

CARLISLE'S CONSERVATION LAND: GUIDELINES FOR USE

**Final
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Carlisle Land Stewardship Committee

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This document was prepared by Carlisle Land Stewardship Committee members Elisabeth Carpenter, Dwight DeMay, Elizabeth Loutrel, and Warren Lyman. Tom Brownrigg and Tricia Smith of the Carlisle Conservation Commission attended meetings of this group and contributed valuable insight. Tom Brownrigg also wrote the appendix on vernal pool protection.

After research and preparation of the initial draft, the document was reviewed and revised by the Land Stewardship Committee. A public hearing was then held with the Conservation Commission. Additional comments were submitted by the Conservation Commission and incorporated by the Land Stewardship Committee. This document will be available electronically and in hard copy at the Town Hall and Gleason Public Library.

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I. INTRODUCTION

1. Purpose and Goals

The purpose of this document is to provide reference information and guidance for Carlisle Conservation Commission (ConsCom) decisions on proposed uses for Town-owned conservation land.

The main goal is to provide a comprehensive repository of relevant background information for ConsCom when making decisions about conservation land use and management. There are legal constraints that apply to all parcels (such as Article 97). Some parcels have unique conservation restrictions or other deed restrictions. This document and its attachments detail the parcel-specific restrictions. In addition, other evaluation considerations are provided for proposed uses (recreation, agriculture, and other uses).

This effort originated when, in the process of reviewing proposals for new uses on conservation lands, the Land Stewardship Committee (LSC) did not find a clear process or set of policies to evaluate such proposals on a comprehensive, Town-wide scale in a timely manner. The LSC formed a sub-group to evaluate ways to review such proposals and determined that the preparation of Conservation Land Use Guidelines (CLG) document would best facilitate this review.

While researching and preparing this guidelines document, the LSC came to the conclusion that the current mix of activities and uses is generally appropriate; that is, significantly changing the balance or intensity (beyond accommodating an increasing population) is not compatible with preserving conservation values.

These guidelines are strictly voluntary and are intended to be a decision-making aid for ConsCom.

2. Overview of the Document

This document consists of several sections:

- Background and Existing Conditions
 - Conservation Values
 - Conservation Land Matrix
 - Overview of Town Conservation Lands
 - Historic and Existing Uses
- Guidance for Decisions on Future Proposed Uses
 - Description of evaluation process
 - Specific guidelines and criteria: 9 categories
- Appendices for additional detail and background

II. CARLISLE CONSERVATION PARCELS: BACKGROUND AND EXISTING CONDITIONS

1. Conservation Values

The town purchases land for conservation in order to keep the land as “open space” or, in other words, in an undeveloped state for wildlife habitat, passive recreation (e.g., hiking, fishing, and bird watching), flood control (in the case of wetlands), preservation of agriculture, and scenic vistas. These reasons provide us with immediate, tangible benefits we derive from “using” the property or benefiting from resources that are there today. However, the environmental benefits literature also describes what are considered “nonuse” or less tangible values for conserving natural resources. These include deriving benefits from preserving biodiversity, existence value (i.e., benefits derived from simply knowing that that natural landscape exists), preserving species that may have some important use in the future (e.g., a medical use), and for land stewardship (i.e., bequeathing open space to future generations). The Carlisle Conservation Commission manages town conservation lands in a manner that upholds these environmental values and ethics, which are the universally accepted bases for preserving the natural landscape in Massachusetts and worldwide.

“Conservation” can be defined as an ethic of resource use, allocation, and protection. Its primary focus is upon maintaining the health of the natural world, including forests, fisheries, habitats, and biological diversity. In common usage, the term refers to the activity of systematically protecting natural resources. Conservation is a philosophy of managing the environment in a manner that does not despoil, exhaust, or extinguish. It includes protection, preservation, management, or restoration of natural environments and the ecological communities that inhabit them. Conservation is generally held to also include the management of human use of natural resources for current public benefit and sustainable social and economic utilization.

The principal value underlying most expressions of the conservation ethic is that the natural world has intrinsic and intangible worth along with utilitarian value and tangible functions.

For the purposes of Carlisle conservation land planning, “conservation values” include the above definitions expanded to include passive recreation (such as hiking) and agriculture with the understanding that such uses do not permanently impact the natural environment.

Conservation land values constitute the reasons a community considers conservation land to be important and an asset to the community. The Carlisle community places a high value on conservation, agriculture, and the preservation of rural attributes, and these values should be considered when future uses are proposed on conservation land.

2. Conservation Land Matrix

Relevant information for each Town-owned conservation parcel has been compiled in a spreadsheet (Appendix 1). This facilitates electronic searching and finding information on each parcel and comparing parcel characteristics.

3. Overview of Town Conservation Lands

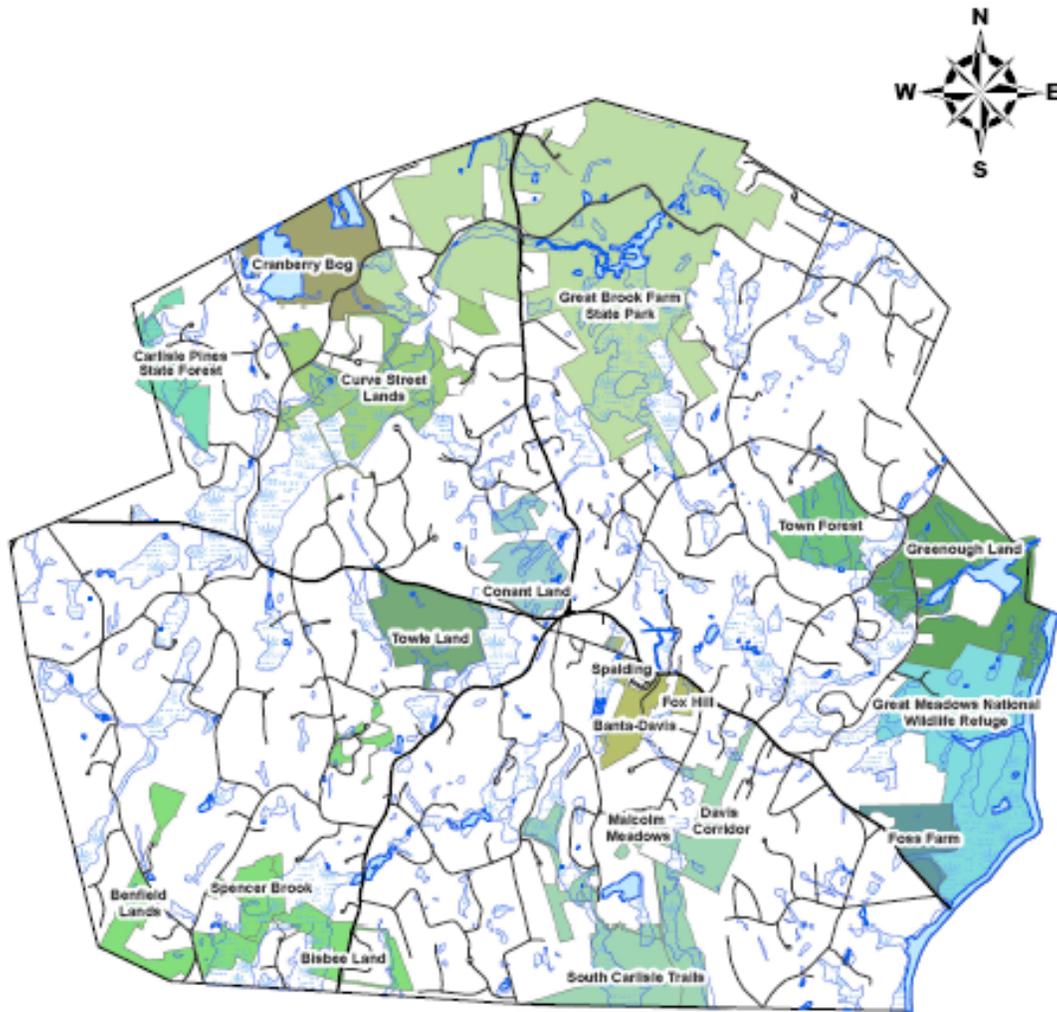
As of 2007, Carlisle, through town, state, federal, and private agencies, has permanently protected over 3,200 acres, or about 33%, of its land. Of this, about 1,100 acres is Town-owned conservation land, the subject of this document.¹

Carlisle is a residential community of about 15.4 square miles, located about 18 miles northwest of Boston, with a relatively low population density (about 342 people/mi²). The town has primarily single-family homes on 2 +-acre lots (with the exception of the town center and a few special zoning considerations for multiple-family dwellings). Carlisle is bordered by the towns of Acton, Bedford, Billerica, Chelmsford, Concord, and Westford, which are all much larger in population than Carlisle and have substantial commercial and employment centers, much larger and more varied residential areas, and significant transportation capabilities. In contrast, Carlisle is noted for its markedly rural character.

Carlisle has a long history of publicly supported efforts to preserve its rural appearance and character and its open space. In addition to the 1,100 acres of Town-owned conservation land, the Town is fortunate to contain part of the Great Meadows National Wildlife Refuge on the Concord River (231 acres), the Great Brook Farm State Park (998 acres), and portions of the Estabrook Woods (over 60 acres). The Carlisle Conservation Foundation, a private, non-profit organization, owns and protects approximately 225 acres. In addition, a strong community appreciation of conservation values has resulted in private parcels, totaling approximately 600 acres, under conservation restrictions (CRs) to complement the town's public conservation land holdings. As a result, there are large intact conservation areas, providing rich habitat diversity and wildlife corridors. These lands are recognized as a local and regional asset by the Minuteman Advisory Group on Interlocal Coordination (MAGIC) sub-region of the Metropolitan Area Planning Council (MAPC). Bird populations, as an overall indicator of ecosystem health and diversity, contain roughly double the number of species compared to some adjacent towns because our large intact wild areas support greater diversity not possible in areas with only small islands of wild space.

Figure 1 provides an overview map of Carlisle's larger conservation parcels. Table 1 lists Town – owned conservation lands and their approximate acreages. Brief descriptions of these parcels are provided in Appendix 2.

¹ Town of Carlisle Open Space & Recreation Plan, Carlisle, Massachusetts, June 2006.



Carlisle Conservation Parcels

Copyright © 2010 Carlisle Trails Committee
 Town of Carlisle 2004 GIS Database
 Certain base layers courtesy of the Office of Geographic and Environmental Information (MassGIS),
 Commonwealth of Massachusetts Executive Office of Environmental Affairs

0 0.5 1 2 3 4 Miles

Figure 1. Overview Map of Conservation Land in Carlisle²

² Map courtesy of Carlisle Trails Committee

Table 1. List of Town-Owned Conservation Land

Name	Acreage	Name	Acreage
Benfield Conservation Land	25.7	Hart Farm	13.5
Bisbee Land	34	Heidke Parcel	8.2
Benfield Hill	1	Hutchins Field	16
Buttrick Woods	14.0	Ice Pond Property	7.1
Carr Land	6	Macone Property	3
(Chestnut Estates land)	8.15	MacAfee Land	15
Cranberry Bog	151	Malcolm Land	23.1
Davis Corridor	126	Mannis Land	27.9
Deacon Land	7.5	Robbins Field	18.45
Fisk Meadow	11.6	Rockstrom Land	7.6
Foss Farm	55.2	Sachs Greenway	9.3
Fox Hill	11.2	Swanson Land	20
Gage Woodland	14	Swanson Family Land	3.0
Greystone	14.33	Towle Land	120.9
Greenough Land	255	Town Forest	71
Great Brook Estates OS1	3.7		

4. Historic and Existing Uses of Conservation Land

Apparently a significant Native American population resided in Carlisle prior to its settlement by colonists in 1650. Carlisle has evolved into the community it is today from a small, rural agricultural enclave in Colonial times. Early colonial agricultural activities included crop farming, dairying, other animal husbandry, and lumber production. Later, farming became primarily an export business with agricultural products transported to the Boston area. Other small industries in Carlisle included textile mills, gristmills, and sawmills; quarries and limekilns; copper mining; blacksmithing; and taverns. Over the past half-century, farming became marginalized as Carlisle transitioned to a primarily residential community. Appendix 3 summarizes historical and current use information on the six largest Carlisle conservation properties.

Current uses or activities on town-owned conservation land fall into six broad categories:

- Wildlife habitat and watershed protection
- Open space preservation
- Passive recreation activities
- Agricultural activities
- Educational activities
- Maintenance activities

Wildlife habitat and watershed protection

Most Town-owned conservation land (with the exception of the Town Forest and Hutchins/Robbins land)³ was acquired for conservation and passive recreation purposes, as stated in Town meeting vote records and recorded deeds. An important component of conservation, in addition to maintaining open space areas as an intrinsic value, is the protection of wildlife habitat in a world of dwindling natural areas. Important wildlife habitat protection and maintenance activities should encompass the following:

- Protecting various habitats for migrating and nesting birds, including grassland, edge habitat, transitional habitat, forest, and wetland species, thus providing habitats for all local fauna
- Wetland, stream, and pond habitat for reptiles, amphibians and fish (some of them protected)
- Areas of natural plant communities, as well as rare plant species
- Provision and protection of corridors connecting protected land and open space to facilitate wildlife movement and migration

Six Town-owned conservation parcels have rare species habitat: Town Forest, Heidke Lot, Foss Farm, Benfield Conservation Land, Cranberry Bog, and Greenough Land.

It should be noted that wildlife habitat is not necessarily, or even mostly, in an untouched or pristine condition in Carlisle; most habitat is second or third growth, as is typical in eastern Massachusetts. Much land originally cleared for agriculture has become reforested with clearings for residences and lawns.

Open Space Preservation

As documented in the most recent OS&R Plan, open space preservation is very important to Carlisle residents. A broader value of conservation land is the preservation of open space that has intrinsic value simply by its existence. Pressures are occasionally felt to develop conservation lands, often for socially valuable purposes such as affordable housing or structured recreation facilities, because these lands are viewed as “available” and, moreover, are relatively low cost because they are already owned by the town. With limited exceptions, the Town has preserved its network of open space and found other ways to address these pressures

Passive Recreation activities

Most of Carlisle’s conservation land was acquired with a view to allowing a variety of passive recreation activities on the land in addition to conservation. Table 2 provides a summary of the Rules and Regulations pertaining to recreation uses allowed on town-owned conservation land, posted on the Conservation Commission’s web site as of 2010. Appendix 4 provides the complete Rules and Regulations of the Carlisle Conservation Commission.

³ Town Forest was originally part of the town Poor Farm and was placed under ConsCom management in 1994. Hutchins and Robbins were acquired for agriculture.

Mountain bike riding, which has become increasingly popular in recent years, is not addressed in this list of activities. Interestingly, when the Sachs Greenway was established there was an agreement that horses and bikes would be excluded to protect a sensitive and fragile section of trail over a narrow rock wall across a probable vernal pool. Appendix 5 provides a national code of responsibility for bicyclists.

According to existing rules, large organized group activities on conservation land require a permit granted by ConsCom. The size of “large organized groups” is generally set as eight or more persons. The Town’s camping regulations define a large group as more than 15 persons. These camping regulations, formulated by the Land Stewardship Committee, were adopted by the Conservation Commission in the fall of 2008. The complete camping regulations are in Appendix 6. In accordance with Article 97 restrictions, active recreation is generally not allowed on conservation lands.

Agricultural activities.

Agriculture is an allowed use on some conservation land in addition to conservation and passive recreation. Agricultural uses on Town conservation land are generally governed by three-year license agreements. In all cases the agricultural uses predated when the town bought the land. The basis for allowing agriculture on conservation land is to continue the historical tradition of farming in Carlisle, maintain viable agricultural fields, and maintain valued open vistas at little cost to the Town. Until recently, agricultural activities on town conservation lands were primarily limited to corn and hay for animal feed. Community gardens have been allowed at Foss Farm for many years. Nursery trees and fenced cropland were allowed at Fox Hill starting in 2008. Two conservation properties (Hutchins and Robbins) are protected by Agricultural Preservation Restrictions (see Section 2.1, Legal Constraints), which are intended to protect and preserve agricultural lands.

Educational activities

Carlisle’s conservation lands provide significant opportunities for nature education activities, due to the variety of natural habitats represented in Carlisle and the existence and maintenance of an extensive trail system. These activities differ from purely recreational activities as they are offered to the general public and advertised in advance in local publications. Most, but not all, of these activities are free to the general public. Some specific past examples of these activities include:

- Nature walks on Foss Farm fields, margin, and woods for American woodcock and other species sighting
- LSC- organized educational programs on Foss Farm (with the Massachusetts Audubon Society) on raptors and river life
- Nature walks on Greenough Land and Cranberry Bog to observe vernal pools
- Nature walks on several properties to identify fungi, algae, and lichens
- Nature walks on Towle Land – its fields, margins, and forests - to observe bird life
- Nature walks on Towle Land in winter to develop skills in winter tree identification
- Organized stargazing activities
- Walks on Foss Farm to identify wild edible plants

- Organized Trails Committee nature walks (including the winter moonlight walk), often connecting multiple parcels

Table 2. Recreation Uses Allowed or Prohibited on Town-Owned Conservation Lands*

General Uses Allowed or Prohibited on All Town-Owned Conservation Lands	
<p><u>Uses allowed on all Conservation Land</u> Walking, hiking, jogging, running Picnicking Kite-flying Horseback riding [excluded on some properties] Snowshoeing Dog walking Cross country skiing Nature study (observation) Other uses of a passive recreational nature</p>	<p><u>Uses prohibited on all Conservation Land</u> Hunting, trapping Swimming Driving motorized vehicles (except by special permit and as regulated on Foss Farm) Any use between sunset and sunrise** Any commercial use, except de minimis **</p>
<p><u>Uses prohibited except by special permission from a majority of the Commission</u> Camping Discharge of firearms (blanks only) Fires (Fire Department must also issue permit)</p>	<p><u>Use for camping or large organized groups</u> May be permitted and scheduled through the Conservation office Groups of 8 or more people are considered to be large groups</p>
Additional Uses Allowed on Specific Parcels of Land	
<p><u>Foss Farm</u> Pony Club activities Dog shows Dog field trials Dog sledding Dog training classes Horse show 4-H Club activities Fairs Colonial Minutemen Historical Muster Community gardens</p>	<p><u>Greenough Land</u> Ice skating Fishing, ice fishing Canoeing</p>
	<p><u>Towle Field</u> X-C Ski League</p>

* Based on the Carlisle Conservation Commission Rules and Regulations (adopted March 2009).

** Except by permit.

Maintenance activities

The Department of Public Works provides some maintenance for conservation land upon request, including some roadside weed, brush, and limb clearing, periodic parking lot and access road maintenance (such as filling in potholes), and plowing of parking lots in winter.

