



Great Cedars Conservation Area

Old Saybrook, Connecticut

Eastern Connecticut
Environmental Review Team
Report



Great Cedars Conservation Area

Old Saybrook, 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
Conservation Commission
Old Saybrook, Connecticut

July 2002

CT Environmental Review Teams
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Acknowledgments

This report is an outgrowth of a request from the Old Saybrook Conservation Commission to the Middlesex 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, November 14 and Friday, December 7, 2001.

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I would also like to thank Judy Preston, chair, Old Saybrook Conservation Commission, Bob Fish, vice-chair, Old Saybrook Conservation Commission, Walter Harris, member, Old Saybrook Conservation Commission, Christine Nelson, town planner, and Christina Costa, assistant town planner/inland wetland enforcement officer, 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 reports 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 and the stewards of the land. 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 conservation area.

If you require additional information please contact:

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Introduction

Introduction

The Old Saybrook Conservation Commission has requested assistance from the Eastern Connecticut Environmental Review Team in conducting a natural resource inventory of the Great Cedars Conservation Area.

Great Cedars Conservation Area (GCCA) is a new acquisition by the town and Old Saybrook Land Trust. The GCCA is made up of three parcels (formerly known as the Gleason Properties) totaling close to 300 acres. The ERT review was conducted for the largest piece which is 150 acres in size. The Chalkers Mill Pond and Ingham Pond site is 87 acres, and the smallest parcel is 30 acres. (See Location Map) The GCCA is located in the northwest portion of town, north of I-95 between Ingham Hill Road and Schoolhouse Road. It connects with existing town park land and other contiguous forested land north and west.

The 150 acre parcel is forested with numerous wetlands, including the headwaters of the Oyster River, Lake Rockview and an Atlantic white cedar swamp.

Objectives of the ERT Study

The Old Saybrook Conservation Commission has developed a Memorandum of Understanding with the Parks and Recreation Commission and the Land Trust to develop suitable areas for public access and to preserve areas of undisturbed natural habitat. The area is to be developed sensitively for public education and recreation use while protecting natural resources on the property. The town will use the natural resource inventory to better delineate the boundaries of particular aspects of the site before they undertake any improvements so that they may best facilitate opportunities for education, passive and possibly active recreation, and conservation. 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.

The ERT Process

Through the efforts of the conservation commission this environmental review and report was prepared for the Town of Old Saybrook.

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.

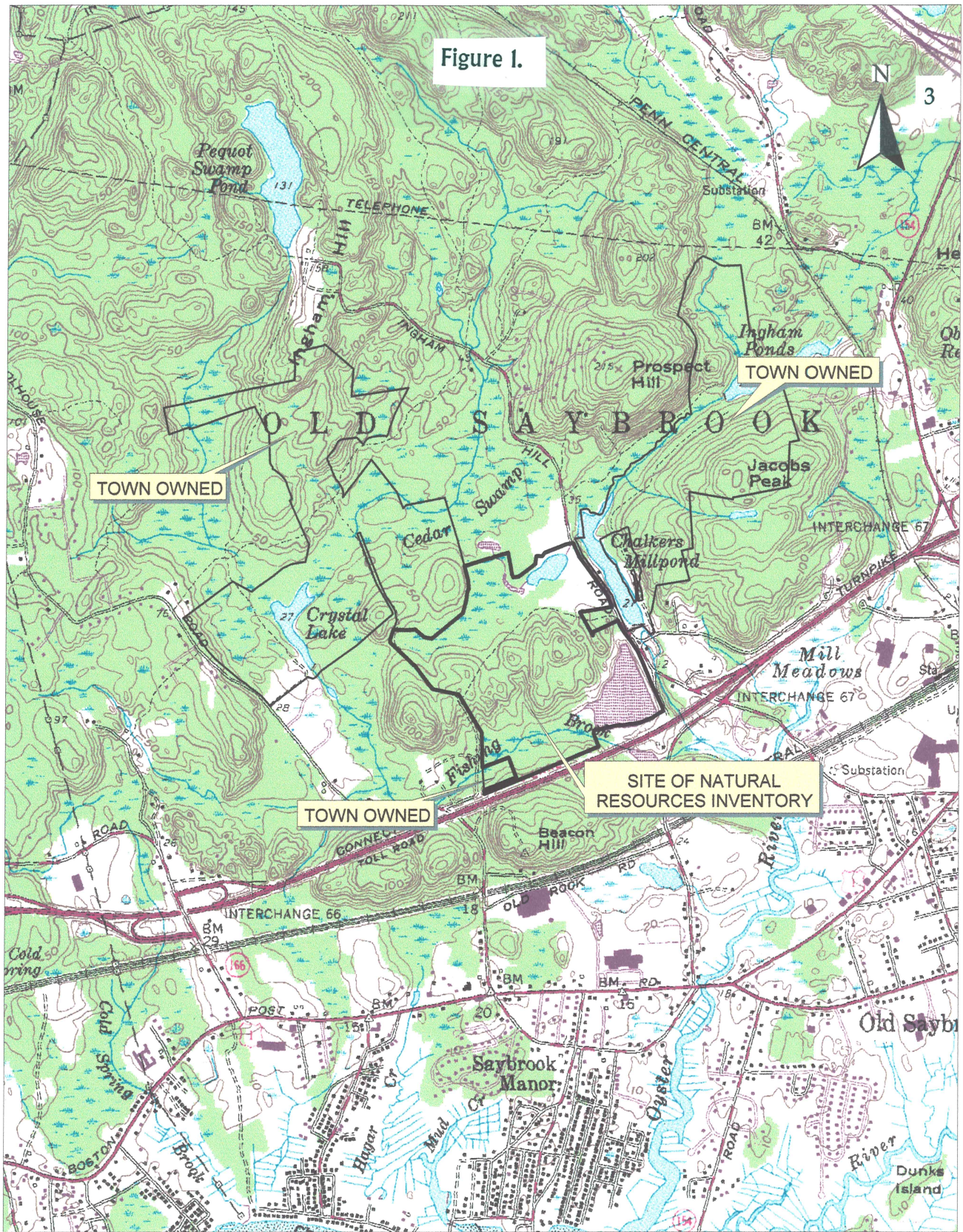
The review process consisted of four phases:

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 reviews were conducted on Wednesday, November 14, 2001 and Friday, December 7, 2001. 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.



REFERENCE: U.S.G.S. ESSEX CONNECTICUT QUADRANGLE



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Great Cedars Conservation Area ERT Review

Old Saybrook, Connecticut

SITE LOCATION MAP

PROJECT No.:
0337-0001

SCALE:
1" = 2,000'

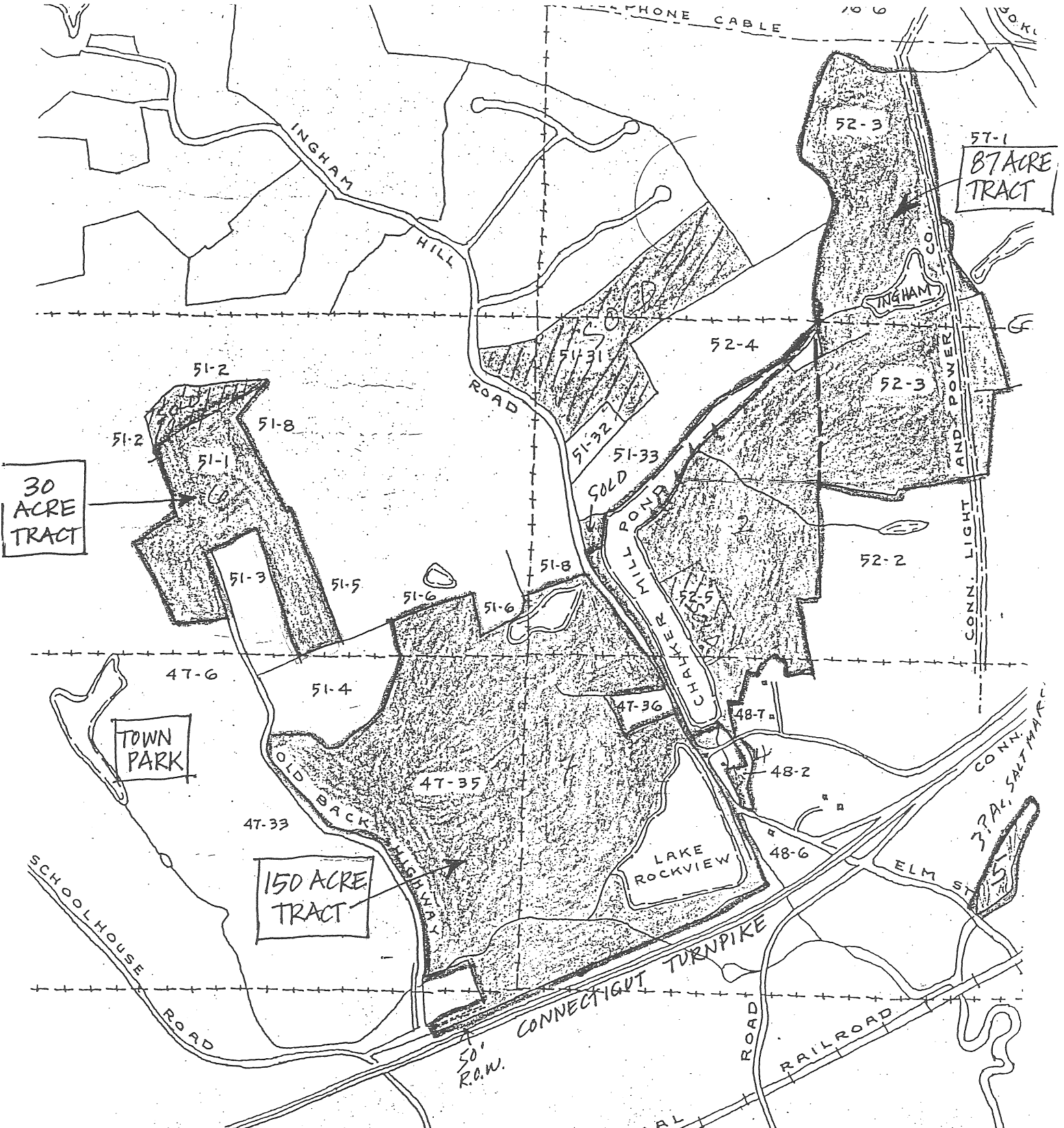
DATE:
AUGUST 9, 2001

FIGURE No.:
1

Figure 2.

Gleason Properties

No Scale



Soil and Water Conservation District Review

The following are general comments and recommendations regarding the natural resources of the Great Cedars Conservation Area in Old Saybrook, CT. Three tracts (30 acres, 87 acres, and 150 acres) form the parcel. The western boundary abuts the 200-acre Town Park and now forms a contiguous 467-acre open space corridor.

The Conservation Commission is primarily concerned with assessing the 150-acre tract. This tract is easily accessible to the public. The following comments address the natural resources located on the 150-acre parcel are based on a review of: 1"= 100' boundary survey plan dated May 17, 1999, two site visits conducted on November 14, 2001 and December 7, 2001, the Open Space and Watershed Land Acquisition Grant Program Questionnaire (October 1998) prepared by Judy Preston, Old Saybrook Land Trust, and the Identification and Protection of Globally Significant and Imperiled Wetland Communities in Connecticut: Atlantic White Cedar (*Chamaecyparis thyoides*) Swamps (March 1997) report prepared by Kenneth Metzler, Connecticut Department of Environmental Protection. These comments are advisory in nature and are intended to assist the Old Saybrook Conservation Commission in protecting areas of ecological significance and in developing a management plan for outdoor education, passive recreation, and conservation.

Site Description

The Great Cedars Conservation Area is located in the Oyster River Watershed and contains the headwaters of the Oyster River. The area was owned by the Gleason family for 300 years and has not been developed. Within the 150-acre tract, peat was excavated in the Great Cedar Swamp area. Excavation is thought to have occurred during the 1970s, but the exact time period of excavation is not known. Wetlands and hilly terrain with moderate to steep slopes characterize the site. Trees and shrubs cover the majority of the site. Canopy cover is greater than 75 percent.

Significant natural resources for the 150-acre tract include an Atlantic White Cedar swamp, Lake Rockview, and Fishing Brook. The area is managed by the Old Saybrook Parks and Recreation Department and the Old Saybrook Land Trust.

Atlantic White Cedar swamps (AWCS) are not common in Connecticut. Only forty AWCS have been identified in Connecticut, with the majority of the swamps found in the eastern part of the state. The swamp at this site is one of six AWCS that has been identified west of the Connecticut River. It is located in the central northern area of the 150-acre tract. Water from an adjoining property potentially drains to this area. Relatively dense vegetation surrounds the swamp. Limited field research has been conducted at this site by CT DEP staff and Wesleyan University students.

Lake Rockview was previously an old gravel pit used for I-95 construction. It is located in the southeastern corner and is estimated to be 75 feet deep. The lake is flushed by the tidally influenced Oyster River. The Town of Old Saybrook owns the majority of the land surrounding the lake, but the southwestern corner is privately held. The north shore is approximately 30 feet above the lake. A low beach area is located on the private property on the south shore of the lake.

Fishing Brook flows between Lake Rockview and Crystal Lake. Crystal Lake is located northwest of the property at the Town Park. The Town plans to install a fish passage at a dam on Fishing Brook just south of Crystal Lake.

Soils

Soil information was obtained from the Soil Survey of Middlesex County, Connecticut, 1979. The county soil survey is sufficient for developing a management plan for outdoor education and passive recreation. A detailed soil survey should be considered if the site is developed more extensively in the future.

No one soil type predominates. The site is fairly evenly divided between soil types that are suitable for passive recreation and those that are not. The majority of the soils on flat to moderate slopes are acceptable for trails, picnicking, and camping. In contrast, soils located on steep slopes are highly erodible and are not suitable for passive recreation. In addition, wetland soils will not support sustained foot traffic, mountain bikes, all-terrain vehicles, and horses, and consequently, should be protected. The soils within the 150-acre tract are described in the summary table on page 13.

Outdoor Education and Passive Recreation Opportunities

The Great Cedar Swamp Conservation Area offers multiple opportunities for public use while still protecting biologically sensitive areas. Potential uses under consideration include outdoor education, hiking, mountain biking, all-terrain vehicle riding, horseback riding, picnicking, swimming, boating, and camping. Specific recommendations for these uses are discussed below. A comprehensive management plan should be developed and address maintenance and liability issues associated with the site. The town will need to provide adequate financial resources to maintain the area if multiple active recreational uses are allowed. Consideration should be given to hiring a consultant to develop a management plan.

1. Public Access

The conservation area is located within one mile of I-95, is approximately ten minutes from the Town Park, and is easily accessible. Ample parking space is available and could be expanded in the future if necessary.

Recommendations:

- Install an interpretative sign with a map of the site at the parking area.
- Highlight biologically-sensitive areas on the sign.
- Display safety rules for camping, swimming, fishing, and boating on the sign.

2. Trails

A loop trail connects the parking area to the Town Park. A dirt road leads from the parking area, passes a wetland-pond complex, and then transitions into the narrow

loop trail. A short segment of the trail is within 10-25 feet of a private residence and driveway. The trail segment near the north shore of Lake Rockview is well defined in some areas and poorly defined in other areas. Overall, the existing trail is in good shape and does not show signs of excessive wear, compaction, or significant erosion.

Recommendations:

- Contact Ann Colson (860-346-2372) at Connecticut Forest and Parks Association (CFPA) for guidance on building and maintaining trails. CFPA offers trail building workshops. The workshops are open to the general public.
- Install trail markers.
- Highlight the wetland-pond complex near the parking entrance.
- Create a new trail segment that is farther away from the private residence.
- Define a trail system near the top of the slope on the north shore of Lake Rockview.
- Establish one or more trails overlooking the lake and leading down to the lake.

3. Mountain Biking, All-Terrain Vehicles, and Horseback Riding

Currently, the town regulations do not permit mountain biking, all-terrain vehicles, or horseback riding in this area. However, the town is considering opening up the area to these activities. The Conservation Commission is primarily concerned with protecting the Atlantic White Cedar Swamp from the direct impacts of human traffic and the indirect impacts from erosion and sedimentation.

The majority of the soils are Canton-Charlton or Charlton Hollis. On moderate slopes, these soils are suitable for trails provided the trails are well planned and maintained. On steep slopes, the soils are highly erodible and could pose a safety hazard if disturbed by frequent traffic from hikers, mountain bikes, all-terrain vehicles, and horses.

Recommendations:

- Consider the impacts of mountain bikes, all-terrain vehicles, and horseback riding on the trails.

- Determine if the pollution impacts from horse manure on the water quality of the lake, brook, and swamp are significant. This might not be an issue if few horses are ridden in this area.
- Create a network of well-marked trails away from the Atlantic White Cedar Swamp. If mountain biking is permitted, consider building separate hiking and biking trails. Separate trails are safer. Consider locating the biking trails closer to the Lake Rockview area.
- Provide information at trailheads regarding the impacts of mountain bikes, all-terrain vehicles, and horses on wetland and other biologically sensitive areas.
- Provide information to local bicycle and outdoor shops on trail locations and potential adverse impacts from off-trail riding. Consider contacting the Connecticut Chapter of the New England Mountain Bike Association (<http://members.aol.com/joeorto> or John Turchi at 860 653-5038). The CT NEMBA might be able to assist with building and maintaining trails.
- Develop a trail management plan.

4. Atlantic White Cedar Swamp

The AWCS is not easily accessible. The Conservation Commission wants to promote this unique area to the public, while protecting the integrity of the AWCS. It was unclear if water was draining from the surrounding private properties into the AWCS.

Recommendations:

- Hire a consultant or contact a local university forestry school to assess the current health of the AWCS. Determine if water is draining from the surrounding private properties into the swamp. Evaluate the impacts of the drainage if it is occurring. Consider developing a long-term monitoring plan for the AWCS.
- Visit other AWCS in Connecticut to collect information on boardwalk design.
- Install a boardwalk along the southern perimeter of the AWCS.
- Install interpretative signs.
- Encourage local environmental educators to coordinate field trips to the AWCS.

5. Lake Rockview: Picnicking, Swimming, Boating, and Fishing

The lake is used for swimming, boating, and fishing. However, easy public access for these activities is not readily available. The steep slopes on the north shore make it difficult to access the lake. There is also a steep drop-off as soon as one enters the water in this area. No beach exists along the north shore.

A few areas along the north shore could be selectively cleared and provide access for swimming and fishing. Specifically, a wide and relatively flat area next to the water is located at the base of moderate slope just downslope from a medium-sized stand of Tree-of Heaven. The northern shoreline between the lake and Fishing Brook is also wide and relatively flat and could be developed into an easy access area.

Access for motor boats would not be feasible in these two areas. Hand-carry boats could be launched at either site, but it is a very long hike from the parking area to lake.

Access might be possible from Ingham Hill Road. A short, grassy road is located at the northeast corner of the lake. The road is gently sloped down to the water and would provide relatively easy access for motor boats and hand-carry boats. However, it is unclear if the road is on private or town-owned property. The road is approximately 0.3 mile south of the main parking area. The road was viewed from the opposite shore near the Boy Scout camp during the site walk.

The private property on the southern shore has a good beach and easy access for picnicking, swimming, fishing, and boating. The Town has considered purchasing the property, but is not actively pursuing this option.

