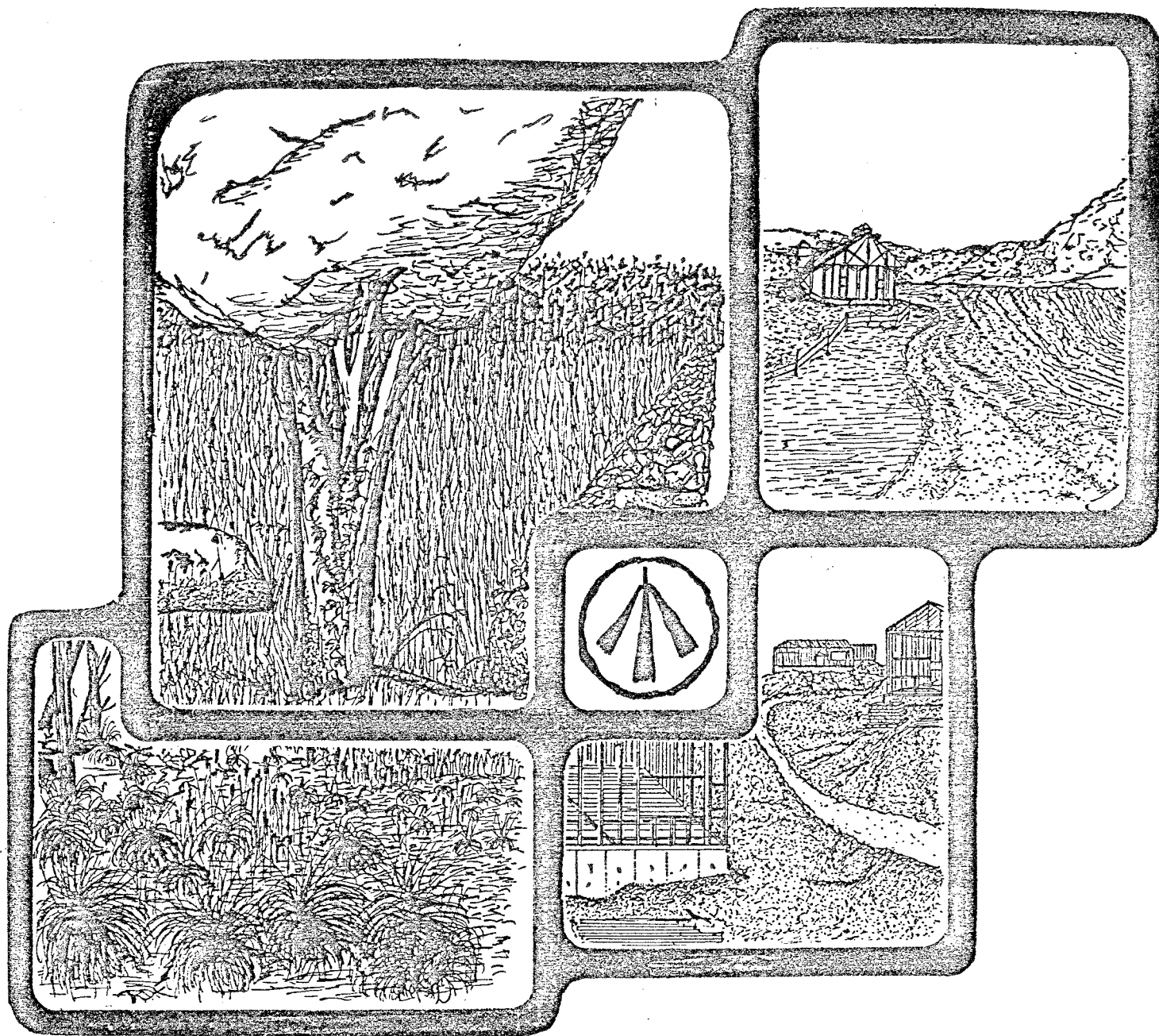


ENVIRONMENTAL REVIEW TEAM REPORT

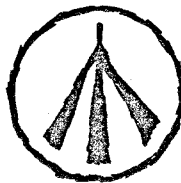


ANSONIA NATURE AND RECREATION CENTER ANSONIA, CONNECTICUT

KING'S MARK
RESOURCE CONSERVATION & DEVELOPMENT AREA

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

**ANSONIA NATURE AND RECREATION CENTER
ANSONIA, CONNECTICUT
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

x x x x x

FUNDING PROVIDED BY

State of Connecticut

POLICY DETERMINED BY

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ENVIRONMENTAL REVIEW TEAM REPORT
ON
ANSONIA NATURE AND RECREATION CENTER
ANSONIA, CT