The Conservation Commission currently provides for mowing on two non-agricultural fields to maintain an open meadow habitat: the field on Towle Land (19 acres) and the meadow on Benfield Conservation Land (10 acres). Towle Field's mowing is scheduled to minimize the impact on nesting bobolinks, and the Benfield Land is mowed to keep it open and reduce brush and forest encroachment. ConsCom also pays for trash removal. The Trails Committee maintains trails, bridges, and internal trail signage on all town conservation land. The Land Stewardship Committee maintains entrance signage and kiosks, and prepares baseline assessments and management plans for acceptance by the Conservation Commission. Land Stewards and their volunteers have also helped with maintenance activities, including invasive species removal, notifying ConsCom of encroachments and assisting in resolution, and cleaning up after vandalism.

On a more informal basis, abutting residents of some properties maintain trail paths and clear brush and limbs from trails and trail sides. Concerned and interested citizens install and maintain bird nest boxes on certain properties.

III. GUIDANCE FOR MANAGING ACTIVITIES ON CONSERVATION LAND

1. Overview of the Evaluation Process

This section provides guidelines and nine specific criteria to evaluate proposed uses on conservation land. It is the intent of this document that ConsCom use these nine criteria when reviewing and evaluating specific proposals:

- 2.1. Legal Constraints
- 2.2. Conservation Values
- 2.3. Vistas and Visual Sensibilities
- 2.4. Usability
- 2.5. Intensity of Use
- 2.6. Specific Evaluation Criteria for Proposed Agricultural Uses
- 2.7. Specific Evaluation Criteria for Recreation Uses
- 2.8. Evaluation Criteria for Other Uses
- 2.9. Coordination and Consistency with Other Town Documents (e.g., OS&R Plan).

2. Evaluation Criteria and Specific Guidelines

When evaluating a request for activities on conservation land, it should be noted that it is ConsCom's duty to uphold conservation values and the legal restrictions on the land. The following are priority considerations for all proposed uses:

- Do not harm conservation value
- Maintaining health of natural resources (e.g., forest management, habitat maintenance)
- Maintain natural resource values and aesthetic value of land
- Some parcels are in core habitat⁴ or are otherwise higher quality for wildlife, so only allow minimal-impact activities

2.1 Legal Constraints

Key Considerations

- *The various levels of legal requirements are complied with, and*
- *Legal constraints are considered early in the evaluation process to avoid unnecessary effort*

The following sections discuss the most common types of legal constraints that may apply to Carlisle's conservation properties. Note that some properties may have very few restraints; while other may have a complicated set of restraints due to funding sources or deed restrictions. The Conservation Land matrix provides the legal restrictions on specific Town conservation lands.

⁴ Core habitat is defined by BioMap2 as key areas critical for the long-term persistence of rare species and other Species of Conservation Concern, as well as a wide diversity of natural communities and intact ecosystems. More information can be found at the BioMap2 website at www.nhesp.org, under the Land Protection and Planning tab.

2.1.1 Massachusetts Article 97

In November 1972 the citizens of Massachusetts approved at the ballot Article 97, which became the 97th Amendment to the State Constitution. The scope of this article is broad and protects environmental and natural values as the rights of citizens, allows for the acquisition of land to support these values, protects land acquired for environmental and conservation purposes from being subverted to other uses, and protects land used for active recreation.

There are several processes required for converting Article 97 land to other uses. The proposed conversion must be approved 1) by vote of the ConsCom; 2) by vote at Town Meeting; 3) by vote of the state legislature; and 4) by the governor's signature. In addition, the Town may have to set aside an equivalent acreage of conservation land. For details on current procedures for converting Article 97 land to other uses, please contact the office of the Conservation Administrator. The complete text of Article 97 is presented in Appendix 7.

2.1.2 Deed Restrictions

Conservation parcels acquired by the Town (by purchase, gift, or Conservation Cluster bylaw) and voted on at Town Meeting (see section 2.1.8 below) are duly recorded in the Registry of Deeds. The deeds list any restrictions on the property. Most state that they were acquired for "conservation and recreation purposes", "watershed protection", and other reasons. Parcel-specific deeds may have more detail on use restrictions.

An interesting exception is the Town Forest, which is part of a larger property originally purchased by the town in the mid-1800s. By a process explained in the Town Forest Baseline Assessment, today's Town Forest was placed under ConsCom management in 1994 and thus became subject to the conditions of Article 97.

2.1.3 Conservation Restrictions

Some parcels have specific Conservation Restrictions (CRs) associated with them. A CR is legally binding, conveys with the land, and is tailored for each specific property. Currently three CRs apply to eight town-owned conservation properties. Table 3 summarizes specified prohibited and permitted uses on these parcels under these CRs.

2.1.4 Agricultural Preservation Restrictions

The Agricultural Preservation Restriction (APR) is a binding agreement between an owner of an APR Parcel and the Commonwealth, exists in perpetuity, conveys with the land, and is recorded at the Registry of Deeds. The Hutchins and Robbins parcels have this type of restriction. The APR is intended to protect and preserve agricultural lands, encourage sound soil management practices, preserve natural resources, maintain land in active agricultural use, and ensure affordable resale values of agricultural land. No activity detrimental to the actual or potential use of the land or detrimental to water conservation, soil conservation, or to good agricultural and forestry management practices is permitted. Non-agricultural structures are prohibited.

Table 3. Conservation Restrictions on Town-owned Conservation Land

#36 = DAVIS CORRIDOR, EXCEPT MALCOLM LAND

#52 = MALCOLM LAND, SACHS GREENWAY, DEACON LAND, CARR LAND, ROCKSTROM LAND AND BUTTRICK WOODS

#57 = BENFIELD CONSERVATION LAND

Prohibited acts	CR #36	CR #52	CR #57
construction of any kind	X	X	
most construction (wells and wastewater systems are allowed, other construction prohibited)			X
mining or excavation	X	X	X
dumping or storage of materials	X	X	X
destruction of vegetation	X	X	X
conveyance of a portion of the property	X	X	X
use of motorized vehicles	X	X	X
activities detrimental to drainage, flood & erosion control, water & soil conservation quality	X	X	X
uses that may impair conservation interests	X	X	X
hunting or trapping		X	X
recreational use for profit or commercial recreational use		X	X
Permitted uses	CR #36	CR #52	CR #57
installation and use of water wells, wastewater disposal fields, and associated equipment			X*
excavation and removal of soil, gravel, etc. associated with above systems			X
sight-pervious fences including historic stone walls			X
agriculture, horticulture, and animal husbandry (using sound practices)			X
use of motorized vehicles as required by police, firemen or other governmental agents	X	X	X
use of motorized vehicles for exercise of reserved rights	X	X	
construction and maintenance of unpaved trails including bridges and boardwalks	X	X	X
erection of regulatory signs	X	X	X
archaeological research approved by grantee and state archaeologist	X	X	X
research by or approved by Museum of Comparative Zoology of Harvard University	X	X	
passive recreational activities: hiking, horseback riding, cross-country skiing, etc.		X	X
forest management		X	X
field maintenance		X	X
field expansion (with written permission of Grantee)			X
inconspicuous brush piles			X
minor educational and recreational structures		X	X
plant and wildlife habitat improvement (removal of invasives, protection of endangered species)		X	X

*These systems shall not be above existing elevations, must be sited to reduce conservation impact, and are only to support residential development on Benfield Lot 1. Existing contours, elevations, and vegetation must be restored.

2.1.5 Restrictions imposed by purchases using the Federal Land and Water Conservation Fund

This Fund was established by the Federal Land and Water Conservation Fund Act of 1965, 78 Stat. 897. The Environmental Handbook for Massachusetts Conservation Commissioners states that any project receiving money from the fund:

“...becomes permanently protected parkland. The boundary plan is the permanent protected boundary for the site. Any boundary encroachment, change of use or lack of basic maintenance constitutes a conversion. If a conversion is anticipated, the Massachusetts Department of Conservation and Recreation (DCR) must be notified. Any proposed conversion must be approved by DCR and the National Park Service and the project applicant must offer another site of equal monetary value and recreational use.”

In addition, land purchased with Federal Land and Water Conservation Funds must be available for use by any U.S. citizen — not only Carlisle residents. Residents of adjacent or distant towns may use the property in accordance with the rules and regulations established by the Carlisle Conservation Commission.

2.1.6 Restrictions imposed by purchases using the Massachusetts Department of Natural Resources – Self Help Program

The Massachusetts Self-Help Program was established in 1960 by M.G.L. Chapter 132A, Section 11 to assist Conservation Commissions established in municipalities in the acquisition of land for conservation and passive outdoor recreation purposes. Properties purchased with Self-Help funds may only be used for conservation and passive outdoor recreation. Passive recreation is defined as any activity that can be casually performed outdoors with minimal disturbance of an area’s natural condition. Examples of passive recreation include hiking, picnicking, cross-country skiing, and informal sports activities on an open field. Examples of active recreation include sports using constructed facilities. Further, the policy states:

“Therefore, development of facilities on Self-Help land is limited to such items as trails, comfort stations, small parking areas, small shelters, or maintenance support structures, boardwalks over wet areas, duck blinds, etc.”

2.1.7 Executive Order #193 Affecting State-Funded Land Acquisitions

Executive Order #193, enacted in 1981, addresses agricultural uses of lands purchased with State or Federal funds, or a combination of both. In its preamble, Executive Order #193 discusses the significance of agricultural land in Massachusetts as a finite natural resource that is being threatened by competing land use interests. The benefits of agricultural land listed in the Executive Order include:

- Reducing flooding by absorbing rain and snow waters
- Replenishing critical groundwater supplies by preserving a pervious surface
- Purifying the air by keeping land open and supporting natural vegetation

- Enhancing wildlife habitat
- Maintaining the aesthetic and historic quality of the landscape

The Order acknowledges the on-going loss of privately owned agricultural land and that state-owned land in agricultural use is increasingly playing a larger role in preserving this valuable natural resource for future generations. It states: “State funds and federal grants administered by the state shall not be used to encourage the conversion of agricultural land to other uses when feasible alternatives are available.” - and, “State agency actions shall encourage the protection of state-owned agricultural land by mitigating against the conversion of state-owned land to nonagricultural uses, and by promoting soil and water conservation practice.”

For purposes of the Executive Order, state-owned land is defined as all lands purchased in whole or in part with state funds or federal funds administered by the state. The Order defines agricultural land as land classified as Prime, Unique, or of State and Local Importance by the USDA Soil Conservation Service, as well as land characterized by active agricultural use.

2.1.8 Town Meeting vote

All of the conservation land that was accepted by town meeting vote was for the purpose of conservation. Recreation purposes were also included in the votes for the Towle Land, Greenough Land, Foss Farm, Cranberry Bog, and Bisbee Land. Agricultural activities were also specifically provided for in the votes for Hutchins Field and Robbins Field. Special Town Meeting vote also resolved to support, encourage, and promote agriculture on Town land in Carlisle.

2.1.9 Conservation clusters

A parcel of ten or more acres may be allowed one additional building lot more than would be otherwise permitted on the property, in exchange for deeding 30% of the parcel to the Town for open space conservation land. See the Town’s Zoning Bylaws for more complete information: http://www.carlislema.gov/Pages/CarlisleMA_Planning/carlislezoningbylaws_021507.pdf

2.1.10 MA Wetlands Protection Act, Wetlands/Flood Hazard District Zoning, and the Carlisle Wetlands Protection Bylaw

The Wetlands Protection Act affects any person proposing to “remove, dredge, fill, or alter any bank, fresh water wetland, coastal wetland, beach, dune, flat, marsh, meadow, or swamp bordering on the ocean or on any estuary (a broad mouth of a river into which the tide flows), creek, river, stream, pond, or lake, or any land under said waters or any land subject to tidal action, coastal storm flowage, or flooding”. In order to legally work in any wetland, the 100-foot buffer zone, or the 200-foot riverfront area, a person must obtain a permit known as an Order of Conditions from the local conservation commission. For legal definitions, please see the Wetlands Protection Act and regulations.

The purposes of the Town wetlands / flood hazard district zoning are:

1. To provide that lands in the Town of Carlisle subject to seasonal or periodic flooding shall not be used for residence or other purposes in such a manner as to endanger the health or safety of the occupants thereof.
2. To protect, preserve and maintain the ground water table and water recharge areas within the Town so as to preserve present and potential water supplies for the public health and safety of the residents of the Town.
3. To assure the continuation of the natural flow pattern of the water courses within the Town in order to provide adequate and safe floodwater storage capacity to protect persons and property against the hazards of flood inundation.
4. To protect the community against the costs which may be incurred when unsuitable developments occur in wetlands, or flood hazard areas.

The Wetland/Flood Hazard District is shown on a map entitled "Wetland/Flood Hazard District, Carlisle, Massachusetts, May 5, 1976", amended March 31, 1980 and further amended May 3, 1988, consisting of an index map and 36 sheets filed with the Town Clerk, together with any and all amendments thereto subsequently adopted by the Town, which are hereby made a part of the Zoning District Map of the Town of Carlisle.

2.1.11 Rivers Protection Act

In 1996 the Massachusetts Legislature passed the Massachusetts Rivers Protection Act, more formally known as "An Act Providing Protection for the Rivers of the Commonwealth". This important law amends the Wetland Protection Act, MGL Chapter 131 Section 40, and provides protection to rivers by regulating activities within a newly established wetland resource area known as the Riverfront Area. This Act identifies eight purposes, which are the same as the Wetlands Protection Act's interests: protection of private or public water supply, protection of groundwater, flood control, prevention of storm damage, prevention of pollution, protection of land containing shellfish, protection of wildlife habitat, and protection of fisheries. The Rivers Protection Act establishes a state policy for protecting the natural integrity of the Commonwealth's rivers and to establish open space along rivers.

<http://www.mass.gov/dep/water/resources/riverqa.htm#purpose>

2.1.12 Archaeological (Native American) site protection and protection of later historical artifacts

2.1.13 Massachusetts Endangered Species Act. 321 CMR 10.00

This Act establishes a comprehensive approach to the protection of the Commonwealth's Endangered, Threatened, and Special Concern species and their habitats. Regulations include provisions for the protection of habitat areas (Significant Habitat) where in the Division's opinion a Project or Activity would result in the Take of any Threatened or Endangered species. Also included are environmental review provisions for habitat areas (Priority Habitat) identified as areas where there is the potential that a Take of any Endangered, Threatened, or Special Concern species may occur as a result of any Project or Activity. Separate review mechanisms

are established for Projects or Activities in these areas.

http://www.mass.gov/dfwele/dfw/regulations/cmr/cmr_1000.htm#cmr1030

Special considerations for vernal pools, including certification by NHESP and other applicable regulations, are described in Appendix 8.

2.1.14 Carlisle Conservation Fund

This fund is under the jurisdiction of the Carlisle Conservation Commission and is governed by the Conservation Commission Act G.L. Chapter 40, Section 8C; Acts of 1996, Chapter 258, Section 15. Conservation Commissions, Establishment; Powers and Duties. The provisions of the law state that money in the funds established by Conservation Commissions must be used to: ‘...acquire, maintain, improve, protect, limit the future use of or otherwise Conserve and properly utilize open spaces in land and water areas within its city or town, and it shall manage and control the same.’ To date there is no record of Carlisle conservation fund dollars being used for any purpose other than activities associated with the land acquisition.

2.2 Land Protection Values

Key Considerations

- *Natural resources and conservation land are valued by the Town and should not be compromised*
- *Conservation values include habitat preservation, vistas, ecological diversity, passive recreation, among others.*

The OS&R Plan includes a list of “Land Protection Values” that are used to rank unprotected parcels for their desirability for protection. Table 4 adapts the values set forth in the OS&R plan for the purposes of this document.

Table 4. Land Protection Values

Land Protection Value	Description
Size	Large parcels are more valuable than small parcels both for wildlife habitat and for open and passive recreation
Linking location	The land abuts a parcel that is already protected or a significant parcel of undeveloped (unprotected) land
Balancing location	Land is located in a section of town that does not have other open space nearby (help to balance the distribution)
Woodlands	Land includes an exceptional forest , a historically managed forest, or one that is outstanding in any other way
Trails	Land has cart paths, trails, or potential links to existing trails
Water features	Land has surface water, wetlands, streams, ponds, or possible well site
Special features	Land has an uncommon feature (special habitat, scenic spot, or historical, archeological, or geological interest)
Rural vista	Land provides a view of open fields or woodlands visible from any road ; visibility from a major road is more important than visibility from a minor road
Core habitat	Land provides habitat for an endangered, rare, or protected species
Ecological diversity	Land contains a variety of terrains and so provides a variety of habitats for flora and fauna
Land use	Land possesses fertile or arable soil suitable for agriculture

2.3 Vistas and Visual Sensibilities

Key Considerations

- *Vistas are an important part of Carlisle’s character*
- *Vistas can be both within parcels and from external vantage points*

Open fields, meadows and forest boundaries, agricultural land, and roadside forest frontage all contribute to the rural character of Carlisle and are highly valued by the town residents. Vistas provide a sense of openness and varied land use that distinguish Carlisle from other communities in the region. This is especially valuable as much of the time, residents don’t have time to get out on the conservation lands, but they can regularly appreciate the presence of, for instance, the Towle Land and Bisbee Land, both with views across the fields and to forest frontage. By comparison, land like the Davis Corridor, while extensive and providing linkages and habitat value, doesn’t have much of a presence on Bedford Road.

Vistas can be categorized according to the following scheme:

- External (views into a conservation property from a road or public space)
 - From major roads such as Rt 225/Bedford Rd and Westford St., Lowell St., Concord St., East St. – provides large number of vehicles, cyclists, and walkers, both resident and non-resident, with significant vistas

- From minor roads still with significant traffic (e.g., Curve St., Fiske St., West St. Maple St.)
- From local residences abutting a property
- Internal (views within a property) – this can include a mix of fields, edge, forest, wetlands, stone walls, and structures. Examples of significant interior views include views across the Cranberry Bog to the open water and forest edge; views across Towle field to the forest boundary and stone walls; and interior woodland views in the Town Forest – a more intimate setting, and the barn at Greenough. Carlisle’s conservation lands have many unique interior vistas, all part of the outdoors experience.

Vista maintenance, preservation, and enhancement are important considerations for conservation land and can include the following:

- No additional structures or structures that are incompatible with the view (structures can include both buildings and fences)
- Preservation or restoration of historic structures such as stone walls, barns, water features, and foundations
- Removal of vegetation that is obscuring views into a property, especially from major roads (e.g., the view from Bedford Rd. into the south (upper) field of Foss Farm and into Fox Hill; the view into Towle Field from Westford St.; and the view into Bisbee Land from Concord St.)

