

**YMCA  
LATHAM  
CENTER**

**Groton,  
Connecticut  
July 1990**

Eastern Connecticut  
Resource Conservation  
and Development  
Area, Inc.

**Eastern  
Connecticut  
Environmental  
Review  
Team  
Report**



**YMCA LATHAM CENTER  
GROTON, CONNECTICUT**

**REVIEW DATE: MAY 17, 1990**

**REPORT DATE: JULY 1990**

**Eastern Connecticut  
Environmental Review Team**

**Eastern Connecticut  
Resource Conservation and Development Area, Inc.  
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**ENVIRONMENTAL REVIEW TEAM REPORT  
ON**

**YMCA LATHAM CENTER  
Groton, Connecticut**

This report is an outgrowth of a request from the Executive Director of the YMCA of Southeastern Connecticut (endorsed by the Groton Town Manger) to the New London County Soil and Water Conservation District (SWCD). The S&WCD referred this request to the Eastern Connecticut Resource Conservation and Development (RC&D) Area Executive Council for their consideration and approval. The request was approved and the measure reviewed by the Eastern Connecticut Environmental Review Team (ERT).

The ERT met and field checked the site on Thursday, May 17, 1990. Team members participating on this review included:

<b>Patrice Beckwith</b>	<b>Soil Conservationist USDA - Soil Conservation Service</b>
<b>Nick Bellantoni</b>	<b>State Archaeologist CT Museum of Natural History</b>
<b>Joe Hickey</b>	<b>State Park Planner DEP - Bureau of Parks and Forests</b>
<b>Steve Hill</b>	<b>Wildlife Biologist DEP - Eastern District Headquarters</b>
<b>Dawn McKay</b>	<b>Zoologist DEP-Natural Diversity Data Base</b>
<b>Pete Merrill</b>	<b>Forester DEP - Patchaug State Forest</b>
<b>Brian Murphy</b>	<b>Fisheries Biologist DEP - Eastern District Headquarters</b>
<b>Tom Seidel</b>	<b>Regional Planner SE CT Regional Planning Agency</b>
<b>Elaine Sych</b>	<b>ERT Coordinator Eastern Connecticut RC&amp;D Area, Inc.</b>
<b>Bill Warzecha</b>	<b>Geologist DEP - Natural Resources Center</b>

Prior to the review day, each Team member received a summary of the proposed project, a list of the town's concerns, a location map, a topographic map, and a soils map. During the field review the Team members were given additional information. The Team met with, and were accompanied by representatives from the YMCA and the Town of Groton. 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 designs 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 landowner. This report identifies the existing resource base and evaluates its significance to the proposed development, and also suggests considerations that should be of concern to the developer and 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 making your decisions on this proposed environmental day camp.

If you require additional information, please contact:

Elaine A. Sych  
ERT Coordinator  
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# 1. SETTING, LAND-USE AND TOPOGRAPHY

The YMCA property consists of  $\pm 150$  acres of relatively undeveloped land located in the northwest corner of the Town of Groton. It is bounded by Gungywamp Road to the south, Armor Road, a private road to the east, wooded undeveloped land to the north and rear portions of residential properties that are located on the east side of Briar Hill Road to the west. Except for some cleared areas in the southern parts, the site is characterized by wooded land that includes the southern half of Latham Lake, a  $\pm 20$  acre surface water body. Buildings on the site include an open air pavilion, sanitary facilities, a caretaker house and the remains of a paved basketball court which, for the most part are all located in the southern parts.

Land use in the area surrounding the site includes low density residential use on the east and west, high density residential use (Naval housing project) on the south and the Barnum School, which is located near the corner of Briar Hill Road and Gungywamp Road. A cranberry bog was reportedly operated in the wetland southeast of the lake. Drainage ditches related to the cranberry bog are visible on a 1965 and 1970 air photo that includes the site. A review of a 1934 air photo for the site and vicinity indicate that Latham Bog was open water and the area to its east comprised open farm fields. The presence of numerous stonewalls on the site gives testimony to its past agricultural use.

During the fieldwalk, it was observed that the front portion of the parcel (southern end), in proximity to the entrance road, is used without consent as a disposal area for brush, old automobiles, and household appliances. Every effort should be made to secure all entrance roads with a gate or fence to prevent illegal disposal of refuse and junk cars.

The site is zoned RU-40 which permits single-family homes on lots of  $\pm 1$  acre or 40,000 square feet. It is understood that municipal utilities (water and sewer) are accessible to the site via Gungywamp Road.

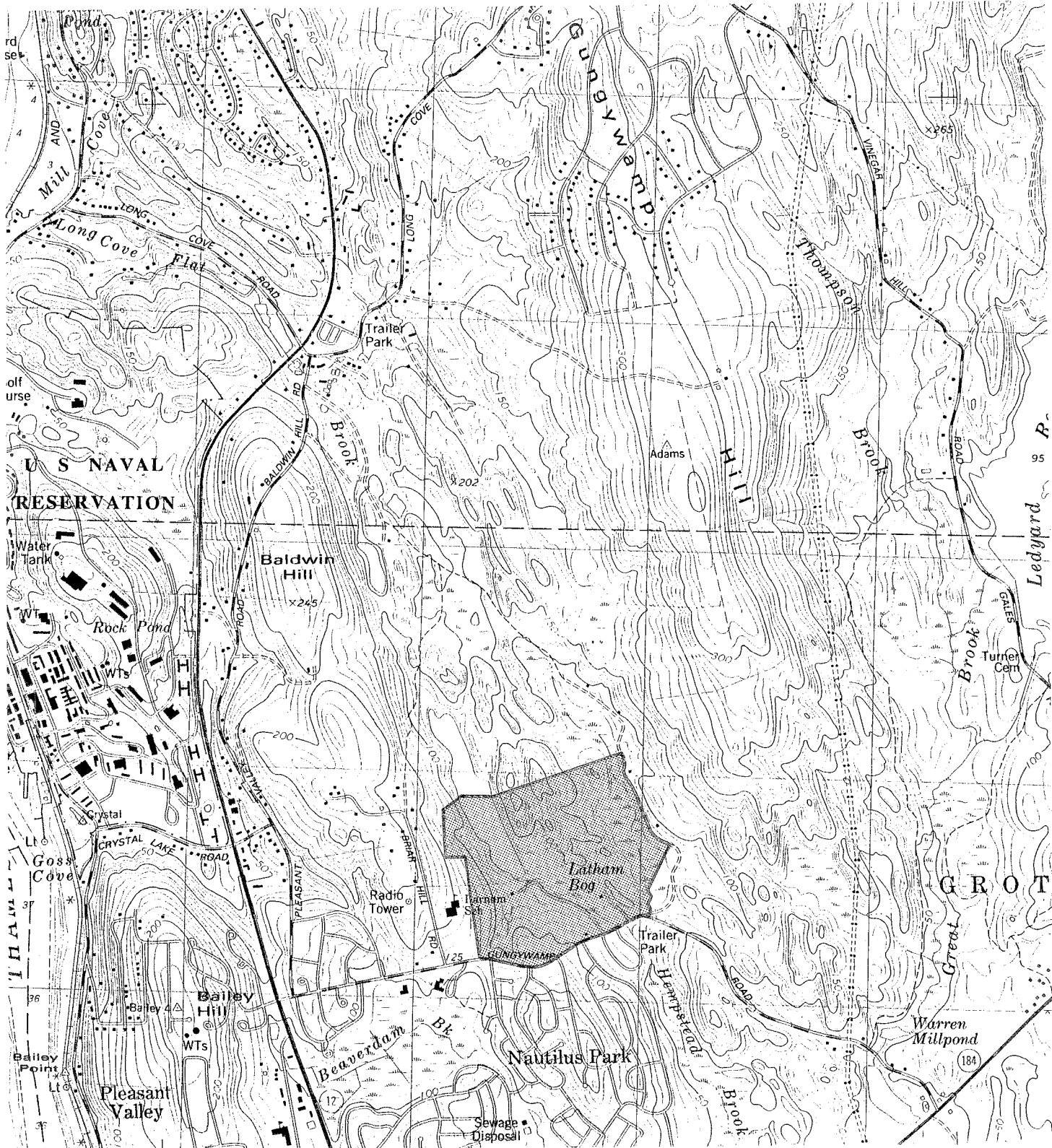
The principal topographical features of the site are found in the low-lying parts of the site and include Latham Lake in the northeast corner, Latham Bog southeast of the Lake, and a  $\pm 22$  acre wetland in the eastern parts. The remainder of the site consists of bedrock controlled uplands that have slopes which range from gentle to very steep. Steepest slopes occur mainly in the northern parts east of Latham Lake. Bedrock is at or near ground surface in this area. Gentle slopes occur mainly west of the entrance road. The remainder of the site contains moderate slopes. Maximum and minimum elevations are about 170 feet above mean sea at the site's northern limits and 70 feet above mean sea level as represented by the surface of Latham Bog, respectively.