I. INTRODUCTION

The Ansonia Nature and Recreation Center is a + 104 acre site located in the northeastern corner of town. Access to the site is available from the west off Milas Street and Deerfield Road (see Figure 1). The site is characterized by slight to moderate relief and consists of open land and wooded land. A large wetland is present on the property together with a two acre pond, hiking trails, picnic areas, ballfields, campgrounds, an activity center and parking lot (see Figure 2). Twomile Brook flows north to south through the central portion of the property.

Elevations range from approximately 350 feet above mean sea level in the low lying central portion of the property to a high of 470 feet above mean sea level in the northeast corner of the site.

The Ansonia Conservation Commission is interested in improving the area for wildlife and passive recreation. The Commission requested the Environmental Review Team to: 1) provide a natural resources inventory of the area and 2) discuss the opportunities and limitations of the site for forest management, passive recreation, and wildlife habitat management. Specific areas of concern the Team was asked to comment on include: a) the erosion problem along the perimeter of the two acre pond. The Director of the Nature Center believes the problem is caused by muskrats; b) alternatives for improving access to the Pond; c) alternatives for providing one or more stream crossings; d) specific measures for improving wildlife habitat, particularly around the Pond; e) potential for creating a handicap trail and boardwalk system for the Center.

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

The ERT met on July 27, 1983 to field review the site. Team members participating on this review included:

Steve Hill.....	Wildlife Biologist.....	CT Dept. of Environ- mental Protection
Bill Hyatt.....	Fishery Biologist.....	CT Dept. of Environ- mental Protection
Frank Indorf.....	District Conservationist.....	U.S.D.A. Soil Conservation Service
Andy Petracco.....	Recreation Planner.....	CT Dept. of Environ- mental Protection
Paul Rothbart.....	Wildlife Biologist.....	CT Dept. of Environ- mental Protection
Don Smith.....	Forester.....	CT Dept. of Environ- mental Protection
Bill Warzecha.....	Geohydrologist.....	CT Dept. of Environ- mental Protection

