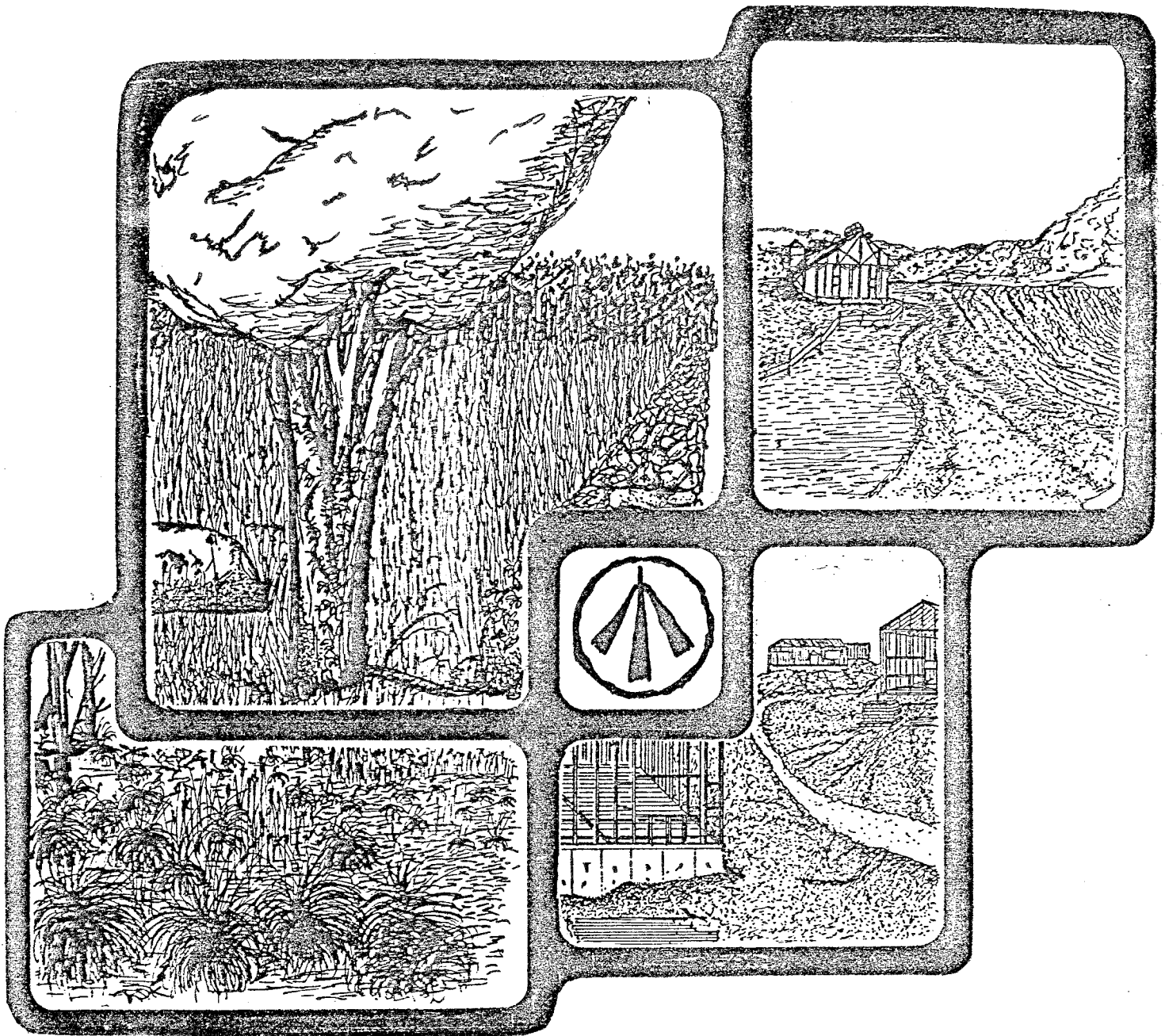


ENVIRONMENTAL REVIEW TEAM REPORT



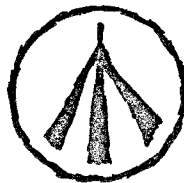
BETHEL LAND TRUST PROPERTIES BETHEL, CT

KING'S MARK
RESOURCE CONSERVATION & DEVELOPMENT AREA

**KING'S MARK
ENVIRONMENTAL REVIEW TEAM REPORT**

**BETHEL LAND TRUST PROPERTIES
BETHEL, CT**

NOVEMBER, 1983



King's Mark Resource Conservation and Development Area
Environmental Review Team
Sackett Hill Road
Warren, Connecticut 06754

ACKNOWLEDGMENTS

The King's Mark Environmental Review Team operates through the cooperative effort of a number of agencies and organizations including:

Federal Agencies

U.S.D.A. Soil Conservation Service

State Agencies

Department of Environmental Protection

Department of Health

University of Connecticut Cooperative Extension Service

Department of Transportation

Local Groups and Agencies

Litchfield County Soil and Water Conservation District

New Haven County Soil and Water Conservation District

Hartford County Soil and Water Conservation District

Fairfield County Soil and Water Conservation District

Northwestern Connecticut Regional Planning Agency

Valley Regional Planning Agency

Central Naugatuck Valley Regional Planning Agency

Housatonic Valley Council of Elected Officials

Southwestern Regional Planning Agency

Greater Bridgeport Regional Planning Agency

Regional Planning Agency of South Central Connecticut

Central Connecticut Regional Planning Agency

American Indian Archaeological Institute

Housatonic Valley Association

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Frederick Leavenworth, Woodbury

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John Rabbe, East Hartford

Mrs. Julia Wasserman, Newtown

Donna Lindgren, Ansonia

STAFF ADMINISTRATION PROVIDED BY

Northwestern Connecticut Regional Planning Agency

Dorothy Westerhoff, Chairman

Charles A. Boster, Director

Richard Lynn, ERT Coordinator

Sandra Bausch, ERT Cartographer

Jamie Whitman, Secretary

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ENVIRONMENTAL REVIEW TEAM REPORT

ON

BETHEL LAND TRUST PROPERTIES

BETHEL, CT

I. INTRODUCTION

The Bethel Land Trust is in the process of preparing management plans for three of their properties. The three properties include:

- 1.) The Wormser Preserve, ± 13 acres, located off Wolfpits Road and Hearthstone Lane
- 2.) The Plishner Preserve, ± 8 acres, located off Pleasant Rise and Cherry Lane
- 3.) The Parsons-Davenport Preserve, ± 19 acres, located off Shelter Rock Road and the Old Redding-Sherman Turnpike

Figure 1 shows the general location of the three properties.

The Bethel Land Trust and 1st Selectman of Bethel requested this ERT study to assist the Land Trust in preparing management plans for the properties. Specifically, the ERT was asked to identify the natural resource base of the three sites and to comment on the potential of the properties for forest management, wildlife management, and recreational use.

The King's Mark Executive Committee considered the Trust's request, and approved the project for review by the Team.

The ERT met and field reviewed the sites on June 30, 1983. Team members participating on this project included:

Steve Hill.....	Wildlife Biologist.....	Ct. Department of Environmental Protection
Jerry Milne.....	Forester.....	Ct. Department of Environmental Protection
Andy Petracco.....	Recreation Specialist.....	Ct. Department of Environmental Protection
Dave Thompson.....	District Conservationist.....	U.S.D.A. Soil Conservation Service
Bill Warzecha.....	Geohydrologist.....	Ct. Department of Environmental Protection

Prior to the field review day, each team member was provided with a summary of the proposed study, a checklist of concerns to address, a topographic map, a soils map, and a soils limitation chart. During the ERT's field review, team members met with representatives from the Land Trust and walked the three properties. Following the field review, individual reports were prepared by each team member and forwarded to the ERT Coordinator for compilation and editing into this final report.

Wormser Property

Scale 1" = 1 mile

This report presents the team's findings. The report identifies the natural resource base of the three properties and discusses opportunities and limitations for land management. All conclusions and final decisions with regard to future land use rest with the Bethel Land Trust. It is hoped the information contained in this report will assist the Land Trust in making environmentally sound decisions.