## LOCATION MAP

Scale 1" = 2000'



Approximate Site

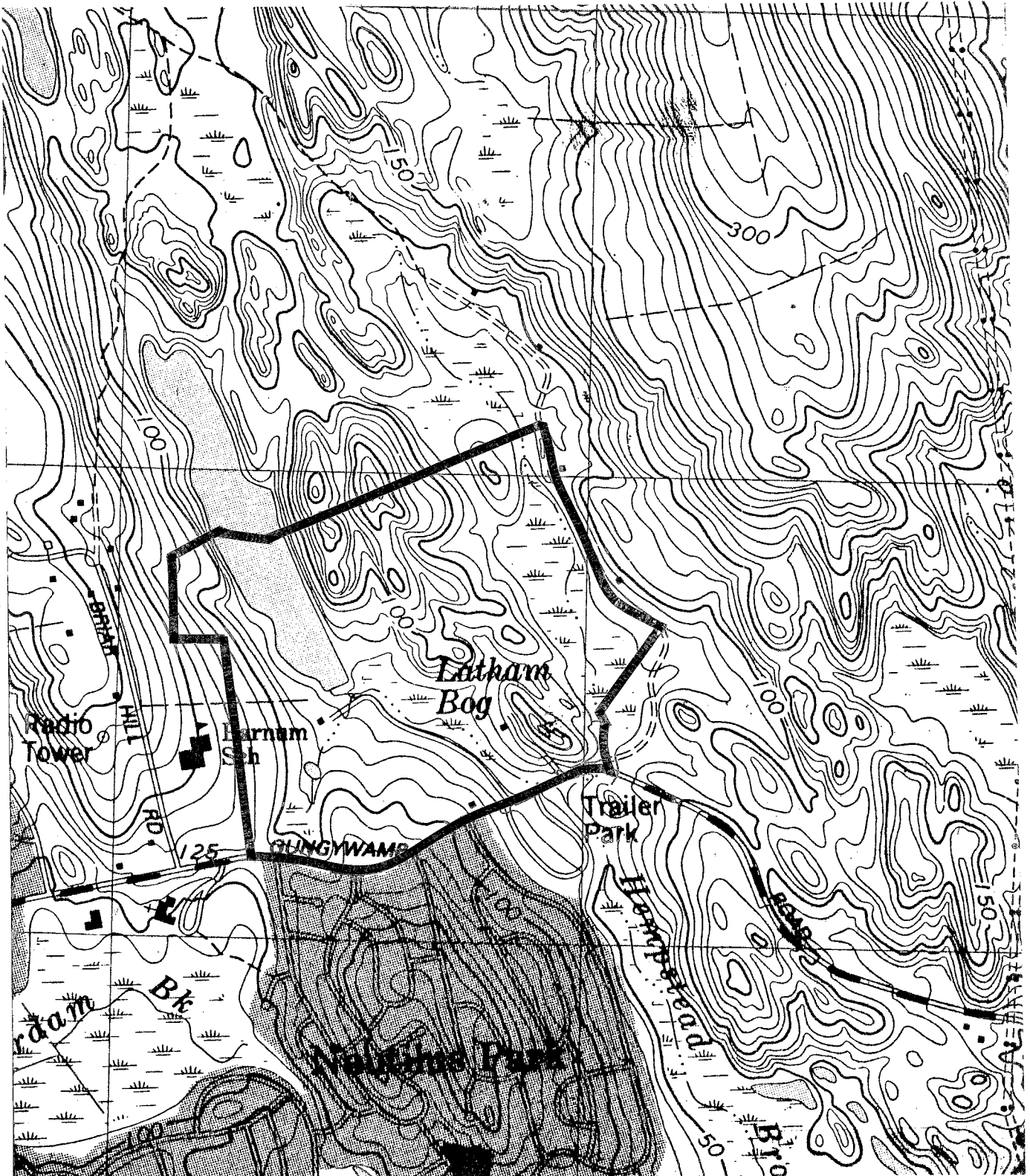


## TOPOGRAPHIC MAP

Scale 1" = 1000'



 Approximate Site Boundary





## 2. GEOLOGY

The YMCA site is located entirely within the Uncasville topographic quadrangle. A bedrock geologic map (GQ-576, 1967) and a surficial geologic map (GQ-138, 1960) for the quadrangle have been published by the Connecticut Geological and Natural History Survey. Both were compiled by Richard Goldsmith.

As mentioned earlier the site is controlled largely by the underlying bedrock. Bedrock is exposed mainly in interior and southern parts of the site. Goldsmith (GQ-576) identified two bedrock types on the site; a granite gneiss and Plainfield Formation. The principal rock type found on the site is a subunit of the Plainfield Formation. It occurs throughout the central parts and, in general, consists of interlayered thinly bedded quartzites, mica schists, and dark gray gneisses. At the site's eastern and western limits, the Plainfield Formation is in contact with granite gneiss. These rocks are described as orange-pink to light-gray medium grained gneissic biotite granite whose major minerals include quartz, microcline, oligoclase, biotite and iron oxides.

The terms "gneiss", "quartzite" and "schist" used in the preceding paragraph refer to the textural and structural aspects of the rocks. All are crystalline, metamorphic rocks (geologically altered by great heat and pressure). "Gneisses" are streaked or banded rocks. A "schist" is a structurally layered rock and is characterized by a high percent of flaky minerals (mica). "Quartzites" are typically light colored to gray, massive to layered, medium grained crystalline rock. It is a metamorphosed sandstone comprised mainly of quartz grain and is very hard and resistant.

The exact depth to bedrock is unknown, but it probably does not exceed much more than 10 feet in most places.

For those areas of Groton not serviced by public water mains, the underlying bedrock aquifer is the likely source of water to on-site wells. The underlying bedrock appears to be the sole aquifer for the site, if an on-site well is desired for a water supply source.

Unconsolidated materials overlying bedrock on the YMCA site may be described as the surficial geology of the area. According to map GQ-138, the majority of the site is covered by as relatively thin blanket (i.e., less than 10 feet) of unconsolidated material known as till. Till is a glacial sediment composed of rock particles ranging in size from small clay particles to large boulders deposited directly by glacier ice. The textural components of the till are not sorted. For example, fine grained particles are intermixed with coarse grained particles. The texture of the till in the upper few feet of till and in shallow to bedrock areas is usually sandy, stony and friable. In contrast, a compact layer may develop below the friable till layer and is locally referred to as "hardpan". The texture of the till covering the site is mostly sandy, stony and loose.

Another type of glacial sediment found on this site is a sandy and gravelly sediment called stratified drift. Though minor in terms of distribution and abundance, these sediments were laid down by glacial meltwater during ice retreat. These deposits

are restricted to the low-lying parts primarily along the periphery of Latham Lake, Latham Bog and the wetland in the eastern parts. The sand and gravel on the site probably do not exceed much more than 10 feet thick.

The only other widespread surficial geologic deposits, which formed post-glacially, are swamp deposits. They occur in Latham Bog and the large wetlands at the eastern limits. Generally speaking, they consist of partly decomposed organic material mixed or interbedded with silt and sand.

The geology of the site should pose little or no problems in terms of passive recreational use of the land such as hiking, bird watching, crosscountry skiing and boating activities on the lake. On the other hand, development of the site for active recreational uses such as playing fields, new buildings or a swimming pool may be hindered due to the presence of moderate to steep slopes and shallow to bedrock soils. The availability of municipal utilities to the site will lessen the hydrogeologic concerns that typically accompany on-site septic systems and wells. However, in the shallow to bedrock areas, there is a good chance that blasting will be required for shallow excavations such as building foundations, utility trenches and swimming pools. Blasting usually increases site development and engineering costs. The most favorable areas for development of playing fields, building, basketball and tennis courts appears to be east of the entrance road in the southern parts. Slopes, wetlands and bedrock will be an obstacle for the development of playing fields and buildings on the remainder of the site.

During a field walk of the site, it was observed that a paved basketball court was constructed over swamp deposits in Latham Bog. A review of air photos for the site and vicinity confirms the construction of the court and re-routing of the outlet stream for Latham Lake to the east side of the court prior to 1965. Because of its state of disrepair, consideration should be given to removing the court and restoring the wetlands/streamcourse in the area back to their former state.

With the tracts proximity to Barnum School, it offers good opportunities for outdoor classroom nature study. A trail could be constructed east of the school to the site without crossing wetlands or traversing very steep slopes. The trail could then connect or lead into the existing trail system on the site. Regarding a nature trail, students and day campers can determine, by observation and reference material, the major features of the tract. Students/day campers can then begin to relate, in a basic way, how the geological processes which formed the land and man's intervention in the natural processes helped to determine the types of habitat and wildlife found on the site. They can study the dynamics of human intervention and natural processes, and how their interplay can alter a habitat, and thereby become more understandable.

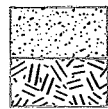
Also, the site and vicinity has important archaeological significance that can be tied into educational programs. (See **ARCHAEOLOGICAL REVIEW** section of report.)

According to the Locational Guide Map for State Policies Plan for the Conservation and Development of Connecticut, Revision for 1987-1992, the site is identified as a

conservation area. The State action strategy for conservation areas are as follows; plan and manage for the long term public benefits of the land contributing to the state's need for food, fiber, water and other resources, open space, recreation and environmental quality, and insure that change in use are compatible with the identified values. Any future plans for the YMCA property should be consistent with the above.

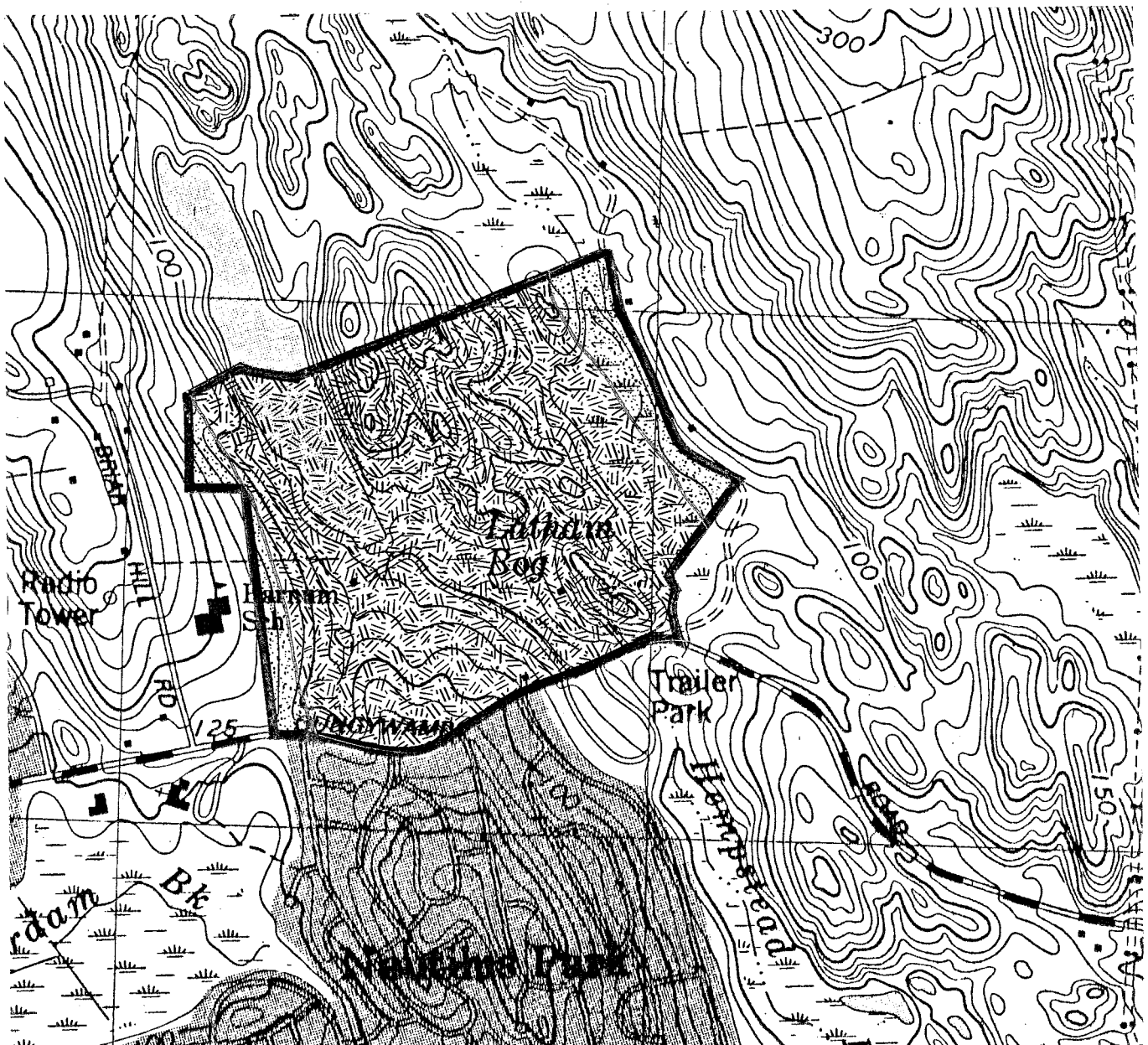
### **BEDROCK GEOLOGIC MAP**

Scale 1" = 1000'



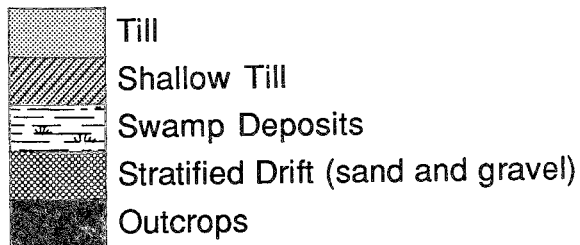
Granitic Gneiss

Plainfield Formation



# SURFICIAL GEOLOGIC MAP

Scale 1" = 1000'



### 3. SOILS DESCRIPTIONS

#### **\*\*\* Aa - Adrian and Palms mucks**

These nearly level, very poorly drained soils are in pockets and depressions of stream terraces, outwash plains, and glacial till uplands. Slopes range from 0 to 2 percent. Adrian soils have a high water table which is at or near the surface for most of the year. Permeability is moderately rapid in the organic layers and rapid in the substratum. Palms soils have a high water table which is at or near the surface for most of the year. Permeability is moderately rapid in the organic layers and moderately slow in the substratum. The available water capacity is high for these soils. Runoff is very slow or ponded. These soils are strongly acid through slightly acid. These soils are not suited to cultivate crops. These soils are suited to trees. Windthrow is common because of shallow rooting depth above the water table. These soils are poorly suited to community development.

These soils are in capability subclass VIw.

#### **\* AfA - Agawam fine sandy loam, 0 - 3 percent slopes**

This nearly level, well-drained soil is on stream terraces and outwash plains. Permeability of the Agawam soil is moderately rapid in the surface layer and subsoil and rapid in the substratum. The available water capacity is moderate. Runoff is slow. This Agawam soil warms up and dries out rapidly in the spring. This soil is well suited to cultivated crops. The hazard of erosion is slight. This soil is suited to trees. This soil is well suited to community development.

This soil is in capability class I.

#### **\* AfB - Agawam fine sandy loam, 3 - 8 percent slopes**

This gently sloping, well drained soil is on stream terraces and outwash plains. Permeability of the Agawam soil is moderately rapid in the surface layer and subsoil and rapid in the substratum. The available water capacity is moderate. Runoff is medium. This soil warms up and dries out rapidly in the spring. Unless limed, the soil is strongly acid or medium acid. This soil is well suited to cultivate crops. The hazard of erosion is moderate. This soil is suited to trees.

This soil is in capability class IIe.

#### **CcB - Canton and Charlton very stony fine sandy loams, 3 - 8 percent slopes**

These gently sloping, well drained soils are on glacial till upland hills, plains, and ridges. Stones and boulders cover 18 percent of the surface. Permeability of the Canton soil is moderately rapid in the surface layer and subsoil and rapid in the substratum. Permeability of the Charlton soil is moderate or moderately rapid. The

available water capacity of these soils is moderate. Runoff is medium. These soils warm up and dry out rapidly in the spring. The soil is strongly acid or medium acid. These soils are not suited to cultivated crops. These soils are suited to trees.

These soils are in capability subclass VI.

### **\*\*\* Ce - Carlisle muck**

This nearly level, very poorly drained soil is in pockets and depressions of flood plains, stream terraces, outwash plains, and glacial till uplands. The Carlisle soil has a high water table near or above the surface for most of the year. Permeability is moderately rapid. The available water capacity is high. Runoff is slow. The soil is strongly acid through slightly acid. This soil is not suited to cultivated crops. This soil is poorly suited to trees. Windthrow is common because of the shallow rooting depth above the high water table. This soil is generally not suited to community development.

This soil is in capability subclass VIw.

### **\* HcB - Haven silt loam, 3 - 8 percent slopes**

This gently sloping, well drained soil is on stream terraces and outwash plains. Permeability of the Haven soil is moderate in the surface layer and subsoil and very rapid in the substratum. The available water capacity is high. Runoff is medium. Haven soil warms up and dries out rapidly in the spring. Unless limed, it is strongly acid or medium acid. This soil is well suited to cultivated crops. The hazard of erosion is moderate. This soil is suited to trees.

This soil is in capability subclass IIe.

### **HrC - Hollis-Charlton-Rock outcrop complex, 3 - 15 percent slopes**

This gently sloping to sloping complex consists of somewhat excessively drained and well drained soils and rock outcrop on glacial till uplands. Stones and boulders cover 1 - 8 percent of the surface. Permeability of the Hollis soil is moderate or moderately rapid above the bedrock, the available water capacity is low. Permeability of the Charlton soil is moderate or moderately rapid, the available water capacity is moderate. Runoff of these soils is medium or rapid. These soils warm up and dry out rapidly in the spring. They are strongly acid or medium acid. These soils are not suited to cultivated crops. The hazard of erosion is moderate to severe. These soils are suited to trees. Windthrow is common on the Hollis soil because of the shallow rooting depth. The major limiting factors for community development are the shallow depth to bedrock in many places, and rock outcrop. The Hollis soil is droughty.

These soils are in capability subclass VII.

**HrD - Hollis-Charlton-Rock outcrop complex, 15 - 45 percent slopes**

This moderately steep to very steep complex consists of somewhat excessively drained and well drained soils and rock outcrop on glacial till uplands. Stones and boulders cover 1 - 8 percent of the surface. Permeability of the Hollis soil is moderate or moderately rapid above the bedrock, the available water capacity is low. Permeability of the Charlton soil is moderate or moderately rapid, the available water capacity is moderate. Runoff of these soils is rapid or very rapid. These soils warm up and dry out rapidly in the spring. They are strongly acid or medium acid. The soils in this complex are not suited to cultivated crops. The soils in this complex are suited to trees. Windthrow is common on the Hollis soil because of the shallow rooting depth. The major limiting factors for community development are the steep slopes, shallow depth to bedrock and rock outcrop.

The soils in this complex are in capability subclass VIIc.

**\*\* MyC - Merrimac sandy loam, 8 - 15 percent slopes**

This sloping, somewhat excessively drained soil is on stream terraces, outwash plains, kames, and eskers. Permeability of the Merrimac soil is moderately rapid in the surface layer and subsoil and rapid in the substratum. The available water capacity is moderate. Runoff is rapid. Merrimac soil warms up and dries out rapidly in the spring. Unless limed, it is strongly acid or medium acid. This soil is suited to cultivated crops. The hazard of erosion is severe. The soil is droughty during the summer. This soil is suited to trees.

This soil is in capability subclass IIIc.

**\* NaB - Narragansett silt loam, 3 - 8 percent slopes**

This gently sloping, well drained soil is on glacial till upland hills, ridges, and plains in the southeastern part of the county. Permeability of the Narragansett soil is moderate in the surface layer and subsoil and moderately rapid or rapid in the substratum. The available water capacity is high. Runoff is medium. Narragansett soil warms up and dries out rapidly in the spring. Unless limed, it is very strongly acid through medium acid. This soil is well suited to cultivated crops. The hazard of erosion is moderate. This soil is suited to trees. This soil is suited to community development.

This soil is in capability subclass IIc.

**NgB - Narragansett very stony silt loam, 3 - 8 percent slopes**

This gently sloping, well drained soil is on glacial till upland hills, ridges, and plains. Stones and boulders cover 1 - 8 percent of the surface. Permeability of the Narragansett soil is moderate in the surface layer and subsoil and moderately rapid or rapid in the substratum. The available water capacity is high. Runoff is medium.

Narragansett soil warms up and dries out rapidly in the spring. It is very strongly acid through medium acid. This soil is not suited to cultivated crops. The hazard of erosion is moderate. This soil is suited to trees. This soil is suited to community development.

This soil is in capability subclass VIIs.

### **NhC - Narragansett extremely stony silt loam, 3 - 15 percent slopes**

This gently sloping and sloping, well drained soil is on glacial till upland hills, ridges, and plains. Stones and boulders cover 8 - 25 percent of the surface. Permeability of the Narragansett soil is moderate in the surface layer and subsoil and moderately rapid or rapid in the substratum. The available water capacity is high. Runoff is medium to rapid. Narragansett soil warms up and dries out rapidly in the spring. It is very strongly acid through medium acid. This soil is not suited to cultivated crops. The hazard of erosion is moderate or severe. This soil is suited to trees. This soil is suited to community development.

This soil is in capability subclass VIIIs.

### **NhD - Narragansett extremely stony silt loam, 15 - 25 percent slopes**

This moderately steep, well drained soil is on glacial till upland hills, ridges, and plains. Stones and boulders cover 8 25 percent of the surface. Permeability of the Narragansett soil is moderate in the surface layer and subsoil and moderately rapid or rapid in the substratum. The available water capacity is high. Runoff is very rapid. Narragansett soil warms up and dries out rapidly in the spring. It is very strongly acid through medium acid. This soil is not suited to cultivated crops. The hazard of erosion is severe. This soil is suited to trees. The major limiting factor for community development is steepness of slope.

This soil is in capability subclass VIIIs.

### **NIC - Narragansett-Hollis complex, very rocky, 3 - 15 percent slopes**

This gently sloping to sloping complex consists of somewhat excessively drained and well drained soils on glacial till uplands. Rock outcrops cover as much as 10 percent of the surface. Stones and boulders cover 1 - 8 percent of the surface. Permeability of the Narragansett soil is moderate in the surface layer and subsoil and moderately rapid or rapid in the substratum, the available water capacity is high, it is very strongly acid through medium acid. Permeability of Hollis soil is moderate or moderately rapid above the bedrock, the available water capacity is low, it is strongly acid or medium acid. Runoff of these soils is medium to rapid. These soils warm up and dry out rapidly in the spring. These soils are not suited to cultivated crops. The Hollis soil has a shallow rooting depth above the bedrock and is droughty. The hazard of erosion is moderate to severe. These soils





## 4. HYDROLOGY

All drainage from the site flows to Hempstead Brook, the outlet stream for Latham Lake/Latham Bog. The outlet stream for the ±22 acre wetland in the eastern parts is also tributary to Hempstead Brook. At its point of outflow to the Groton Reservoir system, Hempstead Brook drains an area of 2.75 square miles or 1,760 acres. The overall drainage area for Latham Lake is estimated to be about 284 acres as measured from the weir structure at the outlet of the Lake.

The drainage area that includes the site is designated as a public water supply watershed. The designation indicates that the area is within the primary watershed for the Groton Reservoir system. The reservoir is classified as an "AA" resource indicating an existing or proposed use as a public drinking water supply. As such, streamcourses draining to the reservoir, such as the ones on the YMCA property are presumed to be "AA" water resources. "AA" water resources may be suitable for drinking, recreational, or other uses and may be subject to absolute restrictions on the discharge of pollutants, although certain discharges may be permitted.

Groundwater beneath the site is classified by the Department of Environmental Protection as GAA. This means that ground waters are within a public water supply watershed. It is presumed to be suitable for direct human consumption. The State's goal is to maintain that condition by banning almost all discharges to groundwater.

### **Bathing/Swimming Potential of Latham Lake**

The Team was asked to assess the potential of Latham Lake for bathing purposes. The Department of Health Services uses the following formula to estimate the maximum number of swimmers per day that should be allowed to utilize a water body:  $N = ((V/180) + F/1000)$ , where **N** is the number of swimmers, **V** is the volume of the water body, and **F** is the inflow provided by streams or other sources. This formula is useful only if the initial natural quality of the water is acceptable and if other safety factors, such as beach space and lake bottom conditions, are satisfactory. It should be noted in this regard that the water on the day of the field review was slightly tea-colored, indicating possible problems with tannins and was somewhat weedy. A town official who recently canoed the lake, indicated it is not very deep. Also much of the lake shore line is steep.

In order to use the Department of Health Services' formula given above, it was necessary to determine the volume of the lake. Since no volumetric information was available for the lake, the Team's geologist estimated the volume of the lake by planimetry of the surface area of the lake and assuming an average depth of 5 feet. The latter figure is based on the assumption that the lake is relatively shallow. Bathymetry data would be needed to determine average depth. Nevertheless, using an average depth of 5 feet, the volume of the lake was estimated to be about 100 acre feet, or about 33 million gallons. This is based on a surface area of about 20 acres. The inflow rate (F) is variable, but the Team's geologist estimated the amount of dilution water available by determining the area of watershed tributary to the bathing area and using a standard estimated minimum stream flow figure for

Connecticut of 50,000 gallons per day per square mile of watershed. The estimate is 22,000 gallons per day. Plugging the above numbers into the Department of Health Services formula, the number of swimmers that could use the lake each day during worst case conditions is estimated to be 205.

During more typical summer flow conditions (an in-flow rate equalled or exceeded 90 percent of the time or about 100,000 gallons per day per square mile), the permissible number of swimmers per day would be about 283. These figures suggest that Latham Lake can be a useful swimming facility for the YMCA, provided all Department of Health Services' factors are, or can be made acceptable. It should be kept in mind that the above estimates assume the average depth of the lake is 5 feet; it could be more or less than 5 feet, and therefore vary the maximum bathing load requirements.

Another important factor that needs to be considered is the size of the bathing area. If bathers are concentrated in a small area, localized bacterial pollution can occur, even with sufficient dilution water flowing through the reservoir. The Department of Health Services suggests that there be at least 1,000 gallons of water within the immediate bathing area for each bather using the bathing area during the course of the day. If it's assumed that 50 square feet contains approximately 1,000 gallons of water, then there should be 50 square feet allocated per bather. This will help to prevent the possibility of bacterial deterioration and to allow for swimming activity. Using the 283 bather figure for a potential beach, then a bathing area of 14,150 square feet should be required. This would be an area of about 200 feet by 70 feet. It is suggested that the YMCA contact the local health department and Department of Health Services (566-1259) for recommendations regarding the development of a bathing area at the Lake. Based on a cursory inspection of the Lake, it appears the most favorable area for beach development would along the east shore of the Lake (north of the Lake's outlet).

A final water related concern is to ensure that the necessary repairs be made to the weir structures on the lake. **Please contact Wes Marsh (566-7245), DEP - Bureau of Water Management, Inland Water Resource Management (Dam Safety).**

**WATERSHED BOUNDARY MAP**

Scale 1" = 1000'

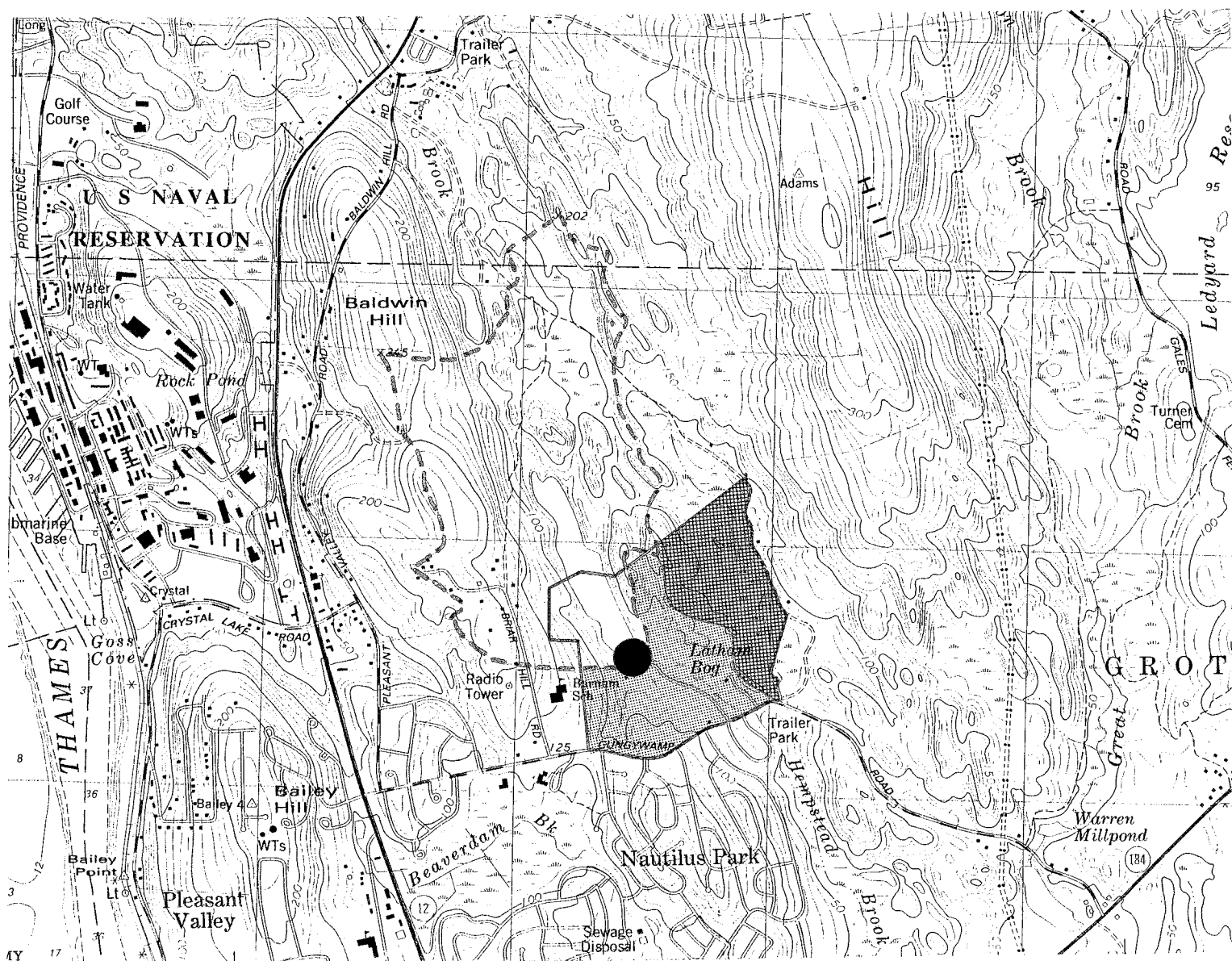


— Site

---● Watershed boundary for Latham Lake from the intersection of the wier structure and the lake outlet stream.

■ Portion of the site that drains to Latham Bog, which ultimately discharges to Hempstead Brook on the south side of Gungywamp Road.

■ Portion of the site that drains to the wetland in the eastern parts.



## 5. THE NATURAL DIVERSITY DATA BASE

The Natural Diversity Data Base maps and files regarding the proposed YMCA Latham Center day camp facility have been reviewed. According to the information, there are no known extant populations of Connecticut "Species of Special Concern" or Federal Endangered and Threatened Species that occur at the site in question. However, the records indicate that a Connecticut plant "Species of Special Concern" was reported from this general vicinity in the late 1800's. The plant, *Zizia aptera*, (Golden Alexanders) was collected in 1882 from this general area, but it is not known if it still occurs here. The plant prefers dry to moist woods, thickets and thicket borders.

The 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. Consultation 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.

## 6. VEGETATION

### East Side of the Pond

This side is characterized by a series of stone and bedrock outcroppings with very thin soil interspersed with small intermittent drainages and areas of very poorly drained soils which create red maple swamps.

On the outcrops there is a scattering of hemlock but it is mostly scarlet and white oak with a few black oak, black birch and red maples. There is a variable understory of Mt. Laurel, Azalea, viburnums, horn beam, flowering dogwood and sassafras. In some areas the laurel is quite dense. In the hollows and drainages it is mostly black oak with some tulip poplar, large tooth aspen and hickories. The understory is similar with more maple leaf viburnum and less Mt. Laurel. The swamps are mostly red maple with a few stems of yellow birch and blue beech.

These are 40 - 50 year old stands that are over stocked and should be thinned to promote a better rate of growth of the residual stand. This would favor the growth of the understory of laurel, but as it is the stands are stagnating which puts the area at a greater risk for wide scale mortality in the event of an insect attack (i.e., Gypsy moth).

However, this must be balanced off against a desire to preserve the area as a heritage area and not risk disturbing any of the archaeological sites.

Hand work of cutting or girdling selected trees could be used to improve the stand without bringing in machinery and still make the stand much more healthy. If a thinning is done some conifers could be introduced to give more diversity to the tree cover.

### **West Side of the Pond**

This east and northeast facing slope is a much better hardwood growing site than the east side. As the land rises from the shores of the pond it goes up in a series of benches or terraces with a decrease in forest site index or tree growing potential. On the best sites at the bottom of the slope there is black and white oak, black birch, tulip poplar, red maple, large tooth aspens and hickories. The understory is moderate to light with spice bush, azalea, sweet pepperbush and highbush blueberry being common and forming dense thickets along the pond and wet drainages. The higher up the slope the spice bush fades out and viburnums become more common along with the Mt. Laurel. Tree species change from tulip and good black oak to scarlet and poorer black oak with poor formed red maples, sassafras, black birch and a few paper birches. Many of the large oaks (black and white) along with some of the larger tulip have recently been removed for saw timber but many of the pole sized stands, especially near the lake, are overstocked. If this area is to be an intensely used recreation area, some effort should be made to remove the dead and dying trees through a fuelwood sale. Most of the medium and larger trees (over 10 inches) have pretty healthy crowns and should be left to maintain the forest stand image.

The semi-open fields and old fields adjacent to Gungywamp Road have had most of the heavy brush bulldozed off although it is sprouting heavily and will completely re-invade the field in a few years if they are not used as building sites and recreation fields as proposed.

There are several acres of what used to be cranberry bogs. These have all reverted to red maple, speckled alder and swamp grasses. Although they are not productive for growing forest products, they are valuable to the total ecological system. However, they are not static. They are silting in slowly, filling in with leaves and dying plant stands so that each year there is less and less open or available water and more "high ground". The trend can only be reversed if it is planned and plans to alter the wetland are approved.

## 7. WILDLIFE RESOURCES

### Habitat Type Descriptions

The following habitat types are present on the YMCA property:

Mixed Hardwood Forest: This habitat consists of a variety of hardwood species including red maple, beech, red oak, elm, hickory, white oak and scattered white pine and cedar. Understory vegetation includes witchhazel, elderberry, multiflora rose, grape, blackberry and hardwood regeneration. Wildlife frequenting such habitat types include deer, fox, raccoon, gray squirrel, woodpeckers (pileated, hairy and downy), ovenbirds, scarlet tanagers, black-throated blue and green warblers, barred owls, broad-winged hawks and various non-game species such as porcupines, shrews, voles and snakes.

Open Field: Open land habitat is very beneficial to wildlife. Vegetation provides food as well as structural diversity, creating cover for a great array of wildlife ranging from mice and shrews to deer. Fields also attract numerous insects, a major food item of various wildlife species such as birds and small mammals including bats. Another important feature of fields is the edge created where fields meet forest. This valuable zone for food and cover consists of dense berries, shrubs and grasses. Wildlife utilizing open field habitat include deer, woodcock, woodchuck, fox, raccoon, skunk, mourning dove, bluebirds, eastern kingbirds, mockingbirds, flycatchers, blue and golden-winged warblers, robins, kestrels, red-tailed hawks, eastern screech owls and cottontail rabbits.

Wetland/Riparian Zone: This habitat type consists of various combinations of streams/brooks, open ponds, swamps and small marshy areas. Associated vegetation includes red maple, birch, alder, cattails, dogwood, jewel-weed, spicebush, sweet pepper bush, skunk cabbage, false helbore, duckweed and various grasses and sedges. Wildlife using such sites include deer, fox, raccoon, skunk, muskrat, mink, swallows, red-winged blackbirds, grackles, kingbirds, cedar waxwings, hooded and wilson's warblers, titmice, woodpeckers, wood ducks and numerous amphibians and reptiles including water and garter snakes, salamanders, newts, and several species of turtles. Beaver are currently active in the old cranberry bog.

### Management of Open Space Tracts

Management of wildlife resources is in a large part dependent upon habitat management. The manipulation of vegetation is a key element of wildlife management. Sustaining wildlife populations means regulating on a continual basis the kind, the amount, and the spatial arrangement of food and cover plants to provide for the needs of wildlife. Wildlife management goals for the site should include production of optimum habitat diversity to maximize production of wildlife species. This can be done by creating and/or maintaining a diversity of food and cover with a mosaic of nesting, resting, and loafing sites scattered throughout the area.

Ideal upland/forestland habitats for general wildlife considerations are composed of:

- 1) Two to three percent (2-3%) of the land mass in permanent grass-legume plots.
- 2) Five to seven percent (5-7%) of the land mass in permanent openings maintained to encourage early successional stage, native vegetation.
- 3) Ten percent (10%) of the land mass in cover species such as young growth conifer patches (1/8 to 2 acres).
- 4) Managing the forestland should be a combination of two systems: a) roughly 75 percent (75%) of the forestland in even-aged and b) 25 percent (25%) in uneven-aged stands. Eventually the management unit would consist of 25 percent (25%) seedling/sapling, 25 percent (25%) poles, and 50 percent (50%) saw timber. If these stands are well-mixed, optimum wildlife habitat will result.

Some specific guidelines:

1) Increase forestland diversity by making small (1/4 to 1 acre) opening in an east to west direction to maximize sunlight. This will encourage fruit-producing shrubs valuable to many wildlife species. The edges of the openings should gradually blend into the forested habitat (i.e. feathered edges).

2) Pile brush (6 feet by 8 feet high by 10 feet in diameter) along edges of openings to create cover for birds and small mammals.

3) Encourage mast producing trees (i.e., oak, hickory, beech).

4) Leave 3 to 5 snag/den trees per acre for their food and nesting values.

5) Trees with vines (i.e. berry producers) should be encouraged.

6) Exceptionally tall trees, utilized by raptors as perching and nesting sites, should be encouraged.

7) Aspen clumps and apple trees should be released from overcrowding competition.

8) Planting of white pine seedlings within openings and as underplantings to increase the amount and distribution of conifer cover.

9) Early successional stage vegetation is essential to various species of wildlife. Where possible, this habitat type (i.e. agricultural fields, pasture, grass-legume plots, native reverting fields) can be encouraged.



10) Fields should be cut every one to three years to maintain early successional stage vegetation. Cutting should be scheduled on a staggered basis and not prior to July 1st to avoid disturbing nesting birds. A 15-foot wide border between fields and forestland should be established and maintained on a staggered basis every three to five years after July 1st. This 15-foot zone provides an additional edge component to the site.


11) Placement of bluebird boxes along field edges.


It should be recognized that for optimum wildlife habitat potential, a variety of successional stage vegetation must be encouraged. Proper maintenance of openings and field borders must be conducted. If neglected, native vegetation will progress to less desirable stages, lowering the wildlife potential on the area.

### **Natural History Education/Trails:**


Trails are the key to bringing people and wildlife together. They should be located to take advantage of terrain and existing habitat and conform to existing landscape textures. Effective trail planning and layout can enhance the learning and aesthetic aspects of outdoor recreation by providing easy access to varied habitats. A nature trail which includes informational signs provides insight into the ecology of an area. The information provided helps the general public appreciate a particular animal, plant or habitat and its ecological value.


Some guidelines to follow when developing a trail system:

 Know the characteristics of the property and plan the layout so that the trail passes by or through a variety of habitat types.

 Make sure the trail is safe as well as exciting. If feasible, a portion of the trail system should be made accessible to the handicapped.

 Follow a closed-loop design, beginning and ending at the same point.

 Avoid long, straight stretches. Trails with curves and bends are longer, add an element of surprise and anticipation, and seem more natural. Straight stretches should not exceed 100 feet.

 The trail system should be well marked and accompanied by an informational pamphlet. This will allow interested individuals, not just organized groups, to have an educational opportunity. If management practices are conducted (i.e. openings, plantings, bluebird boxes) they should be discussed. The major wildlife topics to emphasize should be the value to wildlife of vegetation types/succession and wetland areas.

## 8. FISH RESOURCES

### Introduction

The YMCA property contains Latham Pond, a man-made impoundment of Hempstead Brook. The YMCA which owns 50% of the pond acreage, seeks ERT assistance in helping to determine the recreational potential of the pond and surrounding lands for the development of a day camp that will stress environmental education and awareness.

No extensive water quality and limnological information exists for Latham Pond. The pond is best characterized as a shallow, eutrophic (nutrient enriched) waterbody. Surface waters are classified by the DEP as "A". Designated uses for this water classification are as follows: potential drinking water supply; fish and wildlife habitat; recreational use; agricultural, industrial supply and other purposes.

### Fish Population

The exact fish species assemblage of Latham Pond is unknown. It appears to support a warmwater fish population based upon observations during the field review. Several exposed sand and gravel spawning nests built and guarded by bluegill sunfish and pumpkinseed sunfish were observed. Other fish species expected to inhabit this reservoir are: largemouth bass, chain pickerel, yellow perch, brown bullhead and golden shiner.

### Recommendations

1. Utilize the pond for recreational fishing purposes. The warmwater fish population will naturally reproduce in the springtime as long as normal water levels are maintained; thus, fish stockings of largemouth bass or sunfish will not be required.
2. Stock trout in the pond for children fishing derbies. The purpose of this "put-and-take" strategy is that most trout stocked in the pond should be caught or harvested before the summer when warm water temperatures and low dissolved oxygen levels will limit trout survival. A stocking recommendation for this pond would be 200 to 300 trout released in early spring before the derby was held. More fish may want to be stocked if heavy springtime fishing pressure is expected. A mixture of only "adult" (greater than 9") brook trout and rainbow trout is recommended. Brown trout should not be stocked since they are often difficult to catch; thus, they would not be readily available to young anglers. The DEP Inland Fisheries Division will not stock trout in this pond since its use would only be restricted to camp participants and not the general public. In this case, trout would have to be purchased from a private source. The Team's fisheries biologist can be contacted at 295-9523 for a list of private hatcheries which will sell trout to the YMCA.
3. Canoes and small boats less than 14 feet in size could be allowed in the pond for fishing purposes; however, only boats with electric trolling motors should be allowed.

This restriction will prevent possible water contamination with outboard motor gasoline and also prevent boat speeding conditions which may arise if large horsepower outboard engines are allowed.

4. To ensure the water quality of the pond and its outlet stream, Hempstead Brook, effective soil erosion and sediment controls should be deployed to mitigate site construction runoff.

5. Finally, a swimming beach and hiking trail system could be other possibilities to be explored with the assistance of recreation planners.

## 9. ARCHAEOLOGICAL REVIEW

A review of the State of Connecticut Archaeological Site Files and Maps indicate that the Gungywamp site is located in the project area. This archaeological complex has been the focus of interest and controversy for decades. In fact, The Gungywamp Society, Inc. was formed in 1979 by concerned citizens interested in protecting and preserving what they have interpreted as pre-Columbian stone ruins. Although not of the antiquity claimed by this society, the Gungywamp site is of potential scientific interest as a late 17th century or early 18th century historic archaeological complex which possesses several unusual features including a stone bark mill, an upright fieldstone fence, a number of root cellars, and other interesting stone structures. The Gungywamp complex might be eligible for the National Register of Historic Places because of its unusual features and its pivotal focus as a "cult archaeological site" which has generated extensive examination and discussion within Connecticut's archaeological community.

While many archaeologists and concerned citizens have interpretive differences as to the meaning of Gungywamp, they all agree that these stone structures should be protected and preserved. Maximum efforts should be undertaken to insure that there is no impact on this site due to the proposed day camp facilities. YMCA representatives are sensitive to the site and current plans will not have an impact on the stone structures.

The Office of State Archaeology is prepared to offer technical assistance to the YMCA, their landscape architects, and the Town of Groton on managing this important cultural resource. The network of trails through the site area should be maintained and monitored by camp personnel. While construction activities are not a danger, the threat of destruction by vandals poses a serious problem. The YMCA should be responsible for inspecting the stone structures and reporting any damage to the proper authorities.

Recent state legislation gives private property owners the ability to create archaeological preserves for significant sites existing on their land. Archaeological preserves are treated similar to archaeological sites on state land and receive the same protection under law. Any unnecessary destruction by vandals can lead to

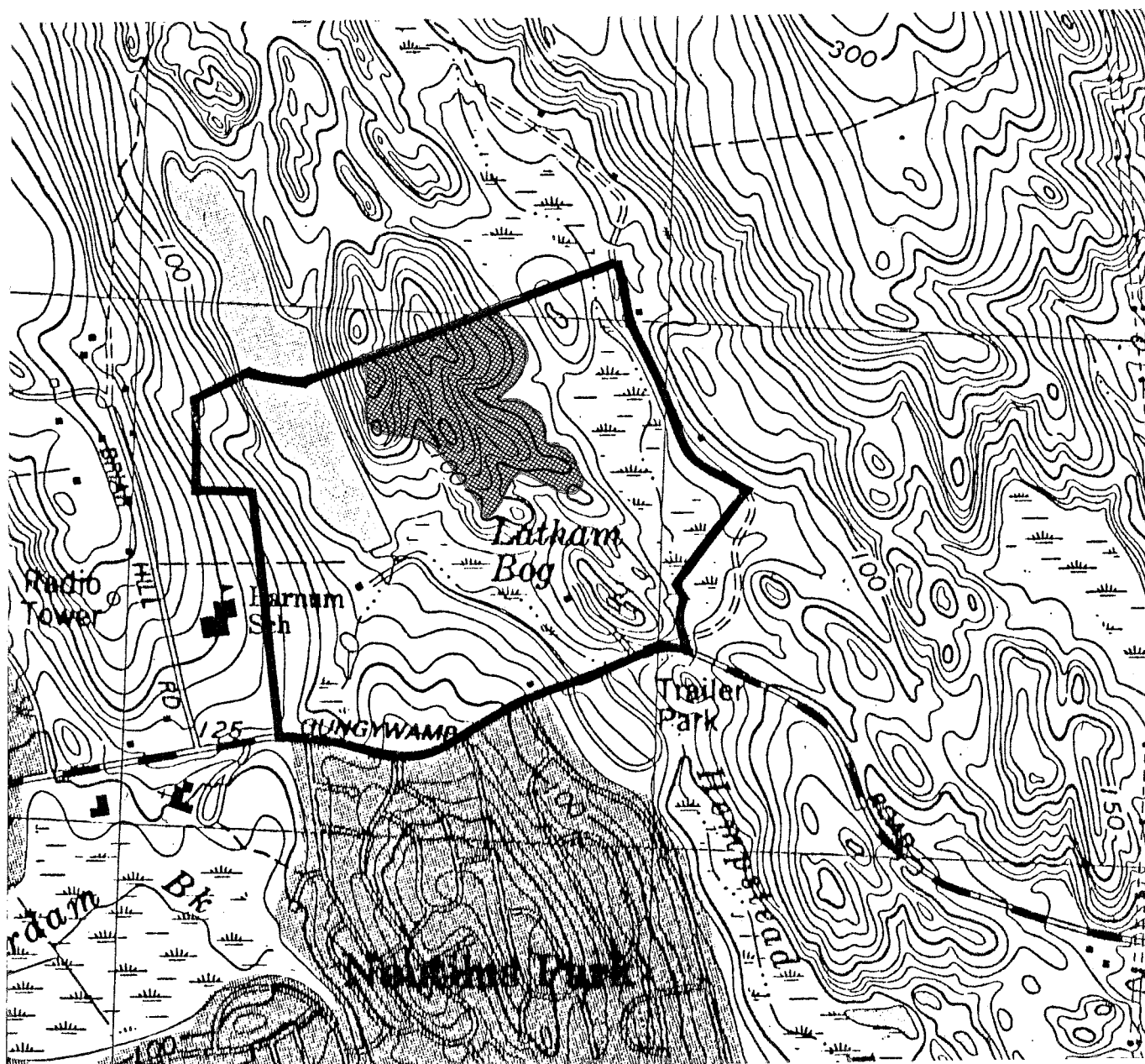
prosecution. The Office of State Archaeology and the Connecticut Historical Commission can assist the YMCA in establishing this important site as a preserve for future generations.

In summary, the YMCA property contains the Gungywamp Archaeological Complex. This site has been interpreted by some as the settlement and ceremonial centers of Bronze and early Iron Age people. The professional archaeological community in Connecticut interprets this site as early colonial settlement activities of the 17th and 18th centuries. Nonetheless, the Gungywamp complex should be preserved and protected as an important archaeological site. The Office of State Archaeology looks forward to working with the YMCA and the Town of Groton in the preservation and conservation of these cultural resources.

### ARCHAEOLOGICALLY SENSITIVE AREA



Gungywamp Archaeological Complex



## 10. WATER SUPPLY

Public water mains are accessible to the site, which should preclude the need for on-site wells. No groundwater resources of particularly significant value are believed to underlie the site. The principal aquifer on the parcel is bedrock, which typically is capable of supplying only small yields to individual wells. Nevertheless, if a low to medium yielding well is desired the underlying bedrock aquifer should prove to be an adequate water source.

## 11. SEWAGE DISPOSAL

Public sewer mains are available to the site. It seems likely that if the site is developed with buildings that include sanitary facilities, showers, cafeteria/kitchen, then connection to the sewer line is recommended. On the other hand, if the construction of a small leaching system is desired the wooded, gently sloping areas west of the main access road appears favorable for on-site sewage disposal. Soil mapping data for this area indicates the presence of favorable soils for a septic system. Soil testing would be necessary in order to determine subsurface conditions; i.e., depth to water table, depth to ledgerock and texture of soils.

## 12. SOIL RESOURCES AND DAY CAMP DEVELOPMENT

There are a variety of soils on the site, most are well to excessively well drained sandy loams. Many of the soils are extremely stony and the terrain is generally hilly with many rock outcroppings. The area in the front of the parcel, located adjacent to Gungywamp Road, is generally less severe than the soils and terrain in the rear of the property. Wetland soils are associated with the stream corridors leading from the lake and with the brook in the northeast corner of the parcel.

### Trails

The existing trail system encircles the pond, leads to the archaeological site and extends out to the property boundaries. The trails are stable, well established and did not show signs of erosion or excessive wear even on steep ground. These trails will adequately serve the purposes of the camp and the creation of new trails is not warranted.

To prevent erosion problems in the future, water bars can be installed on trails with grades exceeding 8%. Waterbars are used to divert storm water of the trail and onto more stable vegetated ground. Waterbars should be adequately daylighted to allow for proper drainage. Trails should be cleared of vegetation six feet out from the center of the path and ten feet above the path. Trails should be marked for distances and designated permitted uses should be posted at trail heads. Mechanized

vehicles and bridle use should be discouraged on steep slopes and poorly drained soil types.

### **Outdoor Classrooms at Camp**

An outdoor classroom can supplement and stimulate the environmental conservation education program at a camp. As a place for creative learning experiences, it gives depth, meaning, and new dimensions to generalization about and understandings of man's relation to his environment.

The following are examples of study projects for Outdoor Classrooms:

**Identification of Grass, Shrubs and Trees** - Study plants and trees that provide shade, prevent soil erosion, provide food and cover for wildlife, serve as windbreaks or mark the boundary of the property. They may act as a buffer zone to insure privacy against an adjacent populated area, demonstrate principles of plant growth, serve as a resource for ecological studies, and provide real practice in forest management. Plants can be labeled with names and values.

**Plant Grafting** - A demonstration area which provides interesting studies in genetics such as production of flowers, fruits and seed.

**Animals-baiting Area** - Put a salt lick and some meat in a cleared area. Place loose dirt around the baited spot, spread it, press it down with the feet, and smooth it out. Animals attracted to the area will leave their footprints, which can be observed and studied.

You can also use small soft drink cans with ends cut open. Smoke index cards with a candle and place the cards in the cans. Add small pieces of bait (peanut butter and rolled oats). Small animals will leave tracks on the smoked cards.

Provide mixed plantings and construct birdhouses, squirrel houses, feeders and birdbaths to attract a variety of birds. A nearby blind will provide an excellent lookout for observation and photographs.

**Natural Succession Area** - An area could be set aside in which no development or disturbance would be made. It would be given complete protection and would provide a spot for the observation of ecological aspects.

**Soil Erosion Demonstration Areas** - This could be an area featuring good conservation practices. Situated on a hillside and located next to a piece of denuded land also located on an incline. Comparisons can then be made over a period of time to determine what happens to the quantity and quality of soil in both areas.

Demonstrations can include areas having (1) no cover; (2) grass; (3) strip crops; (4) diversion terraces. Use five feet by twenty feet areas framed with boards and on sloping ground for each type of cover or practice. Provide a means of catching runoff water from each, for case studies, during particular rainstorms.

**Weather Station** - This is for the study of meteorology and should be located in an open area that can be fenced off and locked.

**Pioneer Living Area** - Social studies can be nicely tied in with such an area. Dramatize the life of the pioneer, including such things as making dyes from plants, cooking outdoors, constructing shelters, learning to identify edible plants and learning other survival practices. This would tie in nicely with the Gungywamp archaeological site.

**Observation Platform** - This platform can be used for observing birds and for studying astronomy. It should be located on the highest point of the property. It is usually an elevated wooden or stone structure where individuals and groups can gain a clearer view of the area.

**Orientation Courses** - The development of several courses for map and compass use would stimulate education and recreational use of the area.

**Soil Profile** - A profile showing the different layers of soil can be demonstrated with a pit to be dug in cross-section fashion at the side of a bank.

**Water Well** - To study water table changes.

**Tree Stump** - A sloping cut on top of a tree stump could be smoothed and waterproofed. A section of a log could be planted if a suitable stump is not available. The annual rings of growth can show effects of competition in earlier years and benefits of woodland management in recent years. Historic events could be listed on an adjacent chart with dates and a time scale placed on the stump for matching. A split-section of a log can be placed nearby to show more about tree growth and how the grain of wood is caused by annual rings.

**Plant Succession** - This is a demonstration area showing the various stages of plant succession, starting with a clear-cut or denuded plot of ground going all the way to the higher stages of tree growth. The important stages to be shown are:

- Stage 1 - Mixed Weedy - annual and perennial weeds and grasses.
- Stage 2 - Perennial Grass - bluegrass, fescue, timothy.
- Stage 3 - Shrubs - sumac, gray birch, sassafras, cherry and aspen.
- Stage 4 - Coniferous Woodland - fir, hemlock, pine, and spruce.
- Stage 5 - Hardwoods - oak, hickory, beech, ash and maple.

**Christmas Tree Plantation** - Plots can be planted to Scotch pine or similar trees for Christmas trees. These areas can be managed by students to teach them elements of pruning and tree farming.

## **Using and Maintaining an Outdoor Classroom**

Here are some examples of outdoor activities listed by different subjects that are designed to involve school-aged children:

Biology - Planting trees or grass, studying flora and fauna, laying out a nature trail, studying samples or soil or water.

Chemistry - Testing soil, applying fertilizer, testing pond water for oxygen content, pH, etc.

Mathematics - Measurements of tree heights, of distance to objects; computations of irregular areas and shapes; contour mapping; and measuring slope and elevation.

Art and Crafts - Landscaping; using natural materials for decorations; drawing or painting outdoor scenes; making leaf prints; and preparing flower arrangements.

Shop - Building walls, bridges, walkways, birdhouses, feeders, signs and displays.

Home Economics - Studying pure water, source of food, nutrition, source of clothing, homes, etc.

Social Studies - The effect of resources on nations; on standards of living; how some of our resources must be protected by law; how we lose some of our freedoms by abusing our natural resources. If available, old aerial photos may show local land use changes.

Vocational Agriculture - Conservation measures, land judging, forest management, fish pond management, value of natural areas, good farming practices, etc.

Ecology - The web of life, the water cycle, all the interlocking relations of organisms with environment, effect of pollution and other man-made problems on environment.

Communications - Study animal and human non-verbal communications, study the dance of the bees, the use of antennas by ants, vocabulary building by identifying living things and objects in the outdoor classroom.

English - A study of Thoreau or other famous nature-oriented authors can be related to live situations in the outdoor classroom. Compositions and similar writing assignments can have themes based on natural resource studies.

## **Pond**

The pond could be used for swimming, boating, fishing and studying aquatic ecosystems. (Also refer to **HYDROLOGY** section) First, be sure to remove all undesirable trees, stumps, and brush. Remove all rubbish, wire, junk machinery, and anything that might be hazardous to boating and swimming. Avoid areas with sudden drop-offs and deep holes.



Swimming access is best suited to areas with a gentle grade. Side slopes of eight to one or ten to one are best for swimming access. This area can be lined with a filter fabric that will allow water to pass but keep the organic materials down. A layer of clean sand can be laid down to discourage vegetation from becoming established.

A boat ramp should also be at a gentle grade of eight to one. This area should be protected from heavy use with concrete or a geotextile material that resists the weight of a vehicle.

Swimming areas should be properly marked. Place swimming devices such as ring buoys, ropes, or long poles at swimming areas to facilitate rescue operations should the needs arise. Long planks or ladders should be kept year round for ice skaters, safety.

## SOILS LIMITATION CHART

### BUILDING SITE DEVELOPMENT

	Shallow Excavation	Dwellings	Local Roads
<b>NaB</b>	Severe cutbanks cave	Slight	Moderate frost action

### RECREATIONAL DEVELOPMENT

	Picnic Area	Playground
<b>CcB</b>	Moderate large stones	Severe large stones
<b>NaB</b>	Slight	Moderate slope

There are partially cleared areas in the front of the lot along Gungywamp road. These areas would serve as the open space recreation fields and office buildings. The space is ideal for building because of the access to the town water supply and sewage line. The area is also relatively flat and free of rock outcroppings. It is also partially cleared of large vegetation and would need a minimal amount of clearing and grading. For buildings with excavations, care must be taken to prevent cave-ins. Proper shoring of side slopes will prevent cave-ins. The soils are well drained soil on glacial tills and are generally well suited to development.

Recreation areas that are used for heavy use can be seeded to one of the following:

	<b>Lbs/ACRE</b>
Kentucky Bluegrass	20
Creeping Red Fescue	20
Perennial Rye grass	5
	45
Creeping Red Fescue	20
Redtop	2
Tall Fescue or	
Smooth Bromegrass	20
	42

Prepare soil according to a soil test or apply fertilizer at a rate of 300 pounds per acre 10-10-10 or equivalent. Apply lime at a rate of 3 tons per acre. Work lime and fertilizer into the soil to a depth of 4 inches. Remove stones and debris.

Seeding dates are April 15 through June 15 and August 15 through September 30.

Apply temporary mulch at a rate of two tons per acre. Mulch should be free of weeds and coarse matter.

Lime according to a soil test or at a minimum of every five years at a rate of two tons per acre.

Fertilize according to a soil test or biennially with a 10-10-10 fertilizer.

## 13. STATE PARK PLANNER COMMENTS

The Team's Park Planner was unable to attend the field review but he is somewhat aware of the property's history, having worked with the Attorney General's staff to ensure that the bulk of the YMCA property remained as open space by a court settlement and subject to transfer to DEP ownership should a future effort be made to sell this acreage.

The priority of the YMCA historically seems to have been to provide active recreational facilities and programming. This is understandable, given the proximity of U.S. Navy Housing. At the same time, DEP's priority is to protect open space in this urbanizing community and to protect the archaeological site on the property. Thus these comments may emphasize the agency's point of view.

The property as a whole has serious physical limitations constraining large scale recreational development. These limitations include the rock outcrop, steep slopes,

very stony soils, water, and muck soils which cover most of its area. Indeed the only significant readily usable sections are: (1) the area of NaB soil just north of Gungywamp Road and a more remote area of glaciofluvial soils in the northeastern corner of the property.

Therefore it is recommended that park development action including administration/activity building, parking lot, ball field be concentrated in or in proximity to the area of NaB soil adjacent to Gungywamp Road where ready access as well as police patrol can be provided. Also, the pros and cons of swimming pool development should be evaluated in terms of capital and operating costs as well as availability of the substantial volume of water required. If developed, it also should be located in or adjacent to the park center complex. As the proposed day camp approach seems the best option for this property with its physical constraints, the only other proposed developments would include a system of trails (located to avoid the archaeological site) and perhaps a small dock at the southwest corner of the pond to encourage canoe access. The use of the pond itself probably is limited to some warmwater fishing and perhaps environmental education (see additional comments in **HYDROLOGY** and **FISH RESOURCES** sections). Otherwise the property basically should be kept in a natural condition.

## 14. REGIONAL PLANNING REVIEW

Surrounding land use is undeveloped, forested land to the north of the YMCA property, to the east is undeveloped, forested land and very low density residential uses along a private road, to the south of the property is a high density residential United States Navy area. The Charles Barnum elementary school is located west of the property along Briar Hill Road along with low density residential uses. A high density United States Navy residential area is located about 1000 feet northwest of the northern end of pond located on the property. The property is unique in that it is a large, basically undeveloped open area on the edge of the heavily urbanized area of Groton along Route 12.

The property is enumerated as an existing recreation area in the regional Development Plan and is listed as open space in the proposed update of the Groton Plan of Development. The area is zoned residential RU-40 which allows organized group camps as a use. Public water and sewer are available along Gungywamp Road and should be utilized for any facilities to be built. The most level land on the property are the fields and forested areas immediately adjacent to Gungywamp Road. This would be a good area for playing fields and any buildings such as an administration, arts and crafts, or activity building. It would be desirable to locate any new buildings well set back from Gungywamp Road to meet not only the zoning regulations, but also to maintain the "openness" of the site and not become visually part of the urban development south of the site. A trail network appears to be in place

and could be expanded to provide access to the natural resource and archaeology features of the property. The use of this property as both an active and passive recreation area will serve an important role of providing open space immediately adjacent to the Region's development core.

# ***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: 203-345-3977, Eastern Connecticut RC&D Area, P.O. Box 70, Haddam, Connecticut 06438.