FIGURE 1 TOPOGRAPHIC MAP

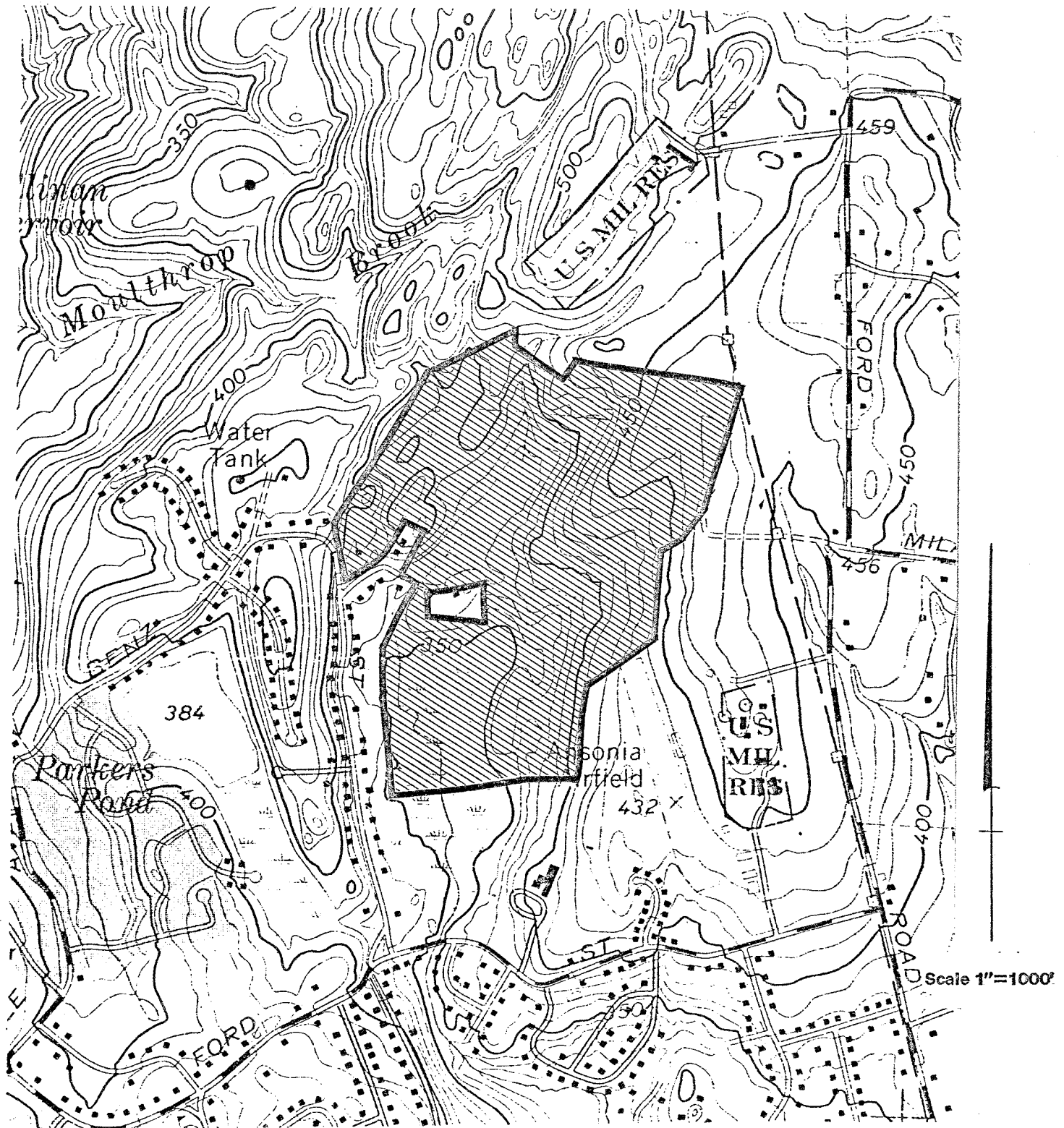
