Hilltop Farm

Suffield, Connecticut

Eastern Connecticut Environmental Review Team Report

Eastern Connecticut Resource Conservation and Development Area, Inc.

Hilltop Farm

Suffield, Connecticut

Environmental Review Team Report

Prepared by the
Eastern Connecticut Environmental Review Team
of the Eastern Connecticut
Resource Conservation and Development Area, Inc.

for the
First Selectman
Suffield, Connecticut

August 2002

CT Environmental Review Teams
1066 Saybrook Road, P.O. Box 70
Haddam, CT 06442
(860) 345-3977

Acknowledgments

This report is an outgrowth of a request from the Suffield First Selectman to the Hartford County Soil and Water Conservation District (SWCD). The SWCD referred this request to the Eastern Connecticut Resource Conservation and Development Area (RC&D) Executive Council for their consideration and approval. The request was approved and the measure reviewed by the Eastern Connecticut Environmental Review Team (ERT).

The Eastern Connecticut Environmental Review Team Coordinator, Elaine Sych, would like to thank and gratefully acknowledge the following Team members whose professionalism and expertise were invaluable to the completion of this report.

The field review took place on Wednesday, April 24, 2002.

Nicholas Bellantoni	State Archaeologist Office of State Archaeology (860) 486-5248
Vivian Felton	CT River Project Coordinator USDA - Natural Resources Conservation Service (860) 688-7725
John Guszkowski	Planner Capitol Region Council of Governments (860) 522-2217 Ext.29

Joe Hickey	Planner CT Greenways Council (DEP - Parks & Recreation, Retired) (860) 529-4363
Ruth Klue	District Program Coordinator Hartford County Soil & Water Conser. District (860) 688-7725
Alan Levere	Environmental Analyst III, Wetland Reviewer DEP - Environ. & Geog. Information Center (860) 424-3643
Dawn McKay	Biologist/Environmental Analyst DEP - Environ. & Geog. Information Center (860) 424-3585
Don Mysling	Senior Fisheries Biologist DEP - Inland Fisheries Division Habitat Conservation & Management Program (860) 567-8998
David Poirier	Archaeologist Connecticut State Historical Commission (860) 566-3005
Larry Rousseau	Forester DEP - Western District (860) 485-0226
Laura Saucier*	Resource Assistant DEP - Wildlife Division (860) 675-8130
Julie Victoria*	Wildlife Biologist DEP - Non-Harvested Wildlife Program (860) 642-7239

Judy Wilson	Wildlife Biologist DEP - Sessions Woods WMA (860) 675-8130

*Individuals primarily responsible for the Wildlife Resources section.

I would also like to thank Elaine Sarsynski, first selectman, Phillip Chester, town planner, Mike Stanley, director of economic and community development, Laura Dillman and Janet Banks, Suffield Heritage Committee and Patrick McMahon, Suffield Land Conservancy, for their cooperation and assistance during this environmental review.

Prior to the review day, each Team member received a summary of the proposed project with location and soils maps. During the field review Team members were given additional maps, air photos and information. Some Team members made individual or additional visits to the project site. Following the review, reports from each Team member were submitted to the ERT coordinator for compilation and editing into this final report.

This report represents the Team's findings. It is not meant to compete with private consultants by providing site plans or detailed solutions to development problems. The Team does not recommend what final action should be taken on a proposed project - all final decisions rest with the town. This report identifies the existing resource base and evaluates its significance to potential development, and also suggests considerations that should be of concern to the town. The results of this

Team action are oriented toward the development of better environmental quality and the long term economics of land use.

The Eastern Connecticut RC&D Executive Council hopes you will find this report of value and assistance in developing a management plan for this newly acquired open space and in planning for the adjacent parcels.

If you require additional information please contact:

Elaine Sych, ERT Coordinator
CT ERT Program
P. O. Box 70
Haddam, CT 06438
(860) 345-3977

Table of Contents

List of Figures

Introduction

Introduction

The Suffield First Selectman has requested assistance from the Eastern Connecticut Environmental Review Team in conducting a natural resource inventory and review of the recently town acquired Hilltop Farm.

The town purchased a 76 acre piece of the farm for the purposes of open space preservation, agricultural use, Connecticut River frontage and for its bald eagle nesting area. Two smaller parcels which include five homes, an historic dairy barn and other farm outbuildings will most likely be subdivided and sold. The town has also purchased +41 acres of farmland across the street.

Hilltop Farm is in the extreme northeast section of Suffield, between Mapleton Avenue (Route 159) and the Connecticut River.

Objectives of the ERT Study

The town has requested a natural resource inventory and information and recommendations concerning:

- preserving the bald eagle nesting area on site;
- providing passive recreation use to the citizens;

- providing vehicular access from Mapleton Avenue;
- providing pedestrian access to the Connecticut River;
- providing animal grazing and agricultural use; and
- ideas/recommendations for the two smaller parcels with buildings.

The town wants assistance in planning and implementing management of the open space parcel so that it will be done in a manner sensitive to protecting natural resources on the property. The ERT report will provide a brief natural resource inventory, discussion of potential impacts from various uses, and guidelines and recommendations for the development and protection of the natural resources. Opinions and recommendations of Team members on some aspects of development and management did vary. It will be up to the town to weigh the possibilities and make any final decisions. Team members are available for further consultation as plans develop.

The ERT Process

Through the efforts of the first selectman this environmental review and report was prepared for the Town of Suffield.

This report provides an information base and a series of recommendations and guidelines which cover the topics requested by the commission. Team members were able to review maps, plans and supporting documentation provided by the applicant.

The review process consisted of four phases:

1. Inventory of the site's natural resources;
2. Assessment of these resources;
3. Identification of resource areas and review of plans; and
4. Presentation of education, management and land use guidelines.

The data collection phase involved both literature and field research. The field review was conducted on Wednesday, April 24, 2002. Some Team members made individual and/or additional site visits. The emphasis of the field review was on the exchange of ideas, concerns and recommendations. Being on site allowed Team members to verify information and to identify other resources.

Once Team members had assimilated an adequate data base, they were able to analyze and interpret their findings. Individual Team members then prepared and submitted their reports to the ERT coordinator for compilation into this final ERT report.

Figure 1

⇑
N

Location Map

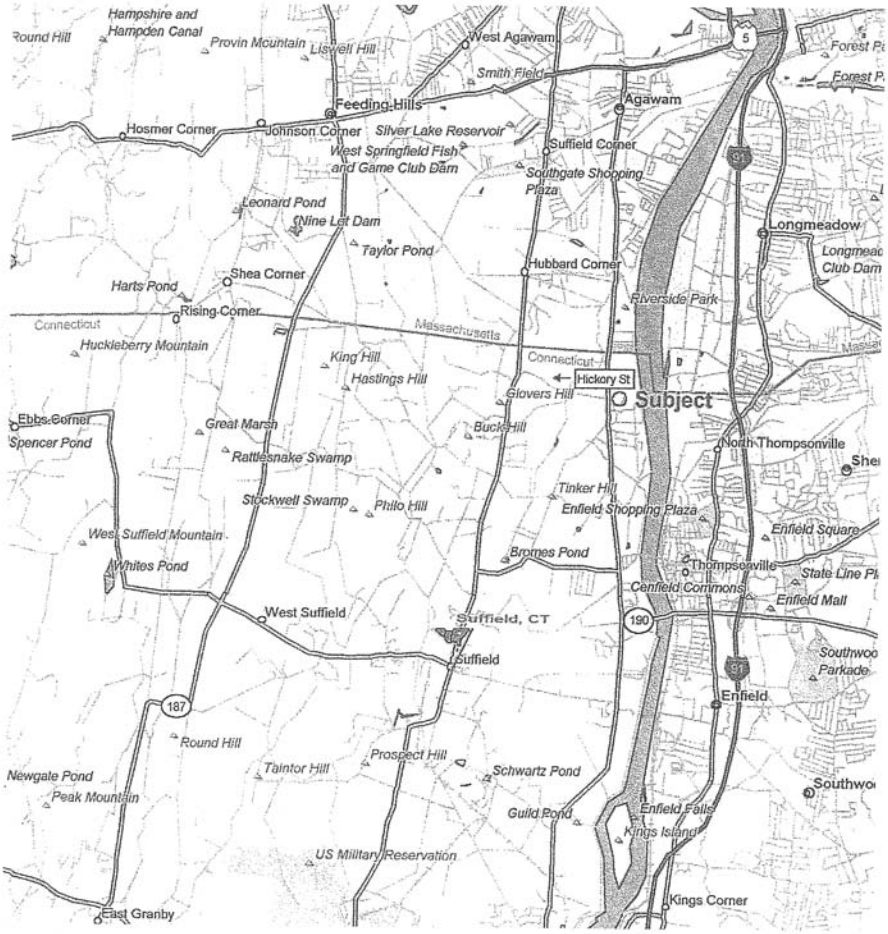


Figure 2

Topographic Map
Scale 1" = 2000'

⇑
N

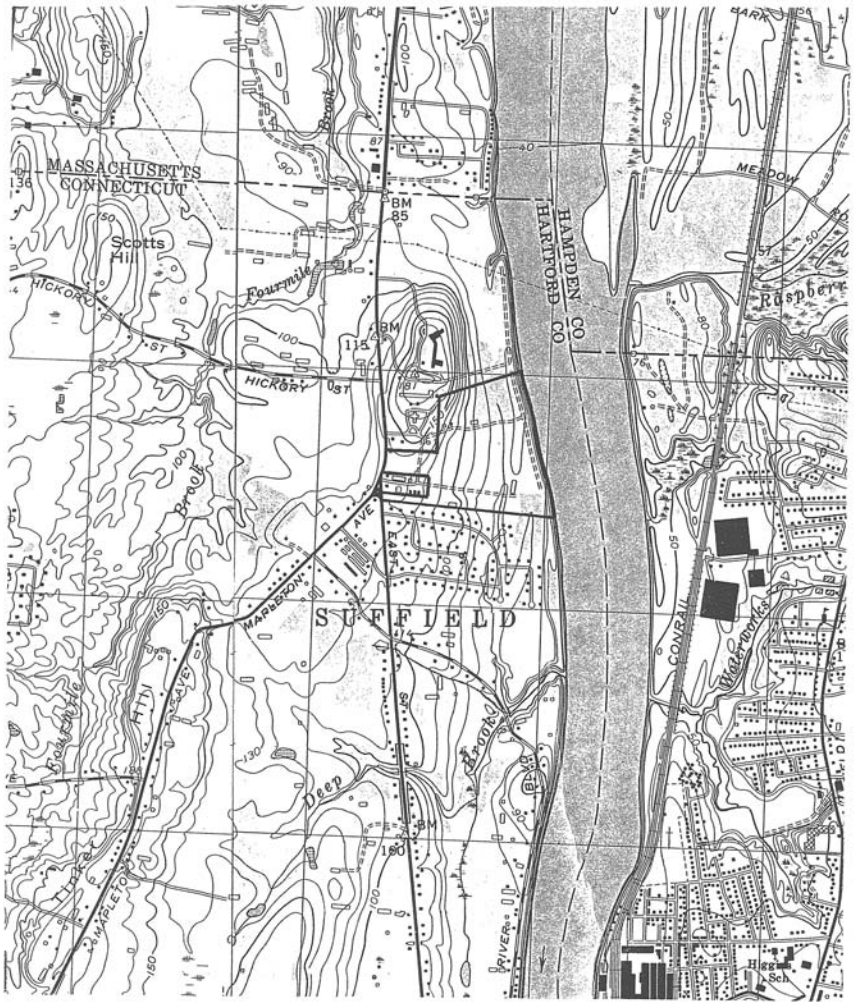
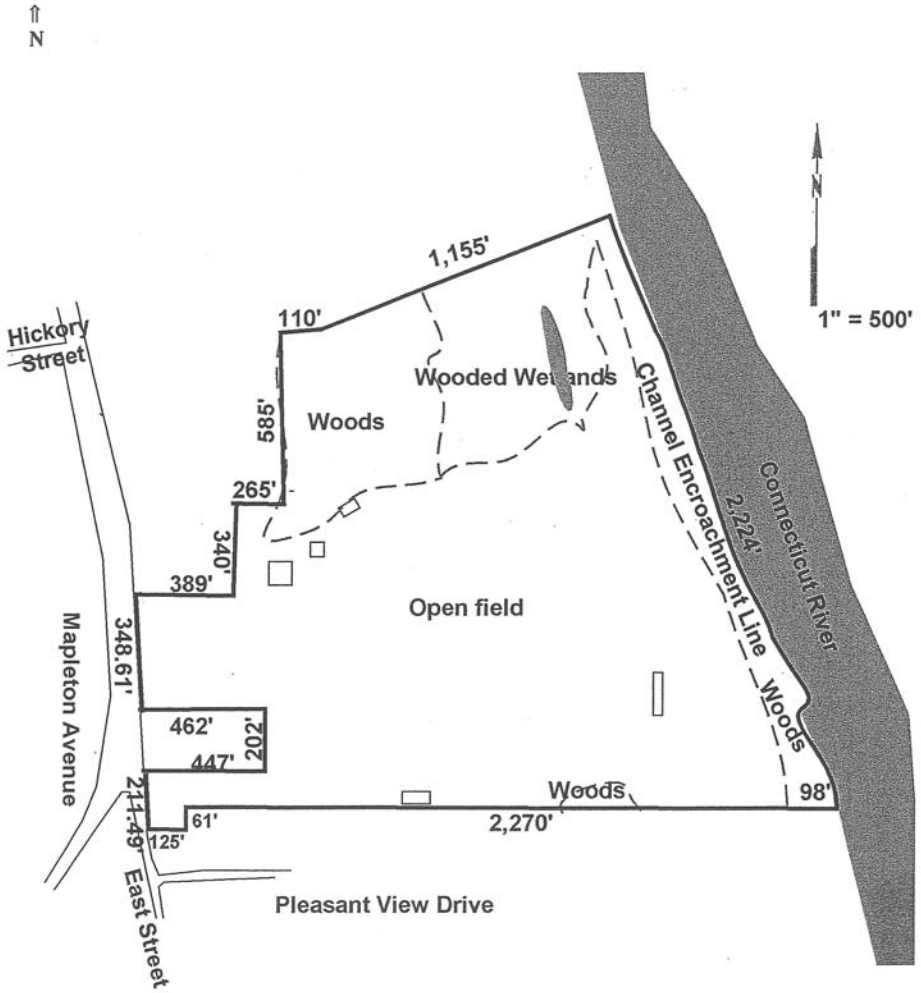


Figure 3.

Subject Plat - Open Space Parcel

Scale 1" = 500'



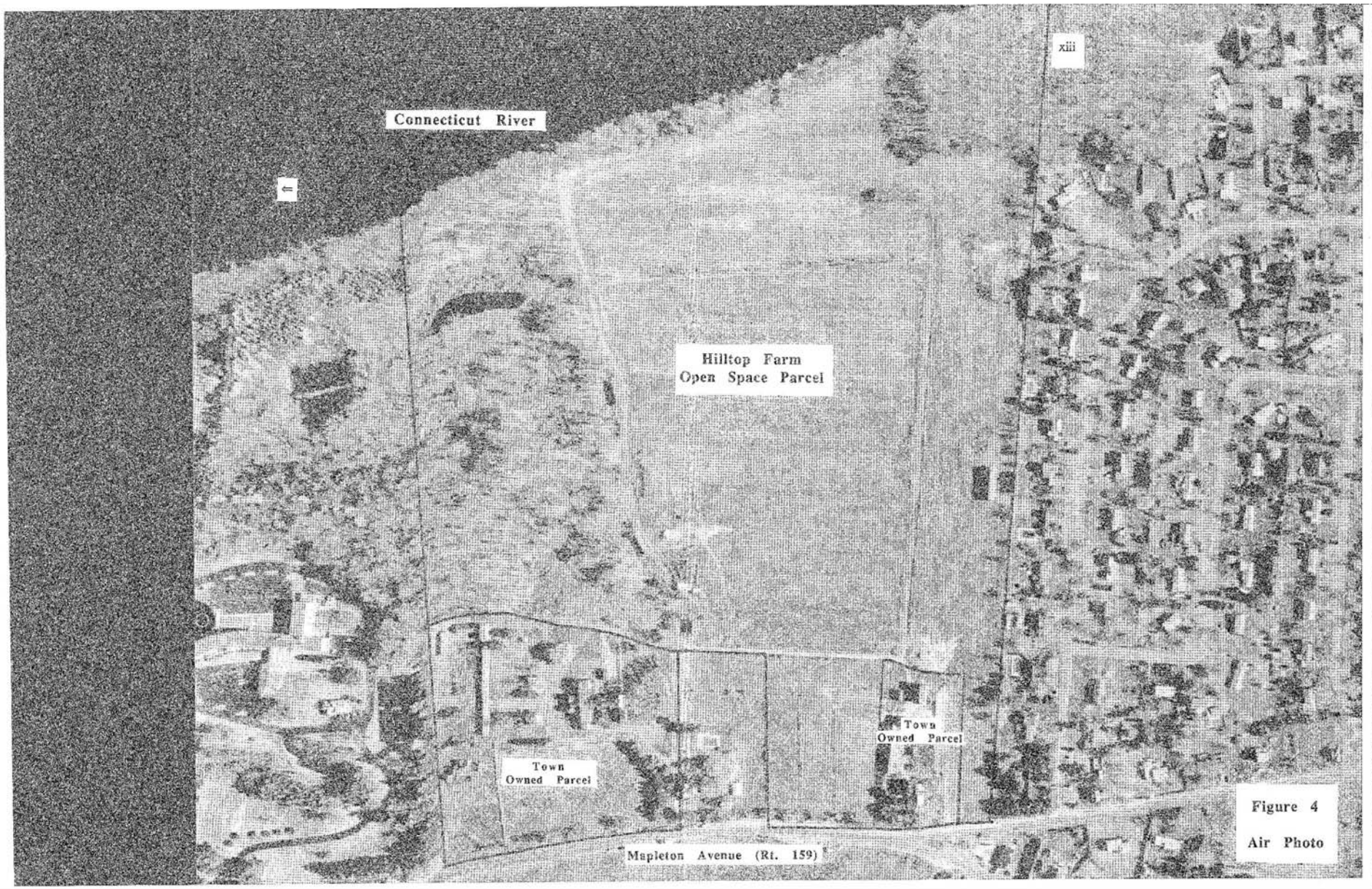


Figure 4

Air Photo

Soils Resources

This section of the report is to assess proposed alternative uses for the land, in light of erosion control, stormwater issues, and agricultural management.

Existing Conditions

Suffield has purchased a 76 acre parcel between Mapleton Avenue and the Connecticut River. This land was a portion of the original 242 acre Hilltop Farm, owned by the Stroh family, which contains a historic white dairy barn, a few homes, and barns, most of which are not on the 76 acre open space parcel. The open space area that now belongs to the town consists of:

1. A small parcel of land with road frontage along Mapleton Avenue, currently used as horse paddocks,
2. A large cleared area on the central part of the property of gently sloping (2-4%, generally from northwest to southeast) land historically used to farm crops,
3. A wooded parcel that comprises about a third of the site, and
4. A relatively narrow well-established vegetative buffer, consisting mainly of trees, on the Connecticut River.

The southern edge of the site abuts a subdivision development built in the 1950-60's. The northern edge abuts a variety of possible civic and/or residential uses, including reuse of the old barn on a drumlin.

Additionally, the town owns farmland to the west across Mapleton Avenue that is not part of the ERT assessment area.

There are a few farm buildings on the study site, most of which seem to be derelict and in disrepair. An unpaved farm road runs east from behind the horse farm building cluster, and ends close to the buffer by the river. Another farm road runs east along the south side of the woods. There is also, in a low area in the eastern part of the property, a long and sparsely vegetated ditch with water, which appears to connect at its northern end with a pond in the woods. It then apparently is piped underground at its southern end, turns east and outlets into the Connecticut River through a 24" concrete pipe. A tile pipe of equal size but higher in elevation is adjacent to the concrete pipe outlet. No water was flowing out of the tile outlet during the site visit. Other pieces of a drainage system were found on-site by the river, exposed and not in use, perhaps rendered dysfunctional by riverbank erosion.

Current observation, in early spring, but in drought conditions, revealed some sheet and rill erosion, but no significant gullies were noted.

A map from 1940 shows drainage structures on the Stroh Farm. There is a large amount of tile drainage throughout the farm. 6" tile runs east adjacent to the farm road, joins with the ditch, culminating in a 24" pipe leading to the river. 8" tile runs east-west, parallel to the old north farm road that borders the woods. Many short drainage laterals from the farm field run into the above-mentioned east-west main lines. The

laterals were most likely installed to drain water from wet areas in the farmed area.

The 1940 map also shows sewer lines from the two clusters of inhabited building areas intersecting the east-west drains. It is unclear whether the sewer drains are still functioning and it is recommended that this be investigated.

Proposed Land Use Alternatives

The Town of Suffield is requesting an inventory and recommendations from the ERT team that would help them determine uses for this open space that would provide passive recreation to its citizens, provide parking for users, and preserve animal grazing and agricultural use. There is no other town-owned public access to the Connecticut River in Suffield. Additionally, the town is considering options for use of the historic barn and lands around it.

A very important consideration in all design planning is preservation of the habitat that has allowed bald eagles to nest in the wooded area.

Soils and Sedimentation/Erosion Control: Construction of Roads

Soils information from the USDA Hartford County Soil Survey, 1958, was used to analyze the site's soil capabilities and limitations. The

information from the soil survey is adequate for general planning but does not take the place of an on-site soils investigation.

Currently the southern unpaved road, beginning behind the buildings, runs through:

RaA, Rainbow silt loam, 0-3%. The soil is moderately well drained fragipan, slow to dry out in spring. Regarding road construction, it is subject to seepage and slides above hardpan.

BrB2, Broadbrook silt loam, 3-8%, eroded, BrC2, Broadbrook silt loam, 8-15%, eroded. The Broadbrook series is a well-drained soil with a very firm fragipan at depths of 2-3 feet. Erosion is a serious problem because the compacted horizon is near the surface. Road construction is subject to seepage and slides above hardpan

BhB, Birchwood fine sandy loam, 3-8%. Birchwood soil is moderately well to somewhat poorly drained fragipan from 2-3 feet. It is subject to seepage and slides above hardpan. Risk of erosion is higher in unprotected areas, but simple practices generally control runoff.

WrA, Wilbraham silt loam, 0-3%. This soil consists of poorly drained fragipan at a depth of about 24 inches.

WcA, Walpole loam, 0-3%. Walpole soil is poorly drained.

AgB, AgA, Agawam very fine sandy loam, 3-8%, and 0-3%. Agawam soils are well drained to somewhat excessively drained on stream terraces. AgB is easily eroded.

It was questioned whether alternative access roads through the square Mapleton Road frontage area would be possible. The soils there are:

RaA: see above

BrB2: see above

PuB, PuC, Poquonock sandy loam, 3-8% and 8-15%. Poquonock soils are well drained over compact pan horizons. Regarding road construction, it is subject to seepage and slides above the hardpan layer (For the town's future reference, most all the soils around the historic barn area are Poquonock.)

The north farm road will not be used for pedestrian access because of its proximity to the woods where the eagles nest.

Recommendations

It appears that maintaining unpaved pedestrian/farm vehicle roads would be most suitable to soil conditions.

- *According to USDA Soil Survey data, the soils are not well-suited to* road construction, and would require an engineered drainage design to address seepage and potential erosion issues. *Note: The Wetland Resources Review section in this ERT report is based on more recent NRCS soils information that is available digitally, rather than the 1958 Soil Survey. For the purposes of evaluating soil capabilities for potential road construction and for agricultural uses, the difference in the data sources are not significant.*
- Additionally, introduction of impervious pavement will create an increase in stormwater runoff that would need to be managed.

Stormwater from roads constructed with impervious materials commonly contains road silts and sand, oil and other petroleum-based contaminants from automobiles.

- Keeping the unpaved road pedestrian-only, except for farm vehicles, will prevent increased compaction of the surface horizon of soils that already have considerable hardpan horizons just 2-3 feet below grade.

Agricultural Practices Pertaining to Sedimentation, Erosion, and Farm Practices

Currently, cornfields are planted with rows running up and down the hillside. Some sheet and rill erosion were observed during the site visit, but there were no severe erosion concerns. Fields are farmed close to the banks of the existing waterway/drainage ditch. There is very little vegetation between the cornfields and the waterway.

It may be of some use to list the soils on site that are farmed, and their agricultural capabilities and limitations, as the town plans to keep the bulk of the land as a working farm.

AgB, AgA, Agawam very fine sandy loam, 3-8%, and 0-3%. This soil warms early in the spring, is easy to work, and responsive to fertility measures. Inadequate moisture means that most crops need irrigation to not be damaged. Simple measures are needed to control runoff and erosion on AgB.

RaA, Rainbow silt loam, 0-3%. Rainbow soils are suited to hay and pasture, and some crops.

BrB2, Broadbrook silt loam, 3-8%, eroded.

BrC2, Broadbrook silt loam, 8-15%, eroded. Broadbrook soils are used mainly for hay, pasture, and tree fruits. Management is needed to maintain/improve organic matter of the soil. It is necessary to be aware of erosion potential and prevent additional loss of Broadbrook soil.

BhB, Birchwood fine sandy loam, 3-8%. With care given to fertility, the soil is suited to hay and pasture. Drainage is needed for other crops.

WrA, Wilbraham silt loam, 0-3%. Undrained areas suited to hay and pasture, while drained areas suited to silage corn, late vegetables and other crops. The compacted horizon makes drainage somewhat difficult. Diversion terraces are needed to divert seepage and runoff from higher areas.

WcA, Walpole loam, 0-3%. Best suited to sod crops. Partly drained areas are suited to silage corn and late vegetables. Because the soil is sandy and gravelly, it is relatively easy to drain.

WuB, Windsor loamy coarse sand, 3-8%. This is a droughty soil, usually wooded or developed. Crops require irrigation and increase of organic matter/fertility. With this, the land is often used for shade tobacco and sweet corn.

Most of these soils are poorly drained, and a number easily or already eroded. A number require increased fertility/organic matter for crop production. The site has contained an extensive drainage system, as

described above, since at least 1940. There are historic records, dated as recently as 1992, that the farm experienced gully erosion. It is unknown whether measures recommended to correct the erosion problem were implemented.

Recommendations

- It is important to be vigilant in inspecting the land for erosion, especially in wet seasons and weather, and to obtain support in controlling and preventing future soil loss.
- A conservation plan is recommended for fields that will remain in farmland. A conservation plan would address erosion control through appropriate cropping practices and other conservation practices. Planting rows of corn on the contour is one conservation practice that would help reduce the risk of erosion. Other practices that could help are cover cropping, and rotating crops from corn to hay. The U.S. Department of Agriculture can provide conservation planning assistance.
- Soil testing is recommended to minimize the use of fertilizers. Testing the soil to determine the available nutrients, and then comparing to the nutrients needed to grow a specific crop can reduce the overapplication of fertilizer. Minimizing the use of fertilizers keeps excess fertilizers from entering the water system. Many of the soils require increased organic matter, and compost would be ideal as a regular soil amendment to fundamentally improve the soils over time. Vegetated soils that are higher in organic matter are less prone to erosion because of healthier vegetative root systems.

- As a number of the soils on the site are more suited to hay fields than to corn and other crops, consideration might be given to return those lands to hay production. Erosion is of minimal concern in well-established hay fields. Hay fields could also be managed to support grassland wildlife.
- A vegetated buffer, a minimum of 35 feet wide, is recommended along the existing watercourse. A mix of grasses, trees, and shrubs will help improve water quality by trapping sediments flowing in from uphill stormwater. The USDA's Conservation Reserve Program* can provide technical and financial assistance for installing buffers.
- If land at the top of the hill will continue to be used for horses, the Town may want to consider requesting a farm management plan to ensure proper manure and pasture management.
- If the town would like to manage portions of the property for wildlife, such as grassland birds, the USDA Wildlife Habitat Incentives Program* may be an alternative for assistance. Introduction of a shrubby area before the tree buffer area next to the river would also, through vegetative diversity, encourage wildlife.

Stormwater Management

Currently a significant portion of the stormwater of the site is piped in a system that empties into the Connecticut River. The drainage system was installed because of wet soils that were difficult to farm. The drainage system allowed the farmers to plant more profitable crops and

to work the land more easily. The drainage outlet that still functions empties very close to the river.

Recommendations

1. Alternatives to managing the existing field drain system:
    - Consider an outlet with an energy dissipator that daylights as far as possible from the river, with the collected storm water running through a vegetated swale on its way to the river.
    - Divert water to a detention pool in the low area east of the ditch, to let sediments and contaminants settle out. Outlet areas could be equipped with filtering/energy dissipation mechanisms.
    - Check to make sure that sewage is not entering the stormwater pipes.
    - Raise the grade of the eroded area near the outlets of the existing pipes, to prevent further concentration of stormwater flow and hence increased erosion.
    -
2. An alternative to maintaining the existing drainage system and repairing the deteriorating outlet is to disable the tiled field drainage system, thereby restoring the natural hydrology at the site. The USDA's Wetland Reserve Program* provides financial and technical assistance for restoring wetlands that have been manipulated for farming. An assessment would first need to be made to determine whether the land has the potential to contribute to the functional values of wetland ecosystems.

Summary

Considering the poor drainage and the erosion potential of the soils, it would seem wise not to tilt the delicate balance of agricultural uses with greatly increased numbers of recreational users. Keeping vehicles away from the interior of the site would keep the number of visitors at a more modest level. Impervious pavements for driving and parking could lead to more polluted runoff and increased drainage problems, and thus are not recommended.

From the point of view of sediment and erosion control and stormwater management, a more rustic, less "improved" open space would be suitable for the site. The river could be accessed by pedestrians on the existing south farm road, for uses such as sitting, bird watching, and fishing.

As an additional recommendation, planting of a tree and shrub barrier adjacent to the north of the farm road would discourage pedestrians from disturbing the crops and the eagles, and would provide shade along the pedestrian access road.

**Available assistance from referenced USDA programs is contingent upon current program rules and funding.*

Enclosures: (1 copy given to requesting agency)

Buffers information packet with brochures

WHIP: Wildlife Habitat Incentives Program, 1999

The Conservation Reserve Program: Innovation in Environmental Improvement

Wetlands Reserve Program Fact Sheet

Restoring America's Wetlands: The Wetlands Reserve Program

Figure 5

⇑ **Soils Map**

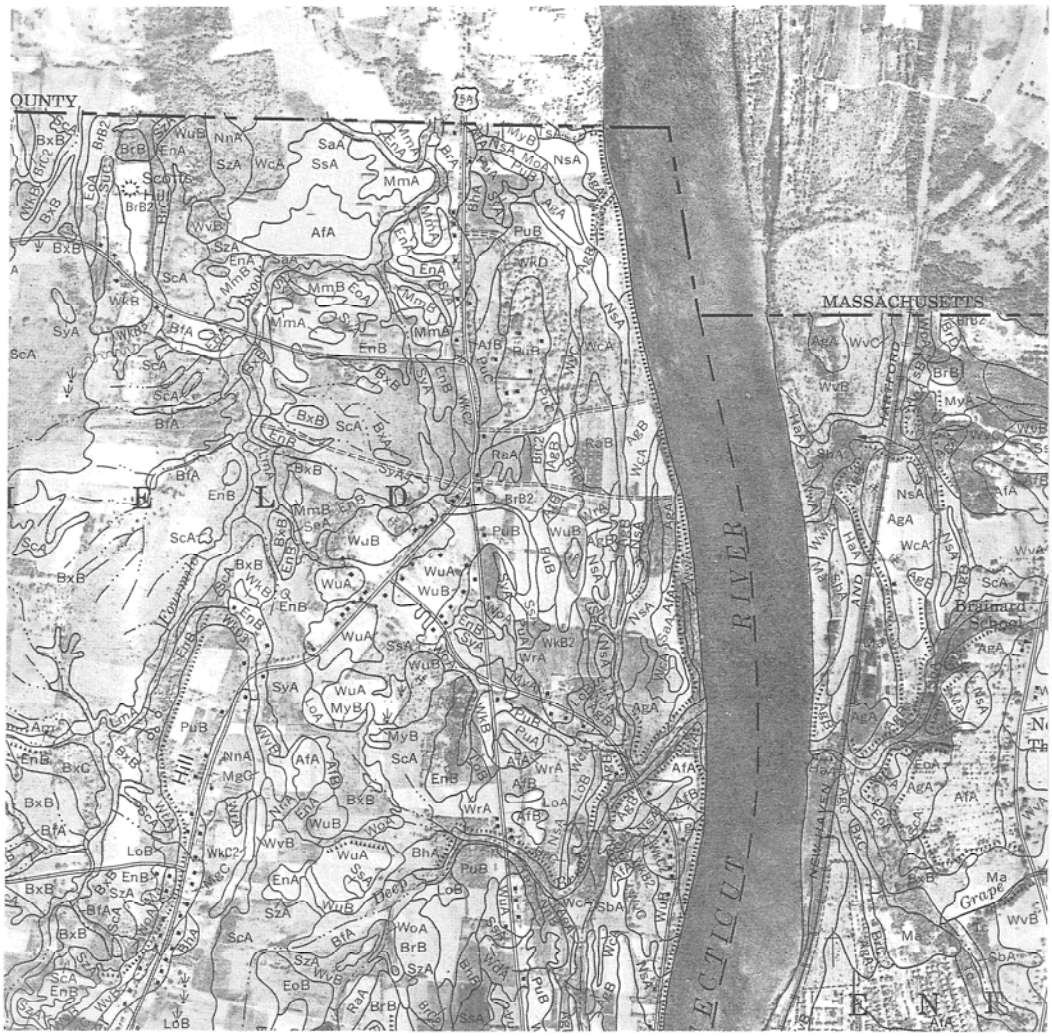


Figure 6

Air Photo

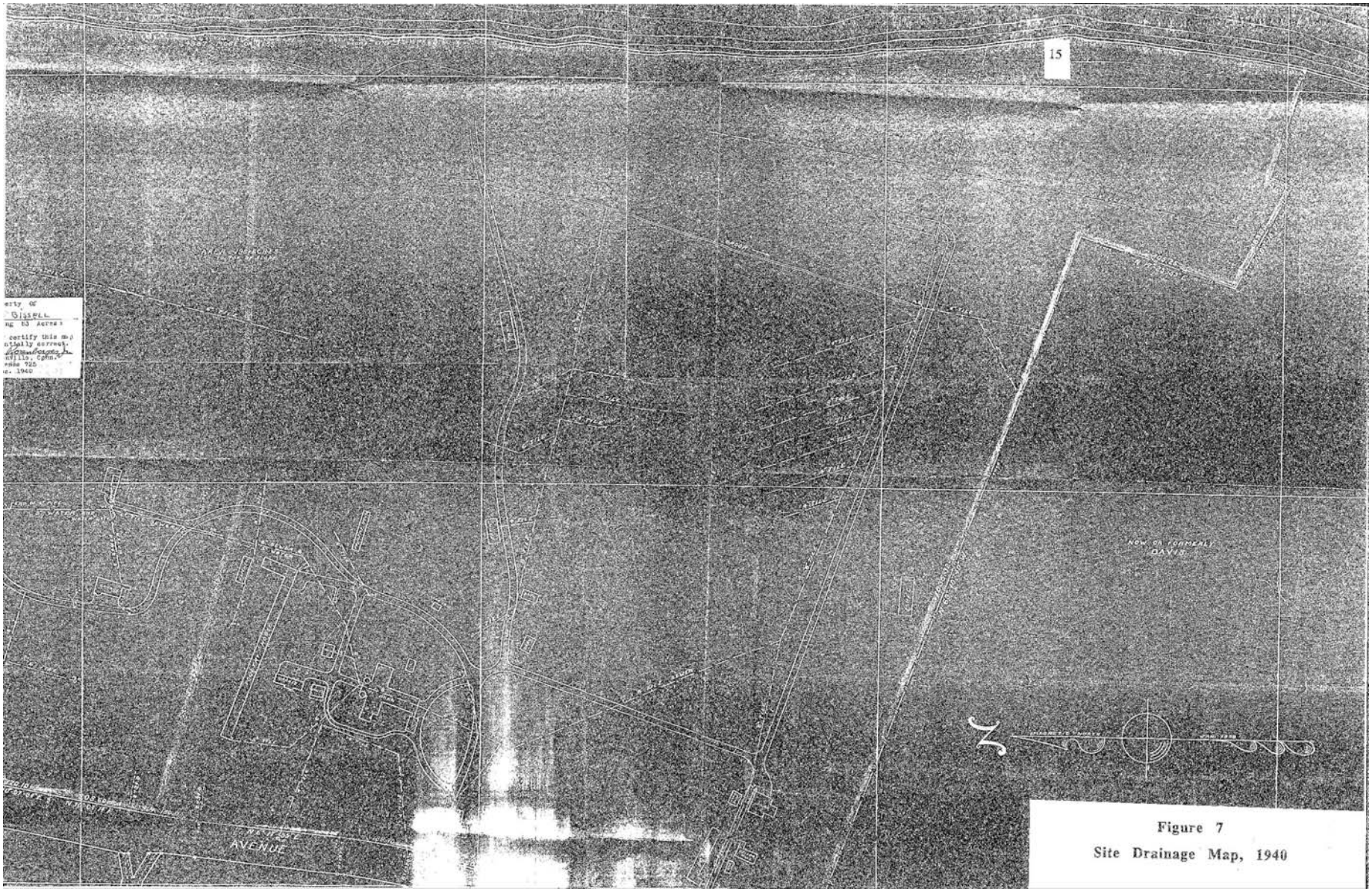


Figure 7
Site Drainage Map, 1940

Wetland Resources

Site overview

This 76 acre town owned property is located in the northeast part of town abutting the Connecticut River. The elevation of the parcel ranges from over 160 feet in the north/northeast part of the parcel to about 39 feet at the shoreline of the Connecticut River. In general, the highest points are to the west by Mapleton Avenue and the lowest points are on the east side by the river. The 90 foot contour interval runs north-south through the center of the parcel. In the 2,350 feet from the road to the river the elevation drops 96 feet. This represents a 4.1 % slope.

The land surface is dominated by agricultural land which makes up about two thirds of the property with the balance, the northern third, being forested. Of this forested third approximately 30-40% is mapped as wetlands. A strip of woodland also parallels the river for its length along the property's eastern border. An additional block of woodland (+2 1/2 acres) occurs in the southeast corner of the property.

What was once a tributary to Deep Brook passes across the parcel paralleling the Connecticut River. This south flowing stream drains the pond in the wooded third of the parcel and is diverted eastward towards the woodlands in the southeast portion of the parcel. The stream now empties directly into the Connecticut River. There is a narrow scrub/shrub riparian strip along this watercourse.

National Wetland Inventory Classification

The U.S. Fish and Wildlife Service has mapped and classified the wetlands and watercourses using a system of codes for all the topographic maps in the state. This parcel occurs on the Springfield South quadrangle, 1:24,000 scale National Wetland Inventory (NWI) maps. Because of the scale of mapping, the inventory classifies wetlands that are the largest or most conclusively observed on the aerial photography.

In this case one wetland has been mapped. This is a ponded area in the woodlands of the northern third of the parcel. This pond is mapped as a Palustrine wetland, with Palustrine being defined as: *of or pertaining to a swamp; marshy.* This wetland was classified as POW, which is palustrine (P), open water (OW). This indicates a body of water less than two meters in depth and roughly a third of an acre in size.

Water Quality

The surface water quality (which includes the wetlands and watercourses) of the parcel have all been mapped by the Department of Environmental Protection as being Class A. Assumptions are made on many of the watercourses over the extent of the map and not every watercourse gets quality tested, but with no known sources of surface water pollutants and this being a headwaters wetland it has been given the water quality classification of A.

The groundwater classification for the parcel is also A except for the woodland along the northern third of the property. However, the entire woodland on the northern one third of the property and continuing north of the parcel has a classification of Groundwater B. The Connecticut DEP's Leachate and Wastewater Discharge (LWWD) mapping for this area shows the source of the lowered ground water quality as an active sewage treatment plant. The location of this facility is on the grounds of the former Saint Alphonsus College property.

(This statewide LWWD mapping had its initial compilation in 1984, 1988, 1991, and 1994 with some updates 1997. If the town desires more information the local health department or the DEP should be able to assist.)

The descriptions of these water quality classifications are:

Class A

Designated uses: potential drinking water supply; fish and wildlife habitat; recreational use; agricultural and industrial supply and other legitimate uses including navigation.

Discharge restricted to: same as allowed in AA (i.e.: Discharge restricted to: discharges from public or private drinking water treatment systems, dredging and dewatering, emergency and clean water discharges.).

Class GA

Designated uses: existing private and potential public or private supplies of water suitable for drinking without treatment; base flow for hydraulically connected surface water bodies.

Discharge restricted to: same as for GAA (i.e.: discharges limited to: treated domestic sewage, certain agricultural wastes, certain water treatment wastewaters.) and discharge from septage treatment facilities subject to stringent treatment and discharge requirements, and other wastes of natural origin that easily biodegrade and present no threat to groundwater.

Class GB

Designated uses: industrial process water and cooling waters; baseflow for hydraulically connected surface water bodies; presumed not suitable for human consumption without treatment. Discharge restricted to: same as for A (Note; same treatment standards apply), certain other biodegradable wastewaters subject to soil attenuation.

Source: *Summary of the Water Quality Standards and Classifications* (1997), Connecticut Department of Environmental Protection, Bureau of Water Management.

Soils

The Natural Resources Conservation Service (NRCS) mapped the soils for the area in the 1990's. This mapping shows wetland soils occurring at two locations. As described above there are wetlands in the wooded

area along the north border which drain into the unnamed stream that flows south through the parcel. Additionally, along the southern border there is an area approximately two acres in size which is mapped as wetland soil but appears to be in agriculture or growing up as meadow in both the 1990 and the 1999 aerial photographs.

Two soil types make up these wetlands. Raypol Silt Loam which dominates the wetlands on the property comprising all the wetlands in the north woods and the stream course that drains it. Wilbraham Silt Loam makes up the two ± acres along the south border of the parcel. Their descriptions are as follows:

Raypol Silt Loam - The Raypol series consists of very deep, poorly drained soils formed in loamy over sandy and gravelly outwash. They are nearly level to gently sloping soils in shallow drainageways and low-lying positions on terraces and plains. Slope ranges from 0 to 5 percent. Surface runoff is slow. The soils have a water table at or near the surface much of the year. Most areas are wooded. Cleared areas are used for hay and pasture. Drained areas are used for silage corn, hay or vegetables. Common trees are red maple, white oak, white ash, aspen, elm, white pine and hemlock.

Wilbraham Silt Loam - This series consists of poorly drained loamy soils formed in subglacial till with slow surface runoff. They are nearly level to gently sloping soils in drainageways and low-lying positions of till hills. Slope ranges from 0 to 8 percent. The soils are very deep to bedrock. The water table is at or near the surface much of the year.

Most areas are wooded. Cleared areas are used for hay or pasture and, if drained, are used for cultivated crops. Common trees are red maple, elm, white ash, pin oak, gray birch, and red cedar.

(These two soil descriptions are modified from: Soil Survey Division, Natural Resources Conservation Service, United States Department of Agriculture. Official Soil Series Descriptions. Available URL: "http://www.statlab.iastate.edu/soils/osd/".)

The wooded third of the property was not available for inspection because of the nesting eagles on the site. Field visits to these wooded wetlands can take place only after the young birds fledge towards the end of June. However, the stream that drains the pond had no such restriction.

This unnamed stream passes under the north perimeter road through a twelve inch concrete pipe and flows about 1,000 feet south a few feet below grade. Its straight line flow path indicates it was most likely channelized at some time in the past. Just above the south perimeter road it passes underground and is apparently diverted/directed east to the Connecticut River along the north edge of the southeast wood lot. The stream averages about 30 inches in width and was flowing about two inches deep over a leaf covered bottom on the day of the ERT field walk. Its banks are stable and grassy. Water striders skimmed over the surface and a few frogs could be heard jumping into the water.

A variety of wetland species were noted within its 1,000 visible feet. These include Duckweed *(Lemna sp.)*, and Horse tail *(Equisetum sp.)*, Touch-me-not *(Impatiens capensis)*, Sensitive fern *(Onoclea sensibilis)*, and some emergent grasses.

The land abutting the stream course is generally grassy nearly to the stream bank although in some places the narrow riparian strip includes Milkweed and some invasives shrubs such as Japanese barberry and Multiflora rose - which was quite heavy on the west side of the stream towards the north. Much of the west side is lined with Staghorn sumac, while the southern half of the east side is lined with cottonwood trees.

Comments

Riparian Buffers:

A buffer strip should be added along both sides of the stream course permitting the riparian area to thrive. The wetland buffer of 50 feet that the town makes use of should be applied to this waterway as well. Wetland buffers are important because they have the ability to filter out unwanted materials from the wetlands. Buffers act as final sediment filters which are especially valuable while the land surface is being disturbed (i.e.: plowed). They also protect wetlands from pesticide and fertilizer runoff from agricultural applications.

In addition, this buffer will provide excellent wildlife cover and will likely serve to keep the temperature of the stream low due to the effects of increased shade over time.

Additional information about buffers, their values and how to implement them can be found at the following Connecticut River Joint Commissions Web site: http://www.crjc.org/riparianbuffers.htm.

Forested Wetlands:

The wetlands in the north part of the property seem to be protected under the general umbrella of avoiding the nesting bald eagles' sensitive area. However, in the event that the eagles cease nesting here, or during the off season (July 1 through mid February), wetland buffers should be maintained and protected as other wetlands would be on other parcels in town.

Other Wetland Soils:

A decision will have to be made about the area mapped as wetland soil (Wilbraham Silt Loam) along the parcel's south border. The town could engage a soil scientist to delineate the wetland soil boundary and then allow the area to vegetate itself with natural hydrophytic vegetation; or the decision may be made to leave this area in agriculture. Either way this should be designated as wetland soils on the final map of the property.

Directly in line with the channelized stream, below the south perimeter road there is another concentration of wetland soil. This appears to have been part of the south flowing stream course which is now diverted. This is mapped as Raypol Silt Loam and currently exhibits wetland characteristics. It was highly organic underfoot and has an area of

cattails *(Typha* sp.). It is currently shown as a wet area on the map the town provided the team members and will hopefully remain so in the future.

Invasive species watch:

Any land that will be set aside for wetland or riparian buffers will be prime targets for invasive species. Multi flora rose is gaining a foothold along the northern half of the stream's west side. Perhaps a local garden club or "Friends of Hilltop Farm" can be engaged to eliminate these pioneer invasive species until natural vegetation gains an advantage.

The channelized stream:

The watercourse that flows from the pond under the north perimeter road has obviously been channelized. A review of aerial photographs of the farm from 1934 indicate that even as of that date the channelization work had been completed. As mentioned above it is likely that the stream is diverted underground to the east just above the south perimeter road. One of the options the town may want to consider is allowing the stream to reestablish itself in what would likely be a more meandering pattern across the landscape; ultimately working with the proper agencies to deliver the water appropriately to the Connecticut River. Currently, there is undercut/or headwall erosion at the end of the discharge pipe along the river's edge.

Roads:

When the ERT Team left the farm there was no firm decision regarding the road network that could bring people to the river. Certainly an

improved dirt road would be better suited to the area than a hard surfaced road; possibly a single lane with occasional pullouts. The town will have to decide if it needs to provide vehicular access to the Connecticut River or if it can create a parking area in the vicinity of the barns and allow only foot traffic to make use of what are now dirt roads to gain access to the river.

The Natural Diversity Data Base

The Natural Diversity Data Base maps and files regarding the project area have been reviewed. According to our information, there are Federal Threatened and State Endangered Bald Eagles *(Haliaeetus leucocephalus)* that occur in the vicinity of this project.

Natural Diversity Data Base information includes all information regarding critical biological resources available to us at the time of the request. This information is a compilation of data collected over the years by the Natural Resources Center's Geological and Natural History Survey and cooperating units of DEP, private conservation groups and the scientific community. This information is not necessarily the result of comprehensive or site-specific field investigations. Consultations with the Data Base should not be substitutes for on-site surveys required for environmental assessments. Current research projects and new contributors continue to identify additional populations of species and locations of habitats of concern, as well as, enhance existing data. Such new information is incorporated into the Data Base as it becomes available.

Also be advised that this is a preliminary review and not a final determination. A more detailed review may be conducted as part of any subsequent environmental permit applications submitted to DEP for the proposed site.

Wildlife Resources

Introduction

A site visit was conducted on April 24, 2002 to evaluate existing wildlife habitats on the 76-acre parcel for open space preservation. Within the literature provided to Team members, agricultural preservation is to be the number one priority of acquiring this property. Preserving nesting habitat for bald eagles is also a priority.

Existing Wildlife Habitats and Use

The 76-acre parcel is dominated by agricultural land, but also contains a variety of habitat types including mixed hardwood forest, open field, old field and riparian type habitat. The variety of habitat types provides wildlife with a diverse mix of food, water, and cover. The parcel borders the Connecticut River to the east, agricultural land to the west, forest habitat to the north, and a suburban housing complex to the south. Species observed/heard during site visit are marked with an asterisk (*).

Wildlife habitat is said to be the complex of vegetative and physical characteristics that provide for all the requirements of wildlife, that is food, shelter, resting, nesting and escape cover, water and space. Generally, the greater the habitat diversity and degree of interspersion

of various habitat types, the greater the variety of wildlife there will be using an area. Conversely, while there may be fewer wildlife species, large unbroken expanses of one habitat type provide important habitat for many species of wildlife including species that avoid edges. Still other species require shrub lands or large expanses of grasslands to produce viable populations. There are many factors to consider when determining habitat use and quality of an area for different species, including habitat types, size of habitat types and their quality, overall size of the study area, location, degree of isolation, diversity, and juxtaposition with other neighboring habitat types, etc.

This area, while small, provides important wildlife habitat due to its location along the Connecticut River and the large amount of agricultural land that could be managed to maximize wildlife usage.

Hardwood Forest Habitat

The forested part of the property constitutes less than half of the acreage of the parcel, but is still valuable for some birds and mammals that can use small blocks. Hardwood forest provides an abundance of food in the form of mast; berries, buds, insects, and catkins. Cover value for wildlife is greatly enhanced by the presence of snags (dead standing trees), cavity trees and large diameter den trees. Wildlife likely using the mature hardwood forest include scarlet tanager, ovenbird, white-breasted nuthatch, black-capped chickadee, black and white warbler, eastern wood-peewee, hairy and downy woodpecker, pileated woodpecker, American redstart, barred owl, broad-winged hawk, red-

backed salamander, and black rat snake. Mast produced by the various oak species provides excellent forage for a variety of animals such as white-tailed deer*, gray squirrel, wild turkey, white-footed mouse and eastern chipmunk.

The bald eagle nest is located within the forested area of the site. Bald eagle nesting habitat is forested areas adjacent to open water such as lakes, rivers and the seacoast. They use these open water areas to fish, which is the major component of their diet. Bald eagles declined throughout the lower 48 states due to human disturbance at nest sites, loss of waterside habitat due to human occupation, loss of nesting trees, and pesticide contamination.

The bald eagle is a state endangered and federally threatened species. Under federal law, the protected status of this species prohibits a number of activities that would be detrimental to the nesting pair including taking, harming or harassing of the birds. "Take" is defined in the federal Endangered Species Act as harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting listed wildlife species; attempting to engage in such conduct; or soliciting or causing such acts to be committed. "Harm" is defined as significantly impairing essential behavioral patterns including breeding, feeding, or sheltering. "Harass" is defined as an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavior patterns which include but are not limited to, breeding, feeding, or sheltering

(personal communication, Julia Victoria, Non-harvested Wildlife Biologist, CT DEP Wildlife Division).

Hilltop Farm has one of the few active bald eagle nests in Connecticut. The bald eagle pair at this site produced chicks in 1997, 1998, 2000 and they are active this nesting season.

Connecticut River and Riparian Habitat

This parcel lies adjacent to the Connecticut River. Connecticut's largest river provides important habitat for various birds, reptiles, amphibians and mammals. The river is known to be a major migration/stopover corridor. These key landscape features are used by birds to navigate and they provide essential food and cover for birds to take advantage of when they stop to rest and refuel. Rivers and the riparian habitat found along the edge can also provide important travel corridors for small and large mammals.

Riparian habitat, or riparian zones, are the greenway of trees, shrubs and herbaceous plants that follows the edge of streams, rivers, lakes and ponds. It provides habitat for many aquatic-based organisms such as frogs, salamanders, toads, ducks, herons, beaver*, muskrat, otter*, and mink. The greater the vegetative diversity along the edges of watercourses, the greater it's value to wildlife in general. This zone of vegetation provides valuable cover, nesting sites, roosting sites and abundant food in many cases, for wildlife. The vegetation found in this habitat is tolerant to periodic flooding and its presence causes

floodwater to slow down and allows the soil to absorb the excess water. This zone of vegetation along a stream or river is often the only remaining contiguous vegetation within a developed area, especially in a densely populated state like Connecticut. It may continue for miles through cities, suburbs and farmland, providing an important travel corridor for wildlife and connecting one habitat to another.

Inspection of aerial photos shows that the riparian habitat along the Connecticut River is approximately 150 wide, between the river and the agricultural field. It is much narrower here at Hilltop Farm than the neighboring properties to the north and south. Generally, the wider the riparian buffer and the more diverse the vegetation, the more valuable it will be for wildlife. If the riparian buffer were to be increased, this area of land would be of much greater value to wildlife, especially migrating birds.

Active and Inactive Agricultural Land

Early successional stage habitats, like hay fields, pasture, grasslands (large open grass areas not used for active agriculture typically), old fields and shrublands are the fastest declining habitat types in Connecticut and throughout the Northeast. These habitats have declined due to succession, interruption of natural processes (like fire), development of these areas and a decline in agriculture. What agricultural land that is left is usually intensively used and often does not provided the necessary habitat. A variety of wildlife, both common and uncommon species depend upon these habitats.

• Cropland

The agricultural field is approximately 40 acres. At the time of the site visit, the field was unplanted with only corn stubble left from the previous growing season. The fields have been planted for the past two years with corn. It was also mentioned that the fields have also been used in the past for a hay crop.

While cropland, like cornfields, can provide food, cover and foraging areas for wildlife (often at the expense of farmers) it is generally not as valuable for wildlife as pasture and hayfields. This is because the fields are generally planted to a monoculture, which limits the food and cover value for many species of wildlife. Often, such crops as corn are highly attractive to common species of wildlife like crows, blackbirds, deer and turkey and in trying to utilize these food sources they often damage the crop under production. Once the crop has been harvested there is little cover value left behind in corn stubble, although the waste corn often found on the ground provides food in the fall for birds and mammals.

Wildlife using cropland habitats and their associated edges include white-tailed deer, woodchuck, red fox, coyote, cottontail rabbit, skunk, meadow vole, eastern bluebird, American goldfinch*, field sparrow, mockingbird, flycatchers, American robin, American kestrel* and red tailed hawk*.

• **Pasture**

Hilltop Farm has a small grazed area that, at the time of the site visit had horses on it. While adding to the overall habitat diversity of the site, due to the small size of the pasture, it will have limited use by wildlife. Pastures usually have areas of weedy and shrubby growth around the rock outcroppings, mixed with areas of short grazed grass and taller herbaceous growth not preferred by livestock. These provide small areas of cover for small mammals and foraging and perching spots for birds. Predators like fox and coyote take advantage of these weedy areas to hunt for the abundant small mammal populations found there.

• **Old Fields**

Old fields are former agricultural fields that were used for pasture or hay land that are no longer being farmed and are characterized by a mix of grasses, forbs or herbaceous plants and often invading tree saplings and shrubs. Old field areas are in many ways similar to pasture, but typically without the areas of very short grass grazed down by livestock. Some old fields are dominated primarily by tall grasses, herbaceous plants and wildflowers, others have a much higher proportion of invading trees and shrubs. The preserve contains a significant amount of old field type habitat in various stages of succession.

The variety of vegetation provides a high degree of structural diversity for wildlife to find food, cover and nesting sites in. The variety of food sources are provided by grasses and herbs in the

form of seeds and plants for browsing and berries and buds for use by various birds and mammals. These areas make excellent areas for small mammals, which in turn attract both, avian and mammalian predators. As with pastures, these areas produce large amounts of insects during the spring and summer months, which are sought after by birds, reptiles and amphibians. Wildlife likely to use this habitat includes wild turkeys, coyotes, red fox, eastern bluebird, rose breasted grosbeak, cottontail rabbits, red-tailed hawk*, eastern kingbird, American kestrel*, eastern screech owl, and indigo bunting.

It must be noted that inactive agricultural areas will naturally revert back to mature forestland in the absence of any type of disturbance, through a process called succession. Man has greatly altered the natural disturbance patterns such as burning, flooding and, beaver activity that worked to create these types of open habitats. Our agricultural lands, both active and inactive now provide much of the habitat for species that have evolved to utilize these habitat types. Man must now manage these lands if they are going to continue to provide this important habitat type in the absence of natural factors. These areas must be mowed and/or herbicided in order to be maintained.

Recommendations for Maintaining and Enhancing Wildlife Habitat

Active and Inactive Agricultural Land

- **Replant the field to warm or cool season grasses.**

A group of birds, collectively known as grassland specialists, because of their dependence on open grassland and/or hay and habitat type, have showed drastic declines in their populations in recent years. While many people are concerned with the decline of Neotropical migrants which use large forested tracts, the documented declines for populations of many grassland birds in Connecticut and throughout the northeast are far greater. What agricultural land that is left is being farmed more intensively than in years past. Where fields were once left fallow to rotate crops, they are now used year after year with the application of fertilizers. Hay fields that were mowed only once annually are now mowed several times per year typically starting in late May or early June. Many of these grassland specialist birds begin nesting in late May and may not complete nesting and fledgling young until the end of July, thus multiple cuts of hay may destroy nesting attempts made by these birds. There are many state-listed species of wildlife that are dependent on grassland type habitat in Connecticut.

If the town wants to maximize the use of this area for wildlife, especially grassland species, these fields could be replanted to warm season grasses. Warm season grasses, structurally, provide better

nesting and cover habitat, but grassland species will also use cool season grasses. Based on the current size of the field (approximately 40 acres), if planted to warm or cool season grasses it could provide the type of habitat required by some of these grassland specialists. A grassland specialist like the bobolink, (Jones and Vickery 1997) could be expected to utilize these sites for foraging and nesting along with other field-associated species like the kestrel*, kingbird and bluebird.

The agricultural practice of taking multiple cuttings of hay per growing season does not allow adequate time for grassland birds to nest and fledge young. Ideally, in order to allow time for these birds to nest, mowing should be delayed until July 15th with August 1st being the preferred date. If this is not a possibility then leave a section of field fallow. In addition to requiring an adequate time window in which to complete the nesting cycle, various grassland birds have specific habitat size requirements. For example, bobolinks, which are the least habitat patch size specific, still need a minimum of 5 acres before they will even attempt to use an area for nesting. Savannah sparrows (a state listed species in Connecticut which has only been documented in a small number of areas in the state) has a minimum grassland habitat size of 20 to 40 acres. In general, these grassland birds require large fields - the larger the better - of hay or grasses to nest and feed in. Beyond size requirements, they all vary in the type and structure of field habitat that they require.

While some of the grassland specialists may not be able to successfully nest and fledge young if the haying schedule is set for early cuts, the

hayfield would still provide foraging habitat for birds that may be nesting nearby. Birds moving through on migration could also be expected to utilize these areas for stop over habitat. These fields could offer excellent nest sites for some of the grassland specialists, if the size of the field is large enough and if adequate time for the nesting period was ensured.

Riparian Habitat/Buffer

• **Maintaining/ enhancing riparian buffer.** Currently the riparian buffer along the agricultural field is approximately 150 feet. The minimum recommended (DEP Fisheries Division) width of a riparian buffer is 100 feet. In general, the wider the buffer and the more diverse the vegetation/structure the buffer has, the more valuable it is for wildlife.

Increasing the width of the current buffer by planting a strip of shrubs and grass or just grass would be a good habitat improvement. Under the United States Departments of Agriculture's Farm Bill Conservation Reserve Program (CRP) several cost share programs are available that could be increase the riparian buffer and thus improve the wildlife habitat. Under these programs, landowners who take agricultural land out of production and put it into "reserve" so that it provides a range of environmental benefits including soil conservation, water pollution reduction and wildlife habitat, can receive funding to cost share project implementation. They also receive a yearly rental payment for the land taken out of production for the life of the contract. For more information

on this program, contact the NRCS office in Windsor. The Wildlife Division can provide technical assistance on what species to plant, how to establish the stand and can provide a specialized seeder needed to plant the warm season grasses.

Maintain Old Fields

To maintain old field habitat, it must be managed. Managing the habitat by mowing, herbiciding or selectively cutting out larger trees will keep the area open and attractive to the species that currently use it.

Maintain Pasture

The amount of pastureland in the Northeast has decreased by approximately 70% since the 1 950's (Wildlife Management Institute 2000). Farm abandonment (and subsequent reforestation) along with land-use changes with remaining agricultural land, (conversion to crops or development) have caused pastureland to be an uncommon habitat type. Grazed areas can provide a patchy distribution of grass heights and structure, so important for species like killdeer and small mammals.

Specific Management Recommendations to Protect the Nesting Eagle Pair

The following recommendations to the Town of Suffield are provided by Julie Victoria, Non harvested Wildlife Biologist, Connecticut Department of Environmental Protection, Wildlife Division.

1. Designate in perpetuity the area under all three eagle nests a setback distance extending out in a 600 foot radius as "Bald Eagle Habitat". Keep this area closed to all activity.
2. On the hillside near the existing barn, where there is a residence that infringes into the 600 foot setback area, plant either large evergreens or construct a fence to provide a visual barrier to the Bald Eagle Habitat.
3. Any public access to the river should be kept as far away from the bald eagle habitat as possible. Preferably public access should be along the dirt road that parallels Pleasant View Drive.

Conclusion

The protection of this property from development is going to protect the existing wildlife habitats and various wildlife species utilizing them. Instituting the wildlife habitat recommendations including modifying haying dates, maintaining old fields by mowing and increasing the riparian buffer would make the property even more valuable for wildlife. The resources available to the town (manpower, time, money, equipment) to do this obviously will strongly dictate how much can be done for wildlife. Use of the Conservation Reserve Program (USDA), entering into a lease with a farmer to keep the land in agricultural production and cooperatively working with lands trusts to manage larger acreage's are just some of the tools available for the town to better manage the property for wildlife.

The presence of the eagle nests on this property makes it a truly unique site and an outstanding resource to the people of Connecticut. All feasible efforts should be made to carry out the specific recommendations contained in this report to limit disturbance to the nest in order to ensure that nesting efforts by this federal and state protected bird continues.

The opportunity to conserve a piece of riverfront property is an increasingly rare opportunity and if these habitats were more specifically managed with wildlife as a priority, the ability of these areas to provide for the needs of many declining species now and into the future could be greatly enhanced.

Literature Cited

Jones, A.L. and P.D. Vickery. 1997. Conserving grassland birds; Managing agricultural land including hayfields, crop fields, and pasture for grassland birds. Massachusetts Audubon Society, Lincoln, MA. 18pp. (Copy included in the appendix)

Wildlife Management Institute Report. 2000. How much is enough for 2002? WMI Publications, Washington D.C. 36 pp.

Forest Resources

The Hilltop Farm Town Owned Land ERT covers a 76-acre parcel of which 19 acres is forested. A forest reconnaissance was made on the wooded portions. This process entails laying out the boundaries of the property on a recent aerial photo, dividing the forest cover into stands. visiting each stand and noting the forest vegetation that occurs there. Along with the vegetation, other physical characteristics of the property such as aspect, slope, terrain, drainage, accessibility from roads, limits to the operability of equipment, and evidence of past management activity are noted.

Forest Cover Description

The forest cover of the property can be divided into three stands.

Stand One is a four-acre mixed hardwood sawtimber stand located in the southeast corner of the property. The stand is bounded by the Connecticut River to the east, private property to the south, agricultural fields to the west and northwest, and Stand Two to the north. The stand's main canopy contains sawtimber sized stocking of red oak, black oak, red maple, black birch, black cherry, and white oak. The predominant species are red oak and black oak. The mid canopy tree species are black gum, beech, black cherry, sugar maple, red maple, and hemlock. Shrub species present are witch hazel and highbush blueberry. The understory layer contains hemlock

seedlings and shrub species of maple-leafed viburnum and mountain laurel. Vine growth present is poison ivy. There are numerous trees with cavities in the main canopy.

The stand's terrain is predominantly level with moderate slope along the eastern edge. The surface is smooth and stone free. The aspect of the stand is easterly. The stand's operability is unlimited. There is an existing access road leading from Mapleton Avenue. There was no evidence of past management activity h the stand.

Stand Two is a two acre mixed hardwood pole/sawtimber stand located in the east along the bank of the Connecticut River. The stand is bounded by agricultural fields in the west, Stand One in the south, and Stand Three in the North. The stand's main canopy contains pole and sawtimber sized stocking of white birch. red maple, beech, black oak, white oak, black cherry, black gum, sassafras, American elm, and boxelder. The mid-canopy contains dogwood and shrubs such as staghorn sumac, multiflora rose, and autumn olive. Vine growth present is oriental bittersweet, wild grape, and poison ivy.

The stand's terrain is moderately to steeply sloping to the east. The surface of the stand is smooth. The stand's operability is restricted due to slope and proximity to the river. There is an existing access road along the field edge and leading from Mapleton Avenue. An old household dump is the only evidence of past activity.

Stand Three is a 13-acre mixed hardwood sawtimber stand located in northern portion of the property. The stand is bounded by private property in the north. the Connecticut River in the east, Stand Two in the southeast, agricultural fields in the south and southwest, and other town owned property in the west. This stand contained the active nesting site of the bald eagles and was not entered for fear of disturbing the birds. The observations of the forest growth were made from along the southern edge of the stand. The main canopy of the stand contains red maple, black oak, white oak, white ash, sugar maple, beech, red oak, hickory, swamp white oak, and pin oak sawtimber stocking. The center portion of the stand is located on poorly drained soils. The predominant species here are red maple, swamp white oak and pin oak. The understory contains multiflora rose and Japanese barberry.

The stand's terrain is moderately sloping in the west, slightly sloping in the center, and steeply sloping in the east. The aspect is easterly. The poorly drained soil in the center portion and the steep slopes in the eastern portion restrict the stand's operability. There is an existing access road from Mapleton Avenue. The past use of the stand appeared to be as a pasture for cows.

Forest Management Recommendations

Stand One is the only area that appears suitable for active forest management due to it's distance away from the eagle nesting sites, it's established access, the forest cover type present, and it's well

drained soils. An improvement cut favoring the large diameter trees with wide crowns would maintain the "big tree" look of the stand. Any harvest activity should take place when it is least likely to disturb the eagles. (See appendix for Forest Practice Description - Improvement Cuttings)

On the other stands, forest management would be limited to locating and marking the boundaries of the property. (See appendix for Fact Sheet - Knowing Your Boundaries)

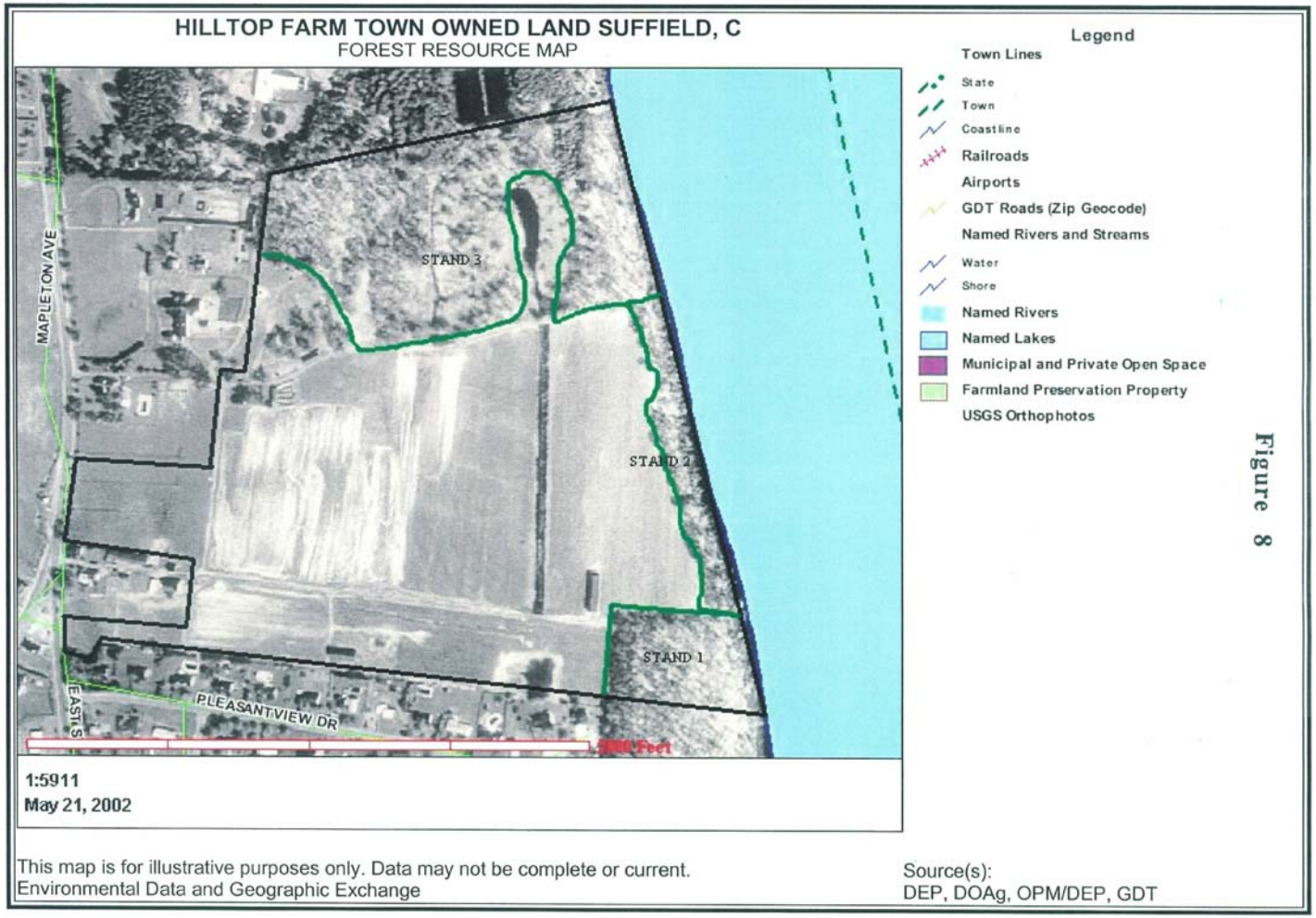


Figure 8

http://imsserve/website/shared/html/print.htm

Aquatic Resources

Site Description

There is nearly one-half mile of frontage along the Connecticut River on the 76 acre Hilltop Farm town owned land. The river flows nearly due south at this point and is narrower (maximum width of 1,500 feet) than the more southerly sections. Water depths within this river reach have not been charted. Inland Fisheries Division field staff report that water depths vary from less than 1 foot to greater than 10 feet in some areas; depth is subject to seasonal variation.

The substrate of the Connecticut River in the Suffield area is primarily rocky ledge with sand and silt deposits in slow-moving areas. Tapegrass and Eurasian water-milfoil are the dominant aquatic plant species, which create large beds in some areas to depths of 4 feet. Coontail, mud-plantain and curlyleaf pondweed are common amidst these beds. On the Hilltop Farm parcel, the river banks are moderate to steep in slope. As with other areas along the river, the plateau at the bank top of slope has been developed for agricultural purposes. The immediate shoreline along the river is heavily wooded.

A small (0.25 ± acre) unnamed pond is located near the parcel's north-east property bound. The pond appears to be relatively shallow; estimated maximum water depths are less than 5 feet. The pond is currently used as a water supply for livestock. Nutrients likely

originating from eroded shoreline around the pond and livestock waste have caused a notable algal bloom. The pond is surrounded in part by field and woody shrubs.

Aquatic Habitats and Resources

Inland Fisheries Division surveys indicate the Connecticut River reach in the vicinity of the Hilltop Farm parcel supports a resident fish population of northern pike *(Esox lucius)*, largemouth bass *(Micropterus salmoides)*, smallmouth bass *(Micropterus dolomieu)*, bluegill *(Lepomis macrochirus)*, pumpkinseed *(Lepomis gibbosus)*, redbreast sunfish *(Lepomis auritus)*, black crappie *(Pomoxis nigromaculatus)*, yellow perch *(Perca flavescens)*, white perch (*Morone americana*), rock bass *(Ambloplites rupestris)*, brown bullhead *(Ameiurus nebulosus)*, *channel catfish (Ictalurus punctatus)*, common carp *(Cyprinus carpio)*, and American eel *(Anguilla rostrata)*.

This reach of river also supports seasonal runs of the following species: Atlantic salmon *(Salmo salar)*, sea-run brown trout *(Salmo trutta)*, striped bass *(Morone saxatilis)*, alewives *(Alosa pseudoharengus)*, blueback herring *(Alosa aestivalis)*, American shad *(Alosa sapidissima)*, hickory shad *(Alosa mediocris)*, gizzard shad *(Dorosoma cepedianum)*, sea lamprey *(Petromyzon marinus)* and shortnose sturgeon *(Acipenser brevirostrum)*.

There is no fish survey data for the unnamed parcel on the property. Fish species anticipated to be resident include largemouth bass, bluegill,

pumpkinseed and brown bullhead. These species are common to small ponds in Connecticut.

Inland Fisheries Division staff suggest that the Connecticut River reach at Hilltop Farm should provide good angling for largemouth and smallmouth bass, common carp and black crappie; good for white perch and fair for channel catfish, brown bullhead, rock bass and American eel.

Fishing for striped bass and American shad is seasonally good to excellent. Striped bass can be caught from spring through fall, but the best months are May and June. Shad fishing is best during late April and May.

The taking of Atlantic salmon and shortnose sturgeon (a State listed rare and endangered species) is prohibited.

The small unnamed pond offers little angling opportunity.

Impacts

The preservation of open space and the protective buffer of woodland along the river frontage on the Hilltop Farm parcel will assure the long term viability of the aquatic habitats and resources found within the Connecticut River proximate to the parcel.

Recommendations

The Town of Suffield should consider creating a formal accessway to the Connecticut River at the Hilltop Farm site for shoreline fishing. An ideal location is at the site of two abandoned stormwater outlet structures near the south-east corner of the current corn field. The river bank is of moderate grade at this location and the area had been disturbed by the installation of the culverts and the culvert outfalls. An ancillary benefit to creating an accessway at this location is the removal of the abandoned stormwater structures and the restoration of degraded riparian habitat. It should be noted that spring freshet flows in the river may prevent shoreline access.

Archaeological and Historical Significance

In the opinion of the Office of State Archaeology and the State Historic Preservation Office, the Hilltop Farm complex possesses historic and architectural importance as an early 20th-century "gentleman's farm." The farm complex appears significantly unaltered including a diversity of farm-related structures and associated farmlands. In particular, the dairy barn is extraordinary in its architectural design and structural integrity. The Hilltop Farm is included within the Town of Suffield's inventory of significant historic properties. Both the Office of State Archaeology and the State Historic Preservation Office believe that the Hilltop Farm is eligible for the national Register of Historic Places.

The Office of State Archaeology and the State Historic Preservation Office strongly supports the preservation and sensitive reuse of the property, especially its architecturally outstanding dairy barn. They encourage the Town of Suffield to pursue National Register designation for the property.

It is further noted that the associated farmlands possess moderate to high sensitivity for prehistoric and historic archaeological resources. The Connecticut River floodplain has yielded numerous Native American archaeological sites including camps, villages and burials. The terraces of the Hilltop Farm leading toward the river would have provided excellent areas of settlement for prehistoric Indian populations.

It is strongly recommended that an archaeological survey for any areas of the property proposed for economic development and/or significant change in agricultural tilling practices be conducted in order to identify, evaluate, and professionally manage all archaeological resources that may be located within the property's boundaries. The Office of State Archaeology and the State Historic Preservation Office are prepared to offer the Town of Suffield any technical assistance in conducting the recommended archaeological survey. The survey should be conducted in accordance with the Connecticut Historical Commission's *Environmental Primer for Connecticut 's Archaeological Resources.*

Planning Considerations

In acquiring the Hilltop Farm property, the Town of Suffield has already completed the most important step in preserving community character in this area of Suffield. Development pressures, particularly in an area near the Connecticut River and close to existing sewer and water infrastructure, can be extremely high and difficult to deny. From the perspective of regional goals and policies, the Town of Suffield has done the right thing in deciding to preserve this property.

The 1988 Capitol Region Plan of Development establishes several policy statements regarding Land Use and the preservation of Natural Resources and Environmentally Sensitive Areas. These include:

- Discourage structural development in the floodplain (Land Use A.l);
- Encourage preservation of floodplain areas; if used, activities should be limited to open space, recreational and agricultural land uses (A.2);
- Encourage the conservation of food and non-food supportive agricultural lands, recognizing the need for a viable agricultural economy (A.5);
- Promote the preservation of unique man-made and natural features of historic, cultural, or educational significance (A.9);
- Encourage State and local governments to develop a wide variety of recreational opportunities available to all citizens (B.1);
- Encourage a balance between passive and active recreation (B.2);

- Promote controlled access of people and vehicles to open space areas for ease of maintenance and safety and to avoid degradation of the environment (B.4); and
- Promote acquisition and preservation of open space areas which will provide shoreline access, especially in or near urban concentrations, along the Connecticut River, and major tributaries (B.5).

As the Hilltop Farm property, particularly the 76 acre parcel bordering the Connecticut River, can be described by many of the policy statements above, its acquisition for preservation by the Town of Suffield is an excellent first step. The major task, from a regional perspective, is how to best use the property in a way that will meet regional goal and policy directives. Following are some observations and suggestions based on the above-mentioned regional policies.

- The eagles nesting in the forested, northern section of the parcel should be an overriding concern. By virtue of the fact that these are federally-protected birds and that their presence on this parcel gives it a "unique...natural feature of...cultural and educational significance," this is an extremely important factor in the planning and management process. As a result, all planned land use and human activity should occur well beyond a buffer zone to be determined by the DEP. At the same time, the presence of the eagles allows for potential educational opportunity, and portions of the existing building could be dedicated to an educational facility/working museum. All parking facilities and roadways

constructed for this purpose should be south and west of the large barn.

- Due to its continuing history of agricultural/pasture lands use, the large tract of open fields should be kept, in as much as possible, as working farmland. While the Town may not wish to get into the business of farming, leasing the land and allowing a local farmer to grow hay, corn or use the land for livestock grazing would not only preserve the cultural heritage of this property, but could also be modestly profitable for the Town. In an effort to protect the water quality of the Connecticut River, though, any agricultural use should be accompanied by a Best Management Practices Plan to minimize erosion, sedimentation, and nutrient runoff to the River.

- It is understood that to acquire the Hilltop Farm property, a portion of the land may need to be sold off to recoup costs. In an effort to protect the resident eagles, as well as the agricultural land, the land to be sold first for residential use should come from the southwestern portion of the property, along Mapleton Avenue and near the existing residential neighborhood.

- This property has the unique (for Suffield) attribute of potentially providing public access to the Connecticut River. The *Regional Plan of Development* recognizes the importance of maintaining and establishing connections to the River, which remains one of the most important natural and cultural resources of the Region. To this end, the Town could include a small passive recreation trail that provides

access from Mapleton Avenue to the River as part of its management plan for this property. While access to the River is an important goal, the Town must be cautious about managing this access. A small gravel pathway could extend from a small, gated parking lot along Mapleton Avenue to the River. A short nature trail could extend through the wooded riverfront area down to the River in the extreme southeast corner of the property. This site could be used as riverfront access for fishermen or hikers. Putting up picnic benches, a small gazebo or pavilion would likely encourage a greater intensity of use than the site could comfortably support.

- The Hilltop Farm property also contains one man-made structure of cultural significance: the large main barn, built in the first two decades of the 20th century. This large structure appears to be in overall excellent condition, and is a landmark structure of Suffield's agricultural heritage, even as Mapleton Avenue (which it overlooks) becomes a main point of access to Six Flags New England across the state line. While the other structures on the property (small residences and barns) are more or less expendable, maximizing the utility and exposure of the main barn should be a priority for the Town of Suffield. While a local committee should explore the range of options for the use of this barn, potential areas of exploration could include an agriculture/natural resources education center, working museum or rural commercial arts and crafts center. As mentioned above, the increase in traffic to this site, particularly during the summer months, would be insignificant due to the Six Flags traffic. In fact, an educational or commercial use for this barn would likely

benefit from this location. Removal of existing residential and barn structures would likely provide enough parking, far enough from the eagles' nesting area, to make this a viable educational or commercial destination.

All told, there are many decisions to be made regarding the management and use of the Hilltop Farm property. Fortunately for the Town of Suffield and the Capitol Region, the most challenging one has already been made: to protect the property from residential development. What remains is an exercise in weighting various (and largely positive) options against Town and Regional goals. It is hoped that the above discussion will help sort out a few of these issues.

Management and Use Considerations

The subject of the ERT review involves the town owned portions of the former Hilltop Farm in Northeast Suffield, extending easterly from Route 159 to the Connecticut River. For the purpose of analysis, the property can be divided into the following sections:

a) **Parcel #1** (7.6 acres), consisting of the farmstead and including a large barn, several dwellings, and other farm buildings;

b) **Parcel #2** (76 acres), the open space acreage, consisting of a number of pasture lots along Route 159 and rear cropland sloping down to the river. It contains three old barns and is split by a north-south running drainage ditch with grassed buffer and bordered by woodland-wooded pasture to the north (the eagle nest site), a steep wooded riverbank to the east, a small woodlot to the southeast and a subdivision to the south; and

c) **Parcel #3** (2.2 acres), containing a dwelling, barn, and several smaller outbuildings.

Issues

- The presence of an active bald eagle nest poses the overriding constraint on management options, as the eagle is a federally protected species. Therefore, a protective buffer limiting, if not absolutely prohibiting human activity, must be maintained.

- The Town of Suffield also has a number of interests and concerns which need to be addressed including:
  a) The Town's interest in preserving farmland to help maintain its rural character.
  b) The Town's existing and expected future staffing levels which will limit its potential for active management of town-owned land.
  c) The Town's desire to preserve the historic barn on the property.
  d) The Town's stated need to generate some income from Parcels #1 and #3 to help pay the Town's share of the cost of Parcel #2.

Use Recommendations

In attempting to balance the issues/concerns listed above, it is clear that a low intensity use/management approach is needed: (1) to protect the eagles, (2) maintaining as open space the acreage for which the town received a state grant, and (3) likely maintaining farmland use versus recreational development which town staffing levels would be unable to service. However, access to the rear land must be maintained without negatively impacting the future use and potential marketability of Parcels #1 and #3. Suggestions by parcel as follows:

Parcel #1

This piece is a complex problem for which ERT review can only suggest possible answers. The basic issue involves the likely conflict between the desire to save the barn and the desire to generate income from the sale of some/all of the 7.6 acres. Various options given in no order of preference include:

(a) demolish all buildings and market the site for a number of lots for upscale homes.

(b) demolish all buildings except the barn and the two freestanding dwellings and sell both the dwellings and whatever additional lots could be developed under existing zoning.

(c) demolish all buildings including the rather modest dwellings in (b) above, excepting only the barn, and sell whatever lots could be developed for upscale homes.

Options b and c preserve the barn but pose the problem of finding a fiscally viable adaptive reuse. The barn seems basically in good condition, although missing windows already have caused pigeon occupancy (and droppings) and the roof and trim at least will require some repair. The main floor offers a large open space with a cathedral ceiling and a partial loft. The lower level is a typical stall/feeding area not readily converted to other uses.

Barn re-use possibilities must consider impact on adjoining land to avoid negatively impacting marketability for valuable houselots. Thus a low volume traffic generator seems appropriate, perhaps with

a parking lot of no more than 12-15 spaces with access provided along the southern border of Parcel #1; said roadway and parking lot to also serve those using the trail discussed under Parcel #2 below.

Several reuse possibilities could include:

(a) museum, requiring a suitable organizational entity and substantial operating and maintenance cost.

(b) commercial activity as antique showroom or arts and crafts, etc. utilizing the main floor for retail and the lower level for storage.

(c) municipal storage (supplies, equipment, etc.)

(d) linkage with any existing vo-ag program in the immediate area.

Parcel #2

Continued agricultural lease is recommended for this piece, especially for the rear, cropland portion. However, the existing downhill plowing should be replaced with contour planting to avoid soil erosion. As the barns are in rather poor condition, removal should be considered unless useful as storage for a lessee's farm machinery and supplies. Public access should be limited to foot access along the farm road leading to the river to avoid impact on agricultural activity, with the possibility of an extension into a loop trail through the riverside woodlot. To make this feasible, some grading and gravelling of the rough roadway is recommended and the status of the rest of the woodlot area, to the rear of Pleasant View Drive should be investigated because of the potential for trail extension. Although the

woodlot contains an available canoe/kayak launch site, vehicle access to this location is not recommended.

Other parts of Parcel #2 seem satisfactory as is, including: (a) the drainage ditch with grass buffer, (b) the handsome woodlot, (c) the well vegetated, stable riverbank, and (d) the off-limits woodland-wooded pasture containing the eagle nest.

Parcel #3

Sale is recommended for this parcel, with removal of public access through the lot to protect resident privacy and improve its marketability.

Parcel #4

As an unsolicited comment, the +40 acres of town-owned farmland west of Route 159 should also remain leased for agricultural use unless or until needed for town ballfields.

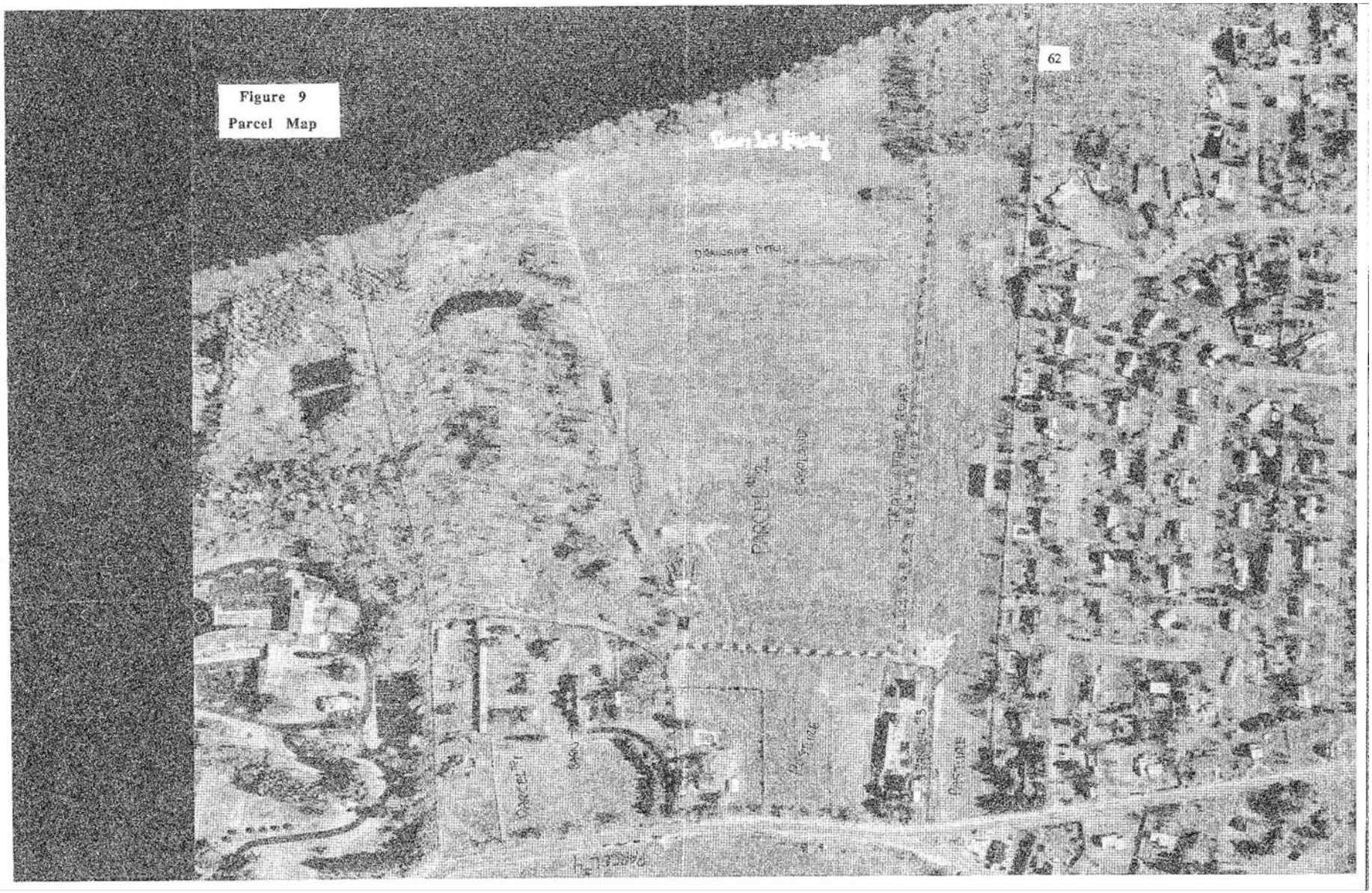


Figure 9
Parcel Map

Appendix

Contact the ERT Office for Appendix Information at 860-345-3977

ABOUT THE TEAM

The Eastern Connecticut Environmental Review Team (ERT) is a group of professionals in environmental fields drawn together from a varety of federal, state and regional agencies. Specialists on the Team include geologists, biologists, foresters, soil specialists, engineers and planners. The ERT operates with state funding under the supervision of the Eastern Connecticut Resource Conservation and Development (RC&D) Area — an 86 town region.

The services of the Team are available as a public service at no cost to Connecticut towns.

PURPOSE OF THE TEAM

The Environmental Review Team is available to help towns and developers in the review of sites proposed for major land use activities. To date, the ERT has been involved in reviewing a wide range of projects including subdivisions, landfills, commercial and industrial developments, sand and gravel excavations, elderly housing, recreation/open space projects, watershed studies and resource inventories.

Reviews are conducted in the interest of providing information and analysis that will assist towns and developers in environmentally sound decision-making. This is done through identifying the natural resource base of the project site and highlighting opportunities and limitations for the proposed land use.

REQUESTING A REVIEW

Environmental reviews may be requested by the chief elected official of a municipality or the chairman of town commissions such as planning and zoning, conservation, inland wetlands, parks and recreation or economic development. Requests should be directed to the chairman of your local Soil and Water Conservation District and the ERT Coordinator. A request form should be completely filled out and should include the required materials. When this request is approved by the local Soil and Water Conservation District and the Eastern Connecticut RC&D Executive Council, the Team will undertake the review on a priority basis.

For additional information and request forms regarding the Environmental Review Team please contact the ERT Coordinator: 860-345-3977, Eastern Connecticut RC&D Area, P.O. Box 70, Haddam, Connecticut 06438.