If any additional information is required, please contact Richard Lynn (868-7342), Environmental Review Team Coordinator, King's Mark RC&D Area, Sackett Hill Road, Warren, Connecticut 06754.

* * * * *

THE WORMSER PRESERVE

II. Site 1:

THE WORMSER PRESERVE:

A. TOPOGRAPHY AND GEOLOGY

The Wormser Preserve is about thirteen acres in size and is located in the central section of town. As shown in Figure 2a, the Preserve is situated on the eastside of Wolf Pit Road approximately 1,500 feet southeast of the confluence of Wolf Pit Road and Codfish Hill Road. The site, which flanks the northwest side of a small bedrock controlled hill, is characterized by a terrace-like topography. The steepest slopes observed on the site, which ranged between 15 and 20 percent, are confined primarily in the southeast section of the property. Elevations on the site rise from \pm 510 feet above mean sea level along Wolf Pit Road to \pm 650 feet above mean sea level in the southeast corner of the property. These elevations were taken from the published Bethel topographic quadrangle.

No watercourses were observed on the property; however, a long and narrow low-lying area occupies the front portion of the site along Wolf Pit Road. It appears that this area probably retains surface water during the wet times of the year. This low-lying, wet area drains in a southwesterly direction into Wolf Pit Brook, west of the site.

The general bedrock geology of the site is described in the "Preliminary Geological Map of Connecticut", 1982, a publication of the Connecticut Geological and Natural History Survey. Detailed bedrock and surficial geologic maps of the Bethel quadrangle, in which the site is located, have not yet been prepared.

Numerous bedrock outcrops were observed primarily along the face of slopes in the south east corner of the property. Also, scattered surface boulders were observed throughout the property. The principal type of bedrock which underlies and outcrops within the site is "Brookfield Gneiss". It is a medium to coarse grained metamorphic rock (rocks altered by great heat and pressure) whose main mineral constituents are quartz, plagioclase, hornblende, biotite and potassium feldspar. Depth to bedrock probably ranges from zero where outcrops occur to not more than ten feet at various points between outcrops.

The surficial deposit covering the entire site is till. Till is a non-sorted sediment that was deposited directly from glacier ice. It consists of a varied mixture of clay, silt, sand, gravel and boulders. Generally, the upper three to five feet of till is sandy, stony and loose. At depths below five feet and sometimes shallower, the till becomes finer grained and compact. Till, in the wet, low-lying area along Wolf Pit Road is overlain by a thin layer of dark, fine grained soil rich in decayed organic material.

B. HYDROLOGY

As mentioned earlier, no major streams were observed on the Wormser Parcel. Most of the property drains westward by sheetflow into the low lying area adjacent to Wolf Pit Road. The low lying area drains in a southward direction into Wolf Pit Brook. A small portion of the property, \pm 2.5 acres, drains northward towards East Swamp Brook.

Due to the compact nature of till soils which tends to impede the flow of

water through it and the topographic conditions along the western boundary line, groundwater is relatively close to or at the surface in this western portion of the site during wet times of year. This condition may hamper usage of this section of the property for passive recreation during the springtime, however should not pose any major problems.

No groundwater resources of particularly significant value are believed to underlie the site. Nevertheless, bedrock underlying the site is typically capable of supplying small yields to individual wells. If a well should prove to be desirable on this site in the future, the bedrock should be an adequate water source for passive recreational purposes.

C. SOILS

As shown in Figure 2b, four soil types have been mapped on the property by the USDA Soil Conservation Service (Soil Survey of Fairfield County, 1981). A brief description of each of these soil types and their suitability for alternate land uses is presented below. More detailed information on the soil types is presented in the soil survey of Fairfield County.

CnD - CHARLTON EXTREMELY STONY FINE SANDY LOAM, 15 to 35 PERCENT SLOPES

This moderately steep and steep, well-drained soil is found on the eastern border of the property. Stones and boulders cover 5 to 35 percent of the surface.

Typically, the surface layer is very dark brown fine sandy loam 4 inches thick. The subsoil is strong brown and yellowish brown fine sandy loam 25 inches thick. The substratum is light olive brown gravelly sandy loam to a depth of 60 inches or more.

The permeability of this Charlton soil is moderate or moderately rapid. The erosion hazard is severe. Available water capacity is moderate. The soil is very strongly acid to medium acid.

The steep slope and the stones and boulders on the surface are the main limitations of this soil.

Recreation. These soils have severe limitations for picnic areas, camp sites, and play areas. With good planning, satisfactory trails can be established. Erosion controls such as waterbars are typically required however in trail development.

Wildlife. Habitat requirements of openland wildlife species can be established, improved, or maintained but slope and stoniness make it very difficult to plant grain, grasses, and legumes. There are few or no soil limitations that affect the development or maintenance of woodland wildlife habitat. It is impractical to develop wetland wildlife habitat on these soils.

Woodland. These soils have fair productivity for wood crops. Competition from hardwoods is a problem when managing for pine, spruce, or larch on these soils. Equipment operation is difficult because of steep slopes. Attention to erosion control measures is important on skid trails and roads.

Cropland. The soils, cleared of stones, are suited to the production of cultivated crops in long rotations with grasses and legumes. Because of the high erosion hazard, very intensive surface water control measures are required.