2.4 Usability

Key Considerations

- *Some parcels are better suited for new uses*
- *The range of usability that currently exists is generally acceptable*

“Usability” refers to how accessible and user-friendly the parcel is. For example, a very usable property might:

- Be located on a major road, or have frontages on several roads
- Have a parking lot adequate for normal use
- Have clearly-marked signage for property name, location, parking lot entrance, trailheads, and rules and regulations
- Have well-maintained and marked interior trails appropriate for a number of uses, including walking, running, dog walking, and cross-country skiing
- Have a variety of habitats for bird-watching, etc.
- Be well-known to the public due to publicity, planned community activities, etc.
- Have dog waste bags, trash cans, and other features for self-maintenance

Examples of prime useable parcels would be Foss Farm and Towle Land. In contrast, a parcel with low usability would:

- Be difficult or impossible to access from roads

- Lack safe or convenient parking
- Lack signage
- Be generally unknown to the public or not visible
- Have characteristics that do not facilitate human use, such as no trails, extensive marshy areas, dense scrub, etc.

However, parcels that are not very useable by human standards can provide needed wildlife habitat, linkages, and corridors, and water supply protection

The following section provides detail on intensity of use of our conservation parcels.

2.5 Intensity of Use

Key Considerations

- *Some parcels are better suited to accommodate more intense uses*
- *More intense uses should be balanced with conservation and passive recreation uses*

Carlisle's population in 2010 has at least doubled since the late 1960's and early 1970's when a large portion of the town conservation land was purchased. With population growth and resultant land development, the amount of open space in town has diminished and the use of town conservation land both by Carlisle residents and those of surrounding communities for recreation has increased. Intensity of use is a measure of human impact on the ecosystem of the land and is ranked in Table 5. For instance, a property with no maintenance, no trails, and no agriculture would have a very low intensity of use. On the other end of the spectrum, mowed vistas and parking spaces represent a high level of maintenance activity. Community gardens and pony rings are examples of high levels of recreation intensity. Land with cultivated fields, including fertilizer and pesticide application, have a high level of agricultural activity. The measure of intensity is based on a sense of the human impact on the ecosystem, with no objective measures. Some activity, such as periodic mowing, may increase the conservation value of a property by providing open meadow and forest edge habitat, but more intense activities detract from the conservation value.

With the competing interests of preservation of habitat, agriculture, and recreation, we need to seek a balance. Over the years, conflicting choices of activities on the town's conservation lands have appeared. At the Towle Land signs request that dog walkers leash their pets during bobolink nesting season and avoid the nesting area. Another example of conflict is winter hikers using ski tracks: notices about not hiking in ski tracks have been posted previously at Towle Field. Another issue: horseback riders' impact on skiing and hiking trails: some feel that this is a problem, since hooves make deep holes in the trail. Additionally, bike riders have an impact on trails: riding in muddy conditions creates ruts and wider trails; riding on steep slopes creates erosion. Two mountain bike organizations have recognized these problems and published guidelines for riders. (see Appendix 4). At Fox Hill, two Carlisle citizens have obtained permission to install a well and tree nursery, as well as a fenced vegetable garden; previously, hay was grown in this field, with a hiking trail through the middle, so the vistas and hiking experience are altered and the use of the field shifted to a more intensive form of agriculture.

Consideration of the intensity of activities is intended to categorize the types of activities and to understand their relative impact on the integrity of the biological systems within a tract of land and the town as a whole. Table 5 ranks the range of intensity of impact of current activities pursued on Carlisle's conservation lands.

The goal of categorizing the level of intensity is to provide insight. For example, Foss Farm, with its 50-car parking lot, pony rings, variety of dog training activities, agricultural fields, community gardens with wells and access road, trails, nature study, large group activities, etc. has the most intense levels of activities; yet, at 55 acres, it is sixth in size of the town-owned conservation properties. The largest property, Greenough Land at 255 acres, has a rich diversity of habitats, and activities overall are at the low level of intensity: hiking, ice skating, two small parking lots, but with four acres of agricultural field use and an aged, declining red pine plantation.

Generally, the Land Stewardship Committee feels that the current intensity of use on conservation land is acceptable. The trend of increasing acreage in agriculture is under scrutiny, since agriculture in general and monocultures and pesticides in particular reduce conservation (particularly wildlife habitat) values. However, continuing the tradition of agricultural activity in town is a recognized community value.

Selective logging and forest management on town-owned land has been discussed. It would have a large immediate impact on the ecosystem, but would open up the forest for new growth over the ensuing years and encourage biodiversity. Any forest harvesting would need careful evaluation and consideration.

As for allowing woodcutting (for firewood) on conservation land, staff from the state Department of Conservation and Recreation has strongly recommended not to allow it.. Too many conflicting issues are involved, including conservation conflicts, damage to land, liability, compensation to Town, and public perception. If we ever do institute a policy allowing woodcutting for firewood, we would need to develop a detailed policy and set of rules/guidelines. Someone would have to administer the system and check all cuts.

The over-arching consideration when increasing the level of intensity of activity on the land, appreciated by not only Carlisle residents but also the larger surrounding community who have come to rely on the quantity and quality of open space in Carlisle, should be to preserve the intrinsic conservation values. We have competing interests, and at risk are the qualities of the town's conservation lands that make them valuable for conservation.

Table 5. Intensity of Use Levels, with Examples for Carlisle Conservation Lands

Intensity level	Maintenance	Agriculture	Recreation
Low	Minimal management and signage / Gage	No agriculture / Heidke	No trails / Macone
Medium-Low	Annual mowing to suppress woody plants / Towle	Tapping maple trees / Towle	Hiking*/ Sachs
	Pruning for trails		X-c skiing*
	Pull-out parking / Bisbee		Ice skating / Greenough
Medium	Pruning for views	Haying with use of fertilizer and lime / Fox Hill	Trail bike riding / Davis Corridor
	Parking lot / Greenough		Horse back riding
	Invasive plant removal		Canoeing
			Fishing
			Kite-flying
		Dog training	
Medium-high	Use of pesticides to control invasives	Field crops with tilling, fertilizers, pesticides / Fiske	Group activities with portable equipment / sled dogs @Foss
			Camping
			Model rocket, model airplane flying
High	Selective thinning of forest	Crops as above with infrastructure / Bog	Group activities with permanent equipment / Pony Club @ Foss
		Fruit and landscape trees / Fox Hill	

* hiking includes birding, jogging, dog walking

* x-c skiing includes snowshoeing

In the broadest sense, the earth’s biological legacy is threatened as never before, but the resources available for environmental protection and conservation are insufficient to deal with these threats. Ecosystem management services, native species, and healthy ecosystems are all at risk, making it necessary to prioritize conservation efforts as effectively as possible. We should consider a values-based method for setting conservation priorities and weighing them against the demands for increased agricultural and recreational uses.

2.6 Specific Evaluation Criteria for Proposed Agricultural Uses

Key Considerations

- *Agricultural uses, and the vistas they provide, are an important part of Carlisle’s history and current character*

- *Agricultural uses should be balanced with conservation goals*
- *The specific wording of license agreements should be carefully considered*

This section discusses potential proposals for individuals or entities wishing to pursue license agreements for agricultural use of conservation land. The term “agricultural use”, as employed here, includes both the growing of crops directly in the soil (not in greenhouses), the grazing of animals, and other activities such as sugar maple tapping and beekeeping.

Proposed agricultural uses should be carefully considered and the lease agreements specifically worded as to allowed and non-allowed activities. Agriculture is a legacy activity on some of Carlisle’s conservation land and in Carlisle in general, but should be balanced with the need to preserve conservation values and dwindling wildlife habitat. Some agricultural practices (such as haying) may result in keeping the land open and reducing forest and shrub encroachment with less impact on habitat. Other practices that involve more human activity, fencing, and other structures may be detrimental to wildlife in addition to restricting public access to public land.

Contained within Carlisle’s 1,100+ acres of Town-owned conservation land are nearly 150 acres of open fields with actual or potential agricultural use. Of these 150 acres, approximately 120-125 acres (about 80%) is currently under agriculture license agreements. Carlisle currently licenses conservation land to farmers as a means of maintaining open vistas and historical agricultural fields at little cost to the town. Most of the fields under agricultural license agreements have historically been used to grow hay and corn. The Cranberry Bog is currently used for commercial cranberry production. Recently, a portion of Fox Hill was licensed to a private citizen for mixed agricultural uses. See Appendix 9 for details, locations, and leasing requirements for current agricultural use.

The remaining 25 – 30 acres of open fields on conservation land are currently mowed to maintain meadow habitat and are not under agricultural license agreements: this includes Towle Field (19 ac) and Benfield Conservation Land (10 ac in fields).

Portions of Towle Field are currently being managed as a grassland habitat (including nesting) for bobolinks and other birds. Towle Field was historically used for pasturage, and has been recommended as a possible site for haying, but previous haying efforts met with mixed success due to the topography and stony nature of the site. In addition to its function as grassland meadow habitat, Towle Field (both east and west portions) also is a site actively used for bird walks, hiking, dog walking, and cross-country skiing. In the late winter of 2010, sugar maple tapping provided an educational opportunity with no impact on other legacy uses of the field.

Portions of the Benfield Conservation Land are currently proposed to lie within the Zone 1 and Zone 2 areas of a public water supply well. In addition, the field is currently mowed to maintain meadow habitat. These considerations may limit the nature and extent of any agricultural use. Any proposed uses of Benfield Conservation Land, including agriculture, must be coordinated with and agreed to by the Carlisle Conservation Foundation, which holds the Conservation Restriction on the Benfield Conservation Land.

The general objectives to be employed in evaluating proposed agricultural use of Town-owned conservation lands are to:

- Preserve the land as agricultural land for future generations;
- Preserve and enhance the quality of the soil for agricultural purposes;
- Preserve the vistas of open fields;
- Preserve the open space which provides special habitats for wildlife;
- Provide value and opportunity to the community, especially to Carlisle residents.

In the last bullet, “value” is meant to include food (for humans or animals) as well as possible in-kind remuneration services and educational events. “Opportunity” is meant to include the opportunity for local food growth (including community supported agriculture or not-for-profit groups), educational events on agriculture and wildlife habitats, and possible private farming operations.

For interested farmers, opportunities other than use of Town conservation land exist. This includes leasing private land in town; leasing non-conservation Town land (such as the underutilized areas at Banta-Davis), or purchasing land for farmland and applying an Agricultural Preservation Restriction (described in Section III. 2.2.1). This will increase Carlisle’s legacy of agriculturally productive land. In addition, some private landowners holding Conservation Restrictions allowing agricultural use on their property may be willing to lease land to a farmer.

Suggested Evaluation Criteria and Method

In some cases ConsCom will be evaluating proposed use of its agricultural fields in a situation where the farmer has successfully farmed the field in the past and/or there is no competing proposal. In other cases, there may be a new applicant or competing applications for the same plot of land. ConsCom may also want to consider whether to return agricultural fields to grassland habitat even after they have been farmed for some years (this is currently the case with a private CR in town). When evaluation is undertaken, it is suggested that, as appropriate, each of the evaluation criteria in Table 6 be considered. Note that the orders of these criteria do not reflect greater or lesser importance. The final license award will be by vote of the Conservation Commission. The ensuing license agreement should be specific about allowed and non-allowed uses of the land under agricultural license agreement (such as erection of structures, etc.)

The Community Garden plots at Foss Farm are used to grow a wide variety of vegetables and flowers. Rules for the annual assignment of garden plots, and the rules governing the use of these plots, are available at Town Hall. The idea of adding more community garden space to the Carlisle inventory has occasionally arisen. Garden plots could be added to the existing community gardens at Foss Farm; there is plenty of additional flat field space, ample parking, a management team in place, and well resources. On the other hand, additional plots could be provided in another part of town. Table 7 presents some suggested evaluation criteria for additional community gardens on conservation land other than Foss. The current community garden rules are in Appendix 10.

Table 6. Suggested Evaluation Criteria for Proposed Agricultural Uses

Evaluation Criteria	Comments
1. Prior successful (and proper) use of land by this farmer	
2. Farmer is Carlisle resident or associated with local activities*	
3. Will preserve soil quality and use soil conservation practices, including crop rotation and planting annual grasses in fall to reduce erosion	
4. Proper use of pesticides (e.g., BMP & IPM**), if proposed	
5. Preservation of natural vistas and wildlife habitat	
6. No hindrance to public's use of existing trails or public areas	
7. Applicant has investigated potential land other than conservation land	
8. Minimal or no new infrastructure (e.g., roads, fences, storage tanks, buildings, wells, electrical service, etc.). Detailed restrictions should be in the license agreement.	
9. Types of equipment and vehicles to be used are appropriate	
10. Provides opportunity for more diverse agricultural uses in Town	
11. Food grown is for local consumption (humans or livestock)	
12. The farming will be a non-commercial operation	
13. The food grown is to be provided to a not-for-profit organization	
14. Farming operations will provide educational opportunities	
15. Farmer offers to provide Town with in-kind services	
16. Applicant has a plan for returning the land to its pre-existing state after license expires (subject to conditions of the ConsCom-approved agricultural license agreement)	

* This criterion is not appropriate for parcels acquired with State and Federal Funds (e.g., Towle Land)

** BMP: Best Management Practices; IPM: Integrated Pest Management

Table 7. Suggested Evaluation Criteria for Additional Community Gardens

Evaluation Criteria	Comments
1. There is a significant number of applicants willing to farm the new plots (number TBD), i.e. the need/interest is there	
2. Land is relatively flat and arable (has the appropriate soil characteristics)	
3. Wells (hand wells) can be provided on the site	
3. Land is accessible from a Town road	
4. There is space for a parking lot consistent with the estimated number of gardeners	
5. Community garden use is consistent with deed/use restrictions on the land	
6. Abutters are included in the decision process	
7. The land provides community gardens serving a different part of town from Foss	
8. The Town can provide the appropriate funds and personnel to develop and manage the plots	

2.7 Specific Guidance for Proposed Recreational Activities

Key Considerations

- *Recreational uses are regulated by local and state statutes.*
- *A defined process for evaluating specific proposal is described below.*

The legal basis for the permitting, restricting or prohibition of some recreational activities on Town-owned conservation lands derives from the following:

1. Carlisle's Rules and Regulations for Conservation Commission Lands (a legal document updated periodically, as needed; the latest version dated March 2009 is in Appendix 4)
2. Carlisle's Camping Regulations for Town Conservation Lands
3. Property Deeds (The deeds recorded by the Town for acquired property commonly indicate the intended purpose for the purchase [e.g., protection of natural resources and watershed protection] and reference Chapter 40, Section 8C of Massachusetts General Laws which include some land use restrictions;
4. Town Meeting Votes (The text of the Warrant Article used for the purchase of the land often lists the intended purpose for the purchase and the allowed uses of the land.)
5. Conservation Restrictions (CRs) (Legally binding restrictions with a grantee organization responsible for enforcement of the terms of the CR.)
6. State and Federal Regulations (For land purchased with monies from State or Federal funds, there are limitations on what land uses are allowed and what restrictions [e.g., on preferences for Town residents] may not be stipulated.)
7. "Article 97" (The 97th Amendment to the State Constitution.)

Items 3 – 7 in the list above are generally discussed in Section 2.1, Legal Constraints.

The Commission's Rules and Regulations list "passive recreation" as an allowed use on all conservation lands. While this is a local rule, similar language is embodied in State rules regarding allowed uses of conservation lands purchased with Self Help funds. While there is no formal definition of "passive recreation" (at either the local or State level), its meaning is generally clear: there should be no harm to the conservation values of the land. Some Massachusetts Department of Conservation Service employees have also indicated that "passive recreation" means "no lines on the ground"; i.e., no sports that require painted lines (e.g., soccer, baseball, football). Section III.2.1 "Legal Constraints" and "Intensity of Use" of this report provide guidance on active vs. passive activities, including the currently allowed intensity of use for on various conservation parcels.

Recreational uses conforming to "allowed" uses (and involving groups of less than 8 people) do not require any permit and may continue as long there is no harm to the land, hindrance of other allowed uses, or impacts on the abutters. Complaints of any kind are usually evaluated by the Conservation Administrator and, as necessary, the Land Stewardship Committee and the Conservation Commission. (Higher level reviews by the Selectmen and Town Counsel have rarely been necessary.) If necessary, the Rules and Regulations can be modified to address identified problems.

Two recreational activities, horseback riding and “mountain” biking, deserve special attention because excessive use by either can severely damage the treadway of trails, leading to poor footing for walkers, to erosion, and to unwanted widening of the treadway. As noted in Table 2, horseback riding is currently allowed on most conservation land except for Sachs Greenway. The ConsCom rules do not mention mountain biking. Appendix 5 provides a proposed code of ethics for cycling. As long as these uses remain associated with just a few individuals or very small groups, the current situation appears acceptable. However, except for the regularly permitted use of Foss Farm for equestrian events, use of Carlisle’s conservation lands by larger numbers or groups of horseback riders or equestrians should be carefully controlled or discouraged. (There is also a history of horse events at the Cranberry Bog). Larger groups should be directed to Great Brook Farm State Park where such activities are more easily and commonly accommodated.

One other recreational activity – dog walking - also deserves special attention. (The use of Foss Farm for training of sled dogs is not covered here.) The common issues include⁵:

- Aggressive or threatening behavior towards other dogs or people;
- Unmannerly or overfriendly behavior including rushing or jumping other dogs or people;
- Owners failing to pick up after their dog;
- Picking up, but leaving the plastic bag on the side of the trail or hanging on a tree; and
- Disturbance of wildlife (e.g., nesting bobolinks on Towle Field, chasing deer at Foss Farm));
- Professional dog walking with more than three dogs

Again, the existing ConsCom rules are silent on these issues. Conservation signs on many parcels exhort visitors to “Clean up after your dogs” and “Keep dogs under control.” Special signs at Towle ask that dogs be kept on leash during bobolink nesting season. The Town has no leash law, relying on the State law (304 CMR 12.08 (3)) that requires: “A person shall keep any animal under his or her control from interfering with any other park patron’s enjoyment....” The clear implication of this law is that if a person does not have their dog under control, it must be on leash. The increased prevalence of dog leash laws in surrounding towns has likely encouraged dog walkers from other towns to walk their dogs in Carlisle. At present, the Cranberry Bog conservation parcel has the most problems with this use, and no remedy has been put forth.

When a recreational activity is proposed for a Town-owned conservation land, it is recommended that the evaluation rely primarily on the Conservation Commission’s Rules and Regulations, and – if applicable – any conservation restrictions (CR) on the parcel.⁶ In a few situations, it may be necessary to invoke rules related to the parcel’s deed restrictions, Town Meeting acquisition vote, or applicable State or Federal rules. Table 8 provides a simple summary of this Plan’s evaluation recommendations. Because of the diversity of applications and associated parcels, it is not possible to provide more definitive guidance. Significant

5 Selected text and information obtained from a flyer, *Off-Leash Dog Walking at Great Brook is in Jeopardy*, sponsored by private individuals in cooperation with Great Brook Farm State Park.