Recommendations:

- Review liability issues with the town attorney regarding public safety hazards near steep slopes.
- Survey the property and identify areas for easy boating, swimming, and fishing access.

- Selectively clear vegetation and create well-marked trails to the lake.
- Clear a stand of invasive Tree-of-Heaven (*Ailanthus altissima*) located at the top of the north shore overlooking the lake and establish a picnic area.
- Discuss management issues (e.g., trail maintenance, trash removal) with the Old Saybrook Parks and Recreation Department.

6. Camping

Consider the safety and sanitation impacts associated with camping. The Boy Scouts have established a campsite with a fire ring on the north shore of Lake Rockview. The camping area is relatively level, but the land is steeply sloped near the lake and could pose a safety hazard to anyone walking down to the lake.

Recommendations:

- Determine if permits will be required for camping.
- Create a trail that leads down to the lake from the campsite.
- Provide a privy area if the site will be used often.

7. Invasive Plants

Tree-of-Heaven (*Ailanthus altissima*), Multiflora Rose (*Rosa multiflora*), Japanese Barberry (*Berberis thunbergii*), and Winged Euonymus (*Euonymus alata*) are present, but not widespread.

Recommendations:

- Conduct an invasive plant survey.
- Develop a plan to remove existing invasive plants before they become more widespread.
- Consider recruiting local scout troops/youth groups to assist with this project.

8. Forest Management Plan

The site is not actively logged at this time. A forest management plan could be useful in clearing areas to be used for trails and recreation and as well as improving and maintaining general forest health and wildlife habitat.

Recommendations:

- Develop a forest management plan. Consult a professional forester or contact Emery Gluck (860-295-9523) at CT DEP Bureau of Natural Resources-Forestry or Stephen Broderick (860-774-9600) at the University of Connecticut Cooperative Extension Forestry office for assistance.
- Consider incorporating invasive plant control into the management plan.

Upland Soils	Drainage	Permeability	Erosion Hazard Potential
Agawam fine sandy loams (0-3% and 3-8% slopes)	Well drained soils on outwash plains and stream terraces	Moderately rapid in the surface layer and upper part of the subsoil	Slight to moderate
Canton and Charlton extremely stony fine sandy loams (3-15% and 15-35% slopes)	Well drained soils found on hills and ridges of glacial till plains	Moderate to moderately rapid in the surface layer and subsoil	Moderate to severe
Canton and Charlton very stony fine sandy loams (3-8% and 8-15% slopes)	Well drained soils found on hills and ridges of glacial till plains	Moderate to moderately rapid in the surface layer and subsoil	Moderate to severe
Charlton-Hollis very stony fine sandy loams (3-15% slopes)	Well drained to somewhat excessively drained soils found on ridges and on upland glacial till plains	Moderate to moderately rapid	Moderate to severe
Hinckley gravelly sandy loams (3-15% slopes)	Excessively drained soils on stream terraces, kames, and eskers	Rapid in the surface layer and subsoil	Low to medium
Hollis-Charlton extremely stony fine sandy loams (15-40% slopes)	Well drained to somewhat excessively drained soils on ridges and on upland glacial till plains	Moderate to moderately rapid	Severe
Merrimac sandy loams (0-3% slopes)	Somewhat excessively drained soils found on outwash plains and stream terraces	Moderately rapid to rapid in the surface layer and subsoil	Slight
Ninigret fine sandy loams (0-5% slopes)	Moderately well drained soils found in outwash plains and stream terraces	Moderately rapid in the surface layer and subsoil. These soils have a high seasonal water table at a depth of 20 inches from late autumn until midspring.	Slight
Udorthents-Urban land complex (Present between Fishing Brook and I-95 on the southern boundary of the 150-acre tract)	Moderately to excessively well drained soils that have been disturbed by cutting or filling and areas that are covered with buildings and pavement. Most cut areas were used as a source of fill	Variable	Variable
Wetland soils			
Adrian muck	Very poorly drained organic soils found in low depressions of outwash terrace and glacial till plains	Rapid The water table is at or near the surface most of the year	NA
Carlisle muck	Very poorly drained organic soils found in low depressions of outwash terraces and glacial till plains	Moderate to moderately rapid The water table is at or near the surface most of the year	NA
Leicester, Ridgebury, and Whitman extremely stony fine sandy loams	Poorly to very poorly drained soils found in drainage ways and depressions of glacial till uplands	Moderate to moderately rapid in the surface layer and subsoil	NA

Figure 3.
Soils Map



Scale 1" = 1320'



Wetland Resources

Site overview

The site is located in the west central part of town and encompasses 150 acres. It is one of three parcels recently acquired by the Town. The site features forest, fields and wetland areas thought to have been mined for peat in the past, and a lake/pond in the southeast corner of the parcel excavated for material during the local highway construction. There is a hill that runs nearly west to east through the property. The highest point on this parcel is atop that ridge or hill line at over 100 feet above sea level. The lowest point is where Fishing Brook leaves the property in the southwest at less than ten feet above sea level.

An area of Atlantic white cedars (AWC) is present on the parcel. This is one of 40 sites noted by the DEP in the state and one of only six sites west of the Connecticut River.

The wetland areas most easily observed from air photos and topographic maps are the lake in the southeast corner which measures over 16 acres, the excavation ponds along the northeast and north central boundary, the wetlands associated southwest of them, and the outflow (Fishing Brook) from the lake.

Since this is a natural resources review the wetland soils were not mapped. However, wetland mapping has been done for this area. The attached map done by the NRCS in the 1990's shows the breakdown of wetland soils as they occur on the property. (Figure 4)

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 in part on the Essex quadrangle National Wetland Inventory map. All of

the wetlands on the site are mapped as palustrine wetlands. Palustrine is defined as: of or pertaining to a swamp; marshy.

Beginning at the northeast section of the parcel, the small chain of ponds just north and northwest of the parking area shows three of the water bodies as POWH. This is Palustrine(P), Open water (OW), Permanent (H). One of the small ponds in that area is labeled PSS IE. This is Palustrine, Deciduous scrub shrub (SSI) and Seasonally saturated (E).

Still on the parcel and just to the west is a wetland complex with the classification: PFOI/4E: This is palustrine, forested (FO), mixed broad leafed deciduous and needle leaved evergreen (I/4), seasonally saturated (E). It is likely that this is the area of the Atlantic white cedars.

Two other wetlands on the south part of the parcel are classified: Fishing Brook and its floodplain and the lake in the southeast corner of the property.

Lake Rockview is classified as POWHh - Palustrine, Open water (OW), Permanent (H), diked (h). Fishing Brook and its floodplain are PFO/SSIE. This is Palustrine, Forested and Scrub shrub, Broad Leafed Deciduous(I) and Seasonally saturated.

What these classifications point out is a diversity of wetland types. Also classified, but just to the north of the property line other small ponds exist. It is likely that these are connected hydrologically to the water bodies on the property. They are classified as Palustrine, Open Water, Permanent, Excavated.

Water Quality

The water quality for this parcel as mapped by the Connecticut Department of Environmental Protection indicates that the surface water quality classification for all of the parcel is assumed to be A. Ground water quality for the site is assumed to be GA. The descriptions of these classifications are: The surface water quality (which includes

the wetlands and watercourses) of the parcel have been mapped by the Department of Environmental Protection as all 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 pollutants and this being a headwaters wetland it has been given the water quality classification of A.

In addition, the groundwater classification for the area is also classified as A for the same reasons listed above.

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.

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

Soils

The soils were not specifically mapped for this site, however pre-existing soils mapping does occur. The attached map shows the name and extent of the soils classified as wetland soils in the state (See Figure 4). This provides a rough overview of the wetland boundaries although the smallest soil unit on these maps is three acres.

Recommendations and Comments

- Establish an official Great Cedars Conservation Area map at a useable, readable scale of the two side by side recreation areas (Great Cedars and the town park). Since the two areas compliment each other in terms of needs met for recreation and natural area preserves the presentation of the two sites together will satisfy all user groups when viewing the available resources. The map should have the wetland and sensitive areas delineated, as well as the existing trails and other features. This map will serve as a planning tool from which all other references can be made and a common instrument of recognition for all.
- Keep the sensitive areas especially in the north and south of the parcel as natural areas. There is sufficient upland area on the property and on the abutting parcel to the west for active trail use.
- Establish and maintain buffers around all wetland and watercourses. Buffers are commonly recognized as functionally protecting wetland and watercourse areas from a variety of potential water quality detractors, and also tend to provide healthy riparian areas for wildlife observation.

The exception to the above would be for consideration of creating access to the sensitive and/or wetland areas for educational purposes. A boardwalk was discussed and would fit well into an educational nature trail which features wetland and wildlife communities.

- Certainly, in addition to the acquisition of the property as a whole, the prize of the parcel is the community of Atlantic white cedars (AWC) that the Team visited on the second field walk of December 7, 2001. As the NWI mapping pointed out, and as visual inspection concurs, there has been excavation of the general area historically. One of the questions that the Team debated was the extent of the excavation and peat removal from the area west of the ponds and over to the location of the AWCs. It appeared to some Team members that the trees that remain in the area leading up to the cedars seemed to be elevated as if the land around them was scoured out or removed - leaving the trees as islands above the plain. To other members this seemed to be nothing more than trees that had taken root on and accreted their own elevated tussock type relief. The Team was not exposed to any young cedar trees on the site and indeed some of the existing specimens seem to be quite old.

If peat mining had taken place this would have affected the microhabitat surrounding the AWC area. With the goal of understanding the ecology of the cedars and why there are no young trees and no seedlings, the town should acquire the services of a forester or ecologist to determine: the current health of the cedars, whether the existing trees are still capable of producing viable seed stock, the prospects for perpetuating the species on the site, re: soil moisture, pH, plant competition, etc., understand the hydrologic connection between the beaver ponds and the cedar area. Assess the potential or likelihood of increased beaver activity and thus elevated water levels, both surface and ground water, to drown the roots with the result of tree death. Summarize the existing literature to get a profile of AWC habitat as it exists and synthesize this with the challenges and sensitivities of the area.

The literature on the subject also alludes to the fact that AWC seedlings are more attractive for deer browse than the neighboring red maple seedlings. With the current density of deer in the state it is clear that any plan to perpetuate the growth of young cedars would have to be in a controlled area.

Additional Comments

The history of the wetlands in the areas of the small ponds north of the parking area and the large excavation pond in the south was a curiosity. The large pond to the south was reported to have been used for the construction of the interstate. This pond appears in its existing size on the aerial photographs dated March, 1965 in the DEP collection. The review of the 1951 USGS topographic map however does not show this as a feature so it is likely that as has been suggested the pond was excavated between the years 1948 and 1965 for road construction of the interstate, likely closer to the latter than the former. (See Figure 5)

The same is true for the smaller ponds to the north near the parking area. The NWI maps indicate, and visual inspection confirms, that these have been excavated. Based on the surficial materials map information these ponds now occur in an area known to be a source of sand and gravel.

Figure 4.

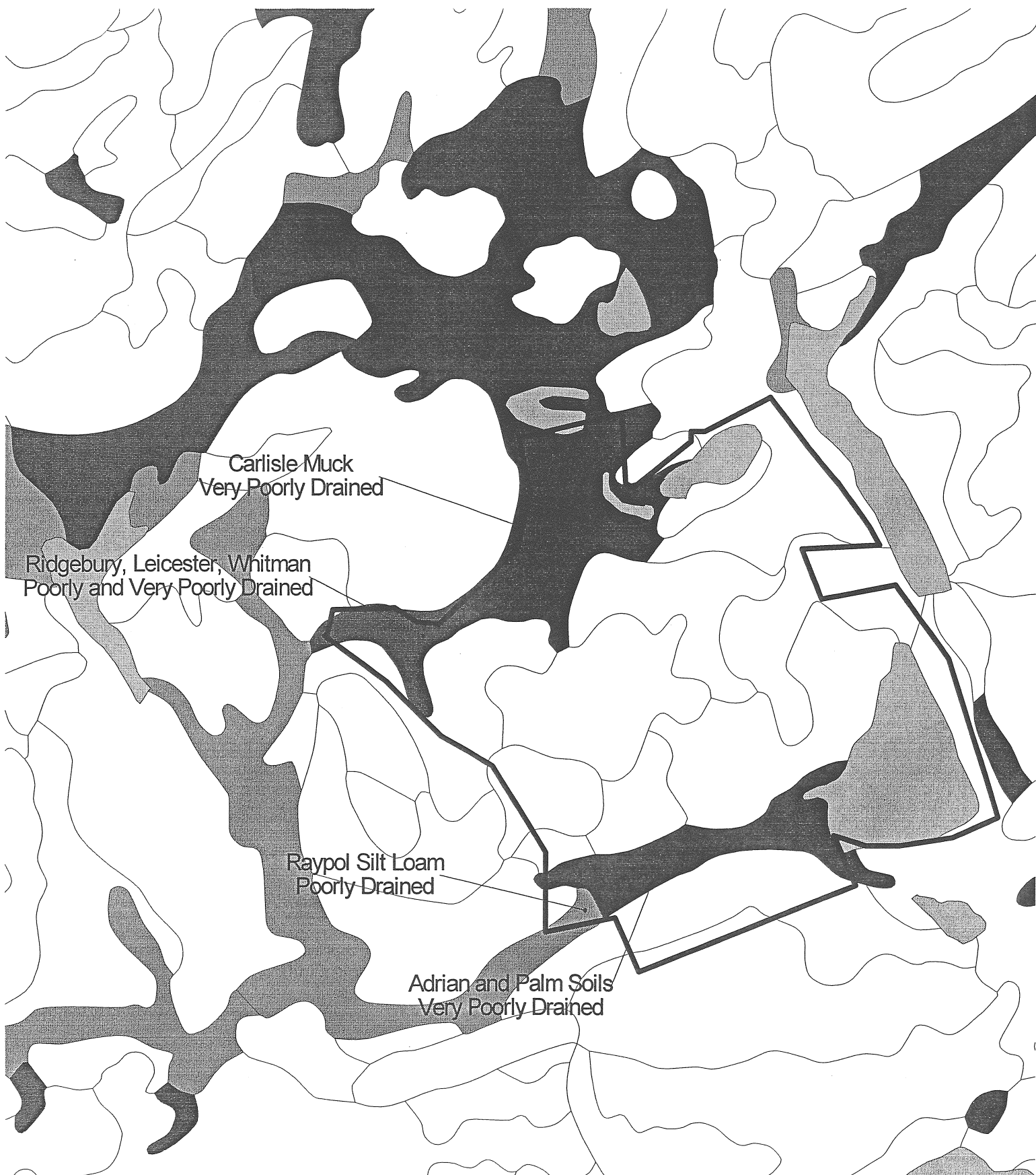
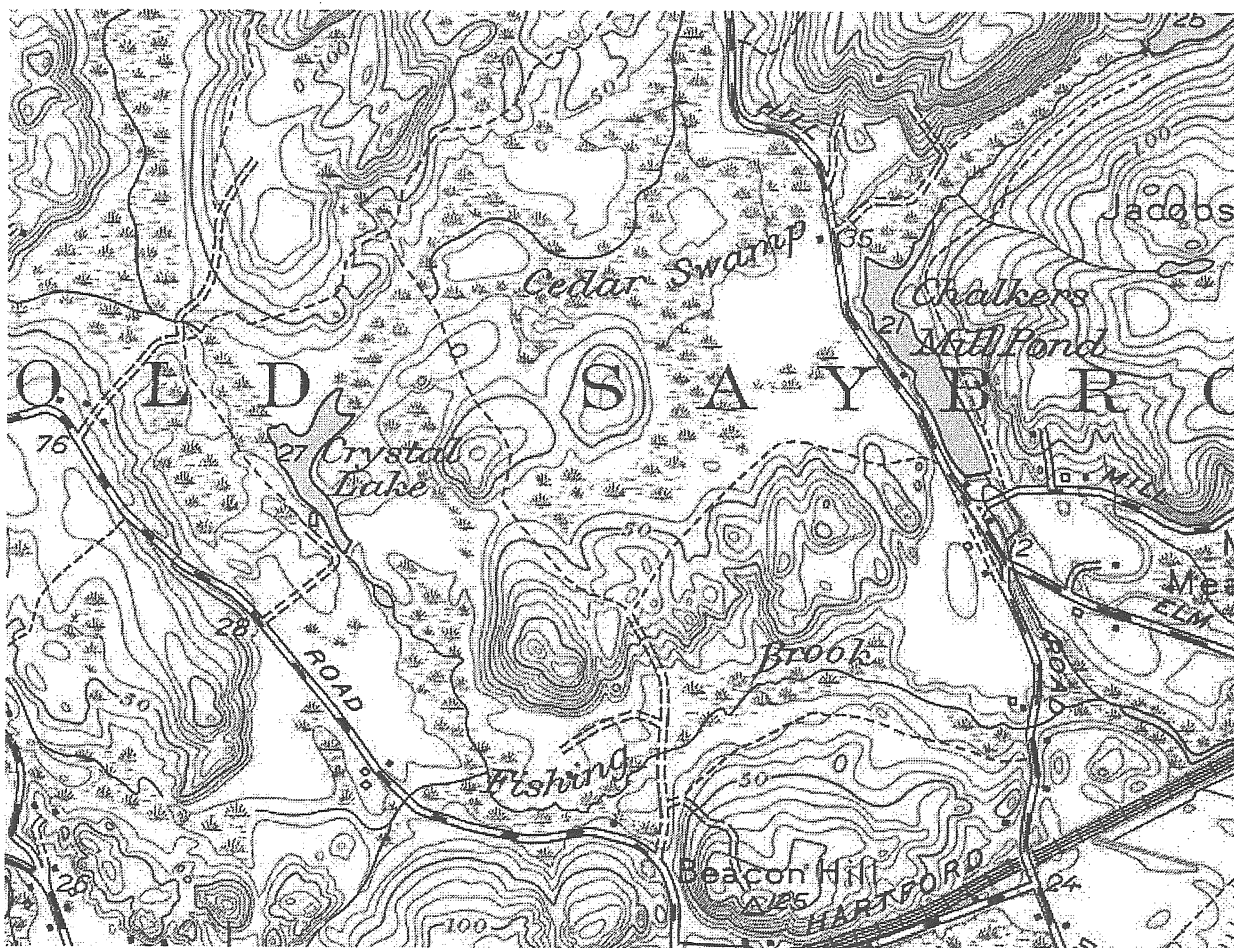


Figure 5.

USGS Essex topographic map reprinted 1951 revised to 1949



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 no known extant populations of Federal or State Endangered, Threatened or Special Concern Species at the site in question. There are, however, a number of State-Listed species that occur on land adjacent to this site, including the Town owned land. Since the possibility of these species occurring on the Great Cedars Conservation Area is high, it is recommended that a botanical inventory of this area be conducted prior to the development of trails and other public access facilities. Please have the town contact Kenneth Metzler, DEP ecologist (860-424-3585) if they need any additional information or assistance.

Natural Diversity Data Base information includes all information regarding critical biologic 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 substituted 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.

Please 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

Areas of Ecological Significance

Atlantic White Cedar Swamp

The Atlantic white cedar swamp is ecologically significant given that it is an uncommon habitat type in Connecticut and throughout the region. Bird species associated with Atlantic white cedar swamps in the Northeast include Cedar waxwing, Brown creeper, Northern saw-whet owl, Alder flycatcher, Hermit thrush, Veery, Northern waterthrush, Canada warbler, Black-and-white warbler, Black-throated green warbler, Common yellowthroat, Red-shouldered hawk and Barred owl. The Hensel's hairstreak, a rare species of butterfly, uses Atlantic white cedar exclusively; the larvae depend on the cedar foliage for food, and the adult butterflies obtain nectar from shrubs commonly found in the understory, such as highbush blueberry and sweet pepperbush. The Banded bog skimmer dragonfly also is thought to occupy some cedar swamps in New Hampshire, although they do not use Atlantic white cedar exclusively. Both the hairstreak and skimmer are endangered in Connecticut.

Research conducted in New Jersey has suggested that a number of mammal species can influence the establishment and growth of Atlantic white cedar. Southern red-backed voles, the predominate small mammal in mature cedar swamps in New Jersey, are thought to play an important role in the successful growth of cedars by dispersing mycorrhizal fungi spores in their fecal pellets. Conversely, white-tailed deer, rabbits and other small rodents, can negatively effect the natural regeneration of cedars through overbrowsing. Some researchers have noted that beaver activity may play a major role in perpetuating white cedar by holding back succession. However, beaver activity also may have a negative effect on the establishment and growth of cedar depending on site conditions, such as the type of vegetation present (e.g., the presence of competing hardwoods) and hydrologic changes (resulting in too much or too little water).

Mixed Hardwood Forest

The majority of the property consists of mature mixed hardwood forest dominated by oak, hickory and maple. Acorns and hickory nuts are valuable food items for numerous species of birds and mammals such as eastern wild turkeys, wood ducks, blue jays, white-tailed deer, gray squirrels, southern flying squirrels, eastern chipmunks and white-footed mice. The small stand of red cedar adjacent to Lake Rockview and mountain laurel present throughout much of the property, contribute to forest diversity and provide cover for wildlife throughout the year. Wildlife species described as "area sensitive" likely use the property given that it is predominately forested and contiguous to unfragmented forest to the west and north. Included on this list would be a number of forest birds that require relatively large tracts of continuous forest for successful breeding (e.g., veery, yellow-throated vireo, scarlet tanager, sharp-shinned hawk and barred owl), and mammals that have large home ranges (e.g., fishers and bobcats).

The lack of varying bank slopes and water depths resulting from past excavation activities at Lake Rockview has created a deep-water wetland with little vegetative diversity and cover (i.e., emergent and submerged aquatic vegetation, shrubs). While not considered prime wildlife habitat, wetlands of this type do provide some benefits to wildlife; they provide food and cover for fish, frogs, aquatic invertebrates, muskrats, river otters and raccoons, and may serve as temporary resting sites for waterfowl such as Canada geese.

Recommendations

Research and Management

In Connecticut's hardwood-dominated landscape, preserving coniferous habitats is important to maintaining wildlife species diversity. Dense stands of hemlock, pine, spruce and cedar provide protective shelter for wildlife by reducing the effects of

wind, precipitation and solar radiation. In addition, the seeds, foliage and twigs are eaten by a variety of birds and mammals. During the site walk, it appeared as though some conifer seedlings were growing in the area most heavily impacted by the beavers (i.e., the more open, flooded portion of the swamp) in the northeast portion of the property. If these were cedar seedlings, did high water conditions caused by the beaver impoundment kill the competing hardwoods, thereby allowing adequate light for the cedars to regenerate?

At this point, there seems to be more questions than answers with respect to the current health and long-term outlook for the cedar swamp. It is recommended that the Town initiate a more in-depth investigation into the history and dynamics of this particular stand to better understand the effects of past land uses and to identify possible management practices (e.g., hardwood tree removal, prescribed fire, plantings) that could be used to perpetuate the stand. Conflicts between beavers (a common, widely-distributed species) and rare plants are not uncommon. If it is determined that the beavers are negatively impacting this rare community or other sensitive resources in the area, the beavers should be removed.

In some areas of the hardwood forest, it appears as though all of the valuable timber was removed (known as highgrading), leaving few oak trees to provide a source of food for wildlife or a seed source to perpetuate a more healthy, diverse forest. The Town should consider developing a long-term forest management plan for the property with the help of a certified forester. Implementing a forest management program may require a short-term loss of continuous forest canopy cover and/or mountain laurel in some areas of the property, but will ensure the health of the forest and associated wildlife species for the future. Although invasive plants (Tree-of-heaven, Phragmites, Japanese barberry) are not a major problem on the property, an effort should be made to remove them.

Recreation Opportunities & Guidelines For Trail Development

Great Cedars Conservation Area has the potential to provide a variety of outdoor recreational opportunities for the public such as hiking, fishing, hunting, nature study, wildlife photography, boating, swimming, horseback riding and mountain biking. A properly designed trail system can provide excellent opportunities to increase public appreciation for wildlife and the ecological values of various habitats. Trails should be designed to enhance the learning and aesthetic aspects of outdoor recreation while minimizing damage to the landscape. Trails should be laid out to pass by or through the various cover types, terrains and other special features represented on the property while avoiding those areas prone to erosion or that contain plants or animals that may be impacted by human disturbance.

It is very difficult to identify the effects of specific recreational activities on wildlife without conducting an intensive study. Uses that are generally considered “compatible” could impact sensitive resources depending on the location, timing and frequency of their occurrence. For example, while regulated fishing is considered an accepted form of outdoor recreation, there could be impacts associated with it, such as streambank erosion at heavily used sites. The overall level of disturbance to vegetation/habitat and wildlife can be significantly reduced by establishing one or two multiple-use trails rather than several single/exclusive-use trails.

Some general guidelines to follow when developing a trail system include:

- Narrow, passive-use recreation trails with natural substrate that would require minimal vegetation removal, maintain forest canopy closure and prohibit the use of motorized vehicles are preferred to reduce environmental impacts and disturbance to wildlife. Abandoned roadways, e.g., farm/logging roads, should be incorporated into the trail system whenever possible and where appropriate.

- Traversing wetlands and steep slopes should be avoided to minimize erosion and sedimentation problems; where wetlands must be crossed, a boardwalk system should be used;
- Know the characteristics of the property and plan the layout so that the trail passes by or through a variety of habitat types;
- When possible, follow a closed loop design and avoid long straight stretches of >100'; trails with curves and bends add an element of surprise and anticipation and appear more natural;
- The trail should be well-marked and accompanied by an informational leaflet and/or small interpretive trail signs that describe the wildlife values associated with the property (e.g., the value of wetlands, various habitat types, special features) and habitat management practices;
- Potential impacts of trails on private property owners should be identified. Where trails bisect private property, the access should be of adequate width and the trail well-marked to reduce the potential for conflicts (e.g., trespass by trail users; lack of privacy);
- Contact the Appalachian Mountain Club or National Audubon Society for more specific guidance on trail design and construction.

Given the property's importance as the only large, continuous open space in Old Saybrook, and its relative small size in relation to the potential demand for public recreation space, multiple trails through the property are not recommended. Initially, it is suggested that the main stem of the old existing road system be designated as the trail where it serves to connect the Conservation Area to the Town park. The use of motorized vehicles should be prohibited and dog owners should be required to keep to their dog on a leash. Despite domestication, dogs do maintain the instinct to hunt

and/or chase wildlife. Uncontrolled dogs can be detrimental to wildlife, particularly during the spring/summer breeding period. Even if this natural instinct to chase is not triggered, the mere presence of a dog running through an area can cause wildlife to become stressed. Where multiple uses are allowed, requiring dogs to be leashed also will minimize conflicts between trail users. A short spur trail could be constructed off of the main trail to provide the public the opportunity to view the Atlantic white cedar swamp and learn about the historic/cultural and biological importance of this rare community. To minimize disturbance to wildlife, the trail be constructed closer to one edge, rather than through the center of the swamp.

Some other potential topics for interpretation (signs and/or brochure) along the main trail include:

- The effects of forest fragmentation and the importance of maintaining large blocks of continuous forest/greenways for wildlife and watershed protection.
- The importance of proper forest stewardship and managing forests for future generations.
- The negative effects of invasive plants and animal species.
- The importance of wetlands and waterbodies to water quality protection/supply and anadromous fish runs.

The current location of the campsite used by the scouts appears to be in an area that will cause minimal disturbance to wildlife. Before allowing horseback riding and mountain biking, careful consideration should be given to identifying the level of use the area initially receives and the demand for other uses. Public use should be monitored during different days of the week and seasons of the year (using a car counter at the property entrance, a log-in book near the entrance, volunteer monitors, or some combination), and the trail should be periodically inspected to assess its condition.

To reduce the potential for conflict between trail users and neighboring property owners, the boundaries should be clearly marked and a brochure with map should be made available at the trailhead. It is further suggested that the Town make a clearer delineation between the current access from Ingham Hill Road (i.e., the roadway leading into the property) and the 12-acre in-holding using some combination of signs, plantings and wooden fence.

Other Considerations

Given the excellent opportunity Lake Rockview provides for swimming and small boat use, as well as the interest of local scout groups in using the Conservation Area for camping and other activities, the Town should consider purchasing the remaining piece of private property between Lake Rockview and I-95. The lake is an attractive feature of the property that the public will want to access, however, the slopes along the northern and eastern shoreline restrict safe and efficient access to the lake from the Conservation Area.

Vegetation

The Great Cedars Conservation Area was recently acquired by the Old Saybrook Land Trust and the town of Old Saybrook for public education, passive recreation and natural resource conservation. This property may be divided into several broad vegetation categories. These include several mixed hardwood stands, the cedar swamp, the hardwood swamp associated with Fishing Brook, open fields and an old field area. Below are brief descriptions of each of these vegetation categories. The location and acreage of these areas were obtained from 1995 aerial photographs and are only approximate. They are depicted on the Vegetation Type Map. The field inventory of vegetation types was conducted in February of 2002. A more comprehensive inventory of the herbaceous vegetation that is present in each of these categories should be made at different times throughout the year by a botanist.

Shallow to bedrock soils, numerous rock outcrops and wetlands dominate the forested portions of this property. Most of the accessible forested portions of this tract, excluding the wetlands, were recently harvested leaving many sections of the forest in an unhealthy condition. At that time the majority of the merchantable red, black and white oaks were removed leaving the smaller, less vigorous and poor quality trees to grow in the residual stand. Some larger trees were left scattered throughout the property, however, most were non-oak species. Many of these larger trees, especially the hickories and occasional white oak provide excellent mast for wildlife. Some of these larger trees have cavities that are being utilized by wildlife as nesting sites. In areas where the timber harvest was heaviest, a dense growth of seedling size hardwoods originating from both seed and stump sprouts and herbaceous vegetation has become established.

The forested portions of this property are well suited to environmental education, conservation and passive recreation. Upgrading more of the old logging roads that are present into hiking and nature trails would not be difficult. Additional loop trails

could be developed by connecting existing trails. The construction of a boardwalk into a portion of the cedar swamp would create an exceptional educational experience while limiting environmental impact. The removal of risk and hazard trees that are located along both designated and non-designated trails is an important consideration.

Forest management aimed at removing the unhealthy and poor quality trees that are interfering with the growth of healthy trees could improve the overall health, stability and diversity of this forest. Although the majority of the valuable oaks were removed during the last harvest, another harvest that would generate a modest amount of revenue and improve the condition of this forest would be feasible at this time. The effect of the proposed intermediate harvest and regeneration harvest if properly administered could be used for the purpose of educational demonstration especially if non-managed control areas are set aside for comparison.

Vegetation Type Descriptions

A. Mixed Hardwoods: This Mixed Hardwood vegetation type totals approximately 50 acres and is generally restricted to areas that have well drained soils. This type is dominated by unhealthy pole and small sawtimber size trees that were left after the last harvest. They range from 60 to about 110 years of age. Larger and older trees are present but they are few in numbers and scattered. The overstory in this vegetation type is dominated by cankered black birch, red maple, shagbark hickory, pignut hickory, mockernut hickory, black oak, scarlet oak, red oak, white oak with lesser numbers of American beech and sassafras mixed in. Red maple, white ash, red oak, yellow birch, black gum and tuliptree dominate where this mixed hardwood type makes a transition to the Hardwood Swamp type. The understory vegetation that is present includes hardwood tree seedlings, hophornbeam, American hornbeam, maple leaved viburnum, American chestnut sprouts, witch-hazel, highbush blueberry and lowbush blueberry. Ground cover vegetation includes poison ivy, Virginia creeper, green briar, rattlesnake plantain, wild sarsaparilla, wood aster, club moss, evergreen wood fern, hayscented fern, Christmas fern and many other species of grasses, sedges and wild flowers.

As a result of the previous harvest, there are not enough healthy trees present at this time for this area to develop into a healthy and productive forest on its own. An option to improve the condition of this forest would be to implement a shelterwood harvest, which removes about half of the sawtimber size trees and most of the pole size trees. In a shelterwood harvest, the most healthy and highest quality trees are left in the residual stand to produce the seed that will eventually become the future forest. These residual trees also shelter or protect the new seedlings until they are well established. Once the new forest has become established (this usually takes between five and fifteen years) another harvest that removes some or all of the remaining large trees may be implemented. This final harvest actually allows the new seedlings to receive full sunlight so that they develop properly and grow quickly creating early successional habitat for wildlife. If another harvest is not implemented during this time period the seedlings that were established as a result of the shelterwood harvest will be shaded by the larger trees and die. The most important goal of the regeneration process is to re-establish a healthy forest .

B. Cedar Swamp: Approximately 34 acres of Cedar Swamp is present within this property. The vegetation that is present is variable with all size classes and age classes of trees represented. The Atlantic white cedar that are present, although not most numerous, are most note worthy. Some of the specimens are in excess of twenty inches in diameter at breast height and over sixty feet tall. Other vegetation includes red maple, yellow birch, black gum, white ash and hemlock that are declining due to an infestation of Hemlock Woolly Adelgid. Red oak, tuliptree and black birch are present where this type grades into the mixed hardwood type. Some of the larger trees that are located in this vegetation type have cavities that make excellent den sites for many species of wildlife. Young seedling and sapling size trees and a dense shrub layer dominate in areas adjacent to openings and where beavers have been active. Shrub species that are present include spice bush, sweet pepperbush, mountain laurel, highbush blueberry, swamp azalea, multiflora rose, swamp rose, winterberry, viburnum spp., and witch-hazel. Skunk cabbage, tussock sedge, club moss, sphagnum moss, poison ivy, green briar, Virginia creeper, cinnamon fern, Christmas fern,

sensitive fern, evergreen wood fern, royal fern and sedges are present throughout as ground cover.

Atlantic white cedar is considered intermediate in tolerance to shade. A moderate to high amount of light is necessary for good germination and relatively open conditions are essential for good survival and growth. If creating and maintaining multiple age classes of the Atlantic white cedar is a long-term goal for this property, then the present forest condition will have to be manipulated. Clear cutting patches of hardwood vegetation to create openings is the most efficient way to create favorable conditions for the establishment of white cedar seedlings. Openings should be designed to mimic natural disturbances in the forest such as hurricanes and windstorms, but with more precision. Once the seedlings are established, they should receive close to full sunlight by periodically removing competing vegetation.

C. Mixed Hardwoods: There are approximately 29 acres of mixed hardwoods that have a dense understory of mountain laurel present. Pole and sawtimber size scarlet oak, black oak, red oak, white oak, shagbark hickory, pignut hickory, mockernut hickory, cankered black birch, red maple, American beech and sassafras form the overstory. Red maple, yellow birch, black gum, white ash, red oak, and tuliptree dominate where this mixed hardwood type makes a transition to the Cedar Swamp to the north and the Hardwood Swamp to the south. The understory vegetation, which is dominated by mountain laurel also, includes hardwood tree seedlings, hophornbeam, American hornbeam, maple-leaved viburnum, American chestnut sprouts, witch-hazel, sweet pepperbush, and highbush blueberry. Ground cover vegetation is limited by the dense shade that the mountain laurel casts. Where breaks in the mountain laurel exist, groundcover vegetation includes poison ivy, Virginia creeper, green briar, raspberry, wild sarsaparilla, wood aster, club moss, evergreen wood fern, hayscented fern, Christmas fern and many other species of grasses, sedges and wild flowers.

Although many of the larger oaks were removed during the last harvest, the remaining forest is reasonably healthy. Many of the larger trees that remain are in fair to good condition and still have space to expand their crowns and grow. The majority

of the smaller trees in this stand are in poor condition and are declining in health and vigor. The unhealthy trees that are competing with larger healthy trees could be removed and utilized as fuelwood, however this is not critical for the health of this stand at this time.

D. Hardwood Swamp: There are approximately 21 acres of the Hardwood Swamp vegetation type present within this parcel. It is associated with Fishing Brook and Lake Rockview. The vegetation that is present is somewhat variable but dominated by pole size red maple, black gum, white ash and yellow birch. Occasional American elm and Atlantic white cedar are also present. Shrub species that are present include mountain laurel, spicebush, sweet pepperbush, highbush blueberry, swamp azalea, multiflora rose, swamp rose, winterberry, hophornbeam, American hornbeam and witch-hazel. Skunk cabbage, false hellebore, tussock sedge, club moss, sphagnum moss, poison ivy, green briar, Virginia creeper, cinnamon fern, sensitive fern, evergreen wood fern, royal fern, sedges and many wild flower species are present throughout as ground cover.

E. Open Field: The open field vegetation type occupies about 7 acres of this tract. The vegetation that is present is dominated by grasses, sedges, wild flower and weed species. The area appears to be maintained as a mowing lot.

F. Mixed Hardwoods: This 6± acre mixed hardwood stand is less densely vegetated than the mixed hardwood stands described above. Although the tree species are the same, white oak and the hickories are present in greater numbers. The eastern red cedar that are scattered throughout suggest that this area was utilized as pasture in the more recent past than the other mixed hardwood areas. Many of these larger trees, especially the hickories and white oak provide excellent mast for wildlife. Some of these trees have excellent cavities suitable for wildlife.

G. Mixed Hardwoods: A dense growth sapling and small pole size black birch and red maple have become established in this area that totals approximately 2 acres. Several non-native invasive plant species have become established in the opening that is located at the center of this area. These species include multiflora rose, Japanese honeysuckle,

bush honeysuckle, wine berry, Japanese barberry, tree-of heaven, autumn olive and winged Euonymus. Although many of these species provide wildlife with food and cover, they are aggressive competitors with native plant species. Mechanical removal of these plants may be difficult, but it is effective especially where only several individuals are present. Where these species are well established a broader approach is necessary. A combination of cultural, chemical and biological methods may be needed for complete control.

H. Old Field: An acre of the old field vegetation type is located adjacent to the open field. Plant species that are present include white ash, red maple and cherry seedlings, eastern red cedar, choke cherry, apple, crab apple, spice bush, smooth sumac, winged sumac, staghorn sumac, grape, poison ivy, Virginia creeper and raspberry. Herbaceous vegetation includes grasses, sedges and many wild flower and weed species. Unfortunately many non-native invasive plant species have also become established. These include Asiatic bittersweet, Multiflora rose, Japanese barberry, autumn olive, tatarian honeysuckle, and Japanese honeysuckle. Mechanical removal or chemical control of these plants is effective but will become more difficult as they become more widespread.

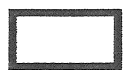
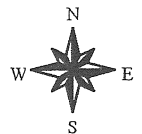
Figure 6.

VEGETATION TYPE MAP



LEGEND

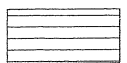
0 500 1000 1500 2000 Feet



PROPERTY BOUNDARY



VEGETATION TYPE BOUNDARY



HOMESTEAD 3+- ACRES



MAJOR TRAILS

VEGETATION TYPES

A. Mixed Hardwoods	50+- Acres
B. Cedar Swamp	34+- Acres
C. Mixed Hardwoods	29+- Acres
D. Hardwood Swamp	21+- Acres
E. Open Field	7+- Acres
F. Mixed Hardwoods	6+- Acres
G. Mixed Hardwoods	2+- Acres
H. Old Field	1+- Acres

Fisheries Resources

Lake Rockview

Lake Rockview is approximately 14.5 acres in size and was created from a sand and gravel operation. It is surrounded by very steep side slopes, especially on the eastern and northern portions of the lake. The lake outlets into Fishing Brook at two separate locations near the southwest portion of the lake. No information is available relative to lake bathymetry, water quality, and aquatic macrophyte populations. The lake most likely contains suitable habitat necessary for the survival of warmwater lake fishes. Warmwater fisheries are resident freshwater finfish populations, which can reproduce and survive in an aquatic environment where water temperatures exceed 75°F for extended periods. Warmwater species that may be expected to inhabit the lake would be: largemouth bass, pumpkinseed sunfish, bluegill sunfish, chain pickerel, yellow perch and brown bullhead. The lake may be deep enough to provide suitable coldwater habitat for trout to survive through the summer. For trout to survive, water temperatures in deeper portions of the lake should be 70°F or less with dissolved oxygen levels 5 mg/l or greater. There is anecdotal information, which suggests that trout stocked in the lake have survived throughout the summer.

Fishing Brook

Fishing Brook is a small coastal stream that is tributary to the Oyster River. The stream within town property is of low gradient and contains slack water as it meanders through marshy wetlands. Instream mesohabitats are mainly in the form of pool and run habitats with sandy, silty substrates. The CTDEP Inland Fisheries Division has not sampled this watercourse; thus, no survey data are available. Based upon the stream's character and watershed, it is expected to support a warmwater fish community that consists of blacknose dace, shiner species, and redbfin pickerel. It's very possible that

warmwater fish that reside in Lake Rockview may seasonally utilize this watercourse since the lake outlets into the stream.

Anadromous fish cannot access this portion of Fishing Brook due to a small pond located south of I-95. At present, there are strong runs of alewife and blueback herring to the base of the dam. CTDEP Inland Fisheries Division staff are currently partnering with the Town of Old Saybrook and Old Saybrook Land Trust to construct a fishway at this pond to achieve fish passage primarily for alewife, blueback herring, and American eel.

Recommendations

- Coldwater species such as trout could be stocked into the lake during early spring utilizing a “put-and-take” strategy in which most fish would be harvested from the lake before environmental conditions become unsuitable for survival. It is possible that some trout will survive the summer and “holdover” within the lake. Harvesting of fish can be enhanced by holding a children’s fishing derby. This management strategy will limit the number of fish living in the lake during the summer, hence, minimizing possible fish mortalities due to warm water temperatures. An initial total stocking of 200-300 adult rainbow and brown trout is recommended. Brown trout are better able to temporarily withstand warmwater lake habitats whereas rainbow trout are more easily caught by shoreline angling.
- The town should consider the installation of in-lake habitat improvement structures to provide cover for fish forage species seeking shelter and predators seeking prey. These structures are relatively simple and inexpensive to construct and usually involve anchored brush piles and trees. CTDEP Inland Fisheries staff are willing to work with the town to determine the appropriate number, type and location of structures.
- A few exposed sandy areas along the lake are eroding. These areas should be stabilized with vegetation to minimize future erosion into the lake.

- Boating access to the lake should be limited to small car-top boats, kayaks and canoes to protect and maintain existing water quality conditions.

Archaeological Review

A review of the Connecticut Archaeological Site files and maps show no known archaeological resource in the project area. However, our files do show three prehistoric Native American campsites in close proximity. In addition, early settler's farming and industrial use of the property suggests the high probability of colonial ruins and features associated with the town of Old Saybrook's historic development.

Natural areas similar to Cedar Swamp that provide interior swamp/wetland have been used for settlements by Native Americans for thousands of years. Indian hunting and gathering economies required the movement of peoples through ecological territories on a seasonal basis. Interior wetland areas would have provided an abundance of natural resources for exploitation, as well as areas of protection from winter elements. The project area exhibits the topographic and environmental variable that allow us to predict prehistoric utilization.

Chalkers Millpond represents early industrial and farming development in the region. While located outside the 150 acre tract, the distribution of historic resources may extend into the project area, and, should be considered during the planning process.

The Office of State Archaeology strongly recommends an archaeological survey for any portion of the project area proposed for ground disturbance in the town's plan for public use. This survey should be conducted in accordance with the Connecticut Historical Commission's "Environmental Review Primer for Connecticut's Archaeological Resources". In addition, the survey may provide educational opportunities for the public and students. The Office of State Archaeology is prepared to provide any technical assistance in conducting the recommended survey.

Planning Considerations

Background

First, it is most common that these ERT reviews are conducted when a municipality is facing the impacts of a development project. In such cases, municipalities seek independent input from a wider range of professionals who are involved in their individual expertise on a day to day basis. This particular review is unusual in that it's purpose is to provide assistance with respect to inventorying natural resources that have already been protected by virtue of the Town's purchase of the property as open space. It is commendable that the Town, specifically the Old Saybrook Conservation Commission, is looking for additional input so as to be able to effectively use the parcel for the good of its citizens while at the same time seeking to protect the most fragile and special features that exist on the property in question. In this way, the Town will be able to provide use of the property that most effectively takes advantage of the beauty and value of the land while at the same time providing an educational experience for generations to come.

The ERT includes a number of qualified resource specialists that are providing specific recommendations regarding the resources present on and adjacent to the subject property. These comments will tend to concentrate less on the resource inventory and more on issues of responsible public access that the Town is interested in promoting at the site.

Such access requires thought on topics such as parking and access and the potential for the placement and design of signage that may be constructed at various points along existing and proposed trails. In addition, suggestions for placement of paths from the standpoint of effective use of the existing topography may be pertinent as well.

Description of the Property

The overall property purchased in 1999, described as the Great Cedars Conservation area, totals approximately 300 acres in size. This review concentrates on a 150-acre parcel located between Old Back Highway off Schoolhouse Road and Ingham Hill Road. It is bound to the south by Interstate 95. This 150 acre parcel includes a significant inland body of water known as Lake Rockview, a large, freshwater lake formed as the result of gravel excavation in the mid 1950's as a source for the construction of the interstate as well as a significant inland wetland system crossing the entire northern portion of the tract. The lake has reported depths approaching 60 to 70 feet, common to excavation pits and quarries. The parcel also includes natural resources described in the accompanying description as regenerating cedars, great cedars, a lake shoreline and the resources of Fishing Brook. Of note, Fishing Brook along the southern boundary of the parcel and in the area of Lake Rockview is identified on National Flood Insurance Program (NFIP) Flood Insurance Rate Maps (FIRM) as a floodway, the only such floodway in the Town of Old Saybrook.

Comments

The following comments are offered based upon review of the 150 acre tract for planning considerations:

1. Municipal Improvements

Section 8-24 of the Connecticut General Statutes states that purchase of land for municipal purposes as well as improvements to municipal properties must be approved by the Planning Commission within that municipality. The approval for the purchase of the property in question was granted by the Old Saybrook Planning Commission in August of 1999. It was acknowledged at that time that specifics on site improvements would be brought forward for approval at a later

date. Those specifics are the center of this municipal effort and the subject of this ERT application.

The improvements that are being anticipated at this time constitute improvements to a municipally owned property and, as such, require the issuance of a report by the municipal planning commission pursuant to Section 8-24 CGS. Specifically, this statute states that “ ... [n]o municipal agency or legislative body shall locate, relocate, substantially improve ... any ... park ... or other municipally owned property ... or locate or extend public utilities [including] light [and] power [as well as any] other purposes, until the proposal to take such action has been referred to the [Planning] commission for a report.” The statute further states that, notwithstanding the provisions of this section, “... a municipality may take final action approving an appropriation for any proposal prior to the approval of the proposal by the commission pursuant to this section.” As a result, the money for such improvements could be approved by responsible municipal boards with the Planning Commission reviewing and reporting on the appropriation afterward. The Planning Commission is bound, however, to reporting within 35 days of official submission of the request for a report on such municipal improvement. If such a report is not issued within those 35 days, this “... shall be taken as approval of the proposal.” It should be noted that where other land use statutes provide extensions for decision timelines, Section 8-24 CGS does not appear to offer such leeway.

2. Vehicular Access

Currently, a small area of grassed field immediately adjacent to Ingham Hill Road is utilized for the parking of vehicles prior to continuing into the property by foot. At the time of purchase, this location had been discussed as the most logical spot for parking and remains quite appropriate in terms of ease of access as well for minimizing the impacts of vehicles to the property. In that this 150-acre parcel will likely be connected via paths to Clark Community Park (a.k.a. Town Park) and its parking facilities off Schoolhouse Road to the west, it seems that additional parking facilities on the subject parcel would be unnecessary. The only other public road directly abutting the parcel is the Old Back Highway, which is a narrow, partially

paved residential road, which follows an original colonial era road. Due to its limited extent of improvement and restricted nature in width and alignment, it would seem that Old Back Highway should be avoided as an option for broad public access. Consistent with this opinion, it is our understanding that the Town is not considering such access at this time.

3 . Floodway Development

Although floodways are identified by the NFIP as extremely hazardous areas due to the velocity of floodwaters, such hazards are related more to development and the potential for erosion and the capacity for carrying debris and projectiles. It is unlikely that any significant development will be proposed or will occur within the Fishing Brook Floodway. If such development is proposed, an engineering review should be conducted at the time of such proposal before any encroachments, including fill should be approved.

4. Footpaths, Viewing Areas and Signage

The existing footpaths that were utilized during the site walk seemed to provide adequate access to several resource areas, including the areas of great cedars and regenerating cedars. Resources such as Lake Rockview and Fishing Brook were more difficult to reach. Pathways in and around the higher elevations of the property and not in the lower elevations in and around the aforementioned waterbodies may be appropriate and more desirable. In terms of clearings and views, the higher elevations immediately above Lake Rockview seem to provide a wonderful opportunity for a minimal clearing (underbrush, not canopy) and view south toward Long Island Sound. A south/southeasterly view from atop that hill seems especially appropriate in that elevations decrease from the site in that direction. The existing stonewall in this location could be incorporated into a site that could include several benches and signage describing the view and resources. In general, hikers would likely welcome simple log benches along the footpaths. Unobtrusive signs describing the resources of the tract at each of those locations would likely be a welcome addition as well.

5. Lake Access Considerations

At the time of the site walk, comments were made with respect to the potential use of Lake Rockview for public swimming purposes. It was acknowledged that the lake may not be suitable for public swimming purposes due to excessive water depths and access consideration resulting from steep embankments, both underwater and on the bedrock slopes to the northwest of the lake. Without a thorough plan for how such public swimming would be accessed and promoted in this location, we would concur with this general concern and recommend not pursuing this option without significant study.

Management Considerations

The subject of this ERT review is the Great Cedars Conservation Area, which is part of a major assemblage of town-owned open space within the upper watershed of the Oyster River. Because of the interconnection of these tracts, comments relating to the entire complex will be made where appropriate.

The physical character of the area is quite mixed, consisting of a mosaic of upland and wetland and waterbodies. The upland is often rough and bony, land typical of much of rural Connecticut, and is covered with a predominantly mixed hardwood forest. Wetlands occupy a substantial portion of both the Great Cedars Conservation Area and the adjoining town park to the west. These include a share of the large cedar swamp, a smaller, beaver-impacted wetland just west of Ingham Hill Road, and wetlands along Fishing Brook and the brook draining Ingham Pond. Waterbodies in addition to Crystal Lake within the town park include: (1) Lake Rockview, a large, deep, water-filled excavation at the junction of I-95 and Ingham Hill Road and the result of the construction of I-95, (2) shallow, Chalkers Mill Pond, and (3) Ingham Hill Pond, which is more of a fen than a pond.

Excluding the town park which contains ballfields and some degree of recreational development, the remainder of the town-owned land is dedicated as conservation land, which is an appropriate designation in view of its physical character. Thus low intensity usage and management are proposed. Indeed existing park and recreation regulations prohibit both mountain bike and equestrian use on trails.

Management Issues and Recommendations

1. General Management

Specific entry/control points are a necessary ingredient of land management. On the west side, the existing access at the town park should suffice, with gating at sundown to

avoid nocturnal misuse. An east side access is needed on Ingham Hill Road, although perhaps not at the existing parking lot near the inholder's home if this should prove to have a negative long term impact on his privacy and enjoyment of his property (also see under Trails below).

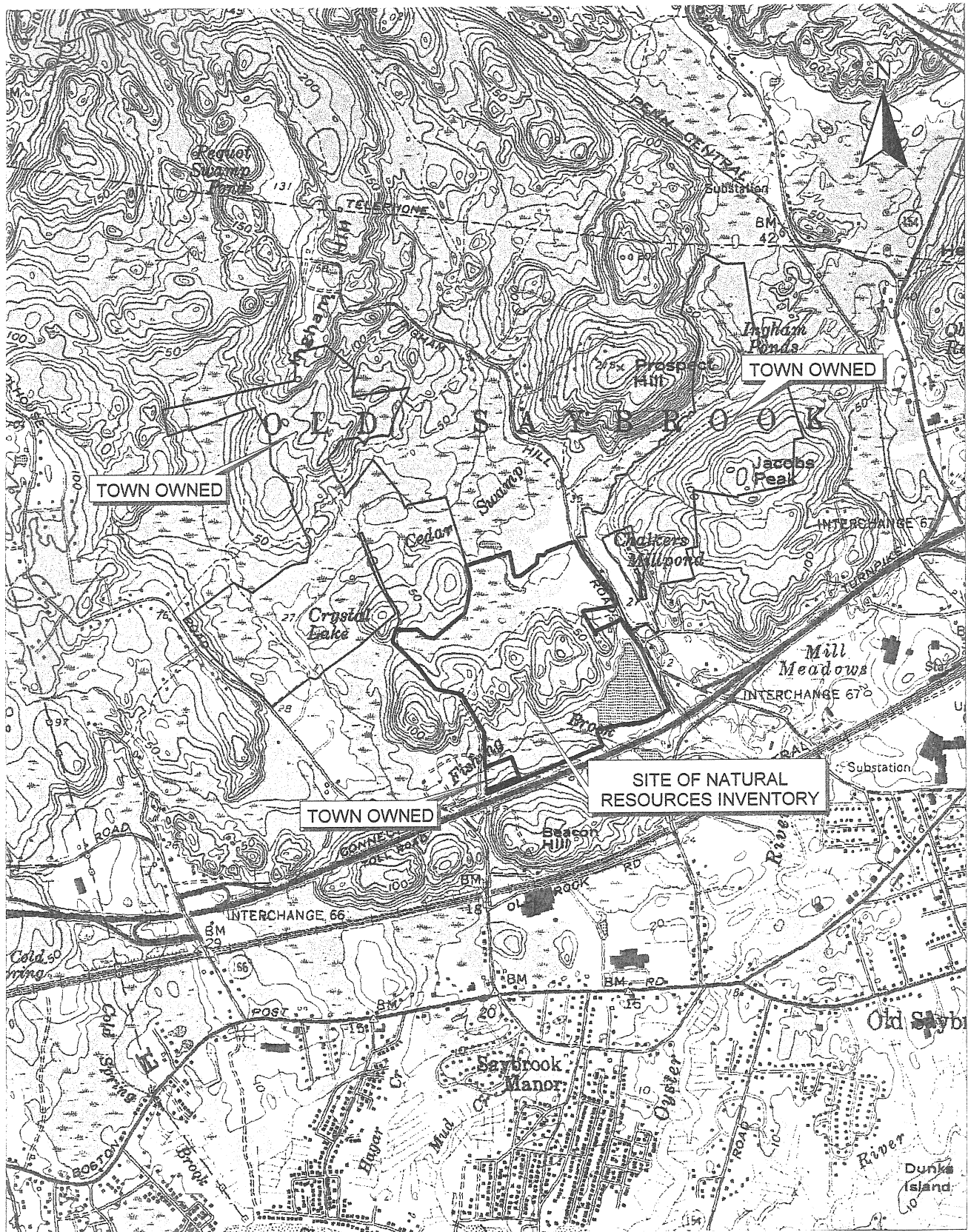
According to town representatives at the ERT field review, no noteworthy management problems such as dumping, partying, etc. have occurred to date. The presence of the resident inholder has proved to be advantageous, as also probably are the residents along the east side of Chalkers Mill Pond.

2. Specific Issues

- **Trail Development** - Although there are some existing trails, partially utilizing old woods roads, development of a comprehensive system including possible loop trails is recommended. First of all, relocation of the existing parking lot/trailhead is suggested because of its current proximity to the inholder's home. A location somewhere between the existing location and the north end of Lake Rockview could serve as a convenient trailhead for trails utilizing town land on both sides of Ingham Hill Road. As schematically suggested on the attached map, a system west of Ingham Hill Road would also connect to the town park in the vicinity of Crystal Lake. A similar trail system utilizing apparent town ownership south of the homes on Chalkers Mill Pond would provide access to Jacobs Peak and Ingham Hill Pond located within a tract of land which otherwise appears nearly landlocked and lacking ready access.
- **Lake Rockview** - This deep lake with a steep, rocky western border offers little opportunity for development of a public swimming facility. Indeed its depth poses a safety hazard which militates against any development or official endorsement of swimming use which could expose Old Saybrook to liability risk. Therefore, this Team member would not endorse the suggested location of a Boy Scout camping area adjacent to the lake. It is recommended to manage the lake for cartop non-motorized boating/fishing. In addition, because of its reported depth, the lake's potential as cold water fishery should be investigated.

- **Natural Area Resources** - Although the conservation land designation provides basic protection, the area does contain a variety of wetland areas and most specifically Atlantic white cedar stands. Although the extent of these stands was unknown at the time of the site visit, especially within Cedar Swamp, existing examples should be protected and encouraged through vegetative management if deemed appropriate.
- **Silviculture** - The hardwood forest occupying much of the upland acreage offers potential for silviculture management and resulting income if town policy decision determined such activity to be compatible with the conservation land designation. In any case, removal of dead or diseased stands including hemlocks in particular is suggested.
- **Wildlife Management** - As the property contains a variety of habitat types, there is potential for enhancing its wildlife population and diversity. Whether or not to allow hunting will be a local policy determination. However, based on the ERT Team experience during the site visit, illegal hunting and poaching is likely to be a management issue which posting periodic patrol may help control.
- **Fishery Management** - As stated under Lake Rockview above, there may be potential for a coldwater, as well as, a warmwater fishery in this waterbody. In addition town plans to restore an anadromous fishery in the Oyster River and its tributaries is a desirable action. However, this Team member notes the man-made channel connecting Lake Rockview to Fishing Brook and raises the question of possible impact on this anadromous fishery potential in terms of impact on flow volume or direction, water temperature, etc.

Figure 7.
Suggested Trail System



ABOUT THE TEAM

The Eastern Connecticut Environmental Review Team (ERT) is a group of professionals in environmental fields drawn together from a variety 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.