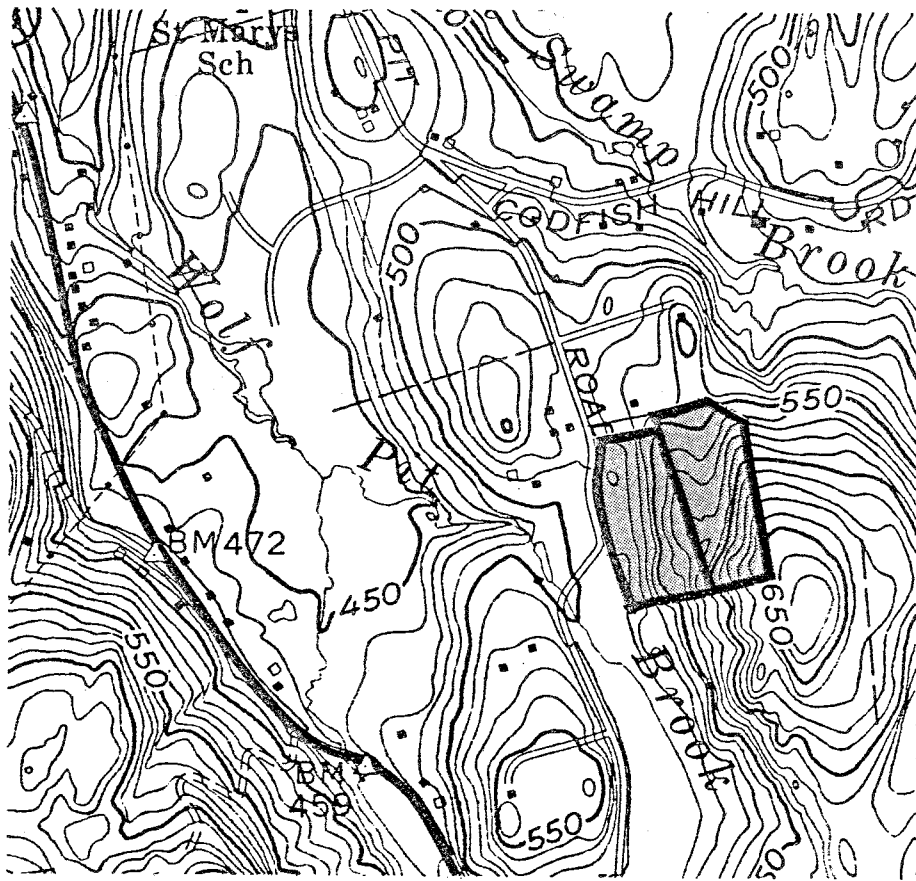


Figure 2 a.
TOPOGRAPHIC MAP

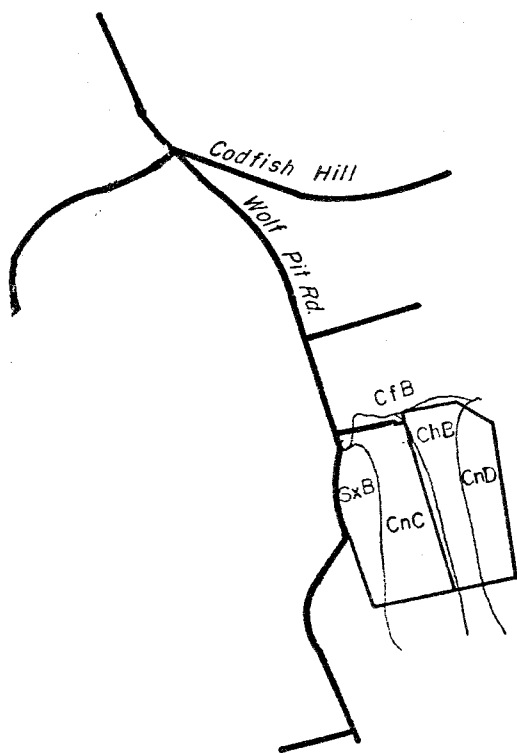


Figure 2 b.
SOILS MAP

ChB - CHARLTON VERY STONY FINE SANDY LOAM, 3 to 8 PERCENT SLOPES

This gently sloping, well-drained soil is found in a band running north to south through the central part of the property and boulders typically cover 1 to 5 percent of the surface.

Recreation. These soils are favorable for picnic areas and camp sites but stone removal is necessary for their use as play areas and limitations are more severe on slopes greater than 2 percent.

Wildlife. Habitat requirements of openland wildlife species can be established, improved, or maintained but stoniness and the steeper slopes add difficulty in management. There are few or no soil limitations that affect the development or maintenance of woodland wildlife habitat. It is impractical to develop wetland wildlife habitat on these soils.

Cropland. When cleared of stone, these soils are suited to the production of the crops generally grown in the area. Erosion is a hazard on the steeper slopes and intensive surface water control measures are needed on such areas.

CnC - CHARLTON EXTREMELY STONY FINE SANDY LOAM, 3 to 15 PERCENT SLOPES

This gently sloping to sloping well-drained soil is found just to the west of the preceeding soil type.

It is similar to the CnD soil type previously described only it is not as steeply sloping. These soils are somewhat more suitable for recreation and other land uses due to the more gentle slopes.

SxB - SUTTON EXTREMELY STONY FINE SANDY LOAM, 3 to 8 PERCENT SLOPES

This gently sloping, moderately well drained soil is found in a slight depression at the western border of the site. Stones and boulders cover 5 to 35 percent of the surface.

Typically, this soil has a surface layer of dark grayish brown fine sandy loam 6 inches thick. The subsoil and substratum are yellowish brown, mottled fine sandy loam to a depth of 60 inches or more.

This Sutton soil has a seasonal high watertable at a depth of about 20 inches from late fall until midspring. The permeability of the soil is moderate or moderately rapid. Runoff is medium, and available water capacity is moderate. The soil is very strongly acid to medium acid in the surface layer and subsoil and very strongly acid to slightly acid in the substratum.

The seasonal high watertable and the stones and boulders on the surface limit the use of this soil.

Recreation. During the main season of use, the nonstony soils with less than 3 percent slope are favorable for picnic areas and camp sites. Drainage is needed to overcome the seasonal watertable on playing fields for intensive use and to extend the period of picnicking and camping. The limitations for play areas increase on the steeper slopes and stonier soils.

Wildlife. These soils are well suited for the dependable growth of a wide variety of desirable openland and woodland wildlife food and cover plants. Habitat requirements of openland wildlife species can be established, improved, or maintained but the stony and very stony soils are more difficult to manage. There are few or no soil limitations that affect the development or maintenance of woodland wildlife habitat. It is extremely difficult and expensive to develop wetland wildlife habitat on these soils.

Woodland. These soils have fair productivity for wood crops. Competition from hardwoods is a problem when managing for pine, spruce, or larch. Hardwoods to favor on these soils are red oak, white ash, and sugar maple. Equipment operation is difficult on the very stony soils.

Cropland. The soils clear of stones are suited to the production of adapted legumes and grasses, late vegetables, and small fruits. With drainage, these soils are also suitable for the production of alfalfa, corn, orchards, and early vegetables. Erosion is a hazard and on the steeper slopes more intensive surface water control measures are needed.

D. VEGETATION

1. General Comments

The individual forest stands discussed in this report vary widely in their potential for forest management. Forest management, as used in this report, refers to the manipulation of forest vegetation, usually through the cutting of trees or the planting of trees to bring about, maintain or improve certain desirable forest conditions.

When properly prescribed and executed, forest management practices will increase the production of forest products, improve wildlife habitat, improve forest aesthetics and enhance the overall condition of the woodland. Without sound management there is no control over the quality of these conditions. Specific management opportunities are outlined for each vegetation type within each of the three parcels. For more detailed information a public service forester with DEP or a private forester should be contacted.

Thinning harvests are prescribed in stands where trees are declining in health and vigor due to over crowding. These thinnings are designed to reduce competition between residual trees for space, sunlight, water and nutrients. Only trees that are of poor quality, damaged, or in direct competition with high quality trees should be removed during these thinnings. Stands once thinned should become more stable, healthy and less susceptible to damage caused by insects, disease and adverse weather conditions.

In all cases where thinnings are being conducted, the thinning should be done under the supervision of a professional forester. Trees to be removed should be marked and volumes of cordwood tallied, if necessary. Should the thinning provide a saleable product, the sale should be accomplished under the terms of a contract with full payment received in advance and a performance bond of 10-15% of the total sales price held.

Where no management practices are discussed, the vegetation is healthy as is. These areas should be reevaluated for future management needs at approximately 10 year intervals.

Areas such as the hardwood swamp which have little potential for forest management are also noted in the vegetation type descriptions. These areas have little or no value for timber production, however their value for wildlife habitat and nature study is high.

From a resource management and maintenance stand point, it would be advisable to have the boundaries of each of the three sites clearly marked.

2. Stand Descriptions and Management Suggestions

As shown in Figure 2c, two vegetation types exist on the property.

TYPE 1. Mixed Hardwoods, 6.6 acres. This stand is found at the base of the slope on moist soil. It is characterized by scattered, poor to medium quality pole and sawtimber size trees. The predominant species are sugar maple, white ash, hickory, and black birch, with lesser amounts of red oak, red maple, and tulip poplar. Sweet cherry and aspen were also observed. The understory is fairly dense, consisting of sapling sugar maples, flowering dogwood, spicebush, arrowwood, and winged euonymus. Ground cover includes grasses, poison ivy, Christmas fern, partridgeberry, Virginia creeper, and jack-in-the-pulpit.

Nectria canker, a fungal disease, was found on several black birch. This disease, while not lethal, decreases the health and quality of the trees by causing decay. The only control is to remove the infected trees during thinning operations.

Overall, a light sanitation cutting to remove cull trees and the cankered black birch for firewood would improve the health and vigor of the stand.

TYPE 2. Mixed Hardwoods, 6.4 acres. This overstocked small sawtimber - large pole stand runs along the upper part of the slope on mesic (moderately moist) to slightly dry sites. Predominant species are red and chestnut oak, beech, and hickory. The understory includes white and chestnut oak, beech, and sassafras. Maple-leaved viburnum, low bush blueberry, wild lily of the valley, and seedlings of white, red, and chestnut oak are found in the ground cover.

Beech bark disease, which eventually kills most mature beech trees, is present. The only control is to salvage the merchantable trees before the disease destroys them.