6 See Section III (Legal Constraints) of this plan for details on the conservation restrictions associated with several parcels of Town-owned conservation lands.

reliance must be put on proposal-specific evaluations by the Conservation Administrator, and – as appropriate – the Land Stewardship Committee and the Conservation Commission. If there is any question regarding the applicability of rules or restrictions to a parcel, check both the Conservation Land Matrix in Appendix 1 and the form for that parcel in Appendix 2.

Table 8. Guidance for Evaluation of Proposed Recreational Activities

Proposed Activity or Situation for Consideration	Suggested Action
1. Activity is allowed* and group size is < 8 people	Allow. Monitor, if advisable.
2. Activity is allowed* by permit only	Request application and hold hearings with LSC & ConsCom**
3. Activity is not listed as allowed or prohibited in Commission’s Rules and Regulations. (Also, no restrictions from a CR, deed, or State or Federal rules.)	Allow if “passive” and < 8 people. If > 8 people, request application and hold hearings with LSC & ConsCom**
4. Camping	Request application and then follow ConsCom’s camping regulations
5. Possibility of impact on conservation values, other users, or abutters	Request application and hold hearings with LSC & ConsCom**
6. Significant questions on parking, group leadership, commercial aspects, or other items	Request application and hold hearings with LSC & ConsCom**
7. Possible conflict with conservation restriction, deed restriction, Town Meeting vote, or applicable State or Federal rules	Request application and hold hearings with LSC & ConsCom**

* I.e., allowed by the Commission’s Rules and Regulations, and not prohibited by any other binding restrictions, e.g., a Conservation Restriction on the parcel. Also assumes no prior problems with this group or activity, and no conflict with other uses of the land, or schedule for other groups.

** If the activity is approved, the Commission (ConsCom) is to issue a written Land Use Permit specifying the allowed activity, location(s), date(s), responsible party(ies), etc. and any special conditions.

If a proposed recreational activity appears to involve unwanted features (e.g., large numbers of participants, frequent use, high intensity of use, lack of oversight, etc.) then the group should be encouraged to use one of the many recreational parcels available in Carlisle and surrounding towns.

2.8 Guidance for Other Proposed Uses

Key Considerations

- *There are local and state restrictions on the potential future uses*
- *Protection of conservation values is a key consideration*
- *A range of one-time and recurring uses are potentially compatible with conservation values*

The purpose of this section is to provide background information and guidance related to the evaluation of proposed non-agricultural/non-recreational uses of Town-owned conservation

lands. Such proposed uses in the past have commonly been related to educational events, scientific studies, and historic event celebrations or re-enactments.

In general, the legal basis for the permitting, restricting or prohibition of some non-agricultural/non-recreational activities on Town-owned conservation lands is the same as was described for recreational activities in Section 2.7 above. Of special note are the prohibitions (except by permit) against the use of motorized vehicles, use between sunset and sunrise, commercial activities, and the stricter control to be imposed on groups of 8 or more people. In general, protection of the conservation values of the property, and the avoidance of disruption of other allowed uses, will be important considerations. For some cases, the Conservation Commission may decide to hold a public hearing in advance of ruling on a proposed use; in such cases, it would be appropriate to consider the concerns expressed by the public in making a final decision.

Past activities on Carlisle's conservation lands that fall into the non-agricultural/non-recreational category have included the following:

- Historic event recreations (some filmed)
- Educational programs (some commercial, including participant fee-based programs, some of which may be sponsored by not-for-profit organizations)
- Scientific studies by qualified individuals or groups (some involving the trapping of animals)

Many other possible uses can be envisioned. In the past, the examples of such uses have mostly involved individuals or small groups. A small number have involved large groups (e.g., the Minuteman Musters at Foss Farm and the filming of a historic event on Towle Field).

Evaluation of Proposed Other Uses

When a non-recreational/non-agricultural activity is proposed for a Town-owned conservation land, it is recommended that: (1) the applicant is required to submit a written proposal; and (2) the evaluation rely primarily on:

1. The overriding priority of ConsCom to preserve conservation values, vistas, special ecological considerations, and compatibility with existing uses
2. The Commission's Rules and Regulations;
3. Any conservation restrictions (CR) on the parcel;
4. The bullet items in the following paragraph; and
5. If necessary, some of the other legal bases listed in Section III, Legal Constraints. .

The opinion of the Land Stewardship Committee (LSC) should be sought if there is sufficient time. If there are likely to be any special concerns, either the LSC or ConsCom should invite the applicant to make a presentation regarding the proposed use at a regularly scheduled committee meeting. If the presentation is to the LSC, that committee will make a recommendation to ConsCom, via the Conservation Administrator, which may act upon this recommendation or hold its own hearing and deliberations.

No set evaluation protocol is recommended. However, in addition to existing rules and legal restrictions, the following should be considered:

- Preservation of the conservation values of the property;
- No significant impact on other allowed uses (except temporary interruptions);
- No significant impact on abutters;
- There is sufficient parking for the participants in the activity;
- There will be no significant safety hazards, nor activities that might subject the Town to increased liability;
- That ConsCom be provided with a copy of any other required permit or license before the activity takes place (e.g., for open fires [Fire Chief permit] or for licensed trapping of animals [State permit]); such as beavers, or turtles for research purposes
- The applicants agree to remove all materials (including trash) brought onto the conservation parcel as part of the activity; and
- Activities that provide a public benefit (even if requiring a fee or having a commercial aspect) be given special consideration;
- Proof of liability insurance.

2.9 Coordination and Consistency with Other Town Documents

Key Considerations

- *There are a number of Town documents that also provide guidance for uses on conservation lands*
 - *It may be appropriate to contact other Town committees and boards regarding future proposed uses.*
-
- OS&R
 - Baseline Assessments and Management Plans
 - Trails Committee documents
 - Zoning regulations
 - Board of Health regulations
 - Other

Appendix 1 – Conservation Land Matrix

The Conservation Land Matrix is a spreadsheet that lists all Town-owned conservation parcels and their specific characteristics (e.g., acreage, date acquired, legal constraints, conservation values, etc.). The Conservation Land Matrix (dated March 14, 2011) is provided as a separate Excel document, which will be available electronically and in hard copy at Town Hall and Gleason Public Library.

Appendix 2 – Individual Conservation Parcel Descriptions

This section provides brief summaries of the Town-owned conservation parcels. See Section III and the Conservation Land Matrix for details on the parcels..

1. Benfield Conservation Land

2. Bisbee Land

3. Benfield Hill

4. Buttrick Woods

5. Carr Land

Location: off Bellows Hill Road	Size: 6.0819	Date Acquired: 1997
Baseline Assessment: in progress		Management Plan:
Sources of Acquisition Funds: Town	CR or APR on Parcel: CR-52	Legal Constraints on Land Use: a) Town
LSC Stewards: Elizabeth Loutrel		Number of Other Stewards: 1
Conservation Values: Mixed forest uplands (pine and hardwood); stream and wetlands on northwest corner Part of the Estabrook Woods Buffer Lands.		Distinguishing Ecological & Cultural Features:
Water Bodies: stream on NW border		Vistas: None
Parking On Site: none		Trails: one trail and two bridges, connecting to trail on Rockstrom Open Space Parcel and trails on CR-10
Fields none	Agricultural Licensee: none	Agricultural License Expires: NA
Current Uses: Conservation and passive recreation by individuals and small groups, including hiking, biking, horseback riding, X -county skiing, bird watching.	Historic Uses: Farming. Historic cart path crossing the land east to west connected the old Green farmsteads. Carrs used it as a woodlot.	Other Possible Uses:
Management Plan – Overall Objectives:		Management Units:
Routine Maintenance Activities: Trail maintenance by Trails Committee		

6. (Chestnut Estates land)

7. Cranberry Bog

Location: Curve St/Fiske St.	Size: 150.7 acres	Date Acquired: 1986
Baseline Assessment: June 2007 (revised)		Management Plan: NA
Sources of Acquisition Funds: Town Conservation Fund	CR or APR on Parcel: No	Legal Constraints on Land Use: Town – Conservation Fund State – Executive Order #193
LSC Stewards: Debbie Geltner, Warren Lyman		Number of Other Stewards: None
Conservation Values: A large parcel with a diversity of wildlife habitats (brook, ponds, marsh/wetlands, fields, upland forest). Contiguous to over 210 acres of other conservation lands including 158.9-ac Chelmsford conservation land and Great Brook Farm State Park. Three certified vernal pools on parcel, another adjacent in State Park. Forty (40) acres of agricultural fields.		Distinguishing Ecological & Cultural Features: Great diversity of wildlife habitats (see box to left); abundant wildlife. Northernmost operating cranberry bog in Massachusetts. Cranberry Bog House on parcel (built in 1905) still being used by farmer. Several water control structures associated with bog. Town has State-granted rights to use water for agriculture. Two bluebird nest boxes; 1 kiosk.
Water Bodies: River Meadow Brook (aka Great Brook); portions of 2 shallow reservoirs (remaining portions in Chelmsford).		Vistas: Great vistas across cranberry bogs from trails on dikes around bog, and from Curve St.
Parking On Site: Room for ~ 6 cars by Bog House and ~ 10 cars on Fiske St.		Trails: Good trails around and through bog areas, and into woods. Connections to Chelmsford conservation land, Great Brook Farm State Park, and Hart Farm conservation land.
Fields: 40 acres total (19 in active production, 21 in restoration)	Agricultural Licensee: Carlisle Cranberries, Inc.	Agricultural License Expires: June 12, 2015
Current Uses: Agriculture, conservation (wildlife habitat), passive recreation (very popular, especially dog walking).	Historic Uses: Agriculture since 1904. Grazing meadow prior to 1904.	Other Possible Uses: Good area for environmental education. Old 4H mini-bog could be restored for educational value.
Management Plan – Overall Objectives: Not yet prepared.		Management Units: Not yet selected.
Routine Maintenance Activities: Maintenance of bog area and associated dams, dykes and water control structures (including mowing sides of dikes) is the responsibility of Carlisle Cranberries, Inc. Bog House maintenance, excluding utilities and minor apartment fixes, is the Town's responsibility. Woodland trails maintained by Trails Committee. Trash removal (1 can by Bog House and 1 at Curve St.) is by paid contractor. Replacement of bags in Doggy Bag dispenser by Stewards and Administrator. Two bluebird nest boxes.		

8. Davis Corridor

Location: Bedford Road		Size:	Date Acquired: 1973-1979
Baseline Assessment: April, 2007		Management Plan: April, 2008	
Sources of Acquisition Funds: Town and State/Conservation Fund	CR or APR on Parcel: CR-36	Legal Constraints on Land Use: a) Town, State	
LSC Stewards: Elizabeth Loutrel, Lynn Knight		Number of Other Stewards: 4	
Conservation Values: Mixed forest uplands (pine and hardwood); streams and wetlands. Part of the Estabrook Woods Buffer Lands.		Distinguishing Ecological & Cultural Features: small abandoned cranberry bog, stone walls, stone piles,	
Water Bodies: Wetlands, probable vernal pools, stream, abandoned cranberry bog		Vistas: None	
Parking On Site: None		Trails: Several trails covering most of site. Bridges crossing wetlands and stream.	
Fields none	Agricultural Licensee: none	Agricultural License Expires: NA	
Current Uses: Conservation and passive recreation by individuals and small groups, including hiking, biking, horseback riding, X - county skiing, bird watching.	Historic Uses: Native American use of uplands. Farm pastures. Woodlots. Cart paths connecting the colonial-era Blood Farms in Carlisle with Concord.	Other Possible Uses:	
Management Plan – Overall Objectives: Maintain clear entrances. Facilitate passage on the trail network. Foster awareness of historical uses. Preserve biodiversity in this ecosystem. Protect water resources.		Management Units: (1) Entrances (Bedford Road, Sachs Greenway, Concord line, Prospect St. / Nowell Farme Rd., Long Ridge Rd., Suffolk Lane). (2) Trails network and trail signs. (3) Historical features (boundaries, stonewalls and town border posts ((current and former)), presumed Native American structures, sawmill and disc harrow relics, historic pastures. (4) Forest ecosystem. (5) Water resources	
Routine Maintenance Activities: Trail maintenance by Trails Committee. Periodic removal of invasive species.			

9. Deacon Land

Location: Baldwin Road	Size: 7.512 ac	Date Acquired: 1997
Baseline Assessment: in progress		Management Plan:
Sources of Acquisition Funds: Town Conservation Fund	CR or APR on Parcel: CR-52	Legal Constraints on Land Use: a) Town
LSC Stewards: Elizabeth Loutrel		Number of Other Stewards: 1
Conservation Values: Mixed forest uplands (pine and hardwood); wetland. Part of the Estabrook Woods Buffer Lands.		Distinguishing Ecological & Cultural Features: stonewalls
Water Bodies: wet meadow, a headwater of Spencer Brook		Vistas: Interior: open view the Bellows Meadow
Parking On Site: none		Trails: none
Fields none	Agricultural Licensee: none	Agricultural License Expires: NA
Current Uses: Conservation and passive recreation by individuals and small groups, including X-county skiing, bird watching.	Historic Uses: Farming. Includes historic Bellows Meadow.	Other Possible Uses: add trail to connect Carr Land with Sachs Greenway.
Management Plan – Overall Objectives:		Management Units:
Routine Maintenance Activities:		

10. Fisk Meadow

Location: Lowell Street	Size: 11.6 acres	Date Acquired: 1981
Baseline Assessment: No		Management Plan: No
Sources of Acquisition Funds: Gift; granted by development corporation to Town for \$1 for conservation purposes	CR or APR on Parcel: No	Legal Constraints on Land Use: By deed restriction: no impediment or obstruction of the flow of brooks; no erection of structures; solely for conservation and recreation purposes
LSC Stewards: Elisabeth Carpenter		Number of Other Stewards: 0
Conservation Values: 2/3 wetland, 1/3 field; watershed protection; wildlife corridor from Conant, Old Morse Road, and DPW across Lowell Road to adjoining Great Brook Farm State Park; plant and wildlife habitat; historic backdrop; agriculture		Distinguishing Ecological & Cultural Features: None yet known
Water Bodies: Streams (2), wetlands		Vistas: Provides open agricultural vista from Lowell Road. Adjoins 3-acre land to the north with a CR (CR-13) to keep the vista open along Lowell Road
Parking On Site: None; parking for a few cars available across Lowell Street on dump road		Trails: None
Fields: One-third of the land is a field adjacent to Lowell Street	Agricultural Licensee: Mark Duffy	Agricultural License Expires: TBD
Current Uses: Watershed; wildlife habitat and corridor; agriculture on field	Historic Uses: Not yet known	Other Possible Uses: Remote possibility for trail from Lowell St to Great Brook Farm State Park
Management Plan – Overall Objectives: TBD		Management Units: 1) streams and wetland, 2) field
Routine Maintenance Activities: Haying/corn on field to keep open vista		

11. Foss Farm

Location: Bedford Road	Size: 57 acres	Date Acquired: 1971
Baseline Assessment: September 30, 2008		Management Plan: No
Sources of Acquisition Funds: Town, State, and Federal	CR or APR on Parcel: No	Legal Constraints on Land Use: Town – Conservation Fund State – Dept. of Natural Resources U.S. – Land and Water Conserv. Fund Executive Order #193
LSC Stewards: Lynn Knight		Number of Other Stewards: 5
Conservation Values: Open fields; forests and margin habitat; stream and associated wetlands; adjoins Great Meadows NWR; diversity of wildlife habitat; historical Foss property; community gardens; open vista agricultural fields		Distinguishing Ecological & Cultural Features: Community gardens; equestrian activities; historic dog sled activities; habitat for many sp. including American woodcock, blue-spotted salamanders, and turtles; State-registered Native American site; significant vista upon entering Carlisle. Carlisle's most significant multi-use conservation parcel.
Water Bodies: Stream, associated wetlands, adjacent to Concord River		Vistas: Extensive rural/agricultural vista N from Bedford Road upon entering Carlisle. Extensive internal field/agricultural vista.
Parking On Site: Large parking lot for about 45 cars entered from Bedford Road		Trails: Established trail network linking with Great Meadows NWR and Greenough Land
Fields Two	Agricultural Licensee: Mark Duffy	Agricultural License Expires: TBD
Current Uses: Community gardening, hay/corn fields, horse activities, walking, dog walking, cross-country skiing, sled dog training, birding, organized bird and nature activities, rocket launching, many other uses	Historic Uses: Native American activities (pre-settlement), farming, Colonial re-enactments, ball fields, snowmobiling, skeet shooting	Other Possible Uses: TBD
Management Plan – Overall Objectives: Maintain wildlife habitats Plant/wildlife inventory Maintain and foster hiking, gardening, agricultural, horse and dog activities, nature activities, and other appropriate uses Improve parking lot Improve vista and sight lines along Bedford Road		Management Units: 1) Parking lot and dirt road, 2) trails, 3) community gardens, 4) fields, 5) stream and wetlands, 6) horse use areas, 7) wooded areas, 8) stone walls and vistas
Routine Maintenance Activities: Community garden maintenance, mowing, trail maintenance (Trails Committee), horse area maintenance, sign replacement, occasional parking lot maintenance		

12. Fox Hill

Location: Bedford Rd/Stearns St.	Size: 11.22 ac	Date Acquired: 1980
Baseline Assessment: In Management Plan		Management Plan: July 2006
Sources of Acquisition Funds: Town (100%)	CR or APR on Parcel: No	Legal Constraints on Land Use: Town – Conservation Fund State – Executive Order #193
LSC Stewards: Warren Lyman		Number of Other Stewards: 1
Conservation Values: Two agricultural fields currently licensed to farmers for hay (East) and for a mix of nursery trees and vegetables (West). Seasonal stream leading to vernal pool. Some forested land (~ 3 acres).	Distinguishing Ecological & Cultural Features: Provides diverse wildlife habitat (fields, woods, wetlands, stream). Surrounding stone walls. Long used for agriculture. Bluebird nest boxes (~ 7) on field edges.	
Water Bodies: Seasonal stream leading to a small vernal pool with seasonal outlet.	Vistas: From Bedford Rd. across east field.	
Parking On Site: Limited to 1 or 2 cars by (or in) entrances or on Stearns St. No parking lot.	Trails: One connecting Stearns St. entrance (east field) to western side of west field.	
Fields: Two (several acres each). Both have slopes and rock outcrops.	Agricultural Licensee: East: R. Shohet West: Bakewell & Brown	Agricultural License Expires: December 2010 (for both)
Current Uses: Agriculture (~ 8 ac) and wildlife habitat (~ 3 ac woods/wetlands). Limited passive recreation (walking, horse riding) as allowed by farmers.	Historic Uses: Agriculture	Other Possible Uses: None envisioned.
Management Plan – Overall Objectives: 1. Preserve the 2 fields for: (a) agriculture (preferred); (b) wildlife habitat; and (c) vistas (esp. from Bedford Rd.). 2. Preserve woodlands (except areas encroaching on fields) and associated wetlands for wildlife habitat and watershed protection. 3. Allow for limited passive recreation. 4. Maintain nest boxes.		Management Units: (1) The 2 fields; (2) forest and wetlands; (3) the 2 entrances (from Stearns St. and Bedford Rd.); (4) the path/trail connecting the east and west sides of the parcel; and (5) the perimeter stone walls.
Routine Maintenance Activities: Farmers are requested to clear field edges to check forest encroachment. Maintenance of bluebird houses on field edges. Maintaining entrances for farm vehicles.		