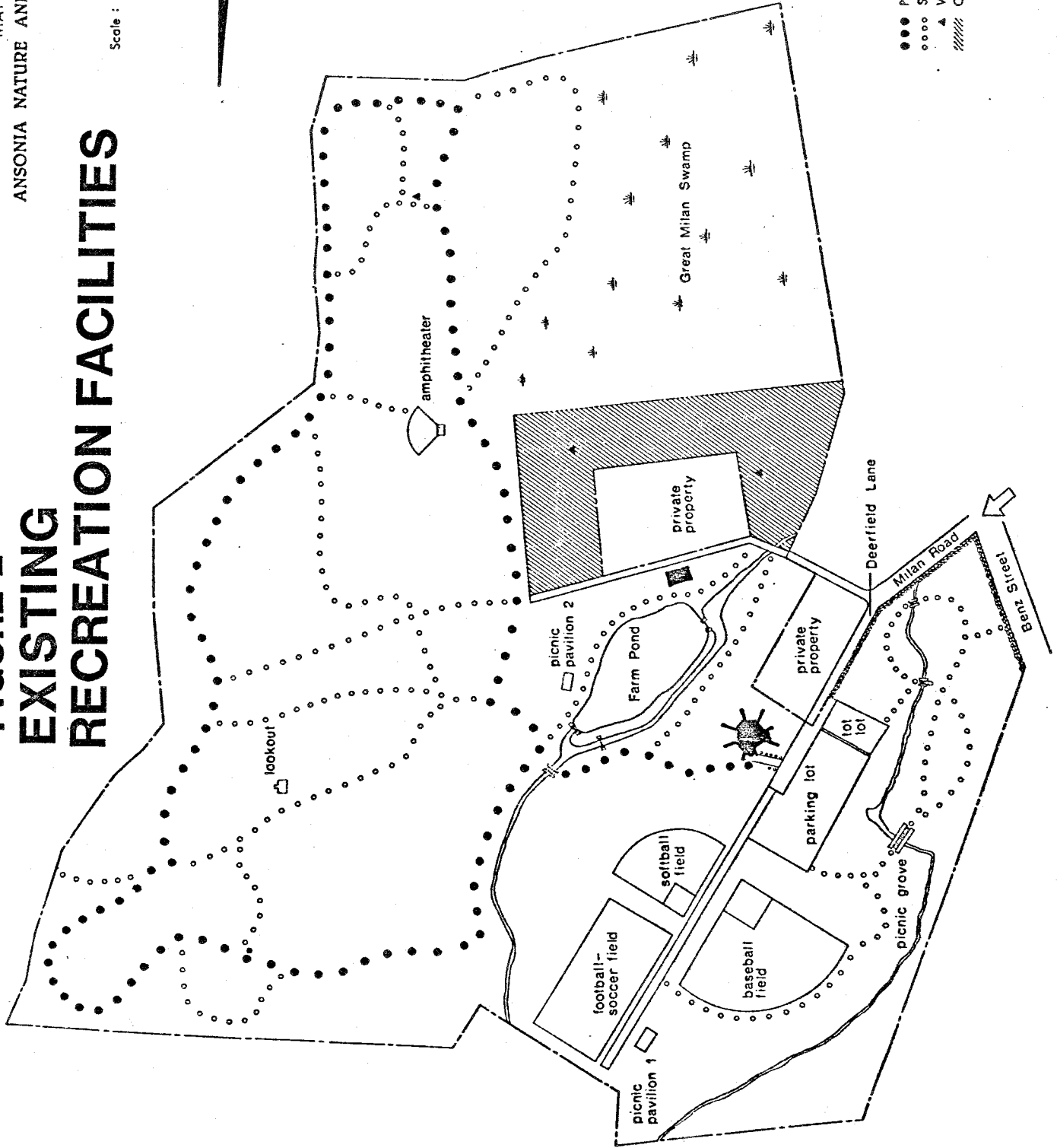