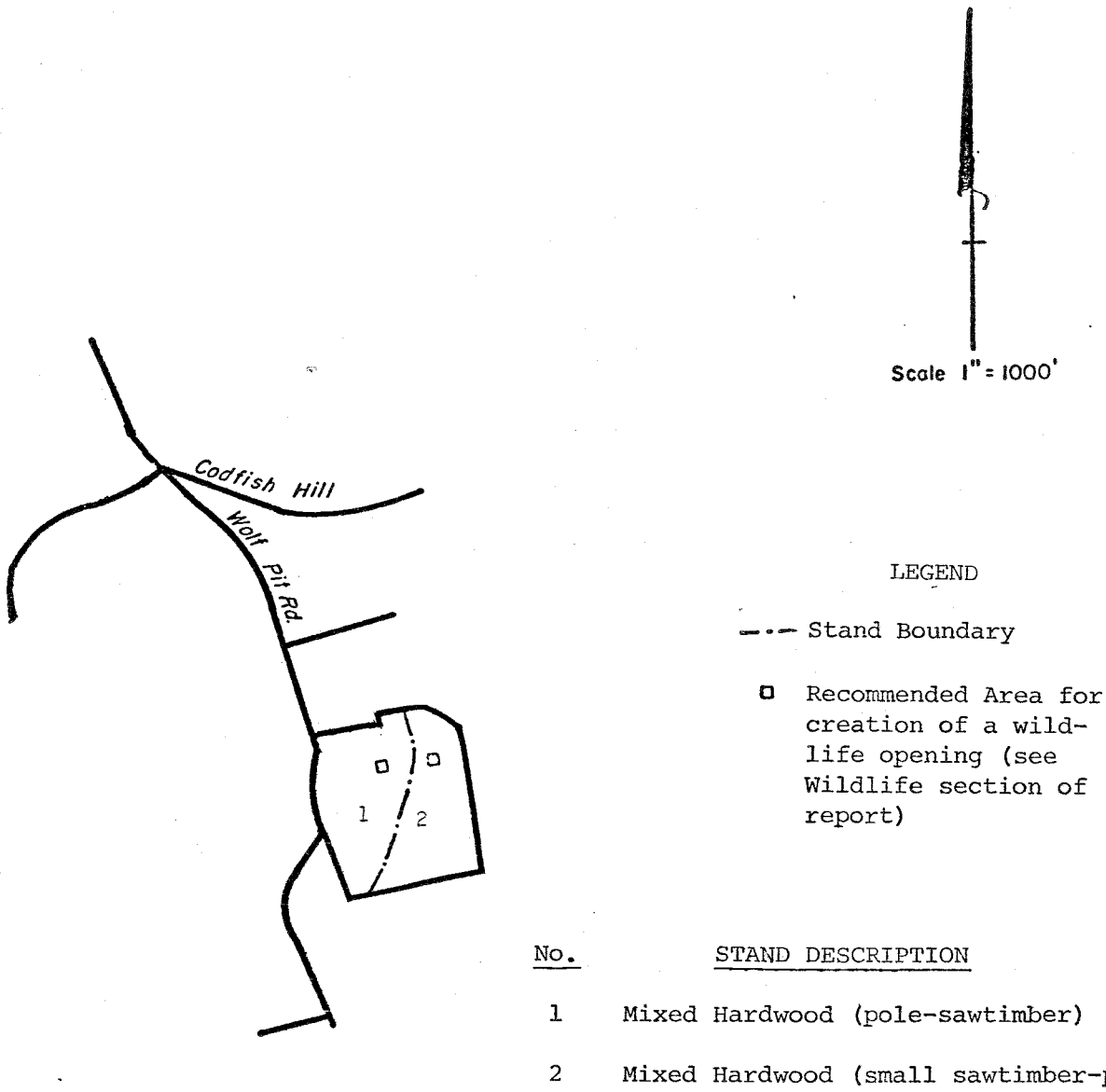
Increment borings (in which the annual growth rings of the trees are measured and analyzed) indicate that the stand should be thinned. A thinning will increase the quality of the remaining stand and also provide some income to the Land Trust. Erosion control measures (such as water bars and seeding of skid trails after the harvest) should be employed during the harvest.

E. WILDLIFE

This area is adjacent to Wolf Pits Conserve (+ 59 acres owned by the Nature Conservancy) and has an excellent wildlife management potential.

Wildlife observed during the ERT's field review included deer and raccoon tracks, a nesting brown thrasher, and various songbirds.

**Figure 2 c.
VEGETATION MAP**



<u>No.</u>	<u>STAND DESCRIPTION</u>	<u>AREA</u>
1	Mixed Hardwood (pole-sawtimber)	6.6 Acres
2	Mixed Hardwood (small sawtimber-pole)	6.4 Acres

Enhancement of this area for general wildlife production can be accomplished by clearing small irregular shaped openings ($\frac{1}{4}$ to 1 acre), located in an east to west direction (to obtain maximum sunlight), around trees with established vine growth. Snag trees in these areas should not be cut as they provide nesting sites for "cavity nesting" wildlife. These clearings could be completed by recruiting the help of local boy scouts, or other youth groups.

Additional thinning of the area to encourage "mast" tree production (i.e., those producing nuts such as oak and hickory) and stimulation of the berry producing understory can be accomplished through a cordwood operation as discussed in the previous section of this report.

When cordwood cutting, 5-7 snag trees per acre should be left for cavity nesting wildlife. Also, a few randomly scattered small brush piles should be created for small mammals and birds to utilize.

F. RECREATION POTENTIAL

The Wormser Property is an attractive piece of land with excellent potential for passive recreational development. Figure 2d presents one alternative for improvement of the area for passive recreational use.

As shown in Figure 2d, a small parking lot could be constructed at the northwestern corner of the property to enhance access to the site and serve as a trailhead. This parking lot could tie into the current trail traversing the northern border of the property. The suggested trail layout presented in Figure 2 would follow the current path on the northern border of the site and provide two "loop" trails through the remainder of the property. The following guidelines should be followed in trail designs and construction:

- 1) Trails should follow the existing contours as much as possible to minimize grades. This will keep trail erosion to a minimum and reduce trail requirements for erosion and sediment control. It will also facilitate trail use by the handicapped and elderly.

- 2) All trees, shrubs and fallen timber should be removed for a distance of 2 feet each side of the trail centerline. Stumps should be cut close to the ground. All protruding limbs should also be removed for a distance of 2 feet each side of the trail centerline. Where other than foot traffic is planned, protruding limbs should be removed to a height of 10 feet. Limbs removed should be cut off as close to the trunk as possible.

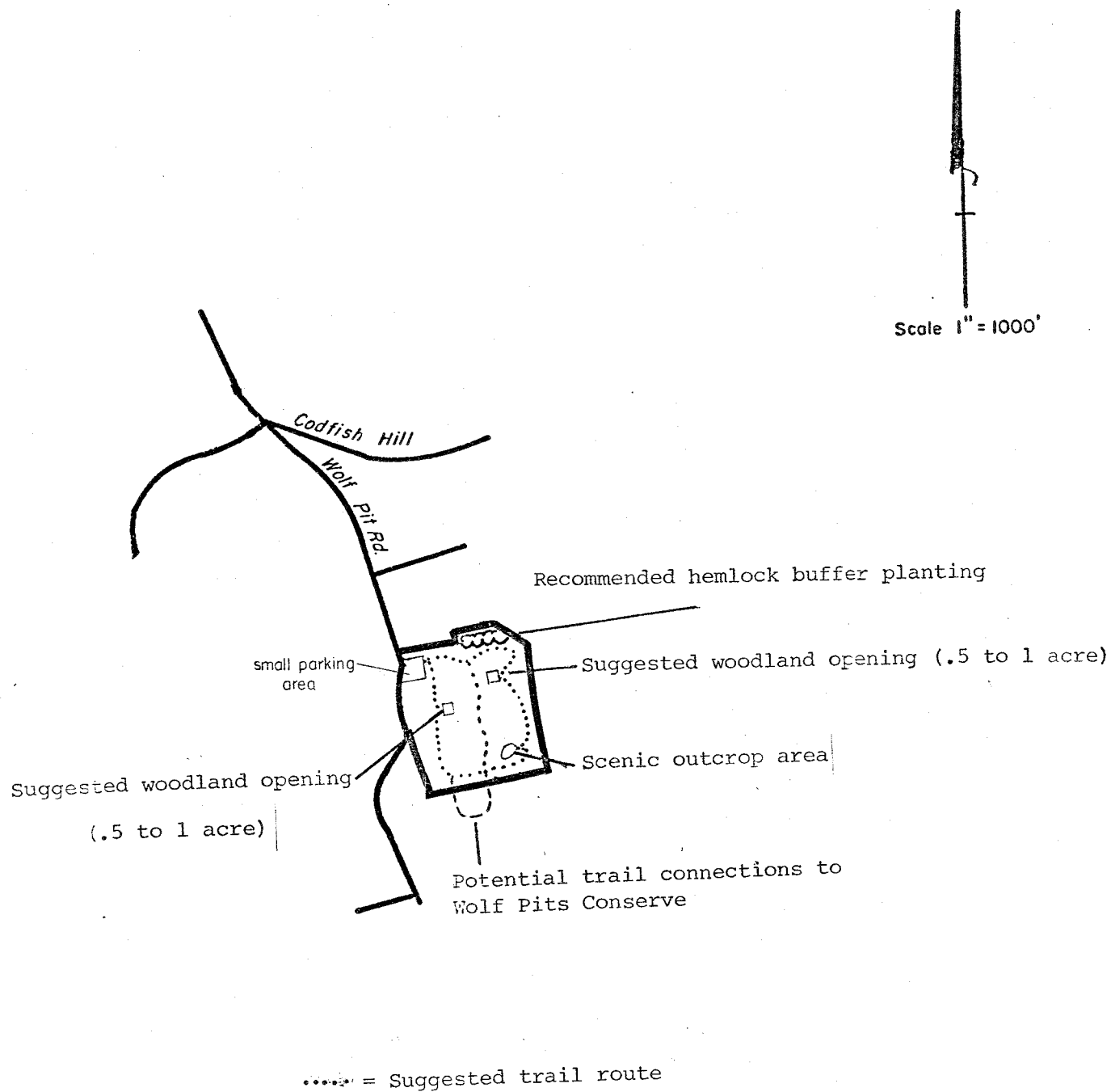
- 3) All undesirable material such as soil high in organic matter, stumps and large stones should be removed from the tread area of the trail.

- 4) The trail surface should be finished to a uniform firm surface and be free of loose material.

An excellent reference on trail construction and maintenance is the Appalachian Mountain Club's "Field Guide to Trail Building and Maintenance" (available from the AMC at 5 Joy Street, Boston, Massachusetts, 02108 for \$6.95).

In designing and constructing the trail, consideration should be given to the following:

Figure 2 d. CONCEPTUAL SITE PLAN



1) Planting a buffer strip of vegetation at the northeast corner of the site to screen the trail from nearby houses. Planting two or three staggered rows of hemlock would be desirable here.

2) Locating the trail to take advantage of the scenic aspects of the property (e.g. the rock outcrop area) and adjacent to any openings cleared to enhance wildlife habitat. The cleared areas if properly maintained by mowing could also function as picnic areas and primitive camp sites.

3) Making arrangements with the Nature Conservatory to "tie in" the Wormser Preserve trail network with that of the Wolf Pits Conserve to the south.

To conclude, the Wormser Preserve has excellent potential for passive recreational use. With judicious trail development, the preserve will offer an attractive area for hiking, bird watching, and nature study.

* * * * *

THE PLISHNER PRESERVE

III. Site 2:

THE PLISHNER PRESERVE:

A. TOPOGRAPHY AND GEOLOGY

The Plishner Preserve consists of an irregularly shaped parcel of land, + eight acres in size. As shown in Figure 3a, the Preserve is situated between Pleasant Rise and Second Lane in the western section of Bethel. The property is characterized mostly by a relatively flat to gently sloping terrain. An area of moderate relief was observed in the northern half of the site. Evidence of a small intermittent stream was observed in the western portion of the property.

The only bedrock outcrops observed during the review were located at the top of a bedrock controlled hill just southeast of the Plishner Property. The principal type of bedrock underlying the Plishner Property is Stockbridge Marble. (Source: "Preliminary Bedrock Geological Map of Connecticut, John Rogers, 1982"). It should be noted that this rock unit had been referred to as Inwood marble, during earlier mapping. It is a white to gray, massive to layered marble, which is generally dolomitic (dolomite-rich); however, it does contain some calcite marble in upper parts. In some areas it is inter-layered with schist or phyllite and with calcareous (containing calcium carbonate) siltstone or sandstone. Marble is a metamorphosed (altered by great heat or pressure) limestone which formed mainly by recrystallization of the minerals calcite or dolomite. As a result, the marble usually becomes more coarse grained than the original limestone.

The unconsolidated blanket of sediments overlying bedrock on the property is stratified drift. Stratified drift deposits, which are indicated as Hinckley, Merrimac and Agawam soils on the soils map (see Figure 3b), were deposited by glacial meltwater streams. Because the material was transported and deposited by water, they are commonly well sorted by grain size and layered (stratified) by different grain sizes. The thickness of these deposits ranges between 10 feet in the western section of the site up to 40 feet in areas throughout the eastern section of the site. Based on visual inspection, it appears some of the original surficial deposits may have been extracted in the past. As a result, the thicknesses of the deposits probably varies throughout the parcel.

The geological characteristics of the site should pose no problems with respect to passive recreational use.

B. HYDROLOGY

Most of the property drains in a west then southwest direction to an unnamed stream which flows west of the site. A small, eastern section of the site drains eastward into the Sympaug Brook. A small, intermittent stream was observed in the western section of the property. This stream emanates from the outlet of an 18 inch stormwater pipe which appears to carry stormwater from the subdivision north of the site. The stream flows in a north to south course eventually discharging into the unnamed stream west of the site.

There does not appear to be any groundwater resources of particularly significant value underlying the site. The principal aquifer on the parcel

is bedrock, which typically is capable of supplying only small yields to individuals wells. Nevertheless, if there is need for a water supply, bedrock underlying the site should be an adequate water source for passive recreational purposes.

C. SOILS

Five soil types have been identified on the Plishner Property according to the Fairfield County Soil Survey. The general location of these soil types is shown in Figure 3b. Each of these soils is briefly described below.

AfB - AGAWAM FINE SANDY LOAM, 3 to 8 PERCENT SLOPES

This nearly level, well-drained soil occupies the western quarter of the property.

Typically, the surface layer is dark brown fine sandy loam 9 inches thick. The subsoil is brown fine sandy loam 20 inches thick. The substratum is light yellowish brown and pale olive sand to a depth of 60 inches or more.

The permeability of these Agawam soils is moderately rapid in the surface layer and subsoil, and rapid in the substratum. Runoff is slow, and available water capacity is moderate.

Recreation. These soils have slight or moderate limitations for picnic areas and camp sites. The level soils are favorable for play areas, but limitations for this use increase on soils having slopes above 2 percent.

Wildlife. Habitat for openland and woodland wildlife species is easily established, improved or maintained on these soils. They are well suited for the dependable growth of a wide variety of desirable food and cover plants. It is impractical to develop habitat for wetland wildlife on these soils.

Woodland. Productivity for wood crops ranges from fair on the sandy loam soils to good on the silt loam soils. Both hardwoods and conifers are well suited. Competition from hardwoods is a problem when managing for pine, spruce, or larch.

Cropland. These soils are suitable for the production of all agricultural crops adapted to the area. Supplemental irrigation is needed to assure necessary production levels for crops with a high cash return. Erosion is a hazard on these soils. Intensive surface water control measures are needed on slopes above 8 percent.

MyB - MERRIMAC SANDY LOAM, 2 to 8 PERCENT SLOPES

This gently sloping, somewhat excessively drained soil is found in the central portion of the site.

Typically, this soil has a surface layer of very dark grayish brown sandy loam 9 inches thick. The subsoil is brown sandy loam 15 inches thick. The substratum is yellowish brown gravelly sand to a depth of 60 inches or more.

The permeability of this Merrimac soil is moderately rapid in the surface layer and subsoil and rapid in the substratum. Runoff is medium, and available



Figure 3 a.
TOPOGRAPHIC MAP

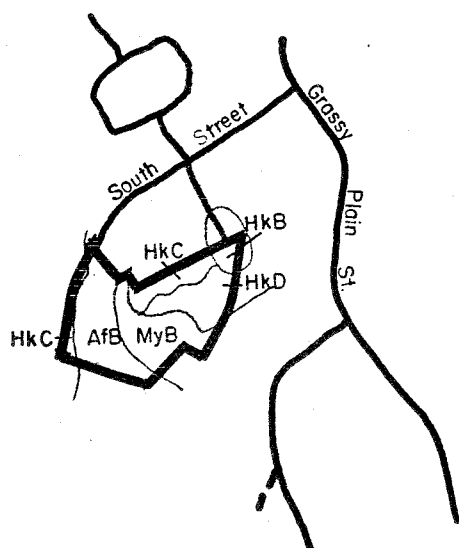


Figure 3 b.
SOILS MAP

water capacity is moderate. The soil dries out and warms up early in spring. It is very strongly acid to medium acid.

These soils have the same opportunities for recreation, wildlife, woodland, and cropland as the preceeding Agawam soil.

HKB, HKC, HKD - HINCKLEY GRAVELLY SANDY LOAM, 3 to 8, 8 to 15, and 15 to 35 PERCENT SLOPES RESPECTIVELY

These excessively drained soils are found on the eastern third of the property.

Typically, the surface layer is dark brown gravelly sandy loam 5 inches thick. The substratum is 10 inches thick. The upper 4 inches is strong brown gravelly sandy loam, and the lower 6 inches is dark brown gravelly loamy sand. The substratum is light olive brown gravelly sandy to a depth of 60 inches or more.

The permeability of this Hinckley soil is rapid in the surface layer and subsoil and very rapid in the substratum. Runoff is slow, and available water capacity is very low.

Recreation. Except where steep slopes present problems, these soils are favorable for picnic areas and camp sites. Maintaining vegetation for play areas is difficult because of low water-holding capacity and low natural fertility.

Wildlife. These soils are poorly suited for the production of habitat required by openland and woodland wildlife. Dependable growth of desirable food and cover plants is limited by the low natural fertility and low moisture-holding capacity. Food and cover can be established, improved, or maintained, but it is difficult and expensive especially for openland wildlife. Results are not always satisfactory. It is impractical to develop wetland wildlife habitat on these soils.

Woodland. Productivity for wood crops is poor on these soils because of low natural fertility and low water-holding capacity. Because of droughtiness, high mortality of natural or planted seedlings can be expected. White pine should produce a greater yield than hardwoods.

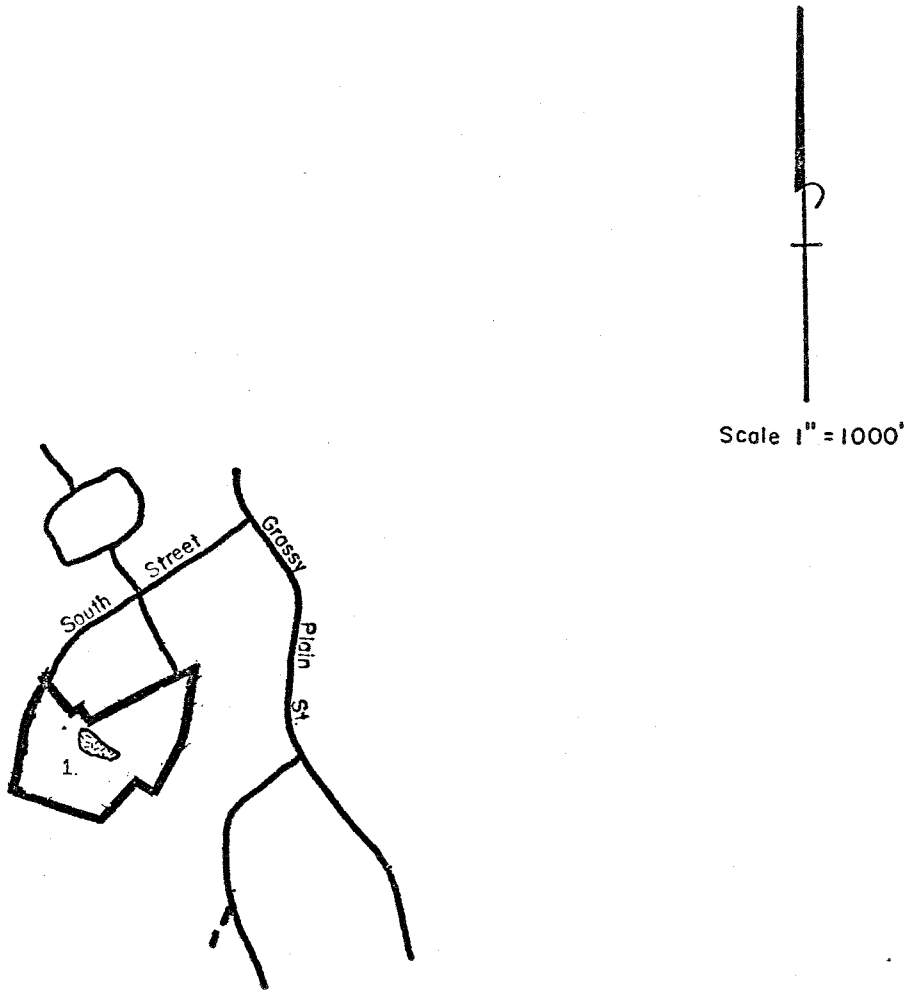
Cropland. Droughtiness and low natural fertility severely restrict the use of these soils for crop production. Irrigation with intensive fertilization is essential for satisfactory yields or crops including tobacco, corn, vegetables, and hay. If cultivated crops are grown on the steeper slopes, measures for controlling erosion and runoff are necessary. Wind erosion is a hazard particularly on loamy sands.

D. VEGETATION


As shown in Figure 3c, one vegetation type is found on the property.

TYPE 1. Mixed Hardwoods, 8 acres. This stand is dominated by mature black oak sawtimber, including many "wolf" trees. Wolf trees are those trees which have grown in the open for a long time and have many large lower

Figure 3 c.
VEGETATION MAP



LEGEND

<u>STAND DESCRIPTION</u>	<u>AREA</u>
1 = Mixed Hardwood (sawtimber)	8 Acres
 = Meadow	

branches and a very wide canopy. They are not desirable for sawtimber but are valuable for wildlife and aesthetics. The understory is composed of red, black, chestnut, and white oak, flowering dogwood, beech, and black birch. Huckleberry, maple-leaved viburnum, pink lady's slipper, Indian pipe, striped pipsissewa, black cherry seedlings, and poison ivy are found in the ground cover. This stand also includes a half acre opening which has a dense grassy cover and some scattered oak saplings.

No striking insect or disease problems are evident, although due to the high proportion of oaks, it can be assumed that gypsy moth has been a problem in the past and probably will be in the future. By increasing the species diversity to include trees that are not as desirable to the insect, defoliation by gypsy moth might be reduced. Areas which have mixed hardwoods (other than oak) in the understory might be opened up to promote the growth of these trees.

To conclude, due to the comparatively small size of this stand and the existing soil types, this parcel does not lend itself to management for forest products. The existing vegetation can best be managed for wildlife habitat and aesthetics.

E. WILDLIFE

Wildlife observed during the ERT's field review included deer and raccoon tracks. Also, a number of songbirds were heard and seen in this area.

Evaluating the existing habitat and management potential of a small site such as this is difficult without specific management goals along with considering neighboring land ownerships. During the review it was mentioned that a 200 acre industrial park is planned adjacent to this site. Intensive off road vehicle usage of this area was noted during the review and will probably increase in the future.

Management suggestions for this site could include creating a diversity of wildlife habitats (creating edges) which will provide resting, feeding and nesting requirements for various wildlife species. A few apple trees were observed in the north west corner of the property. Releasing competitive overtopping trees would allow the vigor to be re-established in the apple trees. After allowing at least one year for vigor, proper pruning and fertilizing could be conducted.

To encourage a diversity of vegetation types for wildlife, proper thinning practices which allow increased light to reach the forest floor, and encourage the growth of both the low and highbush blueberry bushes present on the site, could be implemented.

If cordwood cutting is conducted, 5 - 7 snag trees should be left per acre to encourage cavity nesting wildlife. Also, a few randomly scattered brush piles should be created for small animals to utilize (6 to 8 brush piles/acre is suitable).

The open meadow on this site should be maintained by periodic mowing in order to promote habitat diversity on the site.

Trees with vines should not be cut as these provide fruit for various wildlife species.

F. RECREATION POTENTIAL

The western half of this site (AFB and MyB soil areas) lends itself to both active and passive recreational use. The gentle slopes and sandy soils facilitate active recreational development for group camping, picnicking, ballfields, and playgrounds. On the other hand, these soils also have good potential for the development of paths and trails. The future use of this area is, of course, a policy decision for the Bethel Land Trust, but it should be noted that of the three sites reviewed by the ERT, this + 4 acre area has the most potential for active recreational use and development.

The eastern half of the site lends itself solely to the more passive types of recreational development such as hiking, bird watching, and nature study.

Access to this site can most easily be achieved from the northwest off the cul-de-sac at South Street. Slopes are gentle here and a small parking lot could be created in the interior of the property to minimize conflicts with adjacent property owners along South Street. A loop trail system winding through the property could easily be constructed from this interior parking lot. Guidelines for trail construction presented for the Wormser Preserve may also be applied here.

Due to the irregular shape of this parcel, serious consideration should be given to marking the boundaries of this site.

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THE PARSONS—DAVENPORT PRESERVE

IV. Site 3

THE PARSON-DAVENPORT PRESERVE:

A. TOPOGRAPHY AND GEOLOGY

The Parsons-Davenport Property is \pm 19 acres in size and is comprised almost entirely of inland-wetlands. As shown in Figure 4a, the site is located in the northwest corner of town opposite Meckhauser Park. The land surface elevation of this flat parcel is about 290 feet above mean sea level. Lime Kiln Brook flows in a southerly direction through the parcel.

The surficial geologic deposits of this inland-wetland area consists of decayed vegetation (peat and muck) mixed with some silt, clay and sand.

Underlying the swamp sediments are deposits known as stratified drift. These deposits, which consist predominately of sands and gravel, were deposited by glacial meltwater streams. Thickness of the stratified drift deposits are about 40 feet throughout most of the parcel. However, thicker deposits, up to 80 feet are found in the northern portion.

No bedrock outcrops were seen on the site. Bedrock underlying the property, as mapped from surrounding bedrock outcrops, is classified as Stockbridge (Inwood) Marble. This rock is metamorphic (altered by great heat and pressure) and consists of a white, medium grained marble. It is made up of a mixture of both the minerals calcite and dolomite. Accessory minerals present in the rock include phlogopite, tremolite, diopside, forsterite, quartz, microcline zircon, tourmaline and antigorite.

The bedrock geologic map of the Danbury topographic quadrangle, which encompasses the Parsons-Davenport Property, was prepared by James W. Clarke, Ph.D., 1958 (QR-7) and published by the United States Geological Survey.

B. HYDROLOGY

The site lies within a long, linear shaped inland-wetland that extends northward from the northside of Plumtrees Road in Bethel to the southside of Newtown Road at the confluence of Stoney Hill Brook and Lime Kiln Brook in Danbury. Lime Kiln Brook flows in a northward direction through the middle of the property for a distance of \pm 1,500 feet.

The wetland which comprises the property serves many valuable hydrological functions. It acts as a natural runoff retention basin reducing downstream flood flows during periods of heavy precipitation. It also traps sediments from upstream areas and changes water quality through various biochemical processes.

Based on potential aquifer zone maps on file at the Natural Resources Center of the Department of Environmental Protection, the site does not lie within such a zone. A map showing groundwater availability in the state by D. B. Meade indicates that the stratified drift underlying the parcel is thought to be fine grained. Areas underlain by this type of deposit are known or inferred to be capable of yielding small to moderate amounts of water (1-100 gallons per minute, gpm). In order to determine the potential yield of a well on the parcel, however, a more detailed hydrogeologic investigation would be required.

C. SOILS

As shown in Figure 4b, three soil types have been identified on the Parsons-Davenport Preserve. Each of these is described below.

Sb - SACO SILT LOAM

This nearly level, very poorly drained soil occupies most of the property.

Typically, this soil has a surface layer of black silt loam 14 inches thick. The substratum is dark gray and is 27 inches thick. The upper 20 inches is silt loam, and the lower 7 inches is very fine sandy loam. The substratum is dark gray gravelly sand to a depth of 60 inches or more.

This Saco soil is subject to frequent flooding. The watertable is at or near the surface most of the year. The permeability of the soil is moderate in the surface layer and subsoil and rapid or very rapid in the substratum. Run-off is very slow, and water is ponded on the surface of some areas. Available water capacity is high. The soil is strongly acid to slightly acid above a depth of 30 inches and medium acid to neutral below a depth of 30 inches.

The frequent flooding and high watertable limit the use of this soil.

Recreation. These areas have very severe limitations for picnic areas, camp sites, and play areas.

Wildlife. These very poorly drained soils are not suited for the production and management of woodland wildlife habitat. The habitat requirements of wetland wildlife habitat can be developed, improved, or maintained but moderate treatment is required.

Woodland. Productivity of wood crops ranges from fair to very poor depending on the degree of wetness. Wetness causes severe problems in the use of equipment, the survival of tree seedlings, tree windthrow, and competition from other plants.

Ce - CARLISLE MUCK

This nearly level, very poorly drained soil occupies the southeastern corner of the property.

Typically, this soil consists of black, dark brown, and dark grayish brown decomposed organic material to a depth of 66 inches or more.

This Carlisle soil is wet most of the year, and the watertable is generally at the surface from early fall to late spring. Runoff is very slow. Some areas have water ponded on the surface. A few areas are subject to flooding. The permeability of the soil is moderate or moderately rapid, and the soil is very strongly acid to neutral.

The major limitations of this soil are the high watertable, ponding and the instability of the organic material.

As with the preceeding soil type, this soil is unsuitable for recreation, and is poorly suited to timber production.

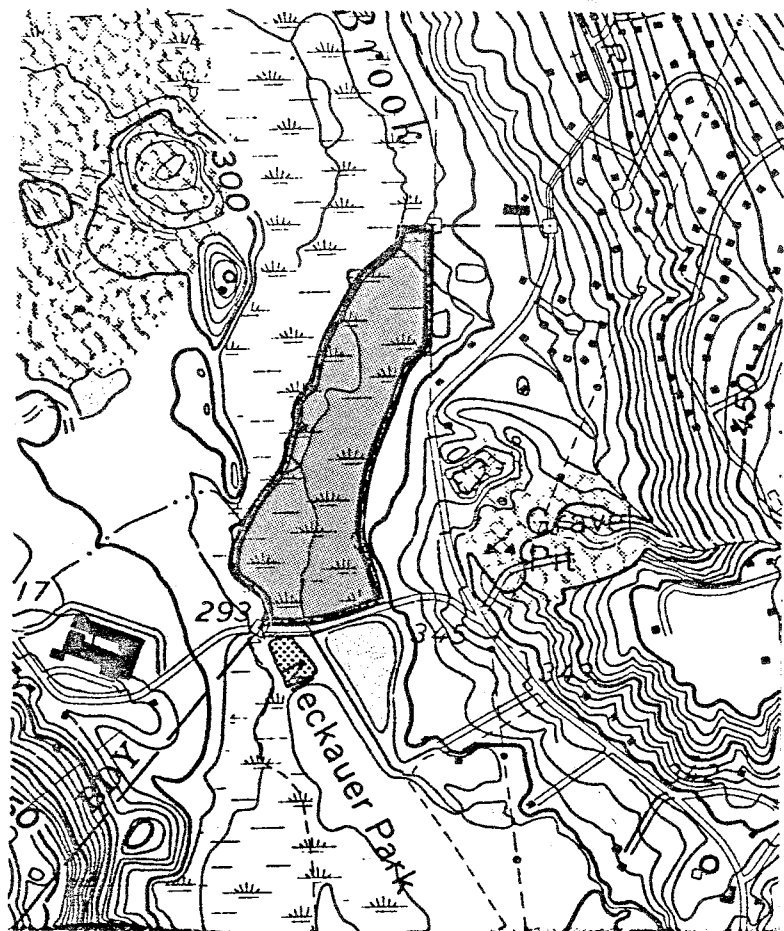


Figure 4 a.
TOPOGRAPHIC MAP

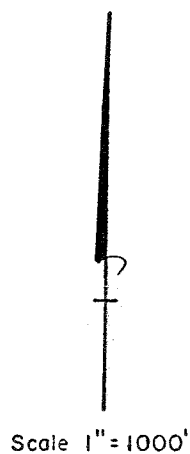
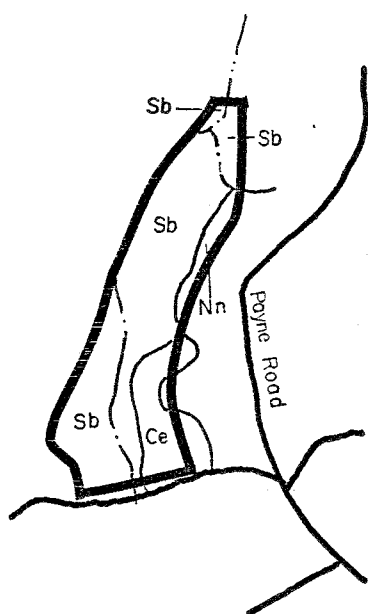


Figure 4 b.
SOILS MAP

Nn - NINIGRET FINE SANDY LOAM

This nearly level to gently sloping, moderately well drained soil is found along the eastern border of the property.

Typically, this soil has a surface layer of very dark grayish brown fine sandy loam 10 inches thick. The subsoil is brown, mottled gravelly loamy sand to a depth of 60 inches or more.

This Ninigret soil has a seasonal high water table at a depth of about 20 inches from late fall until midspring. Permeability is moderately rapid in the surface layer and subsoil and rapid in the substratum. Runoff is slow, and available water capacity is moderate.

Recreation. During the main season of use, these soils are favorable for picnic areas, camp sites, and play areas. Drainage is needed to overcome the seasonal water table on playing fields for intensive use and to extend the period for picnicking and camping.

Wildlife. Habitat for openland and woodland wildlife species is easily established, improved, or maintained on these soils. They are well suited for the dependable growth of a wide variety of desirable food and cover plants. It is extremely difficult and expensive to develop habitat for wetland wildlife on these soils.

Woodland. Productivity for wood crops ranges from fair to good. Both hardwoods and conifers are well suited. Competition from hardwoods is a problem when managing for pine, spruce, or larch. These soils are suitable for the more valuable hardwoods such as black walnut, yellow poplar, and red oak.

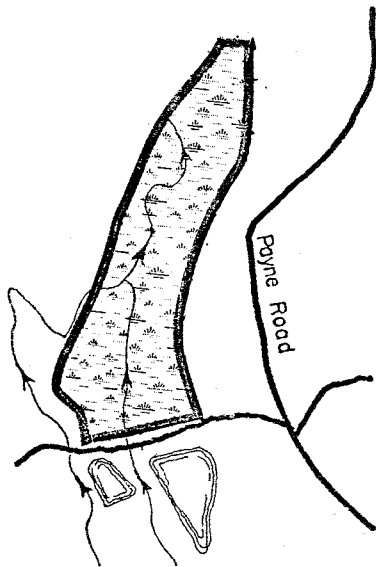
Cropland. These soils are suitable for the production of silage corn, hay, and late vegetables. With adequate drainage they are suited to the production of all crops adapted to the area; however, tobacco and potatoes are subject to some damage in the very wet summers. On the steeper slopes, measures are necessary to control runoff and erosion.

D. VEGETATION

As shown on the accompanying stand map, one vegetative type occurs on the property.

TYPE 1. Hardwood Swamp, 19 acres. This area consists of scattered pole-sized red maple, white ash, and elm over a dense understory of buttonbush, willows, spicebush, silky dogwood, elderberry, and nannyberry. Ground cover is made up of jewelweed, wood nettle, skunk cabbage, various ferns, and numerous vines such as hog peanut, Virginia creeper, poison ivy, and bindweed. Several small (+ ½ acre) grassy openings are present in scattered locations throughout the site.

The poorly drained soil characteristic of this site creates little potential for active forest management.



Scale 1" = 1000'

LEGEND

Stream
Pond

STAND DESCRIPTION

AREA



Hardwood Swamp

19 Acres

Figure 4 c.
VEGETATION MAP

E. WILDLIFE

Wildlife species which can be expected to utilize a wetland habitat such as this, at least occasionally, include: ducks, beaver, muskrat, mink, raccoon, woodcock, grouse, and other small mammals, birds, reptiles, and amphibians.

Wildlife observed during the ERT's field review included raccoon tracks, woodpeckers, red-winged blackbirds, and various unidentified song birds.

This area can be classified as a red maple/shrub swamp and provides excellent wildlife habitat. It presently provides a wildlife refuge and should be maintained in its natural form. Adjacent to this property to the south is the "East Swamp" Wildlife Management Area (a + 88 acre State owned and managed wildlife preserve). The primary management objectives for this area are to maintain and improve the area for farm game, waterfowl and furbearers.

Developing an elevated boardwalk "nature type trail" with interpretive markings would be excellent, but should be confined to a small area within the site. Too much human exposure to a small wetland area such as this would eliminate the nesting potential for shy wildlife species.

F. RECREATION POTENTIAL

As previously mentioned, the inland wetland soils which dominate this site do not lend themselves to recreational use. Nevertheless, the site does offer potential for canoeing along Lime Kiln Brook and the site could support a boardwalk system into a portion of the area if such a facility is desired by the Land Trust.

While the recreational opportunities of the site are limited, this site does have high value for wildlife and also provides valuable hydrologic functions as previously described. Perhaps the best approach to management of this site is to recognize these values and work to maintain them.

* * * * *

ABOUT THE TEAM

The King's Mark Environmental Review Team (ERT) is a group of environmental professionals drawn together from a variety of federal, state, and regional agencies. Specialists on the team include geologists, biologists, foresters, climatologists, soil scientists, landscape architects, recreation specialists, engineers, and planners. The ERT operates with state funding under the aegis of the King's Mark Resource Conservation and Development (RC&D) Area - a 47 town area in western Connecticut.

As a public service activity, the team is available to serve towns and developers within the King's Mark Area --- free of charge.

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 the review of a wide range of significant activities including subdivisions, sanitary landfills, commercial and industrial developments, and recreation/open space projects.

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 an administration agency such as planning and zoning, conservation, or inland wetlands. Requests for reviews should be directed to the Chairman of your local Soil and Water Conservation District. This request letter must include a summary of the proposed project, a location map of the project site, written permission from the landowner/developer allowing the team to enter the property for purposes of review, and a statement identifying the specific areas of concern the team should address. When this request is approved by the local Soil and Water Conservation District and the King's Mark RC&D Executive Committee, the team will undertake the review. At present, the ERT can undertake two reviews per month.

For additional information regarding the Environmental Review Team, please contact your local Soil Conservation District Office or Richard Lynn (868-7342), Environmental Review Team Coordinator, King's Mark RC&D Area, P.O. Box 30, Warren, Connecticut 06754.