13. Gage Woodland

14. Greystone

15. Greenough Land

16. Great Brook Estates OS1

17. Hart Farm

18. Heidke Parcel

Location: Brook Street	Size: 8.19 acres	Date Acquired: 1978
Baseline Assessment: April 27, 2009		Management Plan: No
Sources of Acquisition Funds: N/A	CR or APR on Parcel: No	Legal Constraints on Land Use: Gift to town for conservation purposes*
LSC Stewards: Elisabeth Carpenter		Number of Other Stewards: 2
Conservation Values: Almost all wetland; watershed, wildlife habitat, wildlife corridor to Greenough Conservation Land on Brook St.		Distinguishing Ecological & Cultural Features: Rare species habitat
Water Bodies: Stream, wetlands		Vistas: Wetland vista from Brook Street
Parking On Site: No		Trails: A short section of trail leads into it from the Town Forest to the west
Fields No	Agricultural Licensee: No	Agricultural License Expires: N/A
Current Uses: Watershed protection and wildlife habitat	Historic Uses: Not yet known	Other Possible Uses: Possible trail link from Town Forest to Brook St. and Greenough trail.
Management Plan – Overall Objectives: TBD		Management Units: One (stream and wetland)
Routine Maintenance Activities: None known		

19. Hutchins Field

20. Ice Pond Property

21. Macone Property

Location: North of Bedford Road. Access requires crossing private property	Size: 3 Acres	Date Acquired: 1992
Baseline Assessment: Not initiated		Management Plan: Not initiated
Sources of Acquisition Funds: N/A (Gift)	CR or APR on Parcel: No	Legal Constraints on Land Use: TBD
LSC Stewards: Dwight DeMay		Number of Other Stewards:
Conservation Values: Mixed forest uplands (pine and hardwood); wetland		Distinguishing Ecological & Cultural Features: None
Water Bodies: Wetland		Vistas: None
Parking On Site: None		Trails: None
Fields: None	Agricultural Licensee: none	Agricultural License Expires: NA
Current Uses: None	Historic Uses:	Other Possible Uses: None; parcel is difficult to access
Management Plan – Overall Objectives: To be determined		Management Units: To be determined
Routine Maintenance Activities: None		

22. MacAfee Land

Location:	Size: 15 Acres	Date Acquired:
Baseline Assessment: Not initiated		Management Plan: Not initiated
Sources of Acquisition Funds: Town Conservation Fund	CR or APR on Parcel: No	Legal Constraints on Land Use: a) Town
LSC Stewards: Dwight DeMay		Number of Other Stewards:
Conservation Values: Mixed forest uplands (pine and hardwood); wetland		Distinguishing Ecological & Cultural Features: None
Water Bodies:		Vistas: None
Parking On Site:		Trails: None
Fields: None	Agricultural Licensee: none	Agricultural License Expires: NA
Current Uses: None	Historic Uses:	Other Possible Uses:
Management Plan – Overall Objectives:		Management Units: To be determined
Routine Maintenance Activities:		

23. Malcolm Land

Location: Stearns Street	Size: 23.1 acres	Date Acquired: 1995
Baseline Assessment: April, 2007		Management Plan: April, 2008
Sources of Acquisition Funds: Town and MA Self Help	CR or APR on Parcel: CR 52	Legal Constraints on Land Use: a) Town, State*
LSC Stewards: Elizabeth Loutrel, Lynn Knight		Number of Other Stewards: 4
Conservation Values: Mixed forest uplands (pine and hardwood); wetland. Part of the Estabrook Woods Buffer Lands.		Distinguishing Ecological & Cultural Features: stonewalls and stone piles
Water Bodies: none		Vistas: None
Parking On Site: 1 lot (approx. 10 cars)		Trails: Two Rod Road runs from Stearns Street to Estabrook Woods and an extensive network of trails in Concord on conservation lands.
Fields abandoned field reverting to forest	Agricultural Licensee: none	Agricultural License Expires: NA
Current Uses: Conservation and passive recreation by individuals and small groups, including hiking, biking, horseback riding, X-county skiing, bird watching.	Historic Uses: Farming. Historic Two Rod Rd. was a colonial transportation route between Carlisle and Concord	Other Possible Uses: clear old field occasionally to provide shrub regrowth habitat
Management Plan – Overall Objectives: Maintain clear entrances. Facilitate passage on the trail network. Foster awareness of historical uses. Preserve biodiversity in this ecosystem. Protect water resources.		Management Units: (1) Entrances (Stearns Street, Malcolm Preserve). (2) Trails network and trail signs. (3) Historical features (boundaries, stonewalls and town border posts ((current and former)), presumed Native American structures, sawmill and disc harrow relics, historic pastures. (4) Forest ecosystem. (5) Water resources.
Routine Maintenance Activities: (1) Trail maintenance by Trails Committee; (2) Plowing of parking lot in winter (by DPW); (3) Periodic removal of invasive species		

24. Mannis Land

25. Robbins Field

26. Rockstrom Open Space Parcel

Location: School Street	Size: 7.5461 ac	Date Acquired: 1998
Baseline Assessment: in progress		Management Plan:
Sources of Acquisition Funds: Town	CR or APR on Parcel: CR 52	Legal Constraints on Land Use: a) Town *
LSC Stewards: Elizabeth Loutrel		Number of Other Stewards: 1
Conservation Values: Mixed forest uplands (pine and hardwood); stream and wetland along south border. Part of the Estabrook Woods Buffer Lands.		Distinguishing Ecological & Cultural Features: stone piles, stonewalls and stone foundations
Water Bodies: Abuts Poole Swamp; two streams along edges (east and south, headwater of Spencer Brook)		Vistas: Interior: interrupted view across Poole Swamp
Parking On Site: none		Trails: one trail and two bridges connecting to Poole Swamp and to Carr Land
Fields	Agricultural Licensee: none	Agricultural License Expires: NA
Current Uses: Conservation and passive recreation by individuals and small groups, including hiking, biking, horseback riding, X -county skiing, bird watching.	Historic Uses: Farming.	Other Possible Uses:
Management Plan – Overall Objectives:		Management Units:
Routine Maintenance Activities: Trail maintenance by Trails Committee		

27. Sachs Greenway

Location: Baldwin Road	Size: 9.3441 ac	Date Acquired: 1997
Baseline Assessment: in progress		Management Plan:
Sources of Acquisition Funds: Town	CR or APR on Parcel: CR-52	Legal Constraints on Land Use: a) Town * b) Agreement that excludes horses and bikes
LSC Stewards: Elizabeth Loutrel		Number of Other Stewards: 1
Conservation Values: Wooded uplands (pine and hardwood); wetlands (including vernal pool and stream). Part of the Estabrook Woods Buffer Lands.		Distinguishing Ecological & Cultural Features: Stone walls, stone foundation, small white pine plantation, stone culvert over stream
Water Bodies: wetland and probable vernal pool, headwater of Spencer Brook		Vistas: none
Parking On Site: none		Trails: One trail connecting Two Rod Rd. to Baldwin Rd.
Fields none	Agricultural Licensee: none	Agricultural License Expires: NA
Current Uses: Conservation and passive recreation by individuals and small groups, including hiking, X-county skiing, bird watching.	Historic Uses: Farming. Farm cart path on eastern end	Other Possible Uses:
Management Plan – Overall Objectives:		Management Units:
Routine Maintenance Activities: Trail maintenance by Trails Committee		

28. Swanson Land

29. Swanson Family Land

30. Towle Land

Location: Westford Rd.	Size: 112 ac	Date Acquired: 1968-1971
Baseline Assessment: April 2007		Management Plan: February 2010
Sources of Acquisition Funds: a) Town, State, Federal: 110.4 ac b) Gift: 1.5 ac	CR or APR on Parcel: No	Legal Constraints on Land Use: a) Town, State, Federal* b) NHESP (7 certified vernal pools)
LSC Stewards: L. Carpenter, W. Lyman		Number of Other Stewards: 2
Conservation Values: Large (19 ac) field; successional meadows converting to forests; large wooded area; wetlands with small streams (seasonal) and vernal pools; small pond and dam; planted sugar maples.		Distinguishing Ecological & Cultural Features: Grassland nesting habitat (e.g., bobolinks); rare wildflowers; vernal pools (7 certified); possible Indian ceremonial sites (including “turtle rock”); old quarry site; stone walls; cow tunnel under Westford Rd.; bluebird nesting boxes.
Water Bodies: Very small pond (drying up due to leaking earthen dam); seasonal streams, vernal pools.		Vistas: Across Towle Field (from Westford Rd.)
Parking On Site: 1 lot (~ 10 cars)		Trails: Several trails covering most of site. Small bridges.
Fields: 1 field (~20 – 25 ac) (E & W portions) invaded by buckthorn and poison ivy.	Agricultural Licensee: None (Mowed by J. O’Connor)	Agricultural License Expires: NA
Current Uses: Conservation (including grassland nesting habitat) and passive recreation by individuals and small groups. Rare use by large groups. Sugar maple tapping.	Historic Uses: Hay fields; animal grazing; truck farming (?); recreation by large groups (e.g., X-country ski team, kite-flying parties, movie set)	Other Possible Uses: Agriculture (in field outside nesting area).
Management Plan – Overall Objectives: 1) Preserve wildlife habitat, biodiversity, and water resources 2) Provide and control passive recreation 3) Preserve and restore Towle Field 4) Maintain & restore vistas and stone walls 5) Foster knowledge and appreciation of the Towle Land		Management Units: (1) Towle Field; (2) Pond and dam; (3) Parking lot & entrance; (4) Trails and signs; (5) Stone walls; (6) Other interior structures; (7) Forest & wetland areas.
Routine Maintenance Activities: (1) Mowing of Towle Field (annual contract; grassland nesting habitat protected); (2) trash removal (contracted out); (3) Cleaning of nesting boxes in field (2x/year by T. Brownrigg); (4) Occasional clearing of field edges and low-hanging branches in field; (5) Trail maintenance by Trails Committee; (6) Plowing of parking lot in winter (by DPW); (7) Mowing of small grassy area between parking lot and Westford Rd. (once/yr by DPW).		

31. Town Forest

Location: East Street	Size: About 70 acres	Date Acquired: 1852 (purchased as part of poor farm); 1925 (current acreage designated as Town Forest/Carlisle Reservation); 1994 (placed under ConsCom management at Town Meeting)
Baseline Assessment: April 27, 2009		Management Plan: In process
Sources of Acquisition Funds: Town	CR or APR on Parcel: No	Legal Constraints on Land Use: Town – Conservation . All of Town Forest is within NHESP 2008 Priority Habitat of rare species and Estimated Habitat of rare species.
LSC Stewards: Elisabeth Carpenter		Number of Other Stewards: 2
Conservation Values: Mature forests, open space, vernal pools, extensive streams and wetlands, several unusually wide trails, historical Town property		Distinguishing Ecological & Cultural Features: 3 certified vernal pools (and more may be certifiable), stone wall remnants and other unidentified stone features
Water Bodies: Vernal pools, wetlands, three streams (one may be perennial)		Vistas: Woodland vista from East Street; internal stream/wetland vistas
Parking On Site: No (limited parking on East St.)		Trails: Several trails and loop routes on the site. Bridges crossing streams and wetlands. Several trails of use to private abutting properties.
Fields None	Agricultural Licensee: None	Agricultural License Expires: N/A
Current Uses: walking; dog walking, limited biking, cross-country skiing, bird watching, occasional horseback riding, Trails Committee walks	Historic Uses: Town poor farm; pasture; red and white pine plantations; firewood cutting; Boy Scout camping	Other Possible Uses: Forestry
Management Plan – Overall Objectives: Plant and animal inventory; inventory/description of human artifacts; possible forest management to reduce blowdowns; TBD		Management Units: 1) trails; 2) forested areas; 3) streams, wetlands, and vernal pools; 4) stone walls and other human artifacts
Routine Maintenance Activities: Clearing of downed tree limbs, boardwalk building, and trails maintenance by Trails Committee; mowing of wide paths, bridge building, and trailside clearing by abutters		

Appendix 3 – Historic and Current Uses of Conservation Properties: Selected Examples

For a survey of historic uses, here is an overview of the six largest town-owned conservation parcels. These include: Greenough Land, Cranberry Bog, Davis Corridor, Towle Land, Town Forest, Foss Farm. This general overview gives a sense of how the lands were used, prior to purchase as conservation land. One can infer that the historic uses of the town's other conservation lands were similar.

Native American activity, pre-1600's

The Concord River watershed has been occupied by humans for at least 10,000 years. Artifacts that testify to their presence have been found throughout the area. Although the subject is controversial in some circles, there is a growing consensus in the archaeological community that many of the stone features found in certain areas are of Native American origin. This point of view has been greatly reinforced by the position of representatives of various tribes and a national organization, United South and Eastern Tribes (USET). Typically these features take the form of stone piles or rows of stone. Occasionally representations of living beings such as turtles are found. The stone piles and rows have similarities to objects created by European farmers and sometimes it is difficult to decide who built them. Of course Indians were farmers too.

Greenough Land Stone features have been identified on a large portion of the Greenough Property. However, they seem to be concentrated on the land north of the brook and pond complex. There are examples on the properties on both sides of Maple Street. They are found as far north as the property boundary and probably extend farther. This area is extremely rocky and has many enormous and dramatic boulders and other formations. South of the brook and pond, the character of the land changes dramatically. Much of this area is a hill that appears to consist of sand. Native Americans apparently favored sand areas, especially near water, for burials. Often these are not marked, and it may be that this area was used in that way.

Cranberry Bog Before being settled by Europeans, Native Americans made heavy use of wetlands for food and other resources. They also built ceremonial structures in the area as part of their interaction with the land and water. The known remains of such structures on the Cranberry bog property are located between Martin Street and the water. They have not been surveyed and there may be other areas containing structures.

Davis Corridor Stone piles exist in this land, most notably on the area known as the Malcolm Land. Presumably they date to early Native American activity

Towle Land At some unknown time in the past, Native Americans used parts of the Towle Land for ceremonies. The remains of about 60 stone ceremonial structures are located in the lower woods near Guy Clark's meadow. A large turtle effigy is located in the woods not far from Westford Road.

Town Forest No specific evidence of activity has been noted.

Foss Farm This property was an ideal location for Native American occupation. The adjoining Concord River was the principal route for travelers through the region, and the river and its adjoining areas were a major source of food (fish, reptiles, waterfowl, and mammals). Just a few miles downstream from Foss Farm was a falls that was the site of a large fishing camp used when salmon, alewives, and similar fish migrated upriver to spawn. Artifacts found at this site have been assigned dates between 3600 and 4100 years ago. It is believed that a major trail running from Lexington to Littleton crossed the river about where Bedford Road now is and

essentially followed Bedford Road through the center of Carlisle. Thus, Foss Farm and the surrounding area were at a crossroads of two of the great highways of the pre-colonial period. The Massachusetts Historic Commission has registered three sites in the area, one on Foss Farm itself. Artifacts, including arrowheads, from the area are in the collection of the Carlisle Historical Society.

Early Colonial Settlement, 1600's-1700's

Greenough Land According to Ruth Wilkins in *Carlisle and Its History and Heritage*, Carlisle Historical Society, 1976, the first European settlers on the Greenough land were Solomon and Elizabeth Andrews, and two of their ten sons, Edmund and Issachar, who came by ox sled from Ipswich in 1757. They cleared the land around the home currently at 528 Maple St. Solomon Andrews operated a grist mill near his home on Pages Brook that runs to the north of the house. The flat fertile meadows on the property were a training ground for Revolutionary War soldiers.

Cranberry Bog *Carlisle, Composite Community*, by Donald Lapham, 1970, records that in 1771 Deacon John Robbins built his house, later known as the Deacon Samuel Chamberlain place, near the cranberry bog. This house burned, it was rebuilt and the second house burned in 1903 while occupied by Chamberlain. Only a cellar hole remained in 1970. Presumably, the land around this house was a farm.

Davis Corridor One of Carlisle's earliest settlers, Robert Blood, built his home in 1653 at the north end of the Davis Corridor on Bedford Road. Blood and his descendents farmed in this area, clearing fields and pastures. Old roads extending from Bedford Road to Punkatasset Hill in Concord date back to this era when they were important routes between Billerica and Concord.

Towle Land Donald Lapham's book records that Nathan Munroe, a Carlisle Minuteman built his house in 1738 in what became the Towles' orchard on Westford St. His son, Aaron Munroe, also a Minuteman, built a house near the Towle house around 1775. Presumably, both were farmers.

Town Forest The earliest reference to the land which eventually became the Town Farm and Town Forest comes from Donald Lapham's book, where it is indicates that James Nickles built his house on East Street around 1754 and established a farm.

Foss Farm In 1739, one of Robert Blood's grandsons, Simon Blood, built the house that eventually became known as the William Foss, Jr. house at 981 Bedford Road.

Land in New England by the late 1700's was approximately 85% cleared for fields and pastures, the wood taken for building and heating. Landowners managed their woodlots for cordwood and lumber. Today's stonewalls often marked boundary lines and field edges of farms.

Decline of Agriculture, Rise in Industrialization, 1850's

Changes began to appear by the 1830's, due to expansion of linen mills in Lowell and national railroads. Farms and rural lifestyles were abandoned as people moved to the industrial New England cities, more productive farmlands of the Midwest, and to California and Oregon. After the early 1800's, the New England landscape began reverting back to forest; and agricultural areas shrank eventually to choice fertile river bottoms and adjacent gently rolling terrain.

Greenough Land About 1830, the property was purchased by Capt. Thomas Page (for whom Pages Brook is named) who continued to operate a grist mill there until his death in 1860. Beer's

Atlas (1875) shows a hoop factory at this site. From 1884 to 1923, the property was occupied by the French family. When they arrived, meadows stretched from the house to the Concord River.

Cranberry Bog Before the land was converted into a cranberry bog in 1903, it was a popular grazing meadow and marsh along River Meadow Brook (formerly also called Hale's Brook).

Davis Corridor Henry David Thoreau in his journals in the 1850's noted that fields in this area had begun reverting to forest. He mentions horseback riders on the old roads and discusses his hikes to Carlisle.