FIGURE 2 EXISTING RECREATION FACILITIES

MAP PREPARED BY
ANSONIA NATURE AND RECREATION CENTER
ANSONIA, CONNECTICUT



- PRIMARY NATURE TRAIL
- SECONDARY NATURE TRAILS
- ▲ WATER WELLS
- ////// COMMUNITY GARDENS

The Nature Center has a total of 104 acres, mostly wooded, and 2 1/2 miles of trails.

Prior to the review day, each team member was provided with a summary of the proposed study, a checklist of concerns to address, a soils map, a topographic map, and a soils limitation chart. The day of the field review, team members met with representatives from the Town Conservation Commission and the Director of the Ansonia Nature Center and walked the property. 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.

This report presents the team's findings. The report identifies the natural resource base of the property and discusses opportunities and limitations for land management. All conclusions and final decisions with regard to future land use rest with the Town of Ansonia. It is hoped the information contained in this report will assist the town 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.

* * * * *

II. GEOLOGY

A. SURFICIAL GEOLOGY

The Ansonia Nature and Recreation Center is located in an area encompassed by the Ansonia topographic quadrangle. Both surficial (QR-23) and bedrock (GQ-426) geologic maps of the Ansonia quadrangle have been prepared by Richard Foster Flint and Crawford E. Fritts, respectively. These maps have been published by the U.S. Geological Survey and are available at the Department of Environmental Protection's Natural Resources Center in Hartford.

Till is the surficial geologic material that covers most of the site. Surficial geologic materials consist of those unconsolidated organic and mineral deposits overlying bedrock. Till is a non-sorted glacial sediment that contains rock particles and fragments of widely varying shapes and sizes. Generally, the upper three to five feet of till is sandy, stony and loose. However, below that depth till commonly has a higher percentage of fines and becomes quite compact. The thickness of the till deposit ranges from zero where bedrock outcrops occur to probably not greater than ten feet in between outcrops. Thickness of till in areas indicated as HpE or Hollis-Charlton on the soils map generally ranges between 10 and 20 inches (see Appendix).

In terms of improving the site for passive recreation, it does not appear the till will pose any significant problems.

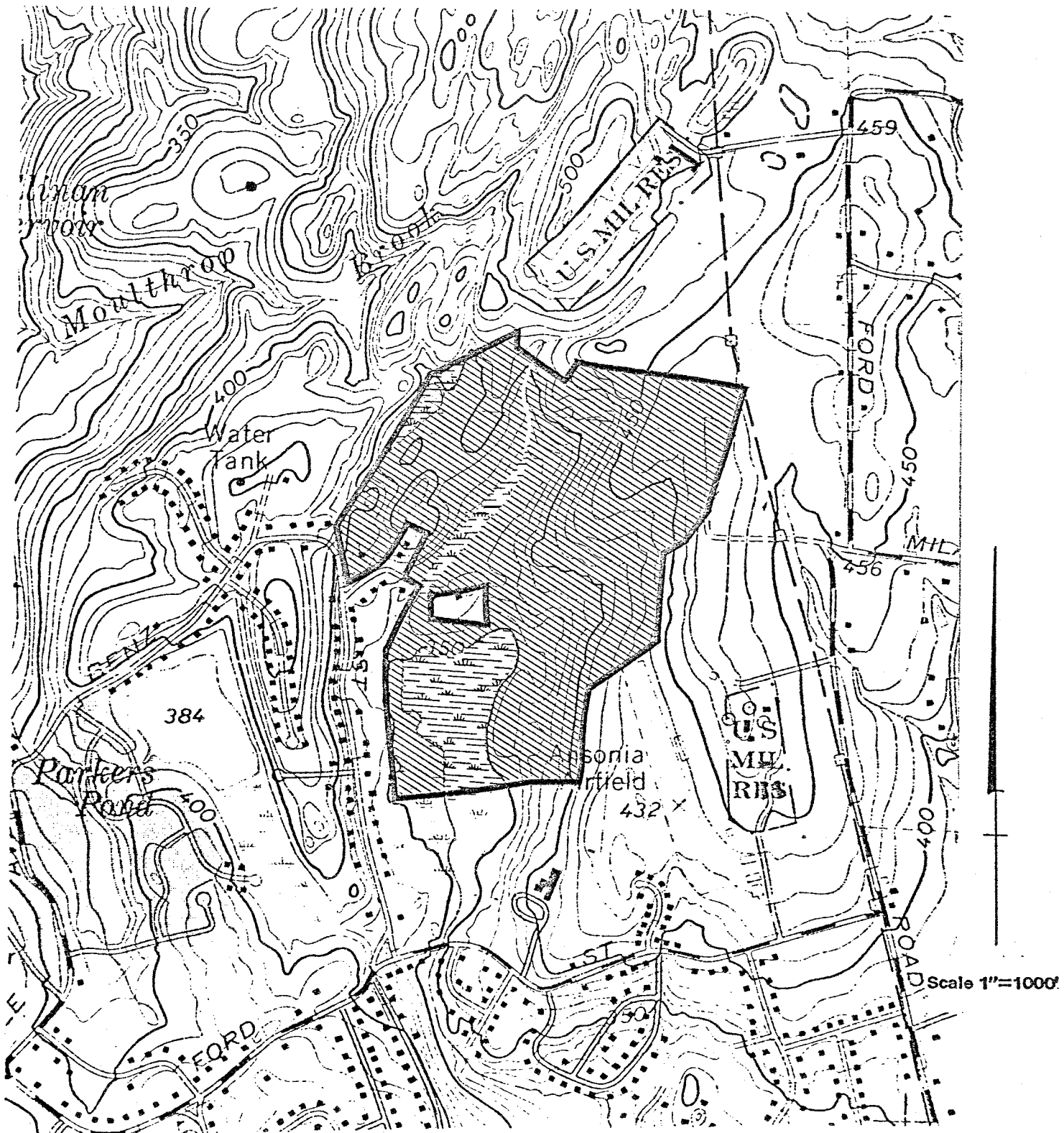
Another surficial deposit which overlies till throughout Great Milan Swamp, along Two-Mile Brook and the wet flat areas in the northwest corner of the site is known as swamp deposit (see Figure 3). Swamp deposits are composed of a mixture of silt, sand and decayed plant material. They are identified on the soils map (see Appendix) as Carlisle Muck (CE), Walpole (Wa), Adrian and Palms mucks (AA) and Ridgebury, Leicester and Whitman (RN) soils. The thickness of the swamp deposits ranges between one and six feet with the deeper deposits occurring within Great Milan Swamp.

Most bedrock outcrops were observed in the western and eastern portions of the site primarily in areas indicated as HpE or Hollis-Charlton on the accompanying soils map.


B. BEDROCK GEOLOGY

The bedrock cropping out on and underlying the site is primarily schist. Schist is a crystalline rock in which platy, flaky or elongate minerals become aligned to form distinct layers. This structure gives the rock a slabby appearance and often allows the rock to be easily split along the layers. The predominant rock type that outcrops on or underlies the site in the western and central portions has been classified as the Southington Mountain Schist. This rock consists largely of an interbedded, medium to fine grained, silvery-gray schist and a light to dark gray, quartz-rich gneiss. The schist in this unit is composed mainly of the minerals quartz, muscovite and biotite micas, oligoclase feldspar and garnet. The other rock type which underlies and crops out mainly in the eastern portion of the site is classified as Derby Hill Schist. This rock is a medium to fine grained, greenish gray to medium dark gray schist whose main minerals include quartz, muscovite-chlorite mica, and sodic plagioclase feldspar. The location of these rock types is shown in Figure 4. Depth to bedrock throughout the parcel varies from zero where outcrops occur to a maximum of about 10 feet in between the bedrock exposures.

FIGURE 3 SURFICIAL DEPOSITS



SURFICIAL DEPOSITS

 - Swamp Deposits


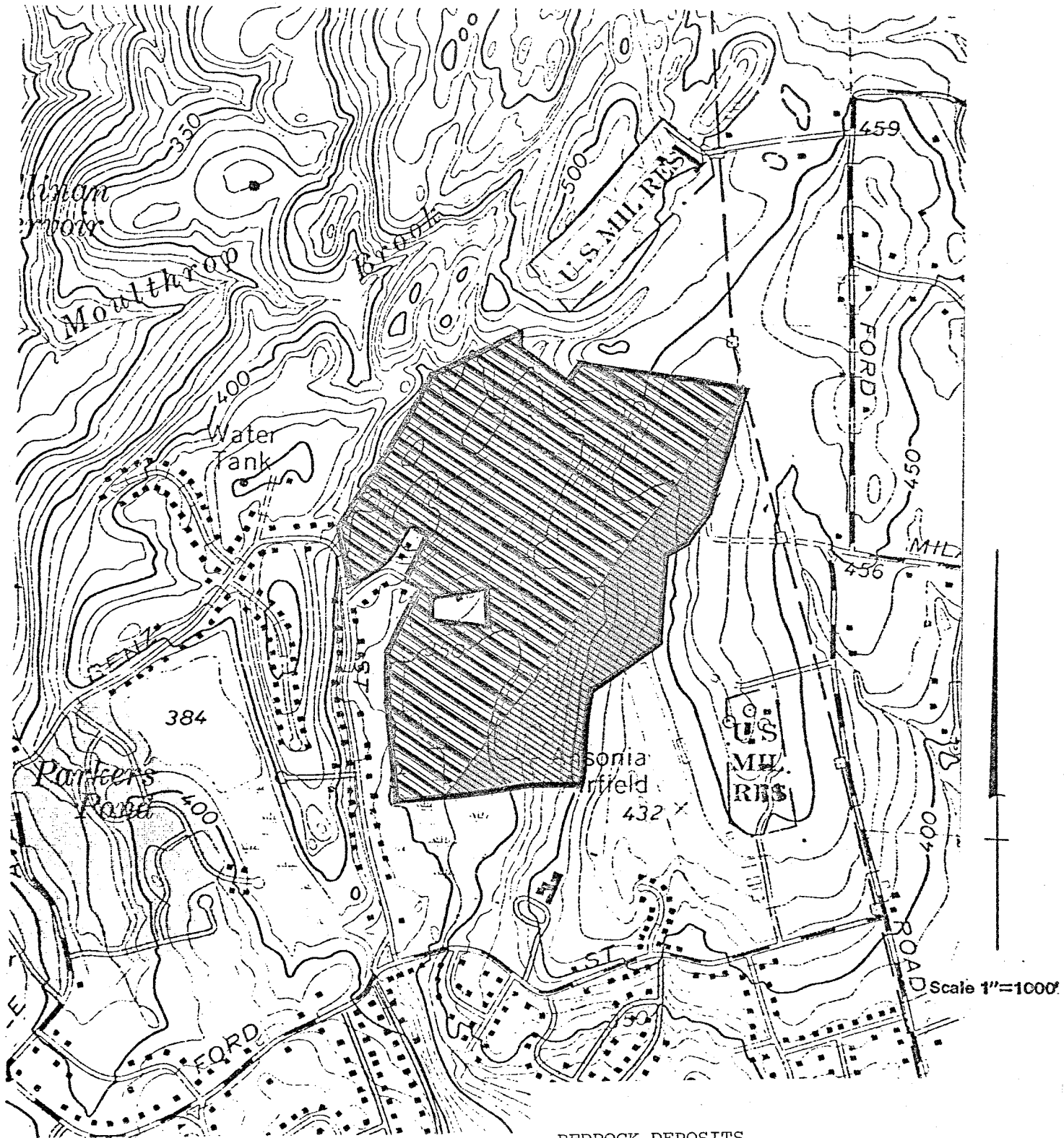


 - Till Deposits

FIGURE 4 BEDROCK DEPOSITS



BEDROCK DEPOSITS

-  - Southington Mountain Schist
-  - Derby Hill Schist

III. HYDROLOGY AND WATER RESOURCES

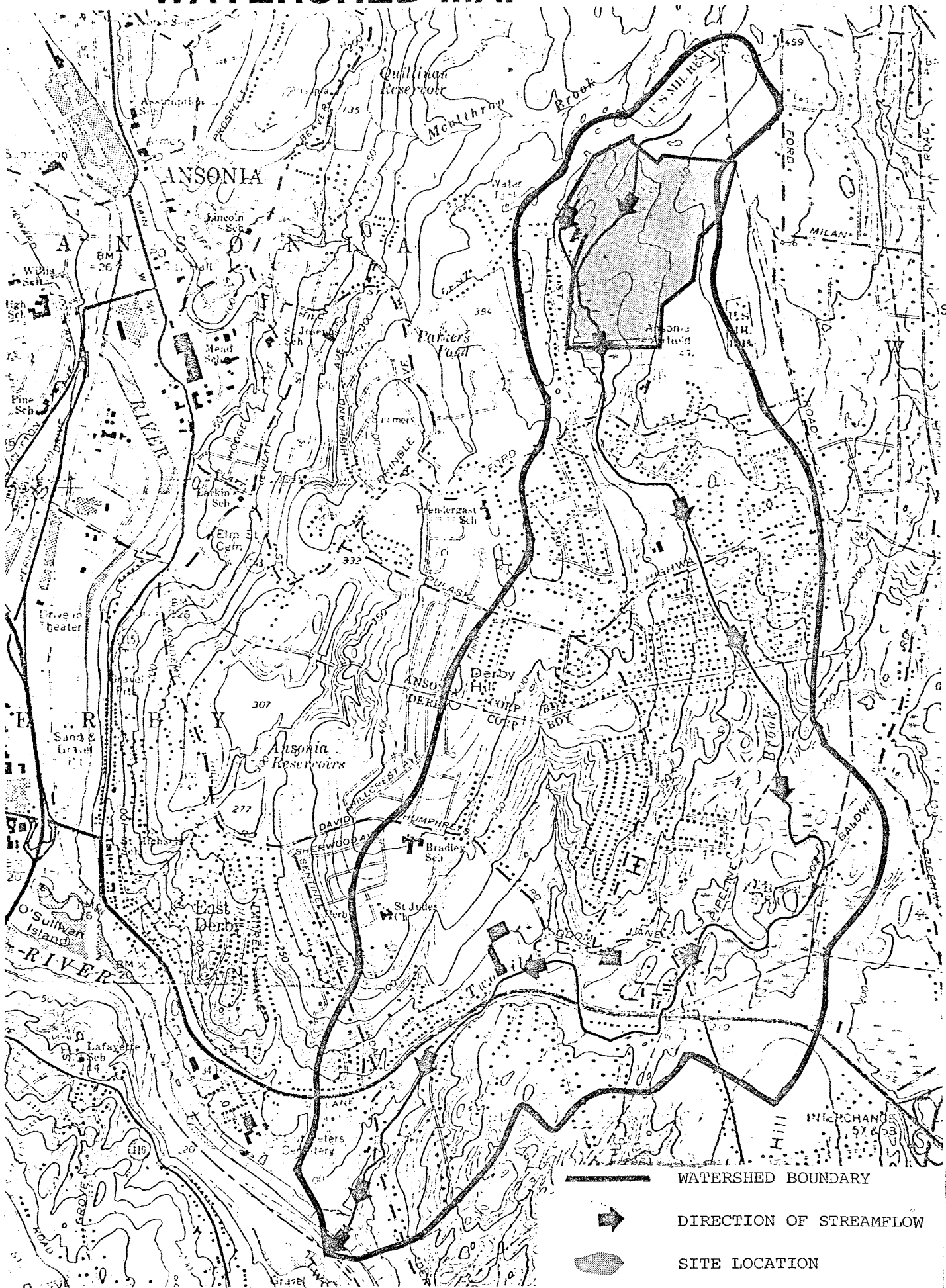
The site lies within the watershed of Two Mile Brook which drains an area of 3.1 square miles or + 2,000 acres. Surface water within the site therefore drains into Two Mile Brook. Two Mile Brook originates in a swamp in the upper reaches of the watershed, and flows in a southerly direction through the central portions of the property. The Brook ultimately discharges to the Housatonic River (see Figure 5).

As mentioned earlier in the report, there is presently a small pond in the central portion of the property. This pond was created by diverting the main stem of Two Mile Brook. Because of the reduced flows created by the diversion, the main stem of the brook, which now flows around the northwest perimeter of the pond, is experiencing a buildup of organic materials, sands and silts along the stream bed.

Presently, the Activities Building at the Ansonia Nature and Recreation Center as well as the picnic area surrounding Pavilion I (see Figure 2) is serviced by a public water supply line. There is also a six inch drilled well with an attached hand pump in the community garden which is available for drinking water and watering plants. If there is a desire to develop another well for recreation water supply purposes, it appears that bedrock underlying the site would be the site's principal groundwater aquifer. Bedrock transmits water by means of an interconnected system of fractures or cracks in the rock. The amount and natural quality of water withdrawn from the well depends upon the number and size of water bearing fractures that the well intersects, and on the mineralogy of the rock formations through which the groundwater, contributing to the well, passes. Bedrock aquifers are generally suitable for providing small but adequate yields for such uses as those needed by an average household (i.e. 3 gallons per minute). As mentioned in the Geology section of this report, schist is the predominant rock underlying the site. Elevated iron and manganese levels are often associated with schists. This is due to the presence of iron and manganese bearing minerals which commonly make-up schists. The mineral concentrations of iron and/or manganese may be sufficiently elevated in water to cause objectionable conditions. Elevated levels of iron and manganese are considered objectionable because they produce a brownish color in laundered goods and impair the taste of beverages, including coffee and tea. Under such circumstances, the water would need appropriate treatