

# VENUTI PROPERTY KILLINGWORTH, CONNECTICUT

## Environmental Review Team Report

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

for the  
First Selectman  
Killingworth, Connecticut

December 1997

CT Environmental Review Teams  
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## ACKNOWLEDGMENTS

This report is an outgrowth of a request from the First Selectman of Killingworth 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 Thursday, August 7, 1997.

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I would also like to thank David LeVasseur, first selectman, Donald Venuti and Family, landowners, representatives from the Killingworth Planning and Zoning Commission, Conservation Commission, Affordable Housing Commission, Office of Emergency Management, Library Association, Board of Finance, Recreation Department, Water Pollution Control Authority, the Killingworth Land Trust, the Taxpayers Association, representatives from the Connecticut Water Company and the South Central CT Regional Water Authority and a consultant from Nathan Jacobson & Associates 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 information. 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 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 Town and landowner. 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 reviewing and making your decision on this proposed town purchase of land.

If you require additional information please contact:

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# 1. INTRODUCTION

## Introduction

The Killingworth First Selectman has requested assistance from the Eastern Connecticut Environmental Review Team in conducting a natural resource inventory and environmental review of the Venuti Family Property (a.k.a. Venwood Lake) that is proposed to be purchased by the town.

The approximately 339 acre parcel is being offered to the Town of Killingworth for purchase. The property is located on Route 148 between Route 81 and Route 79. There is also access to the site from Burr Hill Road. The site is a former sand and gravel excavation operation which ceased to operate approximately five years ago.

An ERT study was conducted in April 1975 on the portion of the property proposed for excavation which resulted in the creation of a  $\pm 30$  acre lake. The 1975 report also evaluated the site for residential development on the upland portions of the site. A copy of this study may be found in the Appendix.

The site is currently known as Venwood Lake, a hunting and fishing preserve open to the public. This autumn marked the fifth year the site has been used for hunting and fishing.

The current owners have first offered the parcel to the Town of Killingworth for purchase and if not purchased by the Town they plan to develop the site for residential homes.

## Objectives of the ERT Study

The Town has asked for assistance with the review of this parcel with regard to the physical and biological resources of the site, potential environmental problems and limitations resulting from past, present or future uses, as well as some recommendations and guidelines for management and development.

Specific use of the property has not been identified and many concepts were discussed with the ERT Team members. Various town officials voiced

their opinions and concerns about the property. Among the uses discussed were: open space, municipal facilities such as a school or sewage disposal site, and recreational uses such as swimming, ballfields, nature/hiking trails and a golf course.

This report is organized in sections, with sections 2 through 9 discussing the physical, biological and archaeological resources of the site along with discussions of use potential, limitations and management guidelines. Section 10 discusses potential past, present and future health and environmental impacts and recommends certain actions, Sections 11 and 12 discuss a specific use issue and Section 13 looks at planning and traffic issues. The Appendix contains a copy of the 1975 ERT report conducted for a portion of the site.

### **The ERT Process**

Through the efforts of the First Selectman this environmental review and report was prepared for the Town of Killingworth.

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

The review process consisted of four phases:

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

The data collection phase involved both literature and field research. The field review was conducted on August 7, 1997, and various Team members also made separate and/or additional field 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.



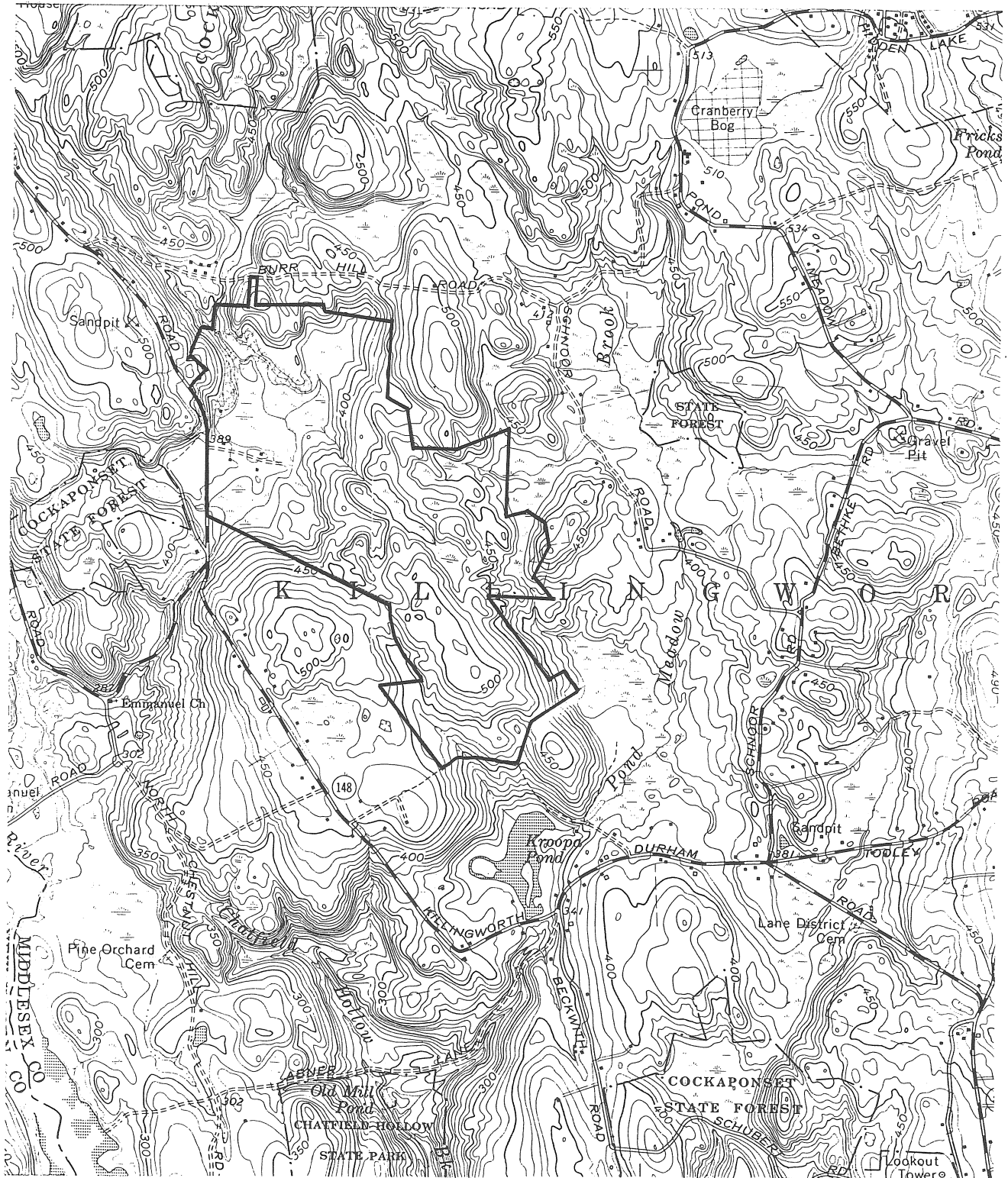
Figure 1



Topographic and Location Map

Scale 1" = 2000'

— Approximate Site



## 2. GEOLOGICAL AND HYDROLOGICAL OBSERVATIONS

The Venuti property consists mostly of forested uplands with gently rolling hills and low land that now is occupied by a deep pond. The relief in the property is just greater than 100 feet and most of the slopes are not very steep. No signs of slope instability were noted. Significantly, the hills and many of the stream valleys have a northwest-southeast orientation and important cross valleys have a northeast-southwest orientation. A small perennial stream enters the property from the northwest and, along with ground water, recharges the pond. The stream has a drainage basin of only several square miles, about half of which is within the Cockaponset State Forest north of the Venuti property. It heads in swamps in the State Forest and, prior to gravel excavation, flowed through the property and out a col<sup>1</sup> toward the southwest into the Hammonasset River.

The upland areas are covered by glacial till: there are only a couple of areas where bedrock is exposed at the surface. The northwestern third of the property was the site of a sand and gravel excavation operation. The old gravel pit was later developed as the pond. The sand and gravel was deposited by glacial meltwaters locally against the wasting ice (Flint, 1978). The glacial meltwaters may have formed a lake that, for a time, occupied the same but slightly larger area that is occupied by the present day pond. The old lake level was at an elevation of about 380-390 feet and was controlled by the level of the col to the west of the Venuti property which drained southwest. The lake rapidly filled with sand and gravel delivered by the meltwater streams.

The bedrock outcrops on the property consist of weakly foliated biotite granite gneiss, referred to as the Monson Gneiss by Lundgren (1979). It consists of quartz and plagioclase feldspar that are rather equant and platy biotite-mica, the alignment of which provides the foliation. Bedrock outcrops weather to a dull gray but are very light gray on a fresh surface. Outcrops contain both vertical and near horizontal fracture sets (joints). One vertical fracture set is oriented northwest-southeast, the other north-northeast south-southwest. The glaciers eroded bedrock more easily where the bedrock was broken by closely spaced fractures. The significance of

aligned valleys is they indicate where the more highly fractured bedrock lies.

Groundwater supplies in this area are derived almost entirely from the fractured bedrock aquifer. The fractures in this area suggest that abundant water supplies can be developed. Vertical fractures allow recharge of the aquifer and horizontal fractures insure that the groundwater can be distributed readily to most well borings into the rock. Yield of a fracture bearing aquifer will in part be controlled by the number of fractures actually intercepted by the borehole. Thus wells drilled in the NW-SE trending valleys, or the NNE-SSW trending valleys, might be expected to yield greater quantities of water. A well drilled at the intersection of the two fracture trends (A or B on the Topographic Map - Figure 2) should yield the greatest amount of water.

## **References**

Flint, R. F., 1978, The surficial Geology of the Haddam Quadrangle: CT Geol. and Nat. History Survey and Dept. Environ. Protection, Quadrangle Reports no. 36, 27p.

Lundgren, Lawrence Jr., 1979, The bedrock geology of the Haddam Quadrangle: CT Geol. and Nat. History Survey and Dept. Environ. Protection, Quadrangle Reports no. 37, 44p.

## **Definitions**

1. col - a gap in a ridge.



### **3. SOIL RESOURCES AND EROSION AND SEDIMENT CONTROL**

The following section discusses the general soil characteristics of the site, their limitations and suitability for proposed uses, and possible future problems with erosion and sediment control.

Soil types found at the site include the following\*:

- 3 Ridgebury, Leicester and Whitman Soils, extremely stony
- 17 Adrian and Palms soils
- 18 Carlisle muck
- 34B Merrimack sandy loam, 8 - 15% slopes
- 47C Woodbridge fine sandy loam, 2 - 15% slope, extremely stony
- 52C Sutton fine sandy loam, 2 - 15% slope, extremely stony
- 62C Canton and Charlton soils, 3 - 15% slope, extremely stony
- 73C Charlton - Chatfield complex, 3 - 15% slope, very rocky
- 73E Charlton - Chatfield complex, 15 - 45% slope, very rocky
- 75 Hollis - Chatfield rock outcrop complex
- 86 Paxton and Montauk soils, extremely stony
- 303 Pit, quarry

\*Please see the following soil map (Figure 3) and key for the digitized soil survey information provided by the Connecticut Department of Environmental Protection's Natural Resources Center GIS system. (Please note: this data has not been certified by Natural Resources Conservation Service as meeting all State Geographic Soil Survey Database standards.)

#### **General Soils Information Overview**

General information on the soils at this site has been taken from the Soil Survey of Middlesex County, Connecticut, USDA Soil Conservation Service, 1979. The Soil Survey should be used as a general planning tool, and not for site specific determinations. The Soil Survey is accurate only to about 2.5 acres. It is important to remember that any plans for development will require detailed soils mapping and information on the suitability of the soils at exact locations for proposed uses.

General information concerning the surficial geology at the site can also be found in the ERT report for the site filed in April of 1975. Pages 22 and 23 specifically refer to the site conditions in reference to water supply and waste disposal as well as foundation development and graded conditions (see Appendix).

The following soils are described in detail, as they do not appear in the Soil Survey of Middlesex County, Connecticut, USDA Soil Conservation Service, 1979. These have been added to the recent electronic update to the soil survey:

**52C Sutton fine sandy loam, 2 - 15% slope, extremely stony**  
(This soil name does not appear in the Middlesex County Soil Survey. This information and soil type division appears as part of the new digitized soil mapping system. This soil is related to the Woodbridge soil.) This nearly level to sloping, moderately well drained soil is formed in loamy glacial till. It is at the base of slopes, in slight depressions and on side slopes in glacial till uplands. Depth to bedrock is commonly more than 60 inches below the surface. From 8 to 25 percent of the soil surface is covered with stones and boulders. The soil has a seasonal high water table at a depth of about 20 inches from fall to spring. Permeability is moderate in the surface layers and subsoil and moderately rapid in the substratum. Surface runoff is medium to rapid and the available water capacity is moderate.

**73C Charlton - Chatfield complex, 3 - 15% slope, very rocky & 73E Charlton - Chatfield complex, 15 - 45% slope, very rocky**  
(This soil name does not appear in the Middlesex County Soil Survey. This information and soil type division appears as part of the new digitized soil mapping system.) This unit consists of very deep, well drained Charlton soils and moderately deep, well drained and somewhat excessively drained Chatfield soils. It is on gently sloping and sloping hills and side slopes. Charlton soils are commonly on lower, concave slopes and Chatfield soils are commonly on upper slopes, hilltops, and near areas of rock outcrop. Charlton and Chatfield soils are in such an intricate pattern that they were not mapped separately. Rock outcrop covers 2 to 10 percent of the surface. Included with this unit are areas of moderately well drained Sutton soils and poorly drained Leicester soils.

Depth to bedrock in areas of Chatfield soils and rock outcroppings over portions of the unit are the main limitations for dwellings with basements. Slope is also a limitation. Erosion is a moderate to severe hazard during construction. Uneven slopes and variable depth to bedrock reduce site selection. Where possible, dwellings with basements should be constructed in areas of very deep Charlton soils.

Slope is the main limitation for lawns and landscaping. Droughtiness can make establishment and maintenance of lawns difficult. Slope is the main limitation for septic tank absorption fields in areas of Charlton soils. Wherever possible, septic tanks absorption fields should be constructed in areas of very deep Charlton soils. Careful planning of road location and grading will avoid some rock removal.

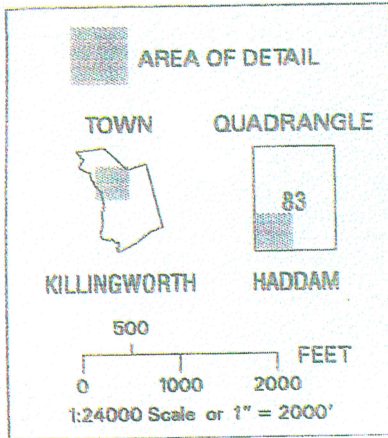
### **Summary Information**

Due to the variety of soil conditions at this location, careful planning considerations must be made for any future development of the site. Septic systems will need to be engineered carefully because most of the soils at the site will either drain too rapidly or too slowly. This may also be a problem with the development of lawns or ball fields because they may either drain too rapidly or too slowly. Many of the soils are very stony, and would require extensive stone removal work for the development of building sites or recreational fields.

Careful site planning and phasing recommendations must be incorporated into erosion and sediment control plans. Phasing will be particularly important due to highly erosive soils on steep slopes and their proximity to wetland areas. Buildings will need to be carefully sited to incorporate development and service requirements. Projects should be designed to fit into the landscape, to work around pocket and large wetlands and to avoid regrading steep slopes.

Erosion and sediment control management practices required during construction should include the following:

- ◆ rapid establishment of vegetative cover;
- ◆ development of temporary diversions for stormwater management;
- ◆ establishment of properly designed and stabilized sedimentation basins.



**DEP-GIS**  
**LEGEND**

**Figure 3**  
**Soils Map**

SOILS, SOIL SPECIAL FEATURES - Soil map units and soil special features from the Advance Connecticut Soil Survey Database, 1:12000 scale data. Soils mapping and digital data was produced under the Connecticut Department of Environmental Protection / Natural Resources Conservation Service soils cooperative. This information is being provided as "ADVANCE INFORMATION SUBJECT TO CHANGE". This data has NOT been certified by Natural Resources Conservation Service as meeting all SSURGO (State Geographic Soil Survey Database) standards.

Natural Resources Center, Connecticut DEP

PLOTTED: 08/08/97 13.59.52 GIS





2 RIDGEBURY FINE SANDY LOAM  
3 RIDGEBURY, LEICESTER AND WHITMAN SOILS, EXTREMELY STONY  
4 LEICESTER FINE SANDY LOAM  
5 WILBRAHAM SILT LOAM  
6 WILBRAHAM AND MENLO SOILS, EXTREMELY STONY  
7 MASSENA SILT LOAM  
8 MASSENA AND ALDEN SOILS, EXTREMELY STONY  
9 SCITICO, SHAKER, AND MAYBID SOILS  
10 RAYNHAM SILT LOAM  
12 RAYPOL SILT LOAM  
13 WALPOLE SANDY LOAM  
14 FREDON SILT LOAM  
15 SCARBORO MUCKY LOAMY SAND  
16 HALSEY SILT LOAM  
17 ADRIAN AND PALMS SOILS  
18 CARLISLE MUCK  
20A ELLINGTON SILT LOAM, 0 TO 5 PERCENT SLOPES  
21A NINIGRET AND TISBURY SOILS, 0 TO 5 PERCENT SLOPES  
22A HERO GRAVELLY LOAM, 0 TO 3 PERCENT SLOPES  
22B HERO GRAVELLY LOAM, 3 TO 8 PERCENT SLOPES  
23A SUDBURY SANDY LOAM, 0 TO 5 PERCENT SLOPES  
24A DEERFIELD LOAMY SAND, 0 TO 3 PERCENT SLOPES  
25A BRANCROFT SILT LOAM, 0 TO 3 PERCENT SLOPES  
25B BRANCROFT SILT LOAM, 3 TO 8 PERCENT SLOPES  
25C BRANCROFT SILT LOAM, 8 TO 15 PERCENT SLOPES  
26A BERLIN SILT LOAM, 0 TO 3 PERCENT SLOPES  
26B BERLIN SILT LOAM, 3 TO 8 PERCENT SLOPES  
27A BELGRADE SILT LOAM, 0 TO 5 PERCENT SLOPES  
28A ELMRIDGE FINE SANDY LOAM, 0 TO 3 PERCENT SLOPES  
28B ELMRIDGE FINE SANDY LOAM, 3 TO 8 PERCENT SLOPES  
29A AGAWAM FINE SANDY LOAM, 0 TO 3 PERCENT SLOPES  
29B AGAWAM FINE SANDY LOAM, 3 TO 8 PERCENT SLOPES  
29C AGAWAM FINE SANDY LOAM, 8 TO 15 PERCENT SLOPES  
30A BRANFORD SILT LOAM, 0 TO 3 PERCENT SLOPES  
30B BRANFORD SILT LOAM, 3 TO 8 PERCENT SLOPES  
30C BRANFORD SILT LOAM, 8 TO 15 PERCENT SLOPES  
31A COPAKE GRAVELLY LOAM, 0 TO 3 PERCENT SLOPES  
31B COPAKE GRAVELLY LOAM, 3 TO 8 PERCENT SLOPES  
31C COPAKE GRAVELLY LOAM, 8 TO 15 PERCENT SLOPES  
32A HAVEN AND ENFIELD SOILS, 0 TO 3 PERCENT SLOPES  
32B HAVEN AND ENFIELD SOILS, 3 TO 8 PERCENT SLOPES  
32C HAVEN AND ENFIELD SOILS, 8 TO 15 PERCENT SLOPES  
33A HARTFORD SANDY LOAM, 0 TO 3 PERCENT SLOPES  
33B HARTFORD SANDY LOAM, 3 TO 8 PERCENT SLOPES  
34A MERRIMAC SANDY LOAM, 0 TO 3 PERCENT SLOPES  
34B MERRIMAC SANDY LOAM, 3 TO 8 PERCENT SLOPES  
34C MERRIMAC SANDY LOAM, 8 TO 15 PERCENT SLOPES  
35A PENWOOD LOAMY SAND, 0 TO 3 PERCENT SLOPES  
35B PENWOOD LOAMY SAND, 3 TO 8 PERCENT SLOPES  
36A WINDSOR LOAMY SAND, 0 TO 3 PERCENT SLOPES  
36B WINDSOR LOAMY SAND, 3 TO 8 PERCENT SLOPES  
36C WINDSOR LOAMY SAND, 8 TO 15 PERCENT SLOPES  
37A MANCHESTER GRAVELLY SANDY LOAM, 0 TO 3 PERCENT SLOPES  
37C MANCHESTER GRAVELLY SANDY LOAM, 3 TO 15 PERCENT SLOPES  
37E MANCHESTER GRAVELLY SANDY LOAM, 15 TO 45 PERCENT SLOPES  
38A HINCKLEY GRAVELLY SANDY LOAM, 0 TO 3 PERCENT SLOPES  
38C HINCKLEY GRAVELLY SANDY LOAM, 3 TO 15 PERCENT SLOPES  
38E HINCKLEY GRAVELLY SANDY LOAM, 15 TO 45 PERCENT SLOPES

39A GROTON GRAVELLY SANDY LOAM, 0 TO 3 PERCENT SLOPES  
39C GROTON GRAVELLY SANDY LOAM, 3 TO 15 PERCENT SLOPES  
39E GROTON GRAVELLY SANDY LOAM, 15 TO 45 PERCENT SLOPES  
40A LUDLOW SILT LOAM, 0 TO 3 PERCENT SLOPES  
40B LUDLOW SILT LOAM, 3 TO 8 PERCENT SLOPES  
41B LUDLOW SILT LOAM, 2 TO 8 PERCENT SLOPES, VERY STONY  
42C LUDLOW SILT LOAM, 2 TO 15 PERCENT SLOPES, EXTREMELY STONY  
43A RAINBOW SILT LOAM, 0 TO 3 PERCENT SLOPES  
43B RAINBOW SILT LOAM, 3 TO 8 PERCENT SLOPES  
44B RAINBOW SILT LOAM, 2 TO 8 PERCENT SLOPES, VERY STONY  
45A WOODBRIDGE FINE SANDY LOAM, 0 TO 3 PERCENT SLOPES  
45B WOODBRIDGE FINE SANDY LOAM, 3 TO 8 PERCENT SLOPES  
45C WOODBRIDGE FINE SANDY LOAM, 8 TO 15 PERCENT SLOPES  
46B WOODBRIDGE FINE SANDY LOAM, 2 TO 8 PERCENT SLOPES, VERY STONY  
46C WOODBRIDGE FINE SANDY LOAM, 8 TO 15 PERCENT SLOPES, VERY STONY  
47C WOODBRIDGE FINE SANDY LOAM, 2 TO 15 PERCENT SLOPES, EXTREMELY STON  
48B GEORGIA AND AMENIA SOILS, 2 TO 8 PERCENT SLOPES  
48C GEORGIA AND AMENIA SOILS, 8 TO 15 PERCENT SLOPES  
49B GEORGIA AND AMENIA SOILS, 3 TO 8 PERCENT SLOPES, VERY STONY  
49C GEORGIA AND AMENIA SOILS, 8 TO 15 PERCENT SLOPES, VERY STONY  
50A SUTTON FINE SANDY LOAM, 0 TO 3 PERCENT SLOPES  
50B SUTTON FINE SANDY LOAM, 3 TO 8 PERCENT SLOPES  
51B SUTTON FINE SANDY LOAM, 2 TO 8 PERCENT SLOPES, VERY STONY  
52C SUTTON FINE SANDY LOAM, 2 TO 15 PERCENT SLOPES, EXTREMELY STONY  
53A WAPPING SILT LOAM, 0 TO 3 PERCENT SLOPES  
53B WAPPING SILT LOAM, 3 TO 8 PERCENT SLOPES  
54B WAPPING SILT LOAM, 2 TO 8 PERCENT SLOPES, VERY STONY  
55A WATCHAUG FINE SANDY LOAM, 0 TO 3 PERCENT SLOPES  
55B WATCHAUG FINE SANDY LOAM, 3 TO 8 PERCENT SLOPES  
56B WATCHAUG FINE SANDY LOAM, 2 TO 8 PERCENT SLOPES, VERY STONY  
57B GLOUCESTER GRAVELLY SANDY LOAM, 3 TO 8 PERCENT SLOPES  
57C GLOUCESTER GRAVELLY SANDY LOAM, 8 TO 15 PERCENT SLOPES  
57D GLOUCESTER GRAVELLY SANDY LOAM, 15 TO 25 PERCENT SLOPES  
58B GLOUCESTER GRAVELLY SANDY LOAM, 3 TO 8 PERCENT SLOPES, VERY STONY  
58C GLOUCESTER GRAVELLY SANDY LOAM, 8 TO 15 PERCENT SLOPES, VERY STONY  
59C GLOUCESTER GRAVELLY SANDY LOAM, 3 TO 15 PERCENT SLOPES, EXTREMELY  
59D GLOUCESTER GRAVELLY SANDY LOAM, 15 TO 35 PERCENT SLOPES, STX  
60B CANTON AND CHARLTON SOILS, 3 TO 8 PERCENT SLOPES  
60C CANTON AND CHARLTON SOILS, 8 TO 15 PERCENT SLOPES  
60D CANTON AND CHARLTON SOILS, 15 TO 25 PERCENT SLOPES  
61B CANTON AND CHARLTON SOILS, 3 TO 8 PERCENT SLOPES, VERY STONY  
61C CANTON AND CHARLTON SOILS, 8 TO 15 PERCENT SLOPES, VERY STONY  
62C CANTON AND CHARLTON SOILS, 3 TO 15 PERCENT SLOPES, EXTREMELY STONY  
62D CANTON AND CHARLTON SOILS, 15 TO 35 PERCENT SLOPES, EXTREMELY STON  
63B CHESHIRE FINE SANDY LOAM, 3 TO 8 PERCENT SLOPES  
63C CHESHIRE FINE SANDY LOAM, 8 TO 15 PERCENT SLOPES  
63D CHESHIRE FINE SANDY LOAM, 15 TO 25 PERCENT SLOPES  
64B CHESHIRE FINE SANDY LOAM, 3 TO 8 PERCENT SLOPES, VERY STONY  
64C CHESHIRE FINE SANDY LOAM, 8 TO 15 PERCENT SLOPES, VERY STONY  
65C CHESHIRE FINE SANDY LOAM, 3 TO 15 PERCENT SLOPES, EXTREMELY STONY  
65D CHESHIRE FINE SANDY LOAM, 15 TO 35 PERCENT SLOPES, EXTREMELY STONY  
66B NARRAGANSETT SILT LOAM, 2 TO 8 PERCENT SLOPES  
66C NARRAGANSETT SILT LOAM, 8 TO 15 PERCENT SLOPES  
67B NARRAGANSETT SILT LOAM, 3 TO 8 PERCENT SLOPES, VERY STONY  
67C NARRAGANSETT SILT LOAM, 8 TO 15 PERCENT SLOPES, VERY STONY  
68C NARRAGANSETT SILT LOAM, 3 TO 15 PERCENT SLOPES, EXTREMELY STONY  
68D NARRAGANSETT SILT LOAM, 15 TO 25 PERCENT SLOPES, EXTREMELY STONY  
69B YALESVILLE FINE SANDY LOAM, 3 TO 8 PERCENT SLOPES  
69C YALESVILLE FINE SANDY LOAM, 8 TO 15 PERCENT SLOPES  
70C BRANFORD-HOLYOKE COMPLEX, 3 TO 15 PERCENT SLOPES, ROCKY

71C BROOKFIELD-BRIMFIELD COMPLEX, 3 TO 15 PERCENT SLOPES, 14 ROCKY  
71E BROOKFIELD-BRIMFIELD COMPLEX, 15 TO 45 PERCENT SLOPES, ROCKY  
72C BRIMFIELD-BROOKFIELD-ROCK OUTCROP COMPLEX, 3 TO 15 PERCENT SLOPES  
72E BRIMFIELD-BROOKFIELD-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES  
73C CHARLTON-CHATFIELD COMPLEX, 3 TO 15 PERCENT SLOPES, VERY ROCKY  
73E CHARLTON-CHATFIELD COMPLEX, 15 TO 45 PERCENT SLOPES, VERY ROCKY  
74C NARRAGANSETT-HOLLIS COMPLEX, 3 TO 15 PERCENT SLOPES, VERY ROCKY  
75C HOLLIS-CHATFIELD ROCK OUTCROP COMPLEX, 3 TO 15 PERCENT SLOPES  
75E HOLLIS-CHATFIELD ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES  
76E ROCK OUTCROP-HOLLIS COMPLEX, 3 TO 45 PERCENT SLOPES  
76F ROCK OUTCROP-HOLLIS COMPLEX, 45 TO 60 PERCENT SLOPES  
77C CHESHIRE-HOLYOKE COMPLEX, 3 TO 15 PERCENT SLOPES, VERY ROCKY  
77D CHESHIRE-HOLYOKE COMPLEX, 15 TO 35 PERCENT SLOPES, VERY ROCKY  
78C HOLYOKE-ROCK OUTCROP COMPLEX, 3 TO 15 PERCENT SLOPES  
78E HOLYOKE-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES  
79E ROCK OUTCROP-HOLYOKE COMPLEX, 3 TO 45 PERCENT SLOPES  
80B BERNARDSTON SILT LOAM, 3 TO 8 PERCENT SLOPES  
80C BERNARDSTON SILT LOAM, 8 TO 15 PERCENT SLOPES  
81C BERNARDSTON SILT LOAM, 3 TO 15 PERCENT SLOPES, EXTREMELY STONY  
81D BERNARDSTON SILT LOAM, 15 TO 25 PERCENT SLOPES, EXTREMELY STONY  
82B BROADBROOK SILT LOAM, 3 TO 8 PERCENT SLOPES  
82C BROADBROOK SILT LOAM, 8 TO 15 PERCENT SLOPES  
82D BROADBROOK SILT LOAM, 15 TO 25 PERCENT SLOPES  
83B BROADBROOK SILT LOAM, 3 TO 8 PERCENT SLOPES, VERY STONY  
83C BROADBROOK SILT LOAM, 8 TO 15 PERCENT SLOPES, VERY STONY  
84B PAXTON AND MONTAUK SOILS, 3 TO 8 PERCENT SLOPES  
84C PAXTON AND MONTAUK SOILS, 8 TO 15 PERCENT SLOPES  
84D PAXTON AND MONTAUK SOILS, 15 TO 25 PERCENT SLOPES  
85B PAXTON AND MONTAUK SOILS, 3 TO 8 PERCENT SLOPES, VERY STONY  
85C PAXTON AND MONTAUK SOILS, 8 TO 15 PERCENT SLOPES, VERY STONY  
86C PAXTON AND MONTAUK SOILS, 3 TO 15 PERCENT SLOPES, EXTREMELY STONY  
86D PAXTON AND MONTAUK SOILS, 15 TO 35 PERCENT SLOPES, EXTREMELY STONY  
87B WETHERSFIELD LOAM, 3 TO 8 PERCENT SLOPES  
87C WETHERSFIELD LOAM, 8 TO 15 PERCENT SLOPES  
87D WETHERSFIELD LOAM, 15 TO 25 PERCENT SLOPES  
88B WETHERSFIELD LOAM, 3 TO 8 PERCENT SLOPES, VERY STONY  
88C WETHERSFIELD LOAM, 8 TO 15 PERCENT SLOPES, VERY STONY  
89C WETHERSFIELD LOAM, 3 TO 15 PERCENT SLOPES, EXTREMELY STONY  
89D WETHERSFIELD LOAM, 15 TO 35 PERCENT SLOPES, EXTREMELY STONY  
90B STOCKBRIDGE LOAM, 3 TO 8 PERCENT SLOPES  
90C STOCKBRIDGE LOAM, 8 TO 15 PERCENT SLOPES  
90D STOCKBRIDGE LOAM, 15 TO 25 PERCENT SLOPES  
91B STOCKBRIDGE LOAM, 3 TO 8 PERCENT SLOPES, VERY STONY  
91C STOCKBRIDGE LOAM, 8 TO 15 PERCENT SLOPES, VERY STONY  
91D STOCKBRIDGE LOAM, 15 TO 35 PERCENT SLOPES, VERY STONY  
92B NELLIS FINE SANDY LOAM, 3 TO 8 PERCENT SLOPES  
92C NELLIS FINE SANDY LOAM, 8 TO 15 PERCENT SLOPES  
93C NELLIS FINE SANDY LOAM, 3 TO 15 PERCENT SLOPES, VERY STONY  
94C FARMINGTON-NELLIS COMPLEX, 3 TO 15 PERCENT SLOPES, VERY ROCKY  
94E FARMINGTON-NELLIS COMPLEX, 15 TO 35 PERCENT SLOPES, VERY ROCKY  
95C FARMINGTON-ROCK OUTCROP COMPLEX, 3 TO 15 PERCENT SLOPES  
95E FARMINGTON-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES  
96 IPSWICH MUCKY PEAT  
97 PAWCATUCK MUCKY PEAT  
98 WESTBROOK MUCKY PEAT  
99 WESTBROOK MUCKY PEAT, LOW SALT  
100 SUNCOOK LOAMY FINE SAND  
101 OCCUM FINE SANDY LOAM  
102 POOTATUCK FINE SANDY LOAM  
103 RIPPOWAM FINE SANDY LOAM

104 BASH SILT LOAM  
105 HADLEY SILT LOAM  
106 WINOOSKI SILT LOAM  
107 LIMERICK AND LIM SOILS  
108 SACO SILT LOAM  
109 FLUVAQUENTS-UDIFLUVENTS COMPLEX, FREQUENTLY FLOODED  
221A NINIGRET-URBAN LAND COMPLEX, 0 TO 5 PERCENT SLOPES  
224A DEERFIELD-URBAN LAND COMPLEX, 0 TO 3 PERCENT SLOPES  
225B BRANCROFT-URBAN LAND COMPLEX, 0 TO 8 PERCENT SLOPES  
228B ELMRIDGE-URBAN LAND COMPLEX, 0 TO 8 PERCENT SLOPES  
229B AGAWAM-URBAN LAND COMPLEX, 0 TO 8 PERCENT SLOPES  
229C AGAWAM-URBAN LAND COMPLEX, 8 TO 15 PERCENT SLOPES  
230B BRANFORD-URBAN LAND COMPLEX, 0 TO 8 PERCENT SLOPES  
230C BRANFORD-URBAN LAND COMPLEX, 8 TO 15 PERCENT SLOPES  
232B HAVEN-URBAN LAND COMPLEX, 0 TO 8 PERCENT SLOPES  
234B MERRIMAC-URBAN LAND COMPLEX, 0 TO 8 PERCENT SLOPES  
235B PENWOOD-URBAN LAND COMPLEX, 0 TO 8 PERCENT SLOPES  
236B WINDSOR-URBAN LAND COMPLEX, 0 TO 8 PERCENT SLOPES  
237A MANCHESTER-URBAN LAND COMPLEX, 0 TO 3 PERCENT SLOPES  
237C MANCHESTER-URBAN LAND COMPLEX, 3 TO 15 PERCENT SLOPES  
238A HINCKLEY-URBAN LAND COMPLEX, 0 TO 3 PERCENT SLOPES  
238C HINCKLEY-URBAN LAND COMPLEX, 3 TO 15 PERCENT SLOPES  
240B LUDLOW-URBAN LAND COMPLEX, 0 TO 8 PERCENT SLOPES  
243B RAINBOW-URBAN LAND COMPLEX, 0 TO 8 PERCENT SLOPES  
245B WOODBRIDGE-URBAN LAND COMPLEX, 0 TO 8 PERCENT SLOPES  
245C WOODBRIDGE-URBAN LAND COMPLEX, 8 TO 15 PERCENT SLOPES  
248B GEORGIA-URBAN LAND COMPLEX, 2 TO 8 PERCENT SLOPES  
248C GEORGIA-URBAN LAND COMPLEX, 8 TO 15 PERCENT SLOPES  
250B SUTTON-URBAN LAND COMPLEX, 0 TO 8 PERCENT SLOPES  
255B WATCHAUG-URBAN LAND COMPLEX, 0 TO 8 PERCENT SLOPES  
260B CHARLTON-URBAN LAND COMPLEX, 3 TO 8 PERCENT SLOPES  
260C CHARLTON-URBAN LAND COMPLEX, 8 TO 15 PERCENT SLOPES  
260D CHARLTON-URBAN LAND COMPLEX, 15 TO 25 PERCENT SLOPES  
263B CHESHIRE-URBAN LAND COMPLEX, 3 TO 8 PERCENT SLOPES  
263C CHESHIRE-URBAN LAND COMPLEX, 8 TO 15 PERCENT SLOPES  
269B YALESVILLE-URBAN LAND COMPLEX, 3 TO 8 PERCENT SLOPES  
269C YALESVILLE-URBAN LAND COMPLEX, 8 TO 15 PERCENT SLOPES  
273C URBAN LAND-CHARLTON-CHATFIELD COMPLEX, ROCKY, 3 TO 15 PERCENT SLOPE  
273E URBAN LAND-CHARLTON-CHATFIELD COMPLEX, ROCKY, 15 TO 45 PERCENT SLOP  
275C URBAN LAND-CHATFIELD COMPLEX, ROCKY, 3 TO 15 PERCENT SLOPES  
275E URBAN LAND-CHATFIELD-ROCK OUTCROP COMPLEX, 15 TO 45 PERCENT SLOPES  
282B BROADBROOK-URBAN LAND COMPLEX, 3 TO 8 PERCENT SLOPES  
284B PAXTON-URBAN LAND COMPLEX, 3 TO 8 PERCENT SLOPES  
284C PAXTON-URBAN LAND COMPLEX, 8 TO 15 PERCENT SLOPES  
284D PAXTON-URBAN LAND COMPLEX, 15 TO 25 PERCENT SLOPE  
287B WETHERSFIELD-URBAN LAND COMPLEX, 3 TO 8 PERCENT SLOPES  
287C WETHERSFIELD-URBAN LAND COMPLEX, 8 TO 15 PERCENT SLOPES  
287D WETHERSFIELD-URBAN LAND COMPLEX, 15 TO 25 PERCENT SLOPES  
290B STOCKBRIDGE-URBAN LAND COMPLEX, 3 TO 8 PERCENT SLOPES  
290C STOCKBRIDGE-URBAN LAND COMPLEX, 8 TO 15 PERCENT SLOPES  
290D STOCKBRIDGE-URBAN LAND COMPLEX, 15 TO 25 PERCENT SLOPES  
301 BEACHES-UDIPSAMMENTS COMPLEX, COASTAL  
302 DUMPS  
303 PITS, QUARRIES  
304 TYPIC UDORTHENTS, LOAMY, STEEP  
305 UDORTHENTS-PITS COMPLEX, GRAVELLY  
306 UDORTHENTS-URBAN LAND COMPLEX  
307 URBAN LAND  
308 UDORTHENTS, SMOOTHED  
W WATER

## **4. WETLAND RESOURCES**

This section focuses on descriptions, functions, uniqueness of the wetlands on site, and the relationship of the wetlands to possible uses.

### **Existing Conditions**

Approximately 16% of this 340+ acre parcel is comprised of wetlands and watercourses (56+ acres). A large majority of these wetlands are comprised of the 30 acre excavated lake in the northern portion of the property. Two other small open water bodies are present on the site (see Figure 4). The remainder is represented primarily by forested red maple swamps scattered throughout the property. The wetland directly to the south of the lake which receives its outflow is in a transitional state between scrub/shrub wetland and a forested wetland.

These wetlands are situated within two different sub-regional watersheds. The northern and central portion drains into the lake and then out under Durham Road to the southwest to eventually flow into the Hammonasset River. The eastern and southern portions of the property drain to the southeast into the Chatfield Hollow Brook and eventually into the Hammonasset River. These two watersheds are part of the regional watershed known as "South Central Eastern Regional Complex" which drains directly to Long Island Sound.

The primary inflow of water onto the site, and consequently into the lake is from the northwest via an unnamed stream which drains a watershed of approximately 3.6 square miles. The stream is most likely perennial (flowing all year round), however the flow into the lake is sometimes not apparent due to the large diameter rip rap placed in the channel at the lake inlet. Two watercourses flow into the lake with much smaller contributing watersheds. One from the northeast and one from the southeast.

The northeast inlet to the lake is via a small wetland area and has no defined channel. There was a significant area of excavation discovered at this wetland location, apparently for the purpose of open water creation to attract waterfowl to shoot (duck decoys were scattered about).

The southeast inlet to the lake is an intermittent stream which most likely flows primarily during storm events or periods of high groundwater levels. The stream receives overflow from a linear forested wetland located in the central portion of the site. Its small watershed is completely contained within the site.

The outlet on the south side of the lake flows through an excavated channel prior to entering the transitional wetland referred to above.

### **Wetland Functional Values**

The primary wetland functions related to this site are water-based recreation, ecological integrity, visual/esthetic potential, flood control and wildlife.

The presence of open water, high water quality, road access, and fishing and hunting opportunities rates the recreation function as high. Absent the lake, the “ecological integrity” of the remaining wetlands should also be rated high due to the lack of inhabited buildings near these wetlands as well as their relatively natural state. The visual/aesthetic properties of the lake, as well as the transitional wetland to the south, is rated higher than normal because of the different number of wetland types at these locations as well as the presence of open water and the largely undeveloped land-use adjacent to these wetlands. The ability of the wetland downstream of the lake outlet to retain flood flows is above average due to its size, thick vegetation and presence of absorbent peat in the soil. In addition, numerous smaller wetlands located at the upper portions of their relative watersheds, such as exist on this site, can collectively provide substantial flood control benefits for downstream areas. The wildlife value of all of the wetlands on this property is average, except for the “outlet” wetland which has higher than normal value due to its diverse habitat.

### **Proposed Activities, Comments and Recommendations**

The proposed activities as stated in the ERT request included recreation (ballfields, swimming, trails), open space, and municipal facilities such as a school.

In general potential threats to wetlands and watercourses can be direct in the form of actual filling or excavation thereof, or indirect, in the form of erosion and sedimentation, decreased water quality, as well as variations in the quantity of water entering the wetland system. The overall suitability of this site as it relates to its water resources should be viewed in terms of these potential impacts.

All of the wetlands on this property are of high enough value in one or more categories to warrant full protection from direct wetland impacts. Further, an appropriate buffer of undisturbed upland area surrounding these wetlands should be maintained. A buffer width of 100 to 200 feet would be desired to provide suitable protection for most concerns. The watercourses, besides the primary inlet and outlet of the lake, while functioning only as storm water conveyance, are intermittent in nature and hold little value for fishery concerns. Properly culverted crossings of these waterways, if necessary, would not have significant impact on these resources.

The construction of municipal buildings, and to a lesser extent, that of ballfields would have the highest potential for impacting water resources. The steep slopes covering the majority of the southern portions of this site would require the creation of a thorough erosion & sedimentation control plan. The use of pesticides, fertilizers and accumulation of urban pollutants from any parking lots would necessitate stormwater quality controls.

The use of the lake for swimming is under the jurisdiction of the State Department of Public Health. Please refer to their section of this report for further information. Much can be done to improve the overall value of the lake for fish and wildlife. The uniform, bare, steep gradient of the outer margins of the lake prohibit the development of valuable, shoreline wildlife habitat. Creation of shallow, submerged "shelves" around the shoreline would allow or encourage the growth of an emergent category of wetland vegetation which in turn would provide valuable habitat for certain fish. Allowing the growth of vegetation above the waterline would also act to diversify habitat, making it attractive to songbirds and providing refuge for wading birds. In addition, improvements could be made to the lake's primary inlet, to allow better fish passage into the lake by providing an alternative the large rip-rap now being used in the

channel. For more information on this please consult the Team fisheries biologist at 860-295-9523.

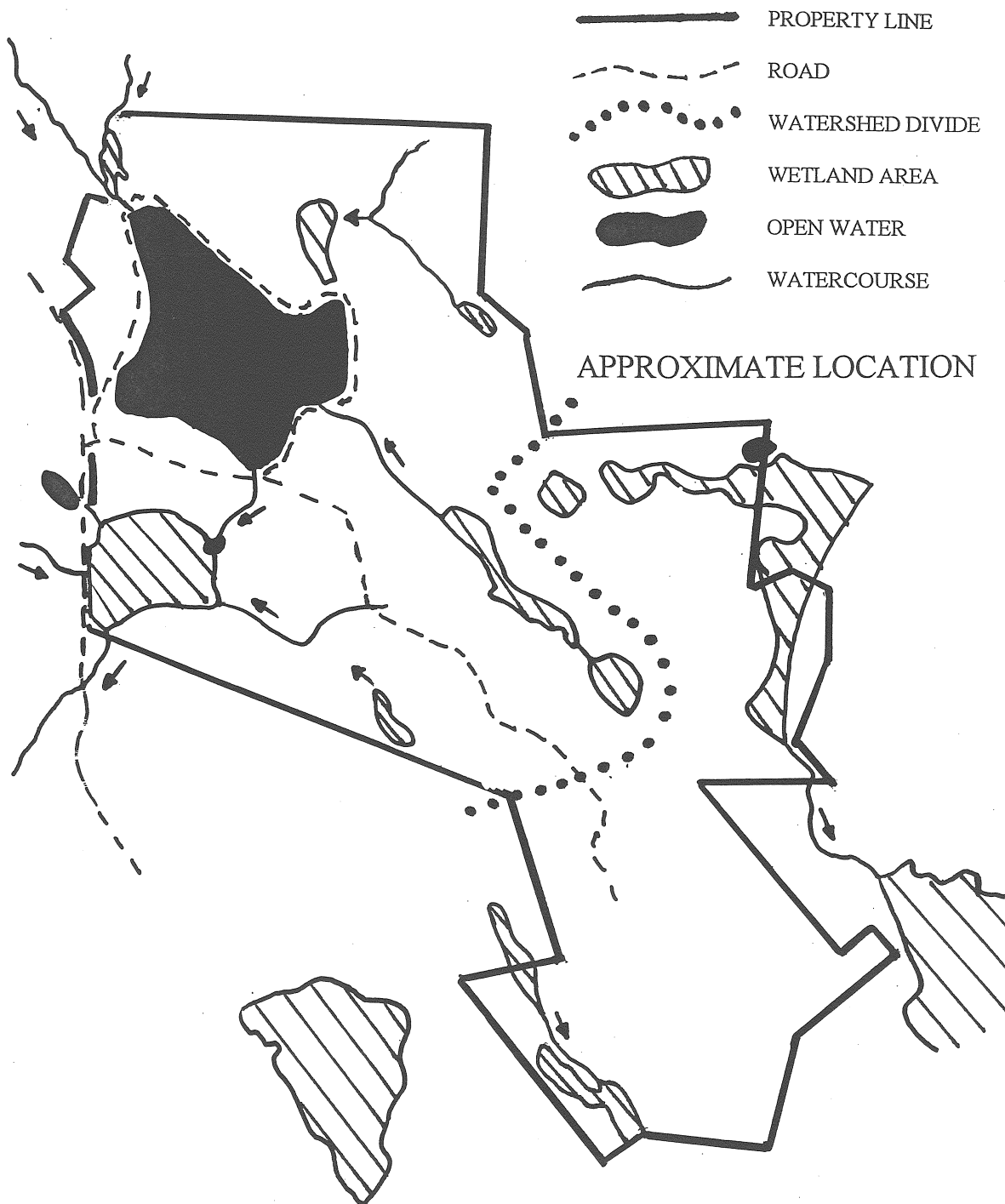


Figure 4

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N

Wetlands and Watercourses Map

Scale 1" = 1000'



## 5. FISHERIES RESOURCES

### Resource Inventory

- Venwood Lake is located on an unnamed tributary to the Hammonasset River. The ±30 acre lake created by peat and gravel excavation supports mixed coldwater and warmwater fish communities. The coldwater community consists of adult hatchery-reared brown, brook, and rainbow trout that are stocked as part of the fishing preserve operation. The present landowner indicated good survival of trout throughout the warm summer months which has resulted in numerous large holdover fish. Good growth and survival of trout is possible due to a large volume of cold, well-oxygenated water in deeper portions of the lake and a sufficient quantity of storage.

The warmwater community in the lake consists of resident fish species which also inhabit the unnamed tributary stream. Warmwater fish live in the upper portions of the lake and can survive in an aquatic environment where water temperatures exceed 75°F for extended periods. The following warmwater species can be expected: largemouth bass, yellow perch, sunfish species, golden shiner and chain pickerel.

The small seasonal watercourse which enters the southeast section of Venwood Lake does not support a viable fish community.

The Hammonasset River supports an important fishery for hatchery trout as it is annually stocked with more than 9,000 adult (9-12") brown, rainbow, and brook trout. Most popular is the trout management area which is located downstream of Lake Hammonasset. Much of the Hammonasset River stream corridor has not been encroached upon by development; thus it supports a viable population of resident stream fishes. The river in low gradient areas supports species typical of this habitat such as: bluegill and pumpkinseed sunfish, white suckers, chain pickerel, smallmouth bass, common shiners, fallfish and brown bullheads. In higher gradient areas, the river becomes more favorable to species preferring swifter stream velocities such as blacknose dace, longnose dace and tessellated darters. White suckers and fallfish should occupy microhabitat in these areas as well.

The Hammonasset River also supports an important anadromous fish community. The river is known to host runs of river herring, white perch and sea-run brown trout. The first known barrier to anadromous fish migrations occurs at Lake Hammonasset. Spawning runs of river herring are expected between the months of March and June. Sea-run brown trout may immigrate in early spring or in the fall with the onset of the spawning season.

### **Comments/Recommendations**

- ◆ A 100 foot open space buffer zone should be maintained along the unnamed tributary to the Hammonasset River. This buffer can be an effective mitigation measure against any type of proposed development on this property. No construction and alteration of existing habitat should be allowed in this zone. Research has shown that 100 foot buffer zones help prevent damage to wetlands and stream ecosystems that support diverse fish and aquatic insect life. Impacts such as soil erosion can be more effectively minimized if riparian areas are left in their natural condition. These buffers will absorb surface runoff and other pollutants before they can enter aquatic ecosystems .
- ◆ Hydrologic analyses may be required to assess any impacts to streamflow regimes due to proposed golf course development. Information should be generated to evaluate and assess the extent to which existing stream flows may be diminished due to the withdrawal of water used for irrigation and turf maintenance. The period of concern is typically during the base flow period, June through September. Diminished flows often translate into instream habitat losses. Further information may also be required if water losses are expected to be significant. This could include stream habitat based studies which predict instream habitat losses in different microhabitat types.
- ◆ Since Venwood Lake is approximately 5 years old, it contains only small amounts of nutrients and is considered to be in an “oligotrophic” state of eutrophication or lake aging. During the process of eutrophication, a lake typically passes through three major states of succession: oligotrophy, mesotrophy, and eutrophy. The transition from one state to the next may take thousands of years; however, eutrophication can be rapidly accelerated by man-made inputs of nutrients such as excessive soil

erosion, stormwater runoff, and septic leachate. Therefore, it is important to minimize any development of the property which may introduce nutrients to local watercourses or Venwood Lake.

- ◆ Venwood Lake is now registered as a “fishing for fee” operation with the DEP which allows the owner to set special size, bag limits and seasons. Once the property is sold to the town, this status would be revoked and the town would have to abide by State of Connecticut fishing regulations.
- ◆ To maintain the existing high quality trout fishery in Venwood Lake, the town will have to annually stock trout since these species will not successfully reproduce. Warmwater species such as largemouth bass will naturally reproduce in the lake and do not need to be stocked.
- ◆ Due to narrow littoral zone along the edge of the pond and 3:1 side slopes, there is a limited amount of submergent and emergent aquatic vegetation. Therefore, the pond will require very little aquatic vegetation maintenance in the future.

## **6. VEGETATIONAL RESOURCES**

The Venuti Family Property has excellent potential as open space for passive and active recreation. Site limitations make development of a more intensive nature such as municipal facilities or a golf course more difficult. The vegetation present on this tract of land falls into three broad categories. These include Mixed Hardwood Forest, Open Fields and Hardwood Swamp/Inland Wetlands. The location and acreage of these areas were obtained from 1995 aerial photographs and are only approximate. They are depicted on the Forest Vegetation Map.

### **A. Mixed Hardwoods:**

The Mixed Hardwood type totals approximately 214 acres. Beginning in the late 1950's and continuing into the 1990's large portions of this vegetation type have been harvested. The harvests have varied greatly in intensity, ranging from complete removal of all merchantable sawtimber size trees to lighter removals.

Areas that were harvested more than twenty years ago are made up of reasonably healthy small sawtimber size trees (11" in diameter at breast height (d.b.h.) and larger) and pole size trees (5" to 11" d.b.h.) which range from 50 to 100 years of age. These areas are generally dominated by red oak, black oak and white oak. Chestnut oak, scarlet oak, red maple, black birch, mockernut hickory, pignut hickory, shagbark hickory and American beech are present in lesser numbers along with occasional large eastern white pine. Tulip tree, sugar maple, black cherry, sassafras, black gum, white ash and yellow birch are more conspicuous components where this forest type grades into the hardwood swamp/inland wetland type.

Understory vegetation includes hardwood tree seedlings, flowering dogwood, gray birch, eastern red cedar, maple leaved viburnum, eastern hop hornbeam, American hornbeam, azalea, beaked hazelnut, American chestnut sprouts, witch hazel, sweet pepperbush, highbush blueberry, lowbush blueberry, huckleberry, barberry and occasional mountain laurel. Ground cover vegetation includes poison ivy, Virginia creeper, green briar, raspberry, dewberry, partridge berry, Canada mayflower, wood aster, rattlesnake-plantain, spotted wintergreen, pipsissewa, Indian cucumber-root, trout-lily, wild onion, false Solomon's seal, wild sarsaparilla, club

moss, evergreen wood fern, hayscented fern, cinnamon fern, Christmas fern and many other species of grasses, sedges and wild flowers.

Some of the areas that were heavily harvested within the last twenty years are dominated by dense seedling (less than 1" in d.b.h.) and sapling (1" to 5" in d.b.h.) size black birch, yellow birch, red maple, eastern hop hornbeam, American hornbeam, American chestnut and American beech. Scattered larger red oak, American beech, white pine, sugar maple, red maple, black birch, hickory, tuliptree, yellow birch and white ash are also present. These larger trees were of such low quality that they had no merchantable value at the time when this area was last harvested and were left standing. Hardwood tree seedlings, grape vines, green briar and raspberry have become established in some of the newer openings created by the most recent harvests.

### **B. Open Fields:**

The open field vegetation type occupies about 61 acres of this tract. The vegetation which is present in these areas is dominated by grasses, sedges, wild flower and weed species with white pine, autumn olive, multiflora rose and hardwood tree seedlings scattered about. Some wild flower and weed species which were observed include daisy fleabane, ox-eye daisy, black-eyed Susan, sunflower, milkweed, Joe-Pye-weed, meadowsweet, steeplebush, white clover, deer tongue, elderberry, pokeweed, smartweed, Queen Anne's lace, boneset, selfheal, dewberry, wild strawberry, raspberry, cleavers, goldenrod spp. and ragweed spp. Phragmites has become established on some of the poorly drained sections of the open fields.

### **C. Hardwood Swamp/Inland Wetlands:**

There are approximately 35 acres of hardwood swamp/inland wetlands present within this property. These wetland areas are somewhat variable with all size classes and age classes of trees represented. Each wetland is dominated by red maple with occasional black gum, white ash, American elm, yellow birch, black birch and tulip tree intermixed. Red oak, sugar maple and shagbark hickory are present in the transition zone between this vegetation type and the mixed hardwood type. Many of the larger trees in these wetland areas have cavities which make excellent den sites for many species of wildlife. Understory vegetation includes spice bush, sweet pepperbush, shadbush, speckled alder, highbush blueberry, red osier dogwood, swamp azalea, arrowwood, winterberry, witch-hazel,

multiflora rose, swamp rose and barberry. Skunk cabbage, false hellebore, tussock sedge, club moss, horsetail, sphagnum moss, poison ivy, Virginia creeper, green briar, cinnamon fern, Christmas fern, sensitive fern, evergreen wood fern, royal fern, steeplebush, meadowsweet, wild geranium, marsh marigold, penny royal, Canada mayflower, rue anemone, wood anemone, Solomon's-seal, false Solomon's-seal, spotted wintergreen, trillium, violets, cinquefoil, dew berry, cleavers, Jack in-the pulpit, aster spp. and other wild flower species are present as ground cover.

## **Management Considerations**

The development and maintenance of a healthy forest environment is feasible for this property in the long run. The removal of risk and hazard trees and the maintenance of healthy vigorous trees which are less likely to be adversely affected by insect and disease infestation should be of major concern in the management of this property. Improvement thinnings focused on the removal of unhealthy and damaged trees which are competing with trees of high potential could be implemented within the mixed hardwood area that has not been harvested in the last twenty years.

The areas that have been heavily harvested in the last twenty years could be improved by having a portion of the larger damaged trees felled or deadened in place. Many of these larger trees are impeding the development of quality seedlings and saplings. A few of these large poor quality trees should however be retained per acre for their value to wildlife as mast producers, insect reservoirs and den sites.

Periodic harvests aimed at releasing crop trees, by removing poor quality competitors, will result in a healthier, more stable forest condition. To reach a healthy and productive state, individual forest stands should be periodically evaluated to determine present and future management needs.

A Public Service Forester from the Department of Environmental Protection may be contacted at (860) 295-9523 to provide basic advice and technical assistance in woodland management. These services are provided free of charge. Services of a more intensive nature are available at a fee from Certified Professional Foresters. A directory of Certified

Forest Practitioners is available from the State of Connecticut Division of Forestry (860) 424-3630.

## Golf Course Development

Tree and vegetation clearing and removal will take place on a significant portion of this tract should development of a golf course occur. If development of this property does occur, the sawtimber size trees and pole size trees that are going to be removed should be tallied and sold as sawlogs and fuelwood rather than chipped and removed at a cost to the developer.

Ideally trees that are going to be retained for buffers between holes or as aesthetic standards should be healthy, free of decay and long lived species such as the oaks, hickories and sugar maple. These trees may be left in groups or "islands" to reduce the impact of soil disturbance and mechanical injury during construction. Construction activities that occur too close to trees that are to be retained will adversely effect their health, vigor and longevity and potentially create future hazard trees. Trees are very sensitive to the condition of the soil within the entire area of their root systems. Excavation, filling and the general use of heavy machinery will lead to some degree of soil compaction that will adversely affect the soil moisture and aeration balance. This imbalance could lead to a decline in tree health and vigor and may even lead to tree mortality within several years. Physical damage to the root system (by excavation) or bark damage may allow the introduction of decay organisms which may result in the decline of a trees health over time. Both individual trees and islands of trees can be designated for retention with vinyl flagging or fencing prior to construction so that tree injury may be avoided.

No excavation, filling or driving of heavy equipment should be permitted within 25-50 feet (depending on tree diameter-the larger the tree to be retained the greater the no disturbance area should be) of single trees or groups of trees. A general rule to follow is no excavation, filling or heavy equipment should be permitted within two times the radial spread distance of the tree's crown. When making grade cuts, trees should be removed back from the cut for at least a distance of two feet for each one foot of depth of cut, e.g. 20 feet back for a 10 foot cut.



Where feasible undisturbed buffer zones of at least 75-100 feet deep of natural vegetation should be left between the golf course and adjacent homes to provide a visual and sound barrier. Reinforcement plantings of native conifer trees, hardwood trees and shrubs should be made after final grading has been completed.

Trees and forests have value in reducing climatic extremes, controlling runoff, filtering out pollutants from the air and water, reducing noise, providing aesthetic enjoyment, creating wildlife habitat, recharging aquifers, supplying wood fiber and functioning as a carbon sink. Healthy forests provide these long term amenities. Therefore a good relationship between development and the retention of forested open space is essential if generations to come are to enjoy a high quality of life.

Figure 5

### Forest Vegetation Map

NORTH



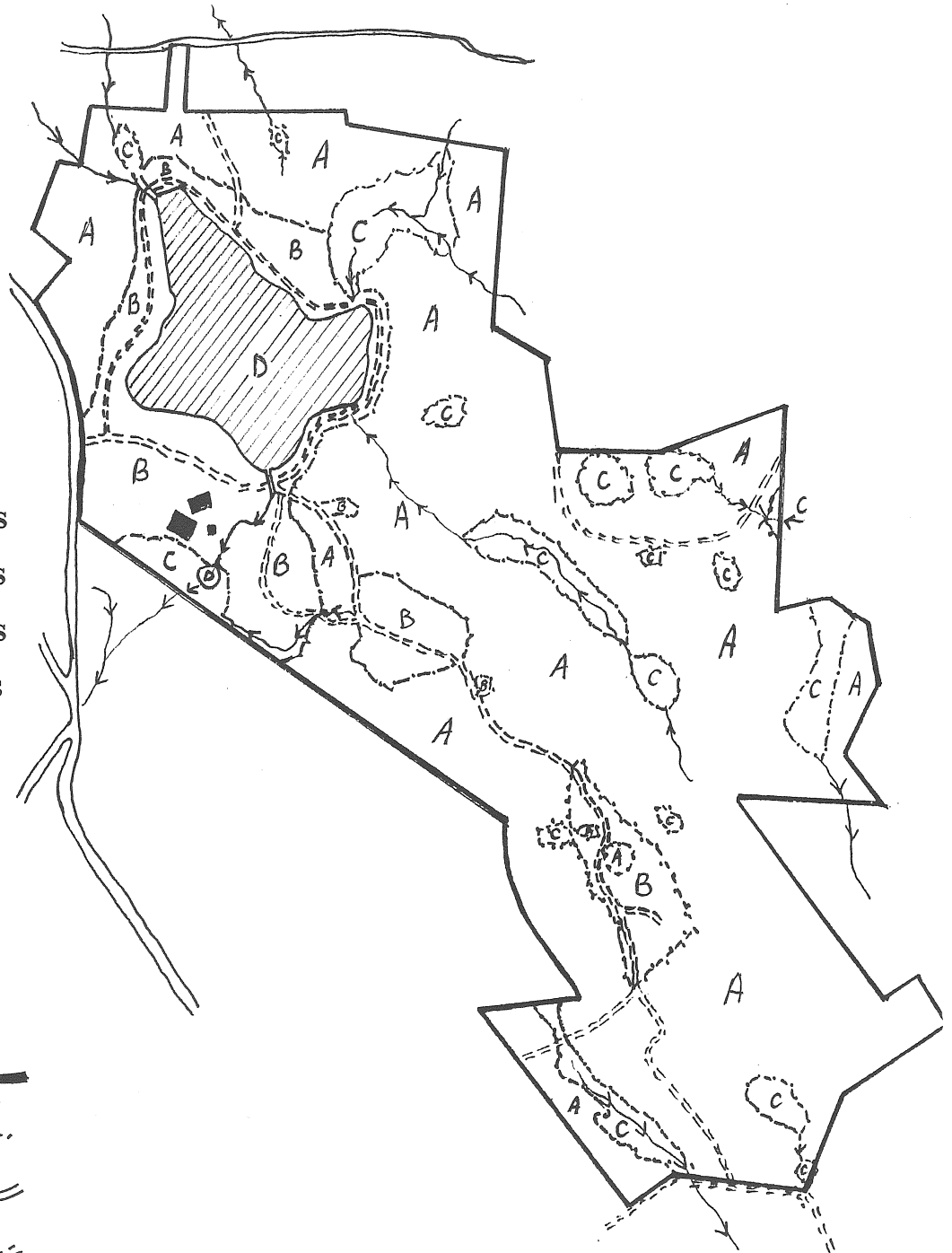
SCALE 1"=1000'

#### VEGETATION TYPES

- A. Mixed Hardwoods...214+- ACRES
- B. Open Field.....61+- ACRES
- C. Hardwood Swamp.....35+- ACRES
- D. Open Water.....30+- ACRES

#### LEGEND

- PROPERTY BOUNDARY
- STAND BOUNDARY
- PAVED ROAD
- WOODS ROAD/TRAIL
- VENWOOD LAKE
- STREAM
- STRUCTURES



## **7. WILDLIFE RESOURCES**

Included in this section is a description of habitat types, habitat use by wildlife, and habitat management recommendations.

### **Existing Habitats and Wildlife Use**

Wildlife habitat is the complex of vegetative and physical characteristics that provide for all of the requirements of wildlife, including food, shelter, resting, nesting and escape cover, water and space. Generally, the greater the habitat diversity and degree of interspersion of various habitat types, the greater the diversity of wildlife using an area. The Venuti property is relatively diverse, containing mixed hardwood forest, open fields, wooded wetlands and a lake.

#### **Forest:**

The property is located within a landscape that is largely comprised of mature, unbroken forest and protected open space including Regional Water Authority property, Cockaponset State Forest and Chatfield Hollow State Park. The Venuti property contains approximately 214 acres of mixed hardwood forest, the majority of which is dominated by oaks (red, white and black). Sub-dominant hardwoods present include red maple, pignut hickory, shagbark hickory, American beech, black birch and yellow birch. Conifer cover on the property is sparser consisting of only a few scattered white pine. The majority of the forest has been harvested to varying degrees over the last 30-40 years. Those areas harvested in more recent years contain predominately sapling sized birches, red maple, and American beech with a mix of larger diameter red oak, American beech, pignut hickory, tulip poplar, and sugar maple scattered throughout.

Mature hardwood forests provide shelter and an abundance of food in the form of buds, catkins, hard mast, berries and insects for wildlife. Acorns and hickory and beech nuts provide excellent forage for a variety of mammals and birds such as white-tailed deer, eastern wild turkeys, gray squirrels, southern flying squirrels, eastern chipmunks, white-footed mice and blue jays. Snags (dead standing trees), large diameter den trees and downed logs also provide shelter and nest sites for short-tailed weasels, short-tailed shrews, eastern chipmunks, northern black racers, ringneck

snakes, owls and various songbirds. Other wildlife likely using the forest for breeding, feeding and shelter include the white-breasted nuthatch, wood thrush, black-capped chickadee, black and white warbler, Eastern wood-peewee, hairy, downy and pileated woodpecker, American redstart, barred owl, broad-winged hawk, redback salamander and black rat snake. Birds requiring large tracts of unfragmented forest for breeding, such as the ovenbird, scarlet tanager, veery and eastern wild turkey also likely occur here given the large acreage of forest surrounding the Venuti property.

### **Fields:**

The property contains approximately 61 acres of open field habitat consisting of two separate fields located along the woods road in the central and southern portions of the property and the open areas adjacent to the lake and buildings. The fields are dominated by a mix of grass, forb and weed species such as switchgrass, deer tongue, smartweed, Queen Anne's lace, red and white clover, raspberry, goldenrod spp., and aster spp.. A few small patches of Phragmites (common reed grass) also have become established in the poorly drained sections of the fields. Open field habitats provide food and cover for small mammals and numerous species of butterflies and insects. These in turn provide a source of food for songbirds, hawks, and larger mammals such as red fox and coyote. Wildlife that likely use the fields include Eastern bluebirds, American goldfinches, tree swallows, eastern kingbirds, Eastern phoebes, chipping sparrows, American tree sparrows, song sparrows, eastern wild turkeys, red-tailed hawks, American kestrels, meadow voles, cottontail rabbits, red fox and coyotes.

### **Wetlands:**

The 45-50' deep, 30-acre lake on the north end of the property is immediately surrounded by a dirt roadway and open field habitat of grasses, weeds and wildflowers that have been periodically mowed. Several intermittent streams feed into and exit the lake. With exception to a 200', gently sloping (5: 1) beachfront created at the southern end of the lake, the shoreline (3:1 slope) is comprised of a very narrow band of vegetation, primarily cattails, burreed and pickerel weed. The lack of varying bank slopes and water depths resulting from past excavation of the lake site 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 and mallards. The shrub wetlands and adjacent forests also may provide nesting habitat for wood ducks.

Approximately 35 acres of hardwood wetland, dominated by red maples, are found in several small pockets scattered throughout the property. Other sub-dominate hardwoods include yellow and black birch, with red oak, white ash, sugar maple and shagbark hickory occurring in the drier areas that transition into the mixed hardwood forest. Understory and ground vegetation consists of a variety of herbaceous plants and berry-producing shrubs such as spicebush, sweet pepperbush, highbush blueberry, witch hazel, winterberry, shadbush, speckled alder, barberry, sensitive fern and Solomon's-seal.

Many species of birds commonly use forested wetlands and adjacent uplands at various times of the year for breeding, feeding and shelter. Some of these birds include the hermit thrush, tufted titmouse, dark-eyed junco, gray catbird, rufous-sided towhee, white-throated sparrow, woodpeckers (downy, hairy and pileated), common yellowthroat, veery, eastern phoebe, American woodcock, eastern wild turkey, red-shouldered hawk and barred owl. Several of the larger trees contain cavities which may serve as den and nest sites for various small mammals and birds such as raccoon, fisher, Virginia opossum, barred owl, great horned owl, big brown bat and wood duck. Other wildlife found in this habitat type include short-tailed weasel, star-nosed mole, wood frog, pickerel frog, northern spring peeper, gray tree frog and eastern garter snake.

## **Habitat Management Recommendations**

### **Open Space:**

Perhaps the greatest value of this property to wildlife is its location in a largely undeveloped area containing large tracts of open space dominated by mature forest. If maintaining the wildlife values of the property is a priority, determining the significance of the area as breeding habitat for area-sensitive forest birds should be a primary consideration. In addition, an effort should be made to maintain the fields through periodic mowing or burning. The fields could be further enhanced for wildlife by creating a "soft edge" between the fields and forest. Maintaining a 25 foot section of

early growth shrubs and saplings would provide additional structural diversity, food and cover.

If the development of municipal and recreational (e.g. ballfields, golf course) facilities is being considered, the delineation of open space wildlife corridors should be identified early in the planning process. The following management guidelines should be considered to minimize adverse impacts on wildlife:

- ◆ Setting aside “islands” of open space surrounded by development is the least desirable for wildlife. Buildings and other facilities should be clustered in one area to reduce habitat fragmentation and corridors of vegetation should be retained to allow for wildlife movement into and through the developed sites. If portions of the forest need to be cleared, an effort should be made to create these clearings adjacent to existing openings to minimize forest fragmentation.
- ◆ Natural landscaping techniques which avoid or minimize the creation of manicured lawns and chemical applications should be utilized whenever possible to reduce the acreage of lost habitat and the potential for wetland contamination.
- ◆ A 100 foot buffer zone of natural vegetation should be maintained around wetlands to help filter and trap sediments and to provide wildlife cover.
- ◆ Backyard habitat management practices could be implemented around buildings and other developed public use areas to further enhance wildlife habitat, aesthetics, and public wildlife viewing opportunities. Landscaping these areas with a diversity of wildflowers and berry- and mast-producing trees, shrubs and vines will attract numerous species of songbirds, small mammals and butterflies. Nest boxes placed on posts in semi-open habitat with scattered trees and short ground cover will provide additional nest sites for the bluebirds and tree swallows that currently use the property. Further information on suggested plantings and nest box design and placement may be obtained by contacting the CT DEP Wildlife Division.

### **Swimming Area:**

If the lake is to be used as a public swimming area, careful consideration should be given as to how the area around the lake is managed. Although current use of the lake by Canada geese is reportedly minimal, the creation of a public swimming area may attract geese to the property. Geese require fresh water for nesting and resting, as well as tender grasses and other succulent vegetation for feeding. Nuisance problems often arise in parks, and on ballfields, beaches, golf courses and residential lawns where large open areas of manicured grass exist in close proximity to open water. Although Canada geese are generally considered aesthetically pleasing, problems occasionally arise when large accumulations of droppings litter public use areas and overfertilize waterbodies, resulting in algae blooms.

To help reduce nuisance goose problems, minimize the amount of lawn area near the lake and create a natural physical barrier to discourage easy movement of geese on and off the water. Allowing the upland vegetation around the lake to grow tall and/or landscaping the area with a variety of native, berry-producing shrubs will not only discourage the geese, but will provide additional food and cover for songbirds and other wildlife. In addition, the public should be discouraged from feeding geese by informing them of the problems associated with attracting too many birds to one area, e.g., water contamination and disease. Should a golf course be developed, these same concepts could be applied in the design phase to discourage nuisance problems.

### **Trails:**

The property lends itself well to providing a variety of recreational opportunities (e.g., hunting, fishing hiking, nature study, horseback riding, mountain biking) and the development of a trail system. Properly designed trails 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. They 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. Some guidelines to follow when developing a trail system include:

- ◆ know the characteristics of the property and plan the layout so that the trail passes by or through a variety of habitat types;

- ◆ make the trail as exciting and safe as 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 seem more natural;
- ◆ the trail should be well marked and accompanied by an informational leaflet; the major wildlife topics that could be emphasized for this particular property include the value to wildlife of wetlands, various habitat types/stages of succession, and backyard habitat management practices (if implemented).

The Appalachian Mountain Club or National Audubon Society could be contacted for more specific guidance on trail design and construction.

### **Conclusion**

Should the Town acquire this property and look to set aside a certain percentage of the property for future development, a more comprehensive wildlife survey should be conducted by a consulting Wildlife Biologist. Careful consideration should be given to retaining open space based on an assessment the property's habitat values in relation to the surrounding landscape. Dr. Robert Askins at Connecticut College in New London would be an excellent source of information on bird use of this area and habitat management recommendations for minimizing the efforts of development and other land on forest birds.



## **8. THE NATURAL DIVERSITY DATA BASE**

The Natural Diversity Data Base maps and files have been reviewed regarding the project area. According to our information, there are no known extant populations of Federal or State Endangered, Threatened or Special Concern Species that occur at the site in question.

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.

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

## **9. ARCHAEOLOGICAL RESOURCES**

A review of the State of Connecticut Archaeological Site Files and Maps shows no known archaeological site on the project area. However, the University of Connecticut conducted archaeological surveys of portions of Cockaponset State Forest in the lower Connecticut River Valley and located numerous precontact and contact native American settlements in similar environmental and topographic features which exist on the Venuti property. Knolls of well-drained soils adjacent to wetland systems are highly sensitive areas for Indian encampments, which demonstrate the movements of peoples adapting to the natural resources of the area. In addition, remnants of historic farming activities are present and should be preserved on the property.

The Office of State Archaeology recommends that any proposed development of the project area that requires ground disturbance activities should be further assessed for cultural resources. Killingworth's Planning and Zoning Commission works regularly with The Office of State Archaeology to preserve and protect archaeological resources within the community. The Office of State Archaeology would be pleased to advise the town on how to best preserve any archaeological resources which may exist on the project area when specific plans for recreation and other facilities are proposed.

Acquisition of the property by the town not only offers recreational opportunities but, also educational opportunities to learn about Killingworth's history in a unique way. Any archaeological sites located can be employed by local schools to teach the science of archaeology and the lifeways of native Americans and colonial farmers. The Office of State Archaeology is prepared to offer any technical assistance to the town on the review for archaeological sites which may be effected by proposed landuse activities and on educational opportunities for the school system.

## **10. POTENTIAL PAST, PRESENT AND FUTURE HEALTH AND ENVIRONMENTAL IMPACTS**

The Venuti Property has undergone intense mining of peat and gravel in a wetland ecosystem. Substantial changes have occurred on the property since 1965. Figures 6 through 12 are aerial photographs of the property taken every 5 years from 1965 until 1995. The peat bog was totally mined and now a large lake exists on site.

A review of CT Department of Environmental Protection's files reveal that there were serious sediment and erosion control and regulatory noncompliance issues, and flooding associated with Venuti's operations. Although those past siltation and noncompliance issues are historical, flooding and low-flow impacts associated with the unnatural lake are important considerations impacting land-use for the present and future. Additionally, other potential and presently unknown human health and environmental impacts associated with Venuti's operations onsite ought to be investigated.

An equipment maintenance facility is on the property. Review of the aerial photographs indicates a building existed at the same location as early as 1965. A Phase I, and if warranted (and likely) Phase 2 Environmental Assessment at this maintenance shop location is necessary to protect any buyers of this real estate.

Industrial degreasing solvents are frequently utilized in truck maintenance shops. Historically in Connecticut, solvents were disposed of into sinks and floor drains, which discharged to dry wells and septic systems. Spillage of petroleum hydrocarbon products (oils, gasoline, diesel) are also associated with truck maintenance facilities. (This is not to say Venuti took part in such practices, nor were they illegal at earlier times.) The occurrence (past and present) of underground and aboveground storage tanks should be investigated. Any existing tanks should be tested for integrity and leaking. The past removal of any tanks should also be reviewed, and any residual contamination from possible leakage and spills should be assessed.

Environmental impacts associated with use of industrial solvents and petroleum hydrocarbon products include soil, groundwater, and surface water contamination. Any existing onsite wells, whether in use or not, should be sampled. Investigatory wells should be installed. The septic tank and leach field, as well as any floor drains and dry wells should be sampled. A public water supply does not exist in the locale of the Venuti Property. Therefore, a determination of any possible contamination at the Venuti Property is imperative in the evaluation for future land usage.

During the past 5 years the Venuti Property has been used as a private hunting and fishing club, known as Venwood Lake. Although rules at that club prohibit the use of lead shot over the lake, during the ERT site visit several spent lead-shot gun shell casings were observed along the lake's banks. Further, it is common practice to repack shell casings. Shell casings marked steel shot may have been repacked with lead shot. A site assessment through-out the entire property should include an evaluation for lead contamination in sediments, soils, and waters.

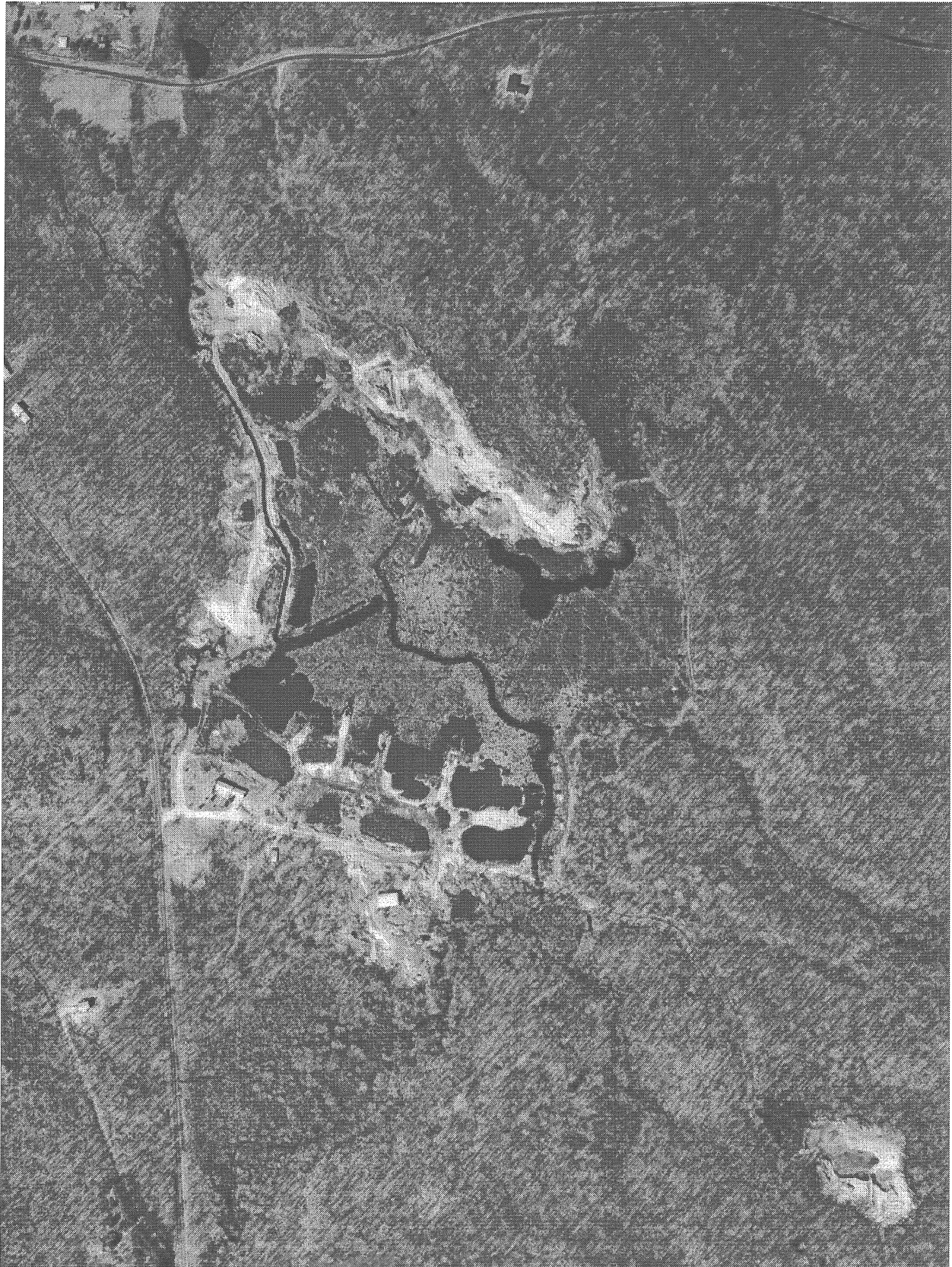
Past practices on the Venuti Property could pose limitations on future land-use potentials. A release of hazardous waste may have occurred. This should be investigated as part of normal business practices, and if necessary remediated. An evaluation of hydrologic parameters and environmental contamination issues deserve detailed scrutiny. The CT DEP's Site Discovery and Assessment Program is available to assist the Town of Killingworth's officials in this endeavor. The contact person at DEP is John Hirschfeld, he can be reached at (860) 424 -3893.



Venuti Property 1965



Venuti Property 1970

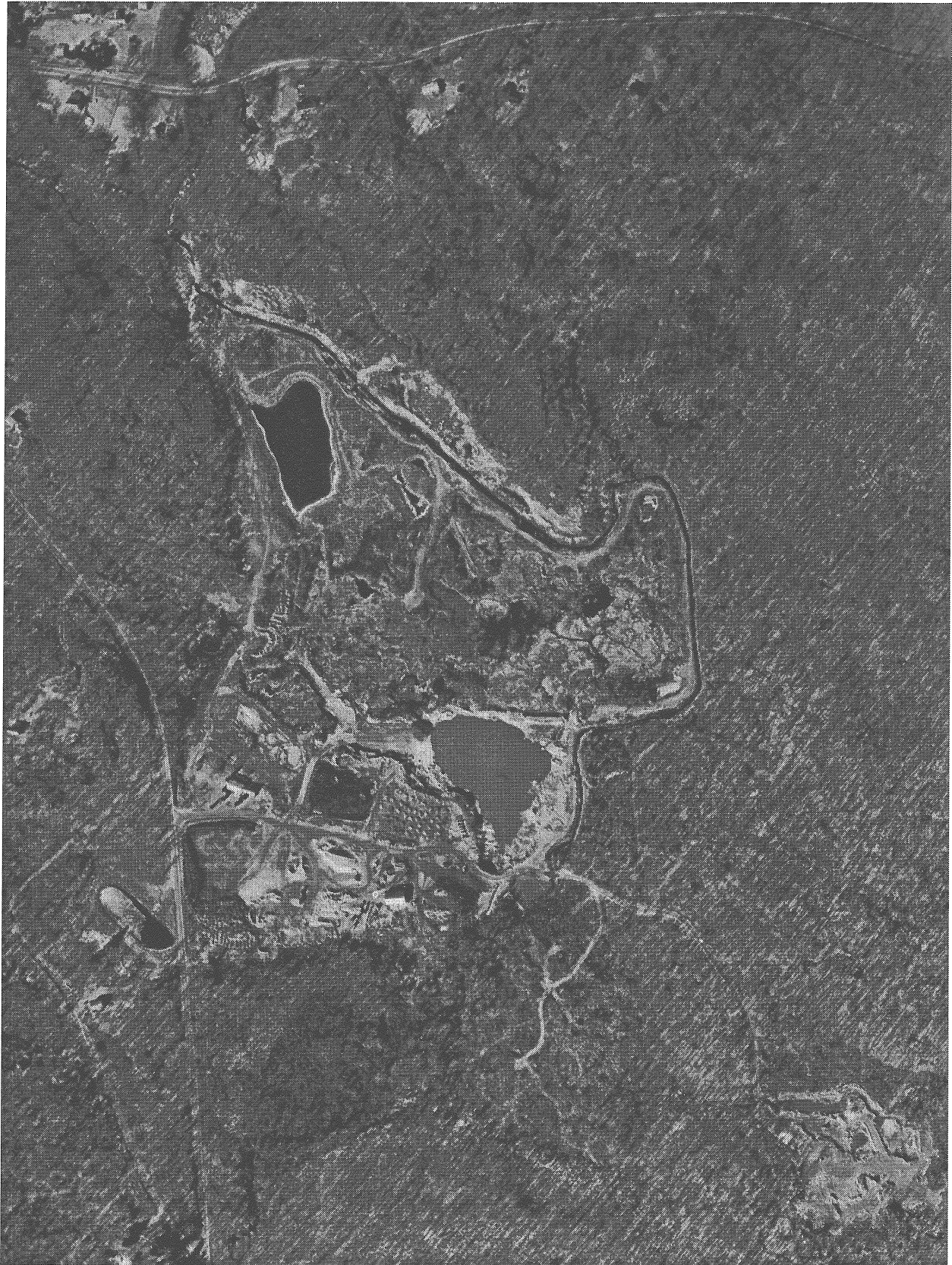


Venuti Property 1975



Venuti Property 1980





Venuti Property 1986



Venuti Property 1990



Venuti Property 1995

## **11. EVALUATION FOR PUBLIC BATHING AREA**

A site evaluation was performed to determine the potential for development of this site into an approved public bathing area.

### **Observations**

As a result of examining this site, the following observations were noted.

- ◆ Venwood Lake is approximately 30+ acres in size. It is the result of a former sand and gravel excavation.
- ◆ The lake is 45-50 feet deep and is currently stocked with fish for use as a private/public hunting and fishing preserve. The water was observed to be clear with a brownish color.
- ◆ A beach area with a shoreline of approximately 200 linear feet has been developed. The slope of the beach into the water is approximately 5 feet linear per foot of water depth. No obstructions were observed in the bathing area.
- ◆ A building is located approximately 300 feet from the beach. It is served by a well drinking water supply and subsurface sewage disposal system. No bathhouse facilities are currently provided at the existing beach.
- ◆ The lake and property being considered for development are on a public drinking water supply watershed.
- ◆ The local health agency representative indicated consistent water volume in the lake even during/periods of prolonged dry weather (summer of 1997).

## **Conclusions**

It would appear that the lake provides a site which could be developed into a public bathing area. Such development should consider the following:

- ◆ The impact of potential bather load contamination should be evaluated so as not to jeopardize the protection this watershed provides to public drinking water supplies.
- ◆ An annual sanitary survey of the lake watershed combined with a weekly sampling program to monitor bathing water quality (during the bathing season) should be implemented by the local health department.
- ◆ A bathhouse with warm water showers and toilet facilities for both men and women will be required. Access to the beach should be controlled through this facility.
- ◆ Beach should be limited to accommodate one (1) person for each linear foot of beach. This could be coordinated with parking availability.

## **12. SEPTAGE TREATMENT AND DISPOSAL FACILITIES**

During the field review, representatives of the Killingworth Water Pollution Control Authority asked about the potential use of septage treatment and disposal facilities on a portion of the site.

Mapping information on the site has been reviewed and it is determined that the groundwaters in this area are classified as GAA. Furthermore, the State's Water Quality Standards have been reviewed which set criteria and policy for the management of the State's water resources. The DEP Department of Water Resources policy regarding the discharge of septage in GAA area is that such activity cannot be permitted.

Enclosed a copy of the State's Water Quality Standards for your information, said policy is on page 25, GW12 (copy follows).

- B. For discharges to ground water of treated domestic sewage other than discharges of domestic sewage identified in subparagraph GW10(A), agricultural wastes, and storm water, the zone of influence shall be the area in which such discharge causes the ground water to be 1) altered in quality from its natural condition, or 2) lowered in quality from that which is suitable for drinking and other domestic uses without treatment. The Commissioner may require the applicant for a permit under Section 22a-430 of the General Statutes to submit for the Commissioner's approval an engineering plan showing the areal extent of any such zone of influence.
- C. The applicant for a permit under Section 22a-430 of the General Statutes authorizing a discharge other than a discharge of treated domestic sewage, agricultural waste, or storm water shall delineate the zone of influence associated with the proposed discharge. Such zone of influence shall include all areas beneath which the ground water which is or may be affected in quality by such discharge. The Commissioner may require that such zone of influence extend to a receiving water body with a classification of B or SB.
- D. The Commissioner may require the applicant for a permit under Section 22a-430 of the General Statutes to demonstrate that he has acquired rights to the zone of influence of the proposed discharge. Acquisition of such rights means that the applicant owns the land overlying such zone, has obtained an easement with respect to such land and has recorded such easement in the applicable Town Clerk's office, or otherwise controls such zone to the Commissioner's satisfaction. Any such easement or other control mechanism shall: 1) provide the applicant with the exclusive right to use the ground water in such zone and such right to enter the land overlying such zone as the Commissioner deems necessary to accommodate monitoring or remediation, and 2) assure that the ground water within such zone will not be used for potable water supply.
- E. The delineation by a Section 22a-430 permit applicant of the zone of influence of a proposed waste discharge indicates that the underlying ground water may not be suitable for human consumption or other uses. Installation of a withdrawal well in or near such a zone of influence may result in an induced flow of polluted ground water to such well. When reviewing an application to withdraw groundwater pursuant to Connecticut's Water Diversion Policy Act, General Statutes Sections 22a-365 *et seq.*, the Commissioner considers the potential impacts on water quality attributable to induced flow of polluted water from a zone of influence associated with a waste discharge.
- GW11. The Department's classification of ground water, whether as GB, GC, or otherwise, conveys no right to degrade that ground water or to utilize less effective treatment measures than those utilized for discharges to groundwater designated for use as potable water. Domestic sewage shall be given the same treatment regardless of the classification of the groundwater to which such sewage is discharged.
- GW12. The Commissioner applies the following policies in reviewing applications under Section 22a-430 of the General Statutes to discharge waste to ground water:
- A. *Class GAA Ground Waters:* The Commissioner does not issue permits authorizing a discharge to class GAA ground water unless such discharge is of treated domestic sewage as defined in Section 22a-430-1 of the Regulations of Connecticut State Agencies, waste generated by certain agricultural practices, certain water treatment waste waters from public water supply treatment systems, or certain minor cooling waters or clean waters. If a GAA area is within an Aquifer Protection Area designated in accordance with Section 22a-354 of the General Statutes, the Commissioner does not issue permits authorizing a groundwater discharge that conflicts with any regulation adopted pursuant to Section 22a-354(i) of the General Statutes.
- B. *Class GAA<sub>s</sub> Ground Waters:* The Commissioner does not issue permits authorizing a discharge to class GAA<sub>s</sub> ground water unless such discharge is of treated domestic sewage as defined in Section 22a-430-1 of the Regulations of Connecticut State Agencies, waste generated by certain agricultural

## **13. PLANNING REVIEW**

The Team planner has reviewed relevant land use, recreational, and development patterns in the area of this property, as well as visually investigating the parcel, and have the following comments.

### **Area Characteristics**

The subject site is residentially zoned. It is located in a mostly rural residential area with parcels of state forest and water company property nearby. As most of the housing developments have taken place directly along the road, the Venuti Property remains one of the few large undeveloped parcels along Rt. 148, a consideration if existing residents are concerned about retaining open space against further development.

A small parcel of the Cockaponset State Forest is located nearly directly west of the site. Property owned by the South Central Regional Water Authority lies just south of the site and falls in the same watershed subbasin.

Rt. 148 currently serves as a secondary east-west collector road between Durham and Chester. It is not a direct cutoff or shortcut between any major roads and is not linked to any large commercial or industrial projects. There is reason to believe that the area will retain its rural residential character in the near future.

### **Traffic Impact**

The property fronts for a distance of approximately 1000 feet on Route 148, a two-lane state route with moderate residential traffic. The pavement has recently been resurfaced and is in good condition. However, due to the curvature of the road, the sight lines are limited and the road therefor does not lend itself to high-speed traffic. While it may accommodate light to medium duty trucks, the road design is probably not suited to heavy-duty vehicles. With this in mind, the potential uses of this property should be consistent with the limitations of the access roadway. Aesthetically, Route 148 is a pleasant drive and is under consideration for designation as a State Scenic Road. Future road improvements should recognize the rural nature of the road



Available Connecticut State DOT traffic data for 1992-1996 shows that for the segment of Rte 148 between 79 and 81, where traffic counts have been taken, there has been no appreciable change in the volume of traffic. On average, the (Average Daily Trips) ADT has remained at about 1200.

## Golf Course

The ERT was asked to consider the suitability of the Venuti site for a possible golf course. Major impacts to consider when siting a golf course include environmental impacts, possible demands on infrastructure and economic feasibility.

Golf is one of the fastest growing leisure activities in the country. The National Golf Foundation says another 400 courses per year are needed to meet the growing demand. Despite the popularity of golf, fairways are not necessarily at the top of the list of desirable amenities in a residential neighborhood. A poll conducted by American Lives Inc. found that when choosing a neighborhood, homebuyers place higher value on low traffic volume and quiet surroundings.

There are some adverse impacts of golf courses to consider. Fairway grooming can generate air pollution (an hour of power mowing is equal to a 350 mile car trip), high water use (the same as a town the size of Essex) and other environmental impacts. However, innovative management practices for golf courses have been developed and may reduce negative impacts. They include use of plant species that require less water and are more pest resistant. It is possible that future site plan approval could require these Best Management Practices to minimize adverse affects. The town zoning regulations currently lack standards for Golf Courses.

To avoid oversaturation of recreation facilities, proponents may want to keep in mind that other golf facilities including East Haddam and the Lyons Property in Old Saybrook are considering golf course developments. A market study about desirable locations and features of golf courses in the area may provide a useful economic assessment on the potential for success.

## **Land Use Patterns**

Although traffic counts do not reflect an increase in traffic, land use in the area surrounding the Venuti Property has changed dramatically in the past decade as residential use has nearly doubled since 1987 and there are more than twice as many lots. The lack of corresponding increase in ADT may be a result of smaller households or an older population, or even a changed employment pattern as more family members are working during the day.

# APPENDIX

## 1975 ERT Report - Venuti Property

For Appendix Information Please Contact  
the ERT Office at 860-345-3977