Towle Land – no specific information

Town Forest The Town purchased this land 1852 as part of the Poor Farm. It provided a home for the poor, and records from 1880 indicate that wood was cut from the land and sold to pay town debt.

Foss Farm Phinehas Blood lived in the house and farmed the land, then sold it to the Hutchinson family. Three more families owned the house and land before the Fosses bought it.

Early 1900's activity on Conservation Lands

Greenough Land Mr. And Mrs. Henry V. Greenough operated a farm on their property for most of their tenure (approximately 1928 – 1973). No farming was apparently ongoing when the Town purchased the land in 1973. The Greenoughs' farming operations included raising cows, pigs, turkeys and chickens. Corn and other crops were grown in the fields. A plan of the property around 1937 shows substantial open fields lying south southwest from Greenough Pond. By the time of a May 1971 aerial photo, the "open fields" on the east side of Maple St. had become a mature red pine plantation. The dam for Greenough Pond was built by the Greenoughs at some time prior to July 1931. Probably, the pond was created primarily to provide habitat for waterfowl.

Cranberry Bog In 1903, Warren and James Nickles purchased more than 400 acres of land in Carlisle and Chelmsford to create cranberry bog. Site preparation included clearing, leveling, ditching, damming, and sanding, mostly by hand. In 1905, they built the Bog House and harvested their first crops. In 1912, the business was incorporated as the Nickles Cranberry Company. In 1922 the bog was sold and it became the Lowell Cranberry Co.

Davis Corridor Names such as the Ox Pasture, perhaps dating from this era, may indicate that the interior land was still under agricultural use. However, the iron flywheel remnant of a portable sawmill, popular in the late 1800's, indicates that this area also provided lumber. Ann Davis, the daughter of John Davis who conceived of a "conservation corridor" in 1970's, remembers cow pastures in the mid-1900's. The First Religious Society owned a woodlot here, as well.

Towle Land Most of this land was purchased in 1912 by Dr. and Mrs. George P. Towle who used the fields to pasture beef cattle. Prior to that the open field had been used as a truck farm.

Town Forest Part of the Town Poor Farm was established as the Town Forest in 1923. The Town Forest was used a source of cordwood after its establishment and was extensively planted in commercial timber in the 1930s; however, firewood cutting and any formal attempt at forest management effectively ceased after the 1940s.

Foss Farm Frank Foss moved his family to the land in 1904. Mr. Foss turned several acres between the house and the river into an asparagus farm, an industry that became commercially successful. The property was farmed by the Foss family from 1904 until purchased by the town.

Conservation land purchases, current uses

The major features of the **Greenough** Land, 242 acres purchased in 1973, include the following:

- Largest Town conservation property
- Linkages with conservation and other protected lands yielding a conservation area of over 740 acres
- Significant trail system on site and with links to other conservation lands
- Largest pond in Town: Greenough Pond (~ 21 ac)
- Page's Brook and associated wetlands (discharge to the Concord River)
- Frontage on the Concord River (~ 1,800 feet)
- Vernal pools; 4 certified
- Upland hardwood and pine forests (~160 ac), including a red pine plantation; red maple swamp
- Agricultural fields (~4 ac) used for hay and corn by lessee farmer.
- Large rock formations (in the upland areas)
- A large animal barn (a part of the original Greenough estate)
- A "warming hut" for skaters (west side of Maple St.)
- Remnants of other farm buildings and drainage ditches
- Numerous stone walls
- The Greenough Pond dam, a favorite fishing site
- Numerous Wood Duck nest boxes (maintained and monitored by MassWildlife) in Greenough Pond and upstream wetlands

The Greenough Land is used primarily for conservation, passive recreation, and agriculture.

- The diversity of wildlife habitat available: upland deciduous and coniferous forests, wetlands, surface waters (stream and large pond), vernal pools, and open fields;
- Wood duck nesting boxes on the property, the nearby Concord River, and the Great Meadows National Wildlife Refuge (GMNWR) make the property especially valuable for water fowl and wildlife corridors;
- The lack of any active recreation or other events which can disturb wildlife.
- Blanding's Turtle, a state-listed rare species, was recently found in the wetlands upstream of Greenough Pond

Cranberry Bog, 150.7 acres purchased in 1986, is a very significant conservation holding for Carlisle, providing:

- Preservation of agricultural land and associated cultural heritage (i.e., cranberry growing) (It is the only commercial cranberry bog in area, the last one in Middlesex County)
- Preservation of land for wildlife habitat
- Preservation of surface water bodies and wetlands for wildlife habitat
- Land for passive recreation, much of it with beautiful "big sky" vistas.
- Preservation of open and rural roadside vistas
- Potential future water supply source
- Important linkage to Great Brook Farm State Park and conservation land in Chelmsford
- Blandings turtle found and reported

Passive Recreation The Cranberry Bog attracts a significant number of visitors for walking (often with their dogs), horseback riding (the soft dike roads are ideal), biking, fishing, and – in

winter – cross-country skiing, snowshoeing, and skating. The trails (including dike roads) around the agricultural area afford beautiful vistas of fields, water and woods, and present a great diversity of wildlife: sun-loving wildflowers, turtles, deer, beaver and a diversity of birds that use the water, fields, wetland areas and forest habitats. The vistas during the fall cranberry harvest are striking. The trails also enter the woods, some leading into the Chelmsford portion of the bog area and some to Great Brook State Park. No estimate has been made of the number of people using the Cranberry Bog for recreation, but it is common to see all the parking spaces filled on a sunny weekend.

Wildlife Habitat The Cranberry Bog has a great diversity of wildlife habitats: ponds, streams, fields, woods, wetlands (woodland and marsh). The specific nature of these habitats has not been assessed in a rigorous manner beyond the two Biodiversity Day studies that involved species identification. Two bluebird nest boxes have been placed on the property

4-H Bog A small bog area – separated from the Agricultural Area licensed to Carlisle Cranberries Inc. – exists on the east side of the bog near Curve St. It is about 30 – 40 feet in diameter. As the 4-H bog it was apparently used in the past for educational purposes. No use has been made of this bog in recent years, and it is becoming overgrown.

Natural Gas Pipeline

The Tenneco Gas Pipeline Co. owns a 50-foot wide easement across the Bog for its underground natural gas pipeline. A portion of the trail system on the Bog follows this easement. The land along the easement is periodically cleared of tree growth by Tenneco. The last clearing was in the fall of 2001. Advance notice was provided in August 2001. Clearing was proposed for 2010-2011.

Davis Corridor 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. The Massachusetts legislature decided 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. John Davis and his wife Aslaug were reluctant to sell their land to developers, so they became interested in selling their land to the Town of Carlisle for conservation. At the time of purchase, most of their 59.72 acres had already reverted to forest, with the exception of the frontage on Bedford Road, an old field that has since reverted to forest. The Davis Corridor has trails along the old roads leading to Concord that are enjoyed by townspeople, especially for their access to the extensive network of trails in Estabrook Woods. These trails also link several Carlisle neighborhoods, providing foot access to conservation land for a large number of homes in Carlisle’s southeast quadrant. Across from the Sachs Greenway entrance, a small abandoned cranberry bog still produces berries. The wildlife habitat is primarily upland forest, with some streams and wetlands, as well as probably two vernal pools.

Towle Land 112 acres, mostly purchased in 1968 by the town provides the following:

- Preservation of significant land for passive recreation. The Towle property is well known and used for birding, nature education, hiking, and cross-country skiing;
- Preservation of significant vistas. The Towle property provides a beautiful vista for traffic along Westford Road in both directions and is a significant asset to the Town. Vistas within Towle property are also beautiful, especially across the field at sunrise and sunset or during times of interesting cloud formations;

- Preservation of agricultural land and associated cultural heritage. The Towle property is not currently farmed but the field has a history of truck farming and cattle raising. Soils in the field are classified as prime agricultural soils.
- Preservation of land for general conservation; and
- Preservation of surface water bodies (streams and pond) and wetlands for wildlife habitat.

Since its purchase by the Town, the Towle Land has been primarily used for passive recreation by individuals, small groups, and – less frequently of late – large groups. In the early years of town ownership, Towle field was hayed by farmers who were allowed to keep the hay in return for their cutting work. This became impractical as the quality of hay declined. Most recently, the Towle field has been maintained by mowing to keep the broad vista open from Westford Road. Other objectives of the mowing are to preserve the special wildlife habitat it affords and to preserve the possibility of future agricultural use. At present, concerns over maintenance of the field as a nesting habitat for birds – especially bobolinks and meadowlarks – appear to preclude any large-scale agricultural use of the whole field. Furthermore, the emergence of poison ivy by June of each year significantly restricts many field uses for the remainder of the growing season. Specific passive recreation activities that take place (or have taken place) on the Towle Land include:

- Walking – There is an excellent trail system that affords walks through both the fields and the woods. Many walkers bring their dogs. The Carlisle Trails Committee occasionally sponsors a guided walk of the Towle Land. A large variety of birds, wildflowers and other wildlife may be found while walking the site. Biodiversity Days studies on just two days (one each in 2001 and 2002) found a total of 50 species of wildflowers on the site. Some of the special wild flowers – mentioned by local naturalist Kay Fairweather – include May apple, cardinal flower, ragged fringed orchid, nodding ladies’ tresses, fringed polygala, Virginal meadow beauty, and blue eyed grass.
- Cross country skiing – From the beginning, the Towle Land has been a popular cross-country skiing site. From 1972 through 1993, volunteer parent-coaches in the Bill Koch Youth Cross-Country Ski League trained Carlisle youth to cross-country ski and sponsored races including youth from adjacent towns there. The cross-country course (about three miles long) was highly praised by Bill Koch, one of America’s most successful Nordic racers. The Bill Koch Ski League is still listed in the Conservation Commission’s Rules and Regulations as an allowed use for the Towle Land.
- Bird Watching – The Towle field draws many bird watchers because of summer visitors such as the bobolinks, blue birds, swallows, and many other birds. One Carlisle resident, Ken Harte, has been watching these birds for over three decades and leads annual bird walks. He has recorded a total of 132 species on the Towle Land. Many bluebird boxes have been placed on the field.
- Kite flying, model plane flying, model rocket launching, and bird dog training have also taken place on the field.

Although there may have been some use by horseback riders and bicycle riders in the past, none appears to have occurred in recent years. The trails on the property are not well-suited for such purposes, and there is inadequate parking for horse trailers.

Uses of the Towle Land by other groups have included the following:

- Bird walks (Ken Harte’s annual guided walk in May)
- Trails Committee guided walks

- Biodiversity Days investigations (in 2001 and 2002)
- Demonstrations of sheep herding and grazing (2001 – 2004)
- Kite flying parties (organized in the 1970s by Tim and Midge Eliasson)
- Alternative site for hot-air balloon landing on spring and fall weekends in the 1970s and 1980s (unplanned landings due to poor weather conditions)
- Filming of a Revolutionary War re-enactment (one event in April 2004) for the Smithsonian Institution in Washington, D.C.
- Forest fire fighting (one incident – not planned – in 2001)
- Bill Koch Ski League (1972 - 1993)
- Camping (rare)
- Maple tree tapping in the spring of 2009 and 2010, using about 10 sugar maples planted in the field, along the edge near Westford Road, by Boy Scouts in the 1980's

Town Forest Today, the Town Forest, 71 acres transferred to the Conservation Commission in 1994 as conservation land, is a mix of natural upland forest, dense mature red and white pine plantations, forest wetlands, and streams. An extensive network of trails, many of them old roads from logging days, and footbridges allow the residents of Carlisle to enjoy this peaceful and secluded property.

Foss Farm In 1971, Mr. William Foss, who lived on this farm for 61 years, sold 57.04 acres to the town of Carlisle for conservation and recreation, retaining 4.26 acres for himself. After he had ceased operating the farm himself, he leased fields to a local farmer to raise feed corn. On the remaining portions of the land, Mr. Foss generously allowed the people of Carlisle and neighboring towns to use the property for the following activities:

- Horseback riding, Pony Club Activities, horse shows
- Dog shows, sled dog training, and dog field trials
- Passive recreation, including kite flying, walking, cross-country skiing, nature study, snowshoeing, and picnicking
- Town Fairs, 4-H Club activities, Colonial Minuteman Historical Musters
- Supervised trap shooting
- Snowmobile riding

According to documents on the Foss Farm Acquisition, the CCC stated its intention to continue leasing portions of the land for agriculture to maintain the farming industry of Carlisle, which was fast disappearing. It also stated that new activities would be considered as needs arise "... provided only that such activities do not conflict with each other or damage the land."

Foss Farm has upland areas with sandy soils, rolling terrain as well as large expanses of flat lowlands. Much of the upland area in the northwest section of the property has become forested (approximately 13 acres). The majority of the property (approximately 44 acres) is open fields, allowing broad vistas. Other features include a stream through a wetland, damp forests, and areas of transitional vegetation (meadow to forest). On the property are two pony rings, two agricultural licensed fields, and a community garden area, with vehicular access and wells with hand pumps for water. Trails wind through the wooded areas and along the perimeter of the fields. Stone fences border the property and several important (or rare) species, such as American woodcock, blue-spotted salamander, and several types of turtles (Blanding's, wood, painted, and snapping) have found suitable habitat at or near Foss Farm. About 75% of the land has soil considered locally important for farmland.

Appendix 4 – Carlisle Conservation Commission Overall Rules and Regulations

RULES AND REGULATIONS FOR USE OF CARLISLE CONSERVATION LAND

1. HOURS, NIGHT USE BY PERMIT.

All people are welcome to enjoy themselves on the conservation land of the Town of Carlisle. They do so at their own risk from sunrise to sunset provided such use is consistent with the Commission's rules and regulations and other applicable local, state and federal laws, rules and regulations. The conservation land and parking lots may not be used between sunset and sunrises except in accordance with a permit duly issued by the Carlisle Conservation Commission (the "Commission"). Groups of eight or more people that wish to use conservation land must obtain a use permit. This permit may be granted by one Commissioner or by the Commission Administrator, except that if said groups wish to use the conservation land in excess of four (4) daylight hours, that use permit must be duly issued by a majority vote of the Commission.

2. FIRES BY PERMIT.

Open fires are forbidden on conservation land except by permits duly issued by the Commission and the Carlisle Fire Department. The use of portable stoves does not require a fire permit, but the intention to use such stoves must be reported in writing to the Commission and the Carlisle Fire Department or noted on any use permit issued in accordance with Rule 1 hereinabove. The following fire safety measures shall apply on all conservation land: Stoves or open fires shall be at least three (3) feet from any combustible material; those making fires or operating stoves must possess an operable fire extinguisher rated consistent with the object fire and/or stove; they must also possess a spade, iron rake and water supply reasonably adequate to suppress the fire or the stove.

3. CAMPING BY PERMIT.

Overnight camping on conservation land is permitted under the Camping Permit Guidelines available through the Conservation Commission Office, Carlisle Town Hall, 66 Westford Street, Carlisle, MA 01741. Call 978-369-0336 for an appointment with the Administrator.

4. ARMS/FIREARMS BY PERMIT.

Arms/firearms, ammunition, bows, arrows and all other projectile weapons or devices are forbidden on conservation land, except that a majority of the Commission may issue an Arms/firearms permit for such use at Foss Farm, but only for non-hunting activities. Historically, the activities which have received permits include the colonial musters and dog training.

5. SPONSORED EVENTS AND CONCESSIONS BY PERMIT.

No one shall engage in business, sell or expose for sale or give away goods or circulars without a permit from the Commission. Applications for sponsored events will be accepted only from non-profit organizations. No admission or parking fees may be charged, but donations to the organization may be requested by posting a sign at the entrance to the event. Registration fees may be charged to participants but not to spectators in events organized by the sponsoring group. The Commission will ordinarily authorize only concessions for food to be consumed on the premises. In limited circumstances, when the Commission deems it in

the public interest, additional concessions may be permitted. Although primary use of the land may be reserved for a specific event, other regular activities on the land shall continue on any given day.

6. TRAILS.

New trails or extensions of existing trails may not be installed by any person unless duly authorized by majority vote of the Conservation Commission at a public meeting.

7. PENALTIES

Without limiting any other available remedies or penalties, any person who submits false information in connection with any documentation or application required under these Rules or Regulations, or who otherwise violates these Rules and Regulations may be punished by a fine of not more than fifty dollars (\$50.00) for each violation hereof. Each day or part thereof during which such violation occurs or continues shall constitute a separate violation.

CARLISLE CONSERVATION LAND USES

1. Uses allowed on all Conservation Land.

Walking, hiking, jogging, running
Picnicking
Kite-flying
Horseback riding
Snowshoeing
Cross country skiing
Nature study (observation)
Other uses of a passive recreational nature

Uses prohibited except by special permission from a majority of the Commission

Camping
Discharge of firearms
Fires (Fire department must also issue permit)

Uses prohibited on all Conservation Land

Hunting, trapping
Swimming
Driving motorized vehicles (except by special permit and as regulated on Foss Farm)

Use by camping and large organized groups

To be scheduled through the Conservation office

2. Additional uses allowed on specific parcels of land

Greenough Land

Ice skating
Fishing, ice fishing
Canoeing

Foss Farm

Pony Club activities

Dog shows

Dog field trials

Dog sledding

Dog training classes

Horse show

4-H Club activities

Fairs

Colonial Minutemen Historical Muster

Plot gardens

Towle Field

X-C Ski League

Date Adopted: March 2009

Appendix 5 – Cyclist’s Code of Responsibility

The following is the National Off-Road Biking Association's (NORBA) Code of Ethics.

- I will yield the right of way to other non-motorized recreationists. I realize that people judge all cyclists by my actions.
- I will slow down and use caution when approaching or overtaking another and will make my presence known well in advance.
- I will maintain control of my speed at all times and will approach turns in anticipation of someone around the bend.
- I will stay on designated trails to avoid tramping native vegetation and minimize potential erosion to trails by not using muddy trails or short-cutting switchbacks.
- I will not disturb wildlife or livestock.
- I will not litter. I will pack out what I pack in, and pack out more than my share if possible.
- I will respect public and private property, including trail use and no trespassing signs; I will leave gates as I found them.
- I will always be self-sufficient and my destination and travel speed will be determined by my ability, my equipment, the terrain and present and potential weather conditions.
- I will not travel solo when bike-packing in remote areas. I will leave word of my destination and when I plan to return.
- I will practice minimum impact bicycling by "taking only pictures and memories and leaving only waffle prints."
- I will always wear a helmet when I ride.

