Published by the author ; Lincoln, MA, c1999.

have put forth and grow four or five inches from the sides of what were the leading ones. It is a plant which plainly requires the protection of the wood. It is stunted in the open pasture. We continue on [northerly, on Two Rod Road], [then westerly] 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 [Estabrook Road].... [Thoreau continues with musing about what to call this entire tract.] 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 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....”

Here, Thoreau is alluding to the fact that the Estabrook area, lightly settled by farmers in the late 1600’s, was largely abandoned by the mid 1800’s. See Figure 3-3 (page 3-7) for an historical USGS map of the Estabrook Woods area. The blue circle at the top roughly delineates the southern section of the Davis Corridor.

The Malcolm land section of the Davis Corridor was in agricultural use until 1992. In 1911, Arthur and Mary Malcolm purchased the farm on Stearns Street and Two Rod Road. The original house, built in 1800 by Benjamin Proctor, a cooper and carpenter, on the west side of Two Rod Road, burned down in 1958. The Malcolm’s son Allan continued living in the roofed-over basement of the house after the fire and farmed his family’s fields with his brother Wilbur until Allan’s death in 1992. They raised market crops: strawberries (primarily), flowers, raspberries, and, earlier, apples, peaches and pears.

Today, the remains of a portable saw mill on Two Rod Road from the late 1800’s and numerous stone walls throughout the Davis Corridor suggest a variety of agricultural and woodlot activities on this land over the years. The handwritten manuscript of Martha Fifield Wilkins *The Old Houses and Families of Carlisle* (available in Gleason Public Library) gives details of land transfers, contents of estates and many tales of earlier Carlisle days. Farms, meadows, barns and houses are enumerated for the Blood families and the later owners of their farms. One feature of the Davis Corridor is a 12-acre area called the Ox Pasture, which had become the property of Waldo D. Wilson and Ethlyn E. Gerow by 1978 and was in the northern portion of the land of the heirs of Henry N. Clark.

At the time of town of Carlisle’s purchase of the Davis Corridor lands in 1974, 1978, 1981, and 1995 they were woodlands (mostly), fallow fields, and a wild cranberry bog, in several parcels belonging to:

- Mr. And Mrs. John A. Davis (55.27 acres, 2.87 acres)
- Mr. And Mrs. Frederick J. Fleming (8.02 acres)
- heirs of Henry N. Clark (27.9 acres, 8.6 acres, 1.1 acres)
- First Religious Society of Carlisle (8.93 acres)
- Guy William Clark, Jr. (3.4 acres)
- Olive B. Carruthers Trust (2.35 acres)
- Roy B. Hodgman (10.68 acres)
- Carlisle Congregational Church, heir of Allan L. Malcolm (23.1 acres)

In addition, John A. and Aslaug B. Davis gave to the town valuable Bedford Road frontage of 1.58 acres.

The town voted to purchase these lands for conservation purposes. Also, the following goals were cited:

- to protect wildlife and watershed resources
- to connect to and to protect the Estabrook Woods, land of close to 672 acres belonging to Harvard University and other protected lands in Concord, extending south to Punkatasset Hill and east to Lowell Road This large protected area totals about 1,000 acres altogether.

A hyper-linked version of Stephen Ells' book may be found on the Web:

<http://homepage.mac.com/sfe/henry/estabrook/seasons/index.html>

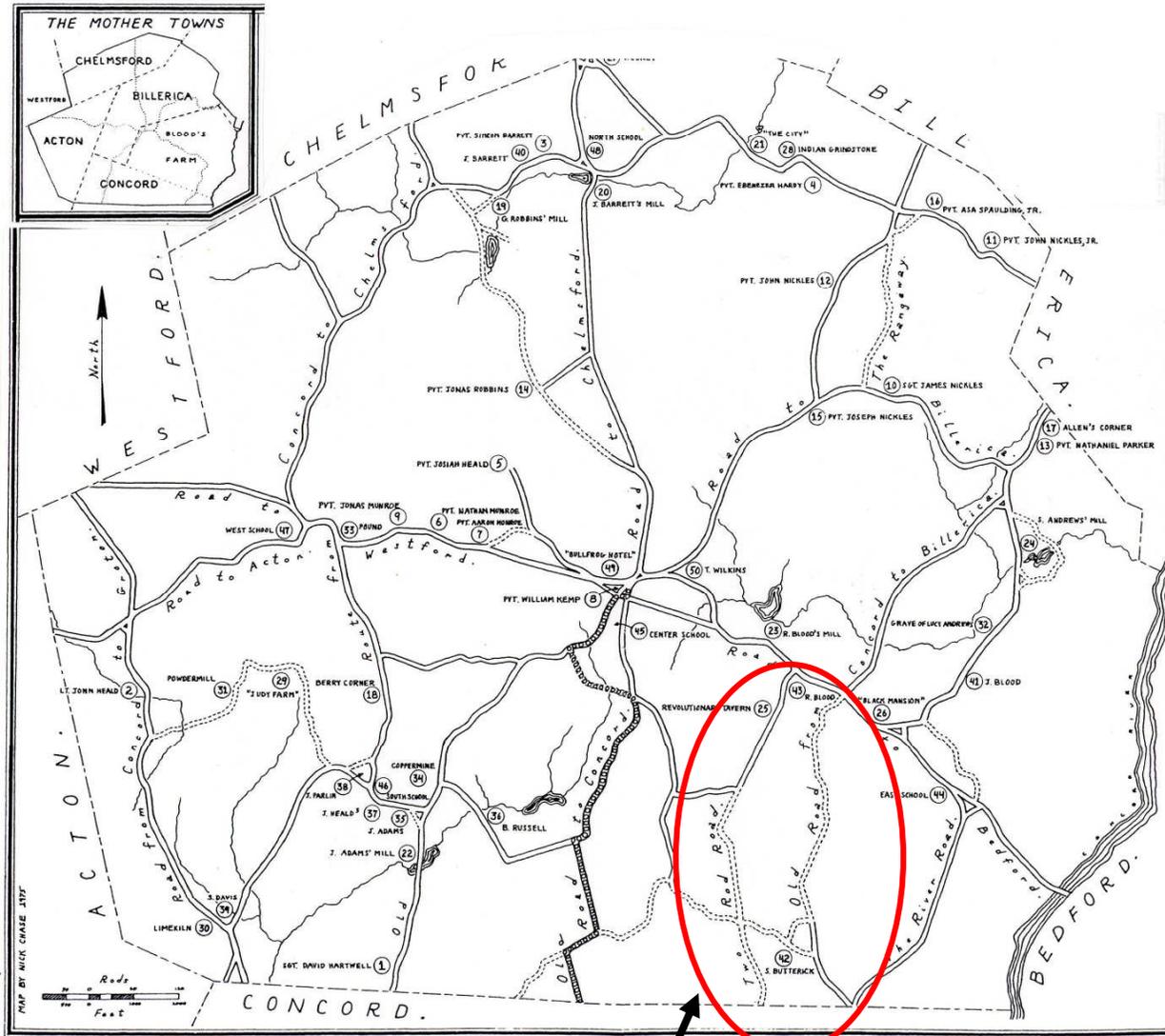
This page contains more historical and current information about Estabrook Woods:

<http://homepage.mac.com/sfe/henry/estabrook/index.html>

3.3 Current Uses

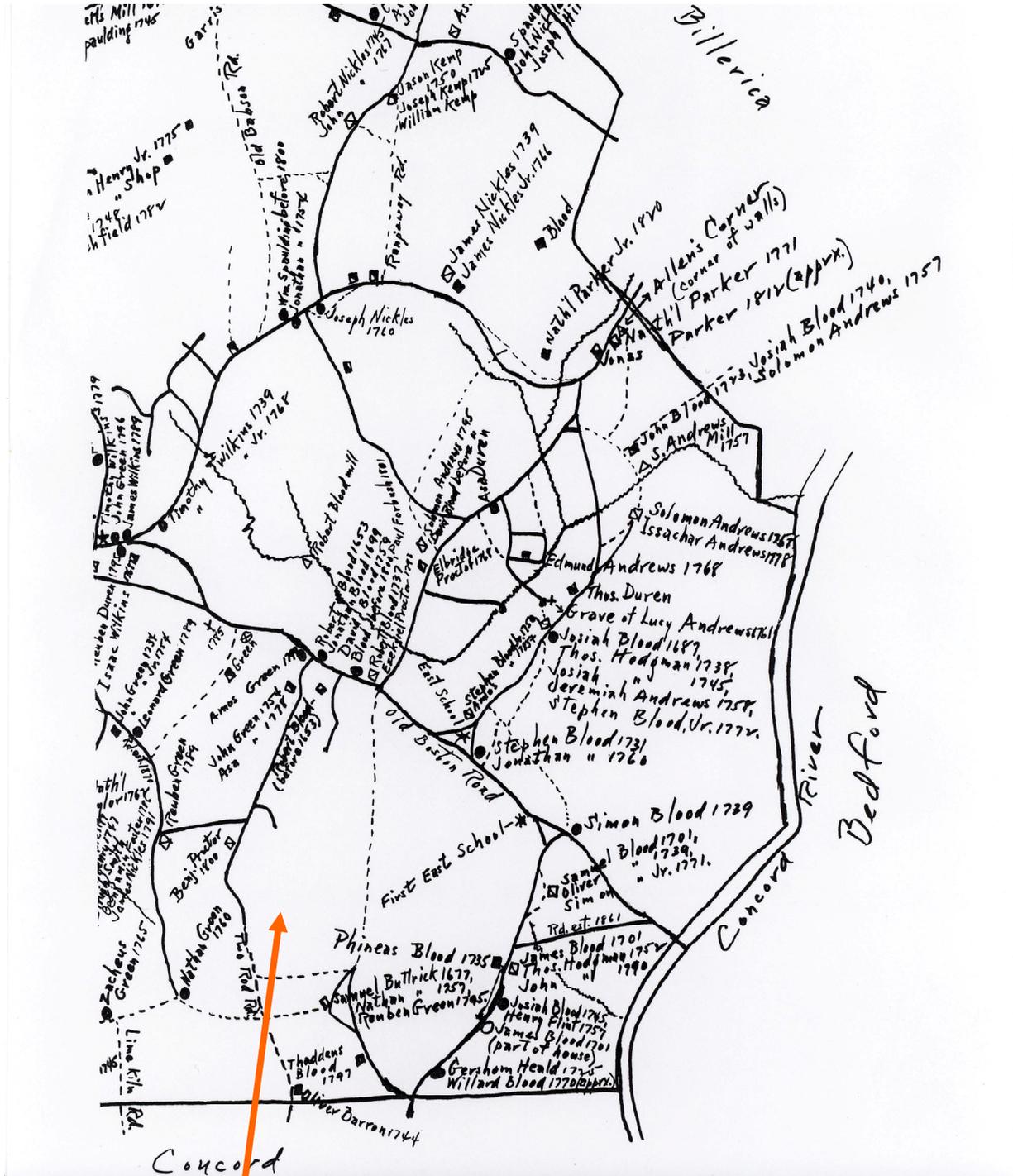
The Davis Corridor, being linear and heavily wooded, is used primarily for walking, horseback-riding, bicycling, cross-country skiing and nature study on its trails. As part of Greater Estabrook Woods, it is protected land of great value for biodiversity. The trails provide links across neighborhoods in Carlisle and to a major network of trails on protected lands in Concord

Figure 3-1. Historical Map of Carlisle, extracted from: Carlisle : its history and heritage. By Ruth Chamberlin Wilkins. Carlisle Historical Society, Carlisle, MA. 2nd edition, 2002.



Davis Corridor region

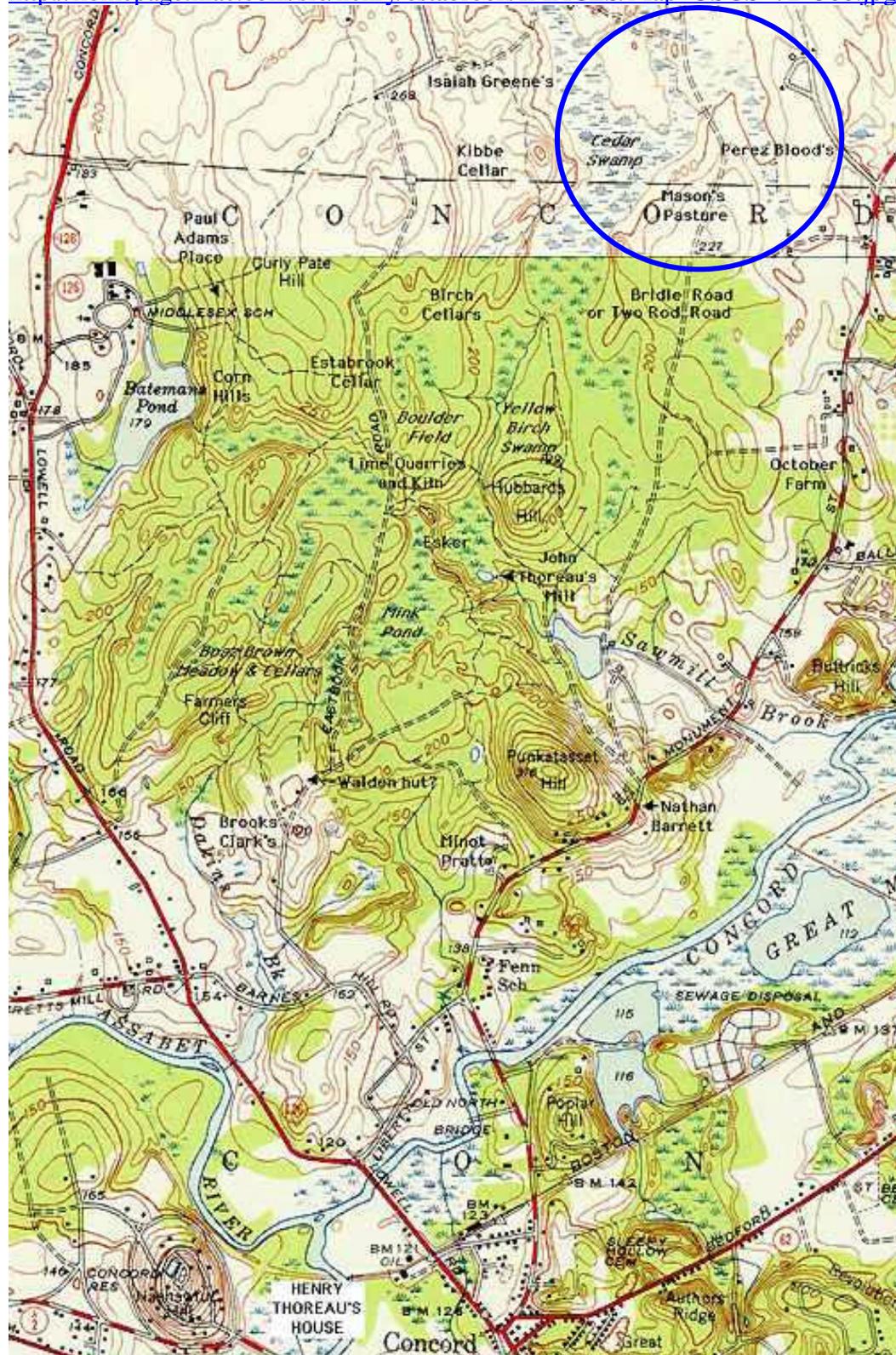
Figure 3-2. Historical Carlisle Houses Map, extracted from: *Carlisle, composite community : historical facts concerning the settlers in present Carlisle, in the colonial period.* By Donald A. Lapham. [1970]. Map dated 1969.



Davis Corridor region, with location of Blood farm houses and other old buildings

Figure 3-3. Old USGS map of the Estabrook Woods area. The added blue circle marks the southern end of the Davis Corridor, with the Cedar Swamp and Mason's pasture that Thoreau wrote about. Source viewed July, 2006:

http://homepage.mac.com/sfe/henry/estabrook/IMAGES/Map_USGS_72_500.jpg



4. Previous Planning or Other Study Documents

4.1 National Heritage and Endangered Species Program

The study of the Davis Corridor by the Massachusetts National Heritage and Endangered Species program identifying this area as Core Habitat, with some Supporting Natural Landscape (dated September 4, 2006) is included in Appendix C. In summary, the Davis Corridor is in the vicinity of Priority Habitats 394 and 373 and Estimated Habitats 4041 and 7464 that are known habitats for these state-listed rare species:

- Blanding's turtle
- wood turtle
- four-toed salamander
- spotted turtle
- blue-spotted salamander
- river bulrush.

This data is from the 11th Edition of the Massachusetts Natural Heritage Atlas.

The Natural Heritage and Endangered Species Program BioMaps for Carlisle show the Davis Corridor as part of the Core Habitat BM592, containing the endangered violet wood-sorrel (*Oxalis violacea*), rare dragonflies and the elderberry longhorned beetle (*Desmocerus palliates*). This area provides a good opportunity to protect populations of blue-spotted salamanders (*Ambystoma laterale*) and spotted turtles (*Clemmys guttata*), both species of special concern.

4.2 Baseline Assessment by The Trustees of Reservations

The Trustees of Reservations (TTOR) plans to create a management plan for the Davis Corridor as part of its role as grantee of Conservation Restrictions #36 and #52 on the entire Davis Corridor property.

In September, 2006, TTOR submitted to the town of Carlisle Conservation Commission a baseline assessment of the original five parcels (126.45 acres) of the Davis Corridor, comprising the land in CR-36

The TTOR September 2006 baseline assessment contains copies of the agreements of the conservation restriction, deeds, deed maps, and a large number of .jpg photos taken on August 24, 2006 along the trails, borders and at the entrances. The photos are referenced to a photo-point map and are a valuable resource. Included are photos of two potential vernal pools, which were also pinpointed on a Natural Heritage Potential Vernal Pool map.

5. Maintenance and Current Condition of Davis Corridor

5.1 Parking

The only parking lot designated for the Davis Corridor is on Stearns Street adjacent to the Two Rod Road entrance at the Malcolm parcel, with the entrance to the lot off the driveway for Malcolm Meadows. This lot is maintained by the Trustees of Reservations under a license agreement (which expired in April 2005) (see Appendix D). By agreement, the Trustees keep the lot in good repair and free of debris. The town plowed the lot in 2006. The space here is adequate for current levels of use, but no sign indicates where parking is or that the lot is for trail users. The “welcome” sign for the Davis Corridor mentions parking at Malcolm Meadows, but visitors may not know what that means. (TTOR also has a small parking lot further to the west on Stearns Street.)



Stearns St. sign = Two Rod Rd. sign for Malcolm Preserve kiosk in parking lot
“Welcome to Carlisle Conservation Land”
(Stearns St., looking south-southwest) photo by Elizabeth D. Loutrel, June 29., 2006

In the 1970’s, parking was available at the Bedford Road entrance to the Davis Corridor, in a field at the edge of the road. This field is now overgrown. View of the old field:



(looking south) photo by Elizabeth D. Loutrel, April 10., 2006

Parking for several cars is available on the ends of Suffolk Lane, Long Ridge Road, Nowell Farme Road and Prospect Street. No signs indicate the proximity of the Davis Corridor. Perhaps this is what the neighborhoods prefer. The only sign is a small Trails Committee Sign “Blood Farm Trail” at the end of Prospect Street, where the public walkway runs south to north and Nowell Farme Road ends on the east. (See photos in **Chapter 1. General Description**, under **1.2 Access**, page 2-2).

5.2 Trails

The Carlisle Trails Committee currently maintains over forty miles of trails in Carlisle, including those in the Davis Corridor. There is no set maintenance schedule for each of the trails although the Committee maintains a list of those sections that have been recently checked or cleared as the seasons progress. Members walk much of the system on a regular basis to inspect as well as enjoy the trails. Special efforts are made to check major trails after large storms. When normal trail maintenance (brush cutting and branch removal) is required for a particular area, it is scheduled at the monthly meeting. E-mail messages are sent out to the list of volunteers and notices are put in the *Carlisle Mosquito* if time allows. On maintenance days, crews are sent out in groups to the selected areas. For a small task, members often take care of the issue themselves as the need is noticed.

Each of the seasons has its share of work that fits into the Trails Committee’s management schedule:

Winter: Activities include cutting and removal of trees that fall along the path to keep trails open for skiing and tobogganing heavy materials into remote sites, as well as planning, manufacture and painting of signs for trails, mapping and charting using the Global Positioning System (GPS) when the foliage is out of the way, and planning for the rest of the year.

Spring: The time before the foliage and bugs arrive in mid April is the best time to do major clearing jobs that require cutting and trimming of branches along the trails.

Summer: Heavy spring rains may require trimming of new growth along trails. Mowing areas in the sun and in open fields needs to be done at this time. The Committee has purchased a DR trimmer to help with this.

Fall: Boardwalks and other major projects are completed at this time when the ground is the most stable and the bugs are not biting.

Major projects such as the creation of new trails or boardwalks require months of planning. Ideally, the Trails Committee would take over a year to plan a new trail so that it can be marked and observed through the seasons to check for optimal location. The year allows the Committee to check for land drainage, and to identify particular features

such as views or plants that would want to be highlighted along the trail. This time also allows the Committee to finish any permitting that may be required.

The Davis Corridor trails are generally in very good condition.

At the Bedford Road entrance, the path until the trail enters the woods is mown grass, with some poison ivy mixed in it. If the area is not mowed frequently, the poison ivy should be weeded out.

During wet periods, water fills some areas and walkers resort to dry land at the edges of the trails. Boardwalks need attention, as shown in the following photographs.



on the west fork of the Blood Farm Trail, the northern wet trail area photo by Elizabeth D. Loutrel, April 10., 2006 (looking south)



on the west fork of the Blood Farm Trail, the southern wet trail area photo by Elizabeth D. Loutrel, April 10., 2006 (looking south)

These two areas on the west fork become hard mud in a dry season.



on the east-west link, the western wet trail area, looking west photo by Elizabeth D. Loutrel, April 10., 2006



on the east-west link, the eastern wet trail area, looking east photo by Elizabeth D. Loutrel, April 10., 2006

These two areas on the east-west link become hard mud in a dry season. Beyond this wet spot to the east is a 50' boardwalk, in excellent condition, built by Boy Scouts in September, 2001.

In general, the wide puddles and deep mud discourage activity on these trails. Several residents have asked for more boardwalks over these wet areas on the link trails and on Two Rod Road. Boardwalks would improve greatly the functioning and appearance of these areas.

5.3 Signs

Where signs exist, they are in good condition, but some may need updating. Two signs for the Davis Corridor exist on public roads. On Bedford Road, this is the sign:



(looking southwest)

photo by Elizabeth D. Loutrel, April 10., 2006

On Stearns Street, this is the “welcome” sign in summer (poison ivy grows by the sign):

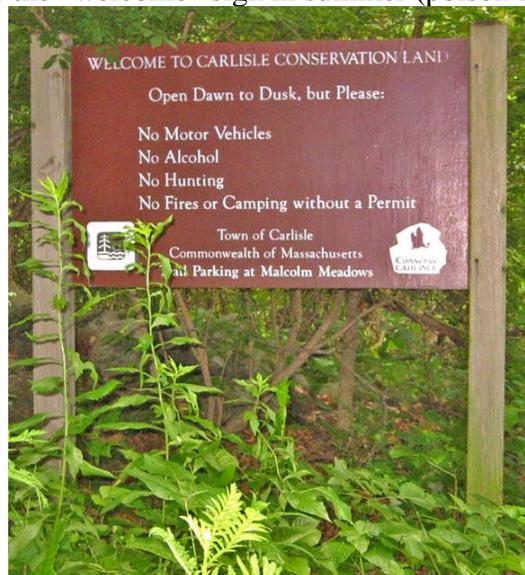


photo by Elizabeth D. Loutrel, June 29., 2006

The interior trails have good signs. They are installed and maintained by the Trails Committee. Generally they indicate the way to an access road, such as: Bedford Rd →

“Blood Farm Trail” is used differently on trail signs and on maps, and perhaps an additional trail name or two in the interior network might be helpful to the public. Another pair of signs on Two Rod Road marking the east-side high water alternative trail to the muddy section shortly after entering the Malcolm land would be useful.

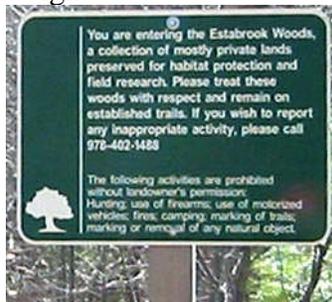
A typical sign looks like this:



(southern junction, looking west-northwest)

photo by Elizabeth D. Loutrel, April 10., 2006

This particular sign at the southern junction of the trail linking the northern section of Davis Corridor trails to Two Rod Road is confusing. Near the entrance to the Davis Corridor on Bedford Road is this sign:



It informs the public that they are entering Estabrook Woods. Older usage of “Estabrook Woods” designated Harvard University’s land in Concord. After the successful effort to increase the area of land under permanent conservation restriction in the middle 1990’s, including Harvard University’s holdings, Estabrook Woods currently designates all the public and private lands preserved for habitat protection in the environs of the Harvard University holdings.

5.4 Kiosks

A kiosk stands in the parking lot off Stearns Street, placed there by the Trustees of Reservations under the parking lot agreement. It has a few of the Trustees’ flyers; otherwise it is blank. Two views of the kiosk:



back of kiosk, from Stearns St., looking south front of kiosk, in parking lot, looking west
photos by Elizabeth D. Loutrel, June 29., 2006

5.5 Encroachments observed

None. As noted earlier, some private trails from houses lead to the trails in the Davis Corridor. One of them, leading out to Stearns Street near Rodgers Road on private land, would be very useful for the public at large, since it ends very close to a public trail leading from Rodgers Road to the Banta-Davis fields and on to the path on Bedford Road between Kimball's Ice Cream and the center of town.

5.6 Signs of inappropriate use or vandalism

No signs of vandalism appear on the property. Near the end of Long Ridge Road a faint trail leads to a pile of brush and clean-up debris in the Davis Corridor, on the west side of the trail.

6. Additional Needs Identified for Management Planning Process

Discuss with Trails Committee these ideas

- Improve trail through wet spots with boardwalks
- Clarify naming of trails, add a name or two
- Additional trail signs at Nowell Farme Road, Long Ridge Road
- Have trails committee maps/book use names consistent with signs

Discuss with Trustees of Reservations these ideas

- Add trail maps or other leaflets to kiosk (owned by TTOR) on Stearns Street
- Add small sign in Malcolm Meadows showing left turn into lot for Davis Corridor parking
- Mount a trail map behind clear plastic on the vertical surface of kiosk

Clear former parking area on Bedford Road, or is Stearns Street parking adequate? (Set-back requirement = 40 feet from road.)

Nomenclature. Davis Corridor originally referred to the Davis, Henry Clark, Fleming and FRS parcels. Clark-Carruthers and Hodgman parcels were bought subsequently and fell into the category of Davis Corridor in the public mind, as they were extensions to the south of the Davis Corridor. The Malcolm parcel, most recently bought, fills in the corridor to the west and provides access and parking on Stearns St. Should it retain its distinct name, or should it be considered part of the Davis Corridor?

Signs at roadside and interior entrances identifying Carlisle Conservation land and stating rules

Vernal pools – investigate and certify

Encroachments by abutters – disperse the current pile and monitor

Schedule and fund mowing of the Bedford Road entrance path to the trail in the woods

Improvement of visibility of Bedford Road entrance – prune and clear roadside brush

Town plowing of Stearns Street parking lot: frequency, resolution if surface material is scraped into a snow pile.

Davis Corridor
Plant List, 2007

Appendix A - Davis Corridor Plant List by Habitat (partial)

Category	Genus, species	Common name	Comments
Trees, canopy			
(mixed-age forest)	<i>Pinus strobus</i>	white pine	dominant young growth
	<i>Quercus rubra</i>	northern red oak	dominant old growth
	<i>Quercus coccinea</i>	scarlet oak	
	<i>Quercus alba</i>	white oak	uncommon
	<i>Tsuga canadensis</i>	hemlock	uncommon
	<i>Betula lenta</i>	black birch	
	<i>Betula papyrifera</i>	paper birch	
	<i>Acer rubrum</i>	red maple	
Shrubs, understory			
	<i>Vaccinium corymbosum</i>	highbush blueberry	
	<i>Clethra alnifolia</i>	sweet pepperbush	most common wetland shrub
	<i>Sassafras albidum</i>	sassafras	
	<i>Smilax rotundifolia</i>	catbrier	
	<i>Rhododendron viscosum</i>	swamp azalea	
	<i>Ulmus americana</i>	American elm	
	<i>Castanea dentata</i>	chestnut	
Ground level			
Lycopodiaceae	<i>Lycopodium dendroidium</i>	ground pine	common
	<i>Lycopodium digitatum</i>	fan clubmoss	unusual
Ferns			
Vascular plants	<i>Mitchella repens</i>	partridge berry	
	<i>Pyrola americana</i>	wintergreen	
	<i>Symplocarpus foetidus</i>	skunk cabbage	
	<i>Alliaria petiolata</i>	garlic-mustard	invasive, Two Rod Rd @ Malc.Mead.

Appendix B. Davis Corridor History of Acquisition

Original owner	Parcel name or earlier name	Acres	Cost	Vote, TM minutes	Purpose*	Deed book / page	Plan book / page	Purchase Date (deed)	MA Self Help
John A. Davis	Parcel A	55.27	\$85,000	5-Nov-1973	1	2108 / 512	117 / 158	30-Apr-1974	\$40,616
John A. Davis	Parcel B	2.87			1				
John A. Davis	Parcel C, home wood lot	1.58	gift	Accepted April 28, 1975	2	2108 / 515	117 / 158 see map 9 / 15	30-Apr-1974	
Frederick J. Fleming	William Lee et al. T.Mason woodlot?	8.02	\$7,500	5-Nov-1973	1	2109 / 517	109 / 98	30-Apr-1974	\$3,750
heirs of Henry N. Clark	Parcel A	27.9	\$28,000 for all	5-Nov-1973	1	2108 / 502	117 / 160	30-Apr-1974	\$14,000 for all
heirs of Henry N. Clark	Parcel B	8.6							
heirs of Henry N. Clark (in north part of Parcel B)	Parcel C Ox Pasture Lot, Waldo Wilson & Ethlyn Gerow	1.1 12							
First Religious Society (Unitarian Church)		8.93	\$7,500	5-Nov-1973	1	2108 / 528	117 / 159	30-Apr-1974	\$3,750
Guy Clark, Jr.	Guy Clark formerly land of Tilly Green, Carruthers Trust	3.4	\$3,230	7-May-1975	1	2305 / 418	124 / 23 see map 21	13-Apr-1978	\$2,565 for Clark and Carruthers together
Olive B. Carruthers	Stedman Buttrick Trustee. Parcel A	0.5	\$1,900 for both	7-May-1975	1	2239 / 380-382 Deeds Book 9004, Page 486 (1957)	124 / 23 see map 21	13-Apr-1977	
Olive B. Carruthers	Stedman Buttrick Trustee. Parcel B	1.85							
Roy B. Hodgman, Jr.	Harriet F. Burbank (1972)	10.68	\$11,660	June 13,14, 1979	1	Plan Book 114, Plan 95 (1972)			
Carlisle Congregational Church	Allan L. Malcolm. Parcel A	7.163	\$200,000 for all	11-Apr-1995	1	08044 / 129	191 / 45	28-May-1996	\$83,160 for all
	Allan L. Malcolm. Parcel B	6.3094							
	Allan L. Malcolm. Parcel 1C	9.4336							
	Allan L. Malcolm. Parcel 1D	0.1928							
Nowell Farm developers	Blood Farm Trail walkway easement	1	<\$100			(Carlisle Assessors' Map 1, Lot 69)		5-Jun-1972	

A Conservation Restriction on the 126-acre +/- Davis Corridor was accepted by vote of ConsCom (1994), town selectmen (1995), town meeting (1995) and by the Mass. State Legislature (1996).

The Conservation Restriction (CR-36) is in perpetuity and is held by the Trustees of Reservations.

A Conservation Restriction on the 23.1-acre Malcolm land was accepted by vote of Town Meeting (2002), ConsCom (2004), town selectmen (2004) and by the Mass. Governor & Legislature (2004). The Conservation Restriction (CR-52) is in perpetuity and is held by the Trustees of Reservations.

*Purpose of acquisitions: 1 = for conservation purposes ; 2 = for protection of the natural and watershed resources of the Town

Appendix C - Davis Corridor: Information from NHESP

Information about the Davis Corridor from the National Heritage and Endangered Species Program identifying this area as Core Habitat, with some Supporting Natural Landscape



Commonwealth of Massachusetts

Division of Fisheries & Wildlife

MassWildlife

Wayne F. MacCallum, Director

September 4, 2006

Elizabeth Loutrel
Land Stewardship Committee
105 Woodridge Road
Carlisle, MA 01741-1717

Re: Baseline Assessment Study
Carlisle, MA
NHESP Tracking Number: 06-20335

Dear Ms. Loutrel,

Thank you for contacting the Natural Heritage and Endangered Species Program ("NHESP") of the MA Division of Fisheries & Wildlife for information regarding state-protected rare species in the vicinity of the above referenced site. We have reviewed the site and would like to offer the following comments.

This project site is located near Priority Habitat's 394 and 373 and Estimated Habitat's 4041 and 7464 as indicated in the 11th Edition of the Massachusetts Natural Heritage Atlas. Our database indicates that the following state-listed rare species have been found in the vicinity of the site:

<u>Scientific name</u>	<u>Common Name</u>	<u>Taxonomic Group</u>	<u>State Status</u>
<i>Emydoidea blandingii</i>	Blanding's Turtle	Reptile	Threatened
<i>Glyptemys insculpta</i>	Wood Turtle	Reptile	Special Concern
<i>Hemidactylium scutatum</i>	Four-Toed Salamander	Amphibian	Special Concern De-listed from the MESA
<i>Clemmys guttata</i>	Spotted Turtle	Reptile	
<i>Bolboschoenus fluvialtilis</i>	River Bulrush	Plant	Special Concern
<i>Ambystoma laterale</i>	Blue-Spotted Salamander	Amphibian	Special Concern
<i>Sensitive Invertebrate species</i>	**	Invertebrate	Endangered

These species are protected under the Massachusetts Endangered Species Act (M.G.L. c. 131A) and its implementing regulations (321 CMR 10.00). State-listed wildlife are also protected under the state's Wetlands Protection Act (M.G.L. c. 131, s. 40) and its implementing regulations (310 CMR 10.37 and 10.59). Fact sheets for these species can be found on our website <http://www.state.ma.us/dfwele/dfw/nhosp/nhfact.htm>.

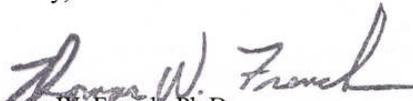
We have also enclosed information on BioMap designations for your information. This evaluation is based on the most recent information available in the NHESP database, which is constantly being expanded and updated through ongoing research and inventory. Should your site plans change, or new rare species information become available, this evaluation may be reconsidered.

www.masswildlife.org

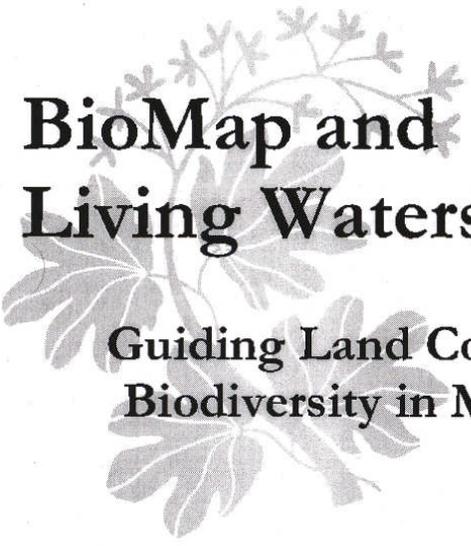
Division of Fisheries and Wildlife
Field Headquarters, North Drive, Westborough, MA 01581 (508) 792-7270 Fax (508) 792-7275
An Agency of the Department of Fish and Game

If you have any questions regarding this review please call Rebecca Skowron, Endangered Species Review Assistant, at ext. 148.

Sincerely,



Thomas W. French, Ph.D.
Assistant Director



BioMap and Living Waters

Guiding Land Conservation for Biodiversity in Massachusetts

Core Habitats of Carlisle

This report and associated map provide information about important sites for biodiversity conservation in your area.

This information is intended for conservation planning, and is not intended for use in state regulations.

Produced by:

**Natural Heritage & Endangered Species Program
Massachusetts Division of Fisheries and Wildlife
Executive Office of Environmental Affairs
Commonwealth of Massachusetts**

Produced in 2004



BioMap and Living Waters: Guiding Land Conservation for Biodiversity in Massachusetts

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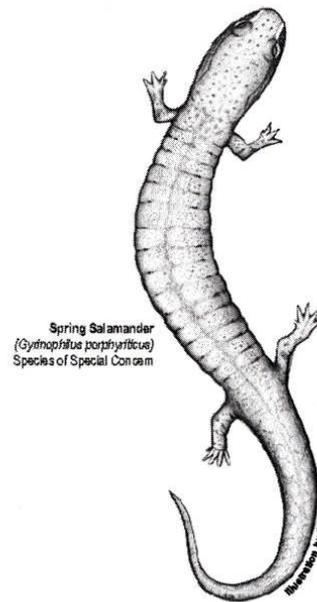
BioMap: Species and Natural Communities

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Living Waters: Core Habitat Summaries

* Depending on the location of Core Habitats,
your city or town may not have all of these sections.



Funding for this project was made available by the Executive Office of Environmental Affairs, contributions to the Natural Heritage & Endangered Species Fund, and through the State Wildlife Grants Program of the US Fish & Wildlife Service.



Natural Heritage & Endangered Species Program

Massachusetts Division of Fisheries and Wildlife

North Drive, Westborough, MA 01581

Tel: (508) 792-7270, Ext. 200 Fax: (508) 792-7821

<http://www.nhesp.org>

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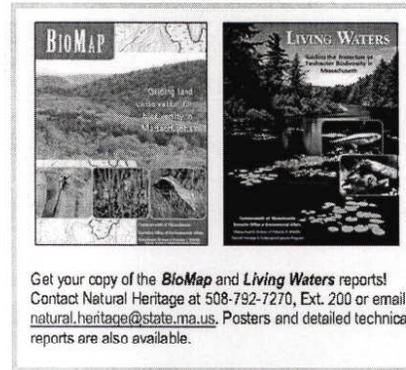
Introduction

In this report, the Natural Heritage & Endangered Species Program provides you with site-specific biodiversity information for your area. Protecting our biodiversity today will help ensure the full variety of species and natural communities that comprise our native flora and fauna will persist for generations to come.

The information in this report is the result of two statewide biodiversity conservation planning projects, *BioMap* and *Living Waters*. The goal of the BioMap project, completed in 2001, was to identify and delineate the most important areas for the long-term viability of terrestrial, wetland, and estuarine elements of biodiversity in Massachusetts. The goal of the Living Waters project, completed in 2003, was to identify and delineate the rivers, streams, lakes, and ponds that are important for freshwater biodiversity in the Commonwealth. These two conservation plans are based on documented observations of rare species, natural communities, and exemplary habitats.

What is a Core Habitat?

Both BioMap and Living Waters delineate *Core Habitats* that identify the most critical sites for biodiversity conservation across the state. Core Habitats represent habitat for the state's most viable rare plant and animal populations and include exemplary natural communities and aquatic habitats. Core Habitats represent a wide diversity of rare species and natural communities (see Table 1), and these areas are also thought to contain virtually all of the other described species in Massachusetts. Statewide, BioMap Core Habitats encompass 1,380,000 acres of uplands and wetlands, and Living Waters identifies 429 Core Habitats in rivers, streams, lakes, and ponds.



Core Habitats and Land Conservation

One of the most effective ways to protect biodiversity for future generations is to protect Core Habitats from adverse human impacts through land conservation. For Living Waters Core Habitats, protection efforts should focus on the *riparian areas*, the areas of land adjacent to water bodies. A naturally vegetated buffer that extends 330 feet (100 meters) from the water's edge helps to maintain cooler water temperature and to maintain the nutrients, energy, and natural flow of water needed by freshwater species.

In Support of Core Habitats

To further ensure the protection of Core Habitats and Massachusetts' biodiversity in the long-term, the BioMap and Living Waters projects identify two additional areas that help support Core Habitats.

In BioMap, areas shown as *Supporting Natural Landscape* provide buffers around the Core Habitats, connectivity between Core Habitats, sufficient space for ecosystems to function, and contiguous undeveloped habitat for common species. Supporting Natural Landscape was



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BioMap and Living Waters: Guiding Land Conservation for Biodiversity in Massachusetts

generated using a Geographic Information Systems (GIS) model, and its exact boundaries are less important than the general areas that it identifies. Supporting Natural Landscape represents potential land protection priorities once Core Habitat protection has been addressed.

In Living Waters, *Critical Supporting Watersheds* highlight the immediate portion of the watershed that sustains, or possibly degrades, each freshwater Core Habitat. These areas were also identified using a GIS model. Critical Supporting Watersheds represent developed and undeveloped lands, and can be quite large. Critical Supporting Watersheds can be helpful in land-use planning, and while they are not shown on these maps, they can be viewed in the Living Waters report or downloaded from www.mass.gov/mgis.

Understanding Core Habitat Species, Community, and Habitat Lists

What's in the List?

Included in this report is a list of the species, natural communities, and/or aquatic habitats for each Core Habitat in your city or town. The lists are organized by Core Habitat number.

For the larger Core Habitats that span more than one town, the species and community lists refer to the entire Core Habitat, not just the portion that falls within your city or town. For a list of all the state-listed rare species within your city or town's boundary, whether or not they are in Core Habitat, please see the town rare species lists available at www.nhesp.org.

The list of species and communities within a Core Habitat contains only the species and

Table 1. The number of rare species and types of natural communities explicitly included in the BioMap and Living Waters conservation plans, relative to the total number of native species statewide.

BioMap		
Biodiversity Group	Species and Verified Natural Community Types	
	Included in BioMap	Total Statewide
Vascular Plants	246	1,538
Birds	21	221 breeding species
Reptiles	11	25
Amphibians	6	21
Mammals	4	85
Moths and Butterflies	52	An estimated 2,500 to 3,000
Damselflies and Dragonflies	25	An estimated 165
Beetles	10	An estimated 2,500 to 4,000
Natural Communities	92	> 105 community types
Living Waters		
Biodiversity Group	Species	
	Included in Living Waters	Total Statewide
Aquatic Vascular Plants	23	114
Fishes	11	57
Mussels	7	12
Aquatic Invertebrates	23	An estimated > 2500

natural communities that were explicitly included in a given BioMap or Living Waters Core Habitat. Other rare species or examples of other natural communities may fall within the Core Habitat, but for various reasons are not included in the list. For instance, there are a few rare species that are omitted from the list or summary because of their particular sensitivity to the threat of collection. Likewise, the content of many very small Core Habitats are not described in this report or list, often because they contain a single location of a rare plant



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BioMap and Living Waters: Guiding Land Conservation for Biodiversity in Massachusetts

species. Some Core Habitats were created for suites of common species, such as forest birds, which are particularly threatened by habitat fragmentation. In these cases, the individual common species are not listed.

What does 'Status' mean?

The Division of Fisheries and Wildlife determines a status category for each rare species listed under the Massachusetts Endangered Species Act, M.G.L. c.131A, and its implementing regulations, 321 CMR 10.00. Rare species are categorized as Endangered, Threatened, or of Special Concern according to the following:

- **Endangered** species are in danger of extinction throughout all or a significant portion of their range or are in danger of extirpation from Massachusetts.
- **Threatened** species are likely to become Endangered in Massachusetts in the foreseeable future throughout all or a significant portion of their range.
- **Special Concern** species have suffered a decline that could threaten the species if allowed to continue unchecked or occur in such small numbers or with such restricted distribution or specialized habitat requirements that they could easily become Threatened in Massachusetts.

In addition, the Natural Heritage & Endangered Species Program maintains an unofficial *watch list* of plants that are tracked due to potential conservation interest or concern, but are not regulated under the Massachusetts Endangered Species Act or other laws or regulations. Likewise, described natural communities are not regulated any laws or regulations, but they can help to identify ecologically important areas that are worthy of protection. The status of natural

Legal Protection of Biodiversity

BioMap and Living Waters present a powerful vision of what Massachusetts would look like with full protection of the land that supports most of our biodiversity. To create this vision, some populations of state-listed rare species were deemed more likely to survive over the long-term than others.

Regardless of their potential viability, all sites of state-listed species have full legal protection under the Massachusetts Endangered Species Act (M.G.L. c.131A) and its implementing regulations (321 CMR 10.00). Habitat of state-listed wildlife is also protected under the Wetlands Protection Act Regulations (310 CMR 10.37 and 10.59). The *Massachusetts Natural Heritage Atlas* shows **Priority Habitats**, which are used for regulation under the Massachusetts Endangered Species Act and Massachusetts Environmental Policy Act (M.G.L. c.30) and **Estimated Habitats**, which are used for regulation of rare wildlife habitat under the Wetlands Protection Act. For more information on rare species regulations, see the *Massachusetts Natural Heritage Atlas*, available from the Natural Heritage & Endangered Species Program in book and CD formats.

BioMap and Living Waters are conservation planning tools and do not, in any way, supplant the Estimated and Priority Habitat Maps which have regulatory significance. Unless and until the combined BioMap and Living Waters vision is fully realized, we must continue to protect all populations of our state-listed species and their habitats through environmental regulation.

communities reflects the documented number and acreages of each community type in the state:

- **Critically Imperiled** communities typically have 5 or fewer documented sites or have very few remaining acres in the state.
- **Imperiled** communities typically have 6-20 sites or few remaining acres in the state.
- **Vulnerable** communities typically have 21-100 sites or limited acreage across the state.
- **Secure** communities typically have over 100 sites or abundant acreage across the state; however excellent examples are identified as Core Habitat to ensure continued protection.



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BioMap and Living Waters: Guiding Land Conservation for Biodiversity in Massachusetts

Understanding Core Habitat Summaries

Following the BioMap and Living Waters Core Habitat species and community lists, there is a descriptive summary of each Core Habitat that occurs in your city or town. This summary highlights some of the outstanding characteristics of each Core Habitat, and will help you learn more about your city or town's biodiversity. You can find out more information about many of these species and natural communities by looking at specific *fact sheets* at www.nhesp.org.

Next Steps

BioMap and Living Waters were created in part to help cities and towns prioritize their land protection efforts. While there are many reasons to conserve land – drinking water protection, recreation, agriculture, aesthetics, and others – BioMap and Living Waters Core Habitats are especially helpful to municipalities seeking to protect the rare species, natural communities, and overall biodiversity within their boundaries. Please use this report and map along with the rare species and community fact sheets to appreciate and understand the biological treasures in your city or town.

Protecting Larger Core Habitats

Core Habitats vary considerably in size. For example, the average BioMap Core Habitat is 800 acres, but Core Habitats can range from less than 10 acres to greater than 100,000 acres. These larger areas reflect the amount of land needed by some animal species for breeding, feeding, nesting, overwintering, and long-term survival. Protecting areas of this size can be

very challenging, and requires developing partnerships with neighboring towns.

Prioritizing the protection of certain areas within larger Core Habitats can be accomplished through further consultation with Natural Heritage Program biologists, and through additional field research to identify the most important areas of the Core Habitat.

Additional Information

If you have any questions about this report, or if you need help protecting land for biodiversity in your community, the Natural Heritage & Endangered Species Program staff looks forward to working with you.

Contact the Natural Heritage & Endangered Species Program:

by Phone 508-792-7270, Ext. 200

by Fax: 508-792-7821

by Email: natural.heritage@state.ma.us

by Mail: North Drive
Westborough, MA 01581

The GIS datalayers of BioMap and Living Waters Core Habitats are available for download from MassGIS: www.mass.gov/mgis

Check out www.nhesp.org for information on:

- Rare species in your town
- Rare species fact sheets
- BioMap and Living Waters projects
- Natural Heritage publications, including:
 - * Field guides
 - * Natural Heritage Atlas, and more!



Natural Heritage & Endangered Species Program

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BioMap: Species and Natural Communities

Carlisle

Core Habitat BM532

Vertebrates

<u>Common Name</u>	<u>Scientific Name</u>	<u>Status</u>
Blue-spotted Salamander	<i>Ambystoma laterale</i>	Special Concern
Spotted Turtle	<i>Clemmys guttata</i>	Special Concern

Core Habitat BM576

Plants

<u>Common Name</u>	<u>Scientific Name</u>	<u>Status</u>
Small Site for Rare Plant		

Core Habitat BM580

Plants

<u>Common Name</u>	<u>Scientific Name</u>	<u>Status</u>
Small Site for Rare Plant		

Core Habitat BM592

Plants

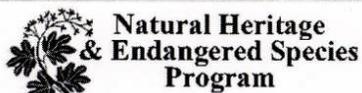
<u>Common Name</u>	<u>Scientific Name</u>	<u>Status</u>
Violet Wood-Sorrel	<i>Oxalis violacea</i>	Endangered

Invertebrates

<u>Common Name</u>	<u>Scientific Name</u>	<u>Status</u>
Elderberry Long-Horned Beetle	<i>Desmocerus palliatus</i>	Special Concern
Sensitive Rare Invertebrate		

Vertebrates

<u>Common Name</u>	<u>Scientific Name</u>	<u>Status</u>
Blue-spotted Salamander	<i>Ambystoma laterale</i>	Special Concern
Spotted Turtle	<i>Clemmys guttata</i>	Special Concern



For more information on rare species and natural communities, please see our fact sheets online at www.nhesp.org

BioMap: Species and Natural Communities

Carlisle

Core Habitat BM604

Natural Communities

<u>Common Name</u>	<u>Scientific Name</u>	<u>Status</u>
Small-River Floodplain Forest		Imperiled

Plants

<u>Common Name</u>	<u>Scientific Name</u>	<u>Status</u>
Britton's Violet	<i>Viola brittoniana</i>	Threatened
Engelmann's Umbrella-Sedge	<i>Cyperus engelmannii</i>	Threatened
River Bulrush	<i>Bolboschoenus fluviatilis</i>	Special Concern
Violet Wood-Sorrel	<i>Oxalis violacea</i>	Endangered

Vertebrates

<u>Common Name</u>	<u>Scientific Name</u>	<u>Status</u>
American Bittern	<i>Botaurus lentiginosus</i>	Endangered
Blanding's Turtle	<i>Emydoidea blandingii</i>	Threatened
Blue-spotted Salamander	<i>Ambystoma laterale</i>	Special Concern
Common Moorhen	<i>Gallinula chloropus</i>	Special Concern
King Rail	<i>Rallus elegans</i>	Threatened
Least Bittern	<i>Ixobrychus exilis</i>	Endangered
Spotted Turtle	<i>Clemmys guttata</i>	Special Concern
Wood Turtle	<i>Clemmys insculpta</i>	Special Concern



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BioMap: Core Habitat Summaries

Carlisle

Core Habitat BM532

Vertebrates

Although relatively small in area, this Core Habitat supports known populations of Blue-spotted Salamanders and Spotted Turtles. Nearly half of the area is riparian habitat, including small streams and bordering forested wetlands.

Core Habitat BM592

This large and minimally fragmented Core Habitat in Concord and Carlisle provides a good opportunity to protect populations of Blue-spotted Salamanders and Spotted Turtles. The diverse wetland complex is also important for invertebrates, including rare dragonflies, and the woodlands are home to the Endangered Violet Wood-Sorrel. With a substantial portion of this Core Habitat protected as conservation land, further habitat protection would help ensure the long-term viability of the rare species found here.

Plants

The Endangered Violet Wood-Sorrel, a purple-flowered herb of rich woodlands, is found within this Core Habitat.

Invertebrates

In the vicinity of Bateman's Pond in Concord and elsewhere within this Core Habitat are wetlands and meadows with thickets of Elderberry that are habitat for the Elderberry Longhorned Beetle, as well as bogs and swamps that are habitat for rare dragonflies. Apparently most of this habitat is unprotected. Located within dispersal distance of this Core Habitat are other areas inhabited by the Elderberry Longhorned Beetle, including Core Habitats in Concord, Lincoln, Sudbury, Lexington, and Waltham.

Vertebrates

This is an area of diverse habitat within which long-term preservation of significant populations of Blue-spotted Salamanders and Spotted Turtles may be possible. Within this roadless area, there is a good interspersed of habitat types, including forested wetlands, small streams, and forested uplands with a moderate density of vernal pools.



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BioMap: Core Habitat Summaries

Carlisle

Core Habitat BM604

This Core Habitat, located along portions of the Concord and Assabet Rivers, includes two of the few remaining Small-River Floodplain Forest communities in Massachusetts. The area is critical for a diversity of rare plant species, including the state's largest known population of Engelmann's Umbrella-Sedge. The Core Habitat also contains key habitats for rare birds, reptiles, and amphibians. In particular, it supports one of the state's largest remaining populations of Blanding's Turtles, and provides important wetland habitat for a variety of breeding and migrating bird species.

Natural Communities

This Core Habitat contains two of the remaining eight Small-River Floodplain Forests known in the state. Small-River Floodplain Forests are Silver Maple-Green Ash forests occurring on alluvial soils of small rivers and streams. They occur on small tributaries of the Connecticut and Nashua Rivers and along some small rivers of eastern Massachusetts. Although small, the Small-River Floodplain Forests in this Core Habitat are relatively undisturbed. This community type is highly imperiled by the encroachment of invasive exotic plant species. Restoration efforts are necessary at all Small-River Floodplain Forest sites in the state to help ensure the continued existence of this community type.

Plants

This is an extremely important area for rare plants. Four different rare plant species, in many scattered populations, are found growing throughout this Core Habitat. The Threatened Britton's Violet is found in several low areas which flood occasionally. The largest Massachusetts population of Engelmann's Umbrella-Sedge ever recorded is found growing here in a muddy, drained area with other sedges and grasses.

Vertebrates

This Core Habitat contains important habitats for a number of state-protected rare species of birds, reptiles, and amphibians. Included are deep and shallow freshwater marshes that provide breeding and migration habitat for Least Bitterns, American Bitterns, King Rails, and Common Moorhens, especially in the managed impoundments of the Great Meadows National Wildlife Refuge. These wetlands also provide habitat for many other waterbirds and waterfowl, including several species of ducks, herons, and rails. Wetlands and riparian uplands within this Core Habitat also support one of the state's largest remaining populations of Blanding's Turtles. Significant habitat for Spotted Turtles, Wood Turtles, and Blue-spotted Salamanders is present as well.



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Appendix D

Maintenance Agreement with TTOR for Parking Lot

LICENSE AGREEMENT MALCOLM MEADOWS PARKING AREA

WHEREAS The Town of Carlisle, through its Conservation Commission, for administration, control, and maintenance under the provisions of G. L. c. 40, §8C, is the owner (the "Owner") of the land shown as Parcel A, Parcel B, Parcel 1C and Parcel 1D on a plan of land entitled "Malcolm Meadows, Carlisle, Mass., Record Plan (Sheet 3 of 10), for Northwest Structures, Inc., Scale 1"=100', Date: June 17, 1996, Revised March 22, 1996, Revised April 2, 1996," (the "Plan"); and

WHEREAS The Trustees of Reservations, Inc. ("The Trustees"), in conjunction with the Carlisle Conservation Foundation, Inc., are the owners of the land shown as Parcel 1A and Parcel 1B on the Plan; and

WHEREAS all of said Parcels A, B, 1A, 1B, 1C, and 1D are to be used in conjunction with each other for conservation and passive recreation purposes by the public; and

WHEREAS the sole area available for off-street public parking is situated on Parcel 1D, as shown on the Plan;

NOW, THEREFORE, the Owner grants to The Trustees a non-exclusive license to install and maintain a sign and a bulletin board on Parcel 1D and to use the parking area on Parcel 1D for all purposes for which conservation land parking areas are ordinarily and customarily used in the Town of Carlisle, subject to the following terms and conditions:

1. The terms of this license shall be for a period of three (3) years, unless sooner terminated by mutual agreement of the parties.
2. The content, design, construction, materials and location of the sign and the bulletin board shall be subject to the prior approval of the Owner, which approval shall not be unreasonably withheld.
3. During the terms of this license, The Trustees shall maintain the parking area in good repair and free of debris, trash or other unsightly material. The Trustees, however, shall have no obligation to plow or remove snow from the parking area.
4. The Trustees shall indemnify and hold the Owner harmless from and against any and all debts, demands, actions, causes of actions, suits, losses, damages and any and all claims demands and liabilities whatsoever of every name and nature, absolute or contingent, both in law and equity, which may be imposed upon, incurred by, or asserted against the Owner by reason of any breach of this License by The Trustees.

Executed as an instrument under seal this 9th day of April 2002.

CARLISLE CONSERVATION
COMMISSION

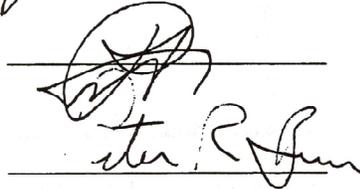
THE TRUSTEES
OF RESERVATIONS, INC.



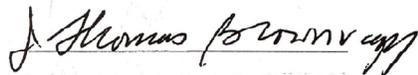












CARLISLE BOARD OF SELECTMEN