Stuart Johnstone, in the introduction to his *Mountain Biking Near Boston* adds these guidelines for the heavily used trails in the northeast:

Avoid riding when conditions are wet, or stick to well-drained gravel routes to minimize erosion. When crossing streams, especially those with silty or muddy bottoms, dismount your bike and walk across to prevent unnecessary disruption. And when crossing puddles or mudholes it is best to either ride or walk through the center rather than to circle the edge and further widen the trail.⁷

New England Mountain Biking Association – guidance from website

Ride "Softly"

The most objectionable sign of our presence is a degraded trail. Conservationists love to point to bicycle ruts and use them as a reason or justification for banning use from suitable riding areas, so never ride when and where you will leave ruts. This means carrying your bike across soft spots and walking around mud puddles so you don't widen them. This means not riding on rainy days, especially during the spring mud season. It is tempting to get out on that first beautiful spring day, but this is a time in New England when the trails are fragile. Some trails are

⁷ Johnstone, Stuart. *Mountain Biking Near Boston* : a guide to the best 25 places to ride. Carlisle Mass. ; Active Publications, 1990. p. 5.

especially soft and wet when thawing. Damage can be done this time of year, and can take a lot of time to repair.

Don't hesitate to walk or carry your bike in technical or muddy sections. Learn cyclocross dismounts, mounts and carrying techniques if you are concerned with efficiency. Carry your bike through streams. The silt stirred up can smother water critters and their eggs. The cross-ruts can also divert the stream to create a puddle.

Be careful to not widen trails by riding over vegetation alongside the trail. Stay in the middle of the trail, and don't be too concerned about avoiding rocks. Your mountain bike is designed to go over rough terrain, and sometimes the "line" over rocks is the easier one. Keeping your weight on the saddle or over the rear wheel helps lighten the front of the bike so it will roll over rocks more easily, and with a strategic pull on the handlebars, larger rocks won't be an obstacle.

Don't skid. Don't brake slide. Locking up the brakes is not only an inefficient way to ride, but can degrade hills by forming gullies that water funnels down, can rut sensitive trails, and always indicates a lack of control to others. Modulating brakes - both front and back - will prevent skidding and increase control. Slow, even pedal strokes prevent "spinning-out" up hills (which can cause ruts), as well as increasing the chance that you'll make it over the top. Finesse is often more successful than brute strength. Don't be embarrassed to walk or run your bike up or down steep hills.

Keep in mind that a lot of work goes into building and maintaining trails. Go easy on bridges and stone or wood steps. Respect waterbars, which are logs or piles of dirt or rocks placed across trails to prevent erosion. Ride them in such a way that you will not degrade them. This can be done by riding perpendicular to the bar, lifting first the front wheel, then the rear wheel over them. The key to lifting the front wheel is to first push down, then pull up. Use the pedals to lift the rear wheel.

Appendix 6 - Camping Regulations on Town Conservation Land

Purpose: To allow the use of Town of Carlisle conservation land for camping, thereby creating a greater appreciation of the outdoors and the environment. To ensure the safe and proper use of Town owned land in order to protect it now and for future generations.

Permitting Granting Authority: The Carlisle Conservation Commission.

Permitting Procedure: All overnight camping and activities after dark shall follow this procedure. Applicants shall file a Camping Application Form with the Conservation Administrator. For groups of no more than 15 persons for 1 or 2 nights, the Conservation Administrator at his/her discretion may either grant a camping permit, provided that the Applicant has provided all necessary information, or require the review and approval of the Conservation Commission. The Applicant may be granted alternate dates in order to avoid the need to re-apply in case of weather related cancellations. All applications for groups over 15 persons or stays of more than two nights shall have applications reviewed by the Conservation Commission at a regularly scheduled hearing. The Commission may designate an agent to work with camping groups to ensure proper use of Conservation land and to provide a site inspection following the camping event. Review and approval of camping permits is at the discretion of the Conservation Commission.

Regulations:

1. Camping groups shall designate one responsible representative who will be present at all times and personally responsible for all clean-up and any issues arising from use of Conservation Land. The responsible representative shall read the Rules and Regulations of the Commission for use of Carlisle Conservation Land and agree to abide by these rules.
2. All groups must obtain a permit from the Fire Department if they intend to use an open fire for any purpose. Personal stoves used for meal preparation do not require a permit.
3. All groups should notify the dispatcher / Police Department of the Camping event and shall provide vehicle information for any vehicles that will be left overnight in Town parking areas. Parking shall only be in designated areas. Cars, trucks, or other motorized vehicles or tools are not permitted on conservation lands except as specifically authorized in writing by the Conservation Commission.
4. Specific camping site locations shall be described on the Camping Application Form and reviewed and approved by the Conservation Administrator or the Commission's designee. In general, camping sites should be located: (a) out of view of any residence, (b) to not disrupt other activities on the conservation land, (c) at least 20 feet from any trail, and (d) at least 40 feet from any private property.
5. All animals, including dogs and horses, must be kept under control at all times.

6. No trees, shrubs, flowers, grass, or other flora shall be picked, removed, cut or otherwise damaged. Only wood lying on the ground or dead wood may be used for camp fires.
7. Any camping group that fails to follow any of these regulations or that leaves the Town of Carlisle Conservation land in unacceptable condition may be fined up to \$50 and/or barred from receiving future camping permits.
8. For groups of no more than 15 persons and 1 or 2 nights:
 - a. Camping is permitted on all conservation lands subject to review of specific locations, dates and times.
 - b. Camping sites must be at least 100 feet from any stream, brook, or major water source.
 - c. Camping groups shall follow the “Leave No Trace” standards for all waste including human waste. These standards can be found at www.lnt.org.
9. For groups larger than 15 persons or more than two nights:
 - a. Camping is permitted on larger conservation lands such as Foss Farm, Town Forest, Greenough, Towle Land and Benfield Conservation Land, subject to review of specific locations, dates and times.
 - b. Camping sites must be at least 200 feet from any stream, brook, or major water source.
 - c. Provisions must be made for off-site disposal of human waste. This may include such methods as portable toilets or “Porta-A-Johns”.
 - d. For all waste except human waste, camping groups shall follow the “Leave No Trace” standards. These standards may be found at www.lnt.org.
10. All camping events led or sponsored by organizations, including non-profits, must provide the Conservation Administrator with their Certificate of Liability Insurance naming the Town of Carlisle as the certificate holder, and the amount of coverage.

**Town of Carlisle
Overnight Camping Permit**

NAME _____ GROUP (if applicable) _____

ADDRESS _____ ADDRESS _____

Please fill out the following information as it pertains to all members of your party (attach additional sheet if necessary).

NAME	ADDRESS	AGE
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Date of Arrival _____ Date of Departure _____

Estimated Time of Arrival _____ Camp Location Requested _____

Conservation Lands are patrolled by the Carlisle Police Department:

- In case of emergency dial 911
- For non-emergency calls, dial 978-369-1155

Comments/Special Requests: _____

I/we hereby release and forever discharge the Town of Carlisle, the said Conservation Commission, its members, officers, and instructors, their heirs, assigns, and the administrators from any and all actions, claims, demands, damages, judgments, executions, costs and any and all other claims or damages whatsoever, both in law or in equity, on accenteduate of, growing out of, or resulting from all known or unknown personal injuries, conscious suffering, or any damages from my/my group's participating actively or as spectators.

Signature date
Approved by the Town of Carlisle

_____ Conservation Administrator _____ Date Approved

Appendix 7 – Legal Constraints of Article 97

In November 1972 the citizens of Massachusetts approved at the ballot Article 97, which became the 97th Amendment to the State Constitution.

The amendment reads:

"The people shall have the right to clean air and water, freedom from excessive and unnecessary noise, and the natural, scenic, historic, and esthetic qualities of their environment; and the protection of the people in their right to the conservation, development and utilization of the agricultural, mineral, forest, water, air and other natural resources is hereby declared to be a public purpose.

The general court shall have the power to enact legislation necessary or expedient to protect such rights. In the furtherance of the foregoing powers, the general court shall have the power to provide for the taking, upon payment of just compensation therefore, or for the acquisition by purchase or otherwise, of lands and easements or such other interests therein as may be deemed necessary to accomplish these purposes.

Lands and easements taken or acquired for such purposes shall not be used for other purposes or otherwise disposed of except by laws enacted by a two thirds vote, taken by yeas and nays, of each branch of the general court."

The scope of Article 97 is broad.

In his opinion dated June 6, 1973, Attorney General Robert Quinn stated that the types of "natural resources" covered by Article 97 were varied but included "air, water, wetlands, rivers, streams, lakes, ponds, coastal, underground and surface waters, flood plains, seashores, dunes, marine resources, ocean, shellfish and inland fisheries, wild birds including song and insectivorous birds, wild mammals and game, sea and fresh water fish of every description, forests and all uncultivated flora, together with public shade and ornamental trees and shrubs, land soil and soil resources, open spaces, natural areas, and parks and historic districts and sites."

His enumeration of Article 97 property types included "parks, monuments, reservations, athletic fields, concert areas, and playgrounds." Further, he stated that other types of land were also subject to the article. "Given the spirit of the Amendment and the duty of the General Court, it would seem prudent to classify lands and easements taken or acquired for specific purposes not found verbatim in Article 97 as nevertheless subject to Article 97 if reasonable doubt exists concerning their actual status." (Massachusetts Opinion of Attorney General. No. 45, 1973).

Application of Article 97 has been both retroactive and prospective. Lands taken or acquired for Article 97 purposes both before and after passage of the amendment are covered.

EOEA ARTICLE 97 LAND DISPOSITION POLICY - FEBRUARY 19, 1998

Statement of Policy

It is the policy of EOEA and its agencies to protect, preserve and enhance all open space areas covered by Article 97 of the Article of Amendment to the Constitution of the Commonwealth of Massachusetts. Accordingly, as a general rule, EOEA and its agencies shall not sell, transfer, lease, relinquish, release, alienate, or change the control or use of any right or interest of the Commonwealth in and to Article 97

land. The goal of this policy is to ensure no net loss of Article 97 lands under the ownership and control of the Commonwealth and its political subdivisions. Exceptions shall be governed by the conditions included in this policy. This policy supersedes all previous EOEAs Article 97 land disposition policies. An Article 97 land disposition is defined as a) any transfer or conveyance of ownership or other interests; b) any change in physical or legal control; and c) any change in use, in and to Article 97 land or interests in Article 97 land owned or held by the Commonwealth or its political subdivisions, whether by deed, easement, lease or any other instrument effectuating such transfer, conveyance or change. A revocable permit or license is not considered a disposition as long as no interest in real property is transferred to the permittee or licensee, and no change in control or use that is in conflict with the controlling agency's mission, as determined by the controlling agency, occurs thereby.

Appendix 8 – Vernal Pool Protection in Massachusetts

J. Thomas Brownrigg
4/17/10

Vernal pools provide essential breeding habitat for certain salamanders, frogs, and invertebrates. Salamanders and wood frogs migrate to these pools in early spring to mate and lay eggs. The larva or tadpoles must develop quickly in order to leave the pool before it dries out. Wood frogs and mole salamanders, such as the spotted salamander, spend their adult lives in upland forested areas near the vernal pools. The temporary nature of vernal pools is important in that it prevents establishment of permanent fish populations; fish feed on the eggs and young of vernal pool animals.

In Massachusetts, several laws protect vernal pools, although most of these laws require that the pool has been “certified” by the Division of Fisheries and Wildlife’s Natural Heritage and Endangered Species Program (NHESP). Certification of a vernal pool requires submission of evidence that certain animal species are using the pool for breeding. After reviewing the evidence submitted, NHESP determines whether the evidence meets the standard for certification; if it does, it will issue the vernal pool a number and add it to its data base. NHESP will notify the person who has submitted the observation form, the property owner (if known) and the town’s Conservation Commission. The locations of certified vernal pools through the state are shown on maps issued by NHESP and updated every few years.

Certification is important for vernal pool protection, because most Massachusetts laws do not recognize vernal pools that are not certified. However, it is still possible to protect certain vernal pools that are not certified, provided that these pools occur in areas that are under the jurisdiction of the Massachusetts Wetlands Protection Act. The following four Massachusetts laws pertain to vernal pool protection:

- 1) Massachusetts Wetlands Protection Act Regulations 310 CMR 10.00; provided that vernal pool habitat is located within a wetland resource area. Protected vernal pool habitat includes the pool itself and up to 100 ft. from the edge of the pool to the wetland resource area.
- 2) Massachusetts Surface Water Quality Standards, 314 CMR 4.00; the discharge of dredge or fill is prohibited within the boundary of a certified vernal pool.
- 3) Title 5 of the Massachusetts Environmental Code, 310 CMR 15.00; establishes set-back distances from septic systems for certified vernal pools.
- 4) The Massachusetts Forest Cutting Practices Act Regulations, 304 CMR 11.00; regulates tree removal near certified vernal pools.

Massachusetts Wetlands Protection Act Regulations 310 CMR 10.00

The following definition of vernal pool habitat is from 310 CMR 10.04:

“Vernal pool habitat means confined basin depressions which, at least in most years, hold water for a minimum of two continuous months during the spring and/or summer, and which are free of adult fish populations, as well as the area within 100 feet of the mean annual boundaries of such depressions, to the extent that such habitat is within an Area Subject to Protection Under M.G.L. c. 131, § 40 as specified in 310 CMR 10.02(1). These areas are essential breeding habitat, and provide other extremely important wildlife habitat functions during non-breeding season as well, for a variety of amphibian species such as wood frog (*Rana sylvatica*) and the spotted salamander (*Ambystoma maculatum*), and are important habitat for other wildlife species.”

Note that the definition states “...as well as the area within 100 feet of the mean annual boundaries of such depression, to the extent that such habitat is within an Area Subject to Protection under...[the Act].” Areas Subject to Protection (also called resource areas) are Bordering Vegetated Wetland, Land Subject to Flooding, Riverfront Area, and Coastal Dune. Vernal pool habitat must lie within, for example, a Bordering Vegetated Wetland (BVW) or other resource area in order to be protected by the Wetlands Protection Act (WPA).

The definition of vernal pool habitat *does not* state that the pool must be “certified” to be protected. The use of the word “certified” appears in 10.57(2)(a)5 for Bordering Land Subject to Flooding: “The only portions of this resource area which shall be presumed to be vernal pool habitat are those that have been certified as such by the Massachusetts Division of Fisheries and Wildlife, where said Division has forwarded maps and other information needed to identify the location of such habitat to the Conservation Commission and DEP prior to the filing of each Notice of Intent or Abbreviated Notice of Intent regarding that portion. Such presumption is rebuttable, and may be overcome upon a clear showing to the contrary.”

10.53: General Provisions

(1) If the issuing authority determines that a resource area is significant to an interest identified in M.G.L. c. 131, § 40 for which no presumption is stated in the Preamble to the applicable section, the issuing authority shall impose such conditions as are necessary to contribute to the protection of such interests.

Conversely, if a vernal pool has not been certified, then a potential vernal pool is presumed not to be a vernal pool. However, this presumption can be overcome upon “clear showing to the contrary”, as stated in the official letter of vernal pool certification from NHESP: “Please note that even after a Notice of Intent has been filed, the presumption that vernal pool habitat does not occur on a site is overcome upon a clear showing to the contrary, either through official certification or the presentation of credible evidence at a public hearing (310 CMR 10.57(2)(a)5). Altering vernal pool habitat may be permitted only if it will have no adverse effects on wildlife habitat, as determined by procedures contained in 310 CMR 10.60.” The Conservation Commission, at its discretion, can impose protective conditions in the Order of Conditions if it believes that vernal pool habitat exists on the site.

The WPA offers no protection to vernal pools located outside of regulated wetlands - for example, a pool located completely in an upland forest - with one possible exception, namely an Isolated Land Subject to Flooding (ILSF), as defined in 10.57(2)(b)1: “Isolated Land Subject to Flooding is an isolated depression or closed basin without an inlet or an outlet. It is an area which at least once a year confines standing water to a volume of at least ¼ acre-feet and to an average depth of at least six inches”.

As stated in 10.57(6)(b)4: “The only portions of this resource area which shall be presumed to be vernal pool habitat are those determined under procedures established in 310 CMR 10.57(2)(a)5.” An ILSF, provided it holds water for at least two months and is free of fish, could be vernal pool habitat. Assuming that the vernal pool has a mean depth of 12 inches (a reasonable estimate) and is circular, a pool volume of ¼ acre-foot implies a pool diameter of ~120 ft (1 acre = 43560 ft.). In the writer’s experience, this is a large vernal pool.

An ILSF for which evidence of vernal pool habitat is presented during a Conservation Commission hearing would be subject to a wildlife habitat evaluation if the applicant’s project could alter vernal pool habitat (this would also apply to BVW and BLSF). Even if an ILSF was not shown to provide vernal pool habitat, it is still protected as a resource area.

Massachusetts Surface Water Quality Standards, 314 CMR 4.00

Relevant sections of 314 CMR 4.00 are reproduced verbatim below. *Certified vernal pools* [italics added] are considered “Class B Outstanding Resource Waters” and cannot be filled, dredged, or subjected to contamination from discharges.

Section 4.04: Antidegradation Provisions

(3) Protection of Outstanding Resource Waters. Certain waters are designated for protection under this provision in 314 CMR 4.06. These waters include Class A Public Water Supplies (314 CMR 4.06(1)(d)1.) and their tributaries, *certain wetlands as specified in 314 CMR 4.06(2)* [italics added] and other waters as determined by the Department based on their outstanding socio-economic, recreational, ecological and/or aesthetic values. The quality of these waters shall be protected and maintained.

(a) Any person having an existing discharge to these waters shall cease said discharge and connect to a Publicly Owned Treatment Works (POTW) unless it is shown by said person that such a connection is not reasonably available or feasible. Existing discharges not connected to a POTW shall be provided with the highest and best practical method of waste treatment determined by the Department as necessary to protect and maintain the outstanding resource water.

(b) A new or increased discharge to an Outstanding Resource Water is prohibited unless:

1. the discharge is determined by the Department to be for the express purpose and intent of maintaining or enhancing the resource for its designated use and an authorization is granted as provided in 314 CMR 4.04(5). The Department's determination to allow a new or increased discharge shall be made in agreement with the federal, state, local or private entity recognized by the Department as having direct control of the water resource or governing water use; or

2. the discharge is dredged or fill material for qualifying activities in limited circumstances, after an alternatives analysis which considers the Outstanding Resource Water designation and further minimization of any adverse impacts. Specifically, a discharge of dredged or fill material is allowed only to the limited extent specified in 314 CMR 9.00 and 314 CMR 4.06(1)(d). The Department retains the authority to deny discharges which meet the criteria of 314 CMR 9.00 but will result in substantial adverse impacts to the physical, chemical, or biological integrity of surface waters of the Commonwealth.

Section 4.06: Basin Classification & Maps

(1) 12. Vernal Pools. No point source discharge shall be allowed to a vernal pool certified by the Massachusetts Division of Fisheries and Wildlife; and no discharge of dredged or fill material shall be allowed to a vernal pool certified by the Massachusetts of Division of Fisheries and Wildlife, unless a variance is granted under 314 CMR 9.08.

(2) Wetlands. Wetlands bordering Class A Outstanding Resource Waters are designated Class A Outstanding Resource Waters. *Vernal pools are designated Class B Outstanding Resource Waters* (italics added). All wetlands bordering other Class B, SB or SA Outstanding Resource Waters are designated as Outstanding Resource Waters to the boundary of the defined area. All other wetlands are designated Class B, High Quality Waters for inland waters and Class SA, High Quality Waters for coastal and marine waters.

Section 4.02: Definitions (except as noted)

Discharge of Pollutants. Any addition of any pollutant or combination of pollutants to the waters of the Commonwealth from any source.

Fill means to deposit any material so as to raise an elevation, either temporarily or permanently (310 CMR 10.04).

Point Source. Any discernable, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, vessel or other floating craft, from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture.

Pollutant. Any element or property of sewage, agricultural, industrial or commercial waste, runoff, leachate, heated effluent, or other matter in whatever form, and whether originating at a point or nonpoint source, that is or may be discharged, drained or otherwise introduced into any sewage system, treatment works or waters of the Commonwealth.

Vernal Pool. A waterbody that has been certified by the Massachusetts Division of Fisheries and Wildlife as a vernal pool. Vernal pools are confined basin depressions which, at least in most years, hold water for a minimum of two continuous months during the spring and/or summer, and which are free of adult fish populations.

Massachusetts Environmental Code Title 5, CMR 15.000

Title 5, which regulates the siting and construction of sewage treatment systems, provides setback distances for certified vernal pools. The following are reproduced from the regulations:

15.211: Minimum Setback Distances

“(1) All systems must conform to the minimum setback distance for septic tanks, holding tanks, pump chambers, treatment units and soil absorption systems, including reserve area, measured in feet and as set forth below. Where more than one setback applies, all setback requirements shall be satisfied....

Certified Vernal Pools:

Septic Tank, Holding Tank, Pump Chamber, Treatment Unit, Grease Traps – 50

Soil Absorption System – 100 [2]

[2] The required setback shall be 50 feet where the applicant has provided hydrogeologic data acceptable to the Approving Authority demonstrating that the location of the soil absorption system is hydraulically down gradient of the vernal pool. Surface topography alone is not determinative”.

The Town of Carlisle Board of Health bylaw states: “The minimum setback distance between a leaching area and wetlands is one hundred (100) feet. Depending on specific site conditions, it is possible that some designs which fail to meet the 100' set back may be allowed if the Board finds that the waiver will provide an environmental benefit.... All other setbacks must comply with Title 5 Minimum Setback Distances.” The Carlisle bylaw does not specify set-back distances for a certified vernal pool, so the set-back distances are presumed to be those given in Title 5.

Massachusetts Forest Cutting Practices Act Regulations, 304 CMR 11.00

The Forest Cutting Practices Act applies to land devoted to forest growth and for which the harvest exceeds the threshold given in section 11.02 below. The definition of a vernal pool is essentially the same as the definition given in the WPA. Simplified versions of the regulations that apply to vernal pools are given in the Massachusetts Forestry Best Management Practices Manual (1999), and are reproduced below.

11.02: Statement of Jurisdiction

(1) Areas Subject to M.G.L. c. 132, §§ 40 through 46. 304 CMR 11.00 applies to all land devoted to forest growth owned or administered by private persons, corporations or organizations or by any federal, state, county, municipal or other public agency.

(2) Activities Subject to M.G.L. c. 132, §§ 40 through 46. 304 CMR 11.00 applies to any commercial cutting of a volume of products equivalent in volume to more than 25,000 board-feet or 50 cords on any parcel of land at any one time. Approval of a forest cutting plan under M.G.L. c. 132 means that the land is presently and primarily used in raising forest products and shall be maintained as forest land and continue to provide values as listed in 304 CMR 11.01(2).

11.03: Definitions

Vernal Pool means a confined basin depression which, at least in most years, holds water for a minimum of two continuous months during the spring and/or summer, and which is free of adult fish populations. These areas provide essential breeding habitat for a variety of amphibian species such as the wood frog (*Rana sylvatica*) and spotted salamander (*Ambystoma maculatum*) and are important habitat for other wildlife species. A Certified Vernal Pool is an area that has been certified as a vernal pool by the Division of Fisheries and Wildlife.

Massachusetts Forestry Best Management Practices Manual, 1999

“The following Best Management Practices (BMP) are required under Chapter 132, the Forest Cutting Practices Act, for Certified Vernal Pools, and are recommended for vernal pools in general.

Required BMP (for Certified Vernal Pools):

- 1) Filter strip 50 feet in width around a Certified Vernal Pool, measured from its edge along the slope. No more than 50% of the basal area may be cut at any time, and a waiting period of five years must elapse before another cut is made. Exceptions to this standard may be made by the Service Forester, if it is shown in the Forest Cutting Plan that a heavier cut is necessary to protect environmental quality.
- 2) Where slopes within the filter strip are 30% or greater, the filter strip will extend 100 feet from the Certified Vernal Pool, or to the point beyond 50 feet from the pool where a break in topography reduces the slope to less than 30%.
- 3) No equipment may operate in the depression of a Certified Vernal Pool, and no logging equipment may operate in the filter strip except:
 - to reduce environmental damage shown to be necessary in a statement in an approved Forest Cutting Plan,
 - at an approved stream crossing,
 - on a pre-existing logging road,
 - in filter strips greater than 50 feet in width, beyond 50 feet from the water body. In the last case above, equipment can operate beyond 50 feet of the vernal pool, as long as no principal skid road is located there, disturbance of the forest floor is minimized, and any disturbed soil is promptly stabilized.
- 4) Tree tops and slash shall be kept out of the Certified Vernal Pool depression. If an occasional top does land in the pool, leave it only if it falls in during the amphibian breeding season (approximately March 1 through July 1).

Recommended BMP

Avoid making ruts deeper than 6 inches within 200 feet of a vernal pool. These can represent barriers to amphibian migration.”

Summary

Certified vernal pools receive regulatory protection from several state laws, although the protections do not usually extend to equally important upland areas near vernal pools, where certain vernal pool amphibians spend most of their lives. Vernal pools need not be “certified” to be protected under the Massachusetts Wetland Protection Act (WPA), provided that the vernal pool is located in a wetland resource area, and credible evidence of vernal pool habitat (usually amphibian breeding evidence) is presented to the Conservation Commission prior to issuance of an Order of Conditions. Under the WPA, vernal pool habitat includes the pool itself, and up to 100 feet from the edge of the pool, provided that the extended area lies within a wetland resource area (e.g. Bordering Vegetated Wetland, Riverfront Area, Land Subject to Flooding). Conservation Commissions, or the state Department of Environmental Protection, may condition a project as necessary to avoid the alteration of vernal pool habitat. Regulatory protection afforded by the three other Massachusetts Acts applies only to certified vernal pools.

References

1. French, T. Official letter of notification of vernal pool certification, Natural Heritage & Endangered Species Program (NHESP), 2009.
2. Jackson, S. “Using the Wetlands Act to Protect Vernal Pools”, Massachusetts Association of Conservation Commissions (MACC) Newsletter, May/June 2005.
3. Lin, N.; Smith, A. “Protecting Vernal Pools: Using other Regulatory Tools beyond the Wetlands Protection Act”, MACC Newsletter, May/June 2005.
4. “Frequently Asked Questions about Massachusetts Vernal Pool Certification” (author unknown), NHESP, ca. 2003.
5. Burne, M. “Vernal Pools: Regulatory Protection in Massachusetts”, Vernal Pool Association, 2009.

Appendix 9 – Current Agricultural Use and Procedures for Town Conservation Lands

Carlisle currently licenses conservation land to farmers as a means of maintaining open vistas and historical fields at little cost to the town. Carlisle has traditionally not required any monetary payments (beyond a \$1.00 token fee) from the farmers leasing the fields. The “payments” are considered to be “in kind”, associated with the farmer’s maintenance of the fields (including edge clearing where the forests are encroaching) and the addition of soil amendments to maintain soil fertility. In a few cases (i.e., Towle Field and the Benfield Conservation Land) the town pays for mowing to keep the fields open. Other options for keeping the fields open (such as sheep grazing) have occasionally been tried. It may be preferable for some fields to be mowed and not cropped to maintain open habitat for wildlife. A monoculture crop (such as hay or corn) used to keep the vista open is less valuable for wildlife than the mix of grasses and forbs, native and non-native, that currently exists on the mowed fields. The in-kind payments associated with the license of the cranberry bog are quite extensive (too long to detail here) and include maintenance of the dikes and water control structures associated with the bog.

Table 1 provides information on agricultural fields located on Town-owned conservation land. The Town does not have detailed information on the nature and quality of the soils on the parcels listed in Table 1. Generalized maps of soil type (with some indication of agricultural quality) are available from a study by the Natural Resources Conservation Service (NRCS)⁸, and this information is usually included in the Baseline Assessment for a property prepared by the Land Stewardship Committee. In addition, the recent licenses that have been issued for the Town’s agricultural lands have included a requirement for soil quality testing, although compliance has been poor.

Current Procedures for Issuing New Agricultural Licenses

The procedures used for issuing new agricultural licenses in recent years has been in flux, and only in 2008 were all the licenses (excluding the Cranberry Bog) put on the same 3-year cycle. It is expected that the Conservation Commission, with the help of the Conservation Administrator, will review – and revise as necessary – the procedures to be used for the next 3-year cycle which will begin in 2011. Typically, the Conservation Administrator would publish a legal notice regarding available farming licenses in the fall prior to the issuance of new licenses (e.g., the fall of 2010 for the next cycle). The notice directs interested parties to contact the Conservation Administrator who then sends them a package of information including: (a) a cover letter with background information (e.g., on agricultural lands available) and general instructions; (b) a formal Request for Proposals (RFP); and (c) a sample agricultural license agreement. A date is specified for submittal of proposals. There is currently no established procedure for the evaluation of proposals received.

General Rules and Reporting Requirements for Agricultural Licensees

⁸ *Middlesex County Massachusetts Interim Soil Survey Report, 4th Edition, July 1995.

Prepared by the US Department of Agriculture, Natural Resources Conservation Service. Published by the Middlesex Conservation District. Data and maps are also available at <http://websoilsurvey.nrcs.usda.gov>.

The licensee's use of the land requires conformance with the Conservation Commission's (ConsCom's) *Agricultural License Agreement* and the associated rules contained in their *Required Agricultural Practices and Special Restrictions*. The following is a summary of key elements and restrictions in these documents:

ConsCom's *Agricultural License Agreement*

- Term of agricultural license agreement (non-transferable) is for 3 years (ending in Dec. of 3rd year)
- Not a grant for exclusive use
- License fee = \$1.00
- Indemnification of Town (but no insurance requirements)
- Activities subject to review and inspection by Town
- 30-Day termination clause (for either party)
- No change to land without Town approval

ConsCom's *Required Agricultural Practices and Special Restrictions*

1. Town preference for Best Management Practices whenever possible
2. Soil samples to be tested spring of 1st year
3. ConsCom to be informed one week before any pesticide or herbicide use
4. All pesticides must be approved by EPA and State
5. Vegetated filter strip may be required in some circumstances
6. Cover crop required in tilled areas after tilling
7. Maintain the condition of the soil to limit soil erosion
8. Clearing and maintaining of field edges required – we should have standards and enforce this, otherwise will lose roadside vistas (witness trend at south field at Foss Farm).
9. Written report required by December 1st of each year; at that time, tenant and ConsCom will fill out Land Use Planning Form for next year
10. Must allow public use of trails (passive recreational use) outside growing season as may be approved by ConsCom

Table 1. Current or Potential Agricultural Fields on Town-Owned Conservation Land (July 2010)

Parcel	Approx. Arable Acres	Current/Recent Uses	Licensee	License Exp. Date	Comments	Road Frontage	For Profit	Structures****
Benfield Cons. Land	10	No agricultural use	(none)	*	Mowed by J. O'Connor. Access difficult at present.	No	?	
Bisbee Land	6	Hay	G. Fraser	Dec. 2010		Yes	Yes	
Cranberry Bog: a) b)	19	Cranberries – active bog	M. Duffy	June 2015	All 40 acres covered by same 20-year license; 21 ac in renovation.	Yes	Yes	Yes
	21	Cranberries - renovation				Yes	Yes	
Fisk Meadow	3	Corn & hay	M. Duffy	Dec. 2010	Adjoins 3-ac field with CR	Yes	Yes	
Fox Hill – east field - west field	6	Hay	R. Shohet	Dec. 2010		Yes	Yes	
	2	Vegetables, tree nursery	J. Bakewell	Dec. 2010	~ 1/3 farmed organically	No	Yes	Yes
Foss Farm – N field - S field - Garden plots	14	Corn & hay	M. Duffy	Dec. 2010		No	Yes	
	8	Corn & hay				Yes	Yes	
	2	Vegetables & flowers	(the public)	Every Nov.	Community garden plots	No	Some??	Yes
Greenough Land	4	Corn & hay	M. Duffy	Dec. 2010	Adjacent CR lands also used by M. Duffy; access across private land.	No	Yes	
Hutchins	20	Corn & hay	J. Valentine**	Dec. 2010		Yes	Yes	
Robbins	14	Hay	J. Valentine	Dec. 2010		Yes	Yes	
Towle Land (Field)	19	No ag. use; grassland habitat (e.g., bobolinks); nature and passive recreation activities	(none)	*	Mowed by J. O'Connor.***	Yes	?	
Total Arable Acres Total Currently Farmed	144-149 120	Total ConsCom Acres Approximately = 1,100 acres			Percent of Arable ConsCom Land in Agriculture ~ 80 %			

* Contracts for mowing on Benfield and Towle Land are done on an annual basis.

** Portions of the field are used by M. Duffy for feed corn.

*** The locations and timing of mowing are restricted to allow bobolink breeding and nesting.

**** “Yes” indicates structures (infrastructure) are (is) part of the farming operations (e.g., buildings, pumps, irrigation systems, fences, access roads, etc.)

ac = acres

ag. = agricultural

CR = Conservation restriction

Appendix 10

2011 Foss Farm Community Gardens Rules and Plot Application

Applications for community garden plots at the Foss Farm Conservation Land will be accepted from February 11 through March 26th, 2011. Applications received after the published deadline will be considered as first-time requests for garden plots. Send this completed application along with a check for \$10 for each plot (limited to 2 per household) and a self-addressed stamped envelope to: Carlisle Conservation Commission, Carlisle Town Hall, 66 Westford Street, Carlisle, MA 01741. Please make the check payable to the Town of Carlisle.

Plot Assignments – Due to high demand, there is a limit of 2 plots per household. Each plot must be tended primarily by the members of the household assigned to that plot. A household consists of individuals residing at the same street address. It is not acceptable to regularly tend to someone else's plot unless you notify the Garden Manager of extenuating circumstances. Individuals who fail to observe this rule will not be considered for plot assignment the following year.

Plots are assigned according to the following rules of priority:

- (1) Returning gardeners
- (2) New gardeners who have been previously wait-listed
- (3) New gardeners making their first request
- (4) Returning gardeners requesting a second plot
- (5) Returning gardeners requesting plot reassignment
- (6) If there are plots available after all assignments have been made, they will be distributed by lottery to those applicants who have indicated their interest by checking the box on the application form.

If there is a waiting list for plots, new gardeners may be limited to 1 plot per household.

Returning gardeners have the option to skip one gardening season without losing their returning gardener status. A garden map with gardener's names indicating plot assignments will be sent to all gardeners.

Plot Maintenance – All gardeners are expected to maintain their plots regularly and follow good gardening practices. Keep plots weeded and maintain an 18-inch buffer strip to allow access around the sides and rear of your plot. All roadway edges next to the plots need to be kept clear for occasional mowing. Please do not put rocks, bricks, stakes, tools, chairs, etc. in this area or in the buffer strip. Please place all weeds and diseased plants in the compost areas provided. There is no trash service, so gardeners are responsible for taking all trash off site. Please do not remove or relocate the yellow plot boundary stakes.

Spring Planting – Gardening may begin once the ground has been plowed and the plots have been staked. Please do not plant perennials. By June 8, if a plot is not substantially cleared of

weeds and there is no clear evidence of active gardening, the Garden Manager, may at his/her discretion, reassign the plot to someone on the waiting list and the gardener may lose their status as a returning gardener. There will be no refund of the fee. The Garden Manager's discretion will be based on the outcome of efforts to communicate with the gardener. **Please do not plant in unassigned areas.**

Garden Abandonment – By July 1, if a garden has clearly been abandoned (i.e., plants have clearly not been tended to for over a month) the Garden Manager may reassign the plot without a refund of the fee and the gardener may lose their status as a returning gardener. Garden plots that become available due to abandonment or substantial inactivity will be reassigned for the rest of the growing season by first addressing the waiting list and then by lottery among interested existing gardeners.

Fall Cleanup – By October 31, please remove from Foss Farm Community Gardens all non-plant material that might interfere with plowing and/or an agricultural burn. This includes plastic ground cover, tools, stakes, fencing, rocks, bricks, string, cement blocks, etc. Late season crops may remain.

Garden Road and Garden Gate – Plots are accessible by automobile. Please drive slowly on the road to reduce ruts and dust. Please watch for pedestrians and wildlife. To prevent theft and unauthorized entry, if you are the last to leave the gardens, please lock the gate behind you.

Pesticides – Use of herbicides is prohibited. Only insecticides and fungicides listed by the Northeast Organic Farming Association (www.nofamass.org) are permitted. (For list of substances see www.baystateorganic.org/standards.html). For your own protection and the protection of other gardeners, familiarize yourself with proper use methods or ask experienced gardeners for help before applying any remedies.

Well Operation and Etiquette – To operate well pumps, prime the pump first by filling the pitcher opening on top with water from the barrel while pumping the handle. Please refill the barrel for the next person after you have drawn off the water you need. **Please note that the water from these wells is non-potable.**

Pets – Pets in and around the gardens must be kept under strict control to avoid damage to plants. Please be considerate of your fellow gardeners.

2011 FOSS FARM COMMUNITY GARDENS PLOT APPLICATION

NAME: _____

MAILING ADDRESS: _____

NO. OF PLOTS REQUESTED (limit 2 per household): _____

PHONE: _____ E-MAIL: _____

LICENSE PLATE NUMBER(S): _____

Would you like to participate in a lottery for an additional plot? Yes No

Would you like to be invited to join the non-public Yahoo Foss Farm Gardens discussion group?
Yes No

I have read the above rules governing gardening at Foss Farm Community Gardens and agree to abide by them. I understand that failure to comply may result in the loss of assigned plot without refund and the loss of future gardening privileges.

I also agree to hold harmless the Town of Carlisle and/or its employees and volunteers from claims or liability related to any accident and/or injury that may occur as a result of gardening at Foss Farm Community Gardens.

SIGNATURE: _____ DATE _____

For office use only
Date received:
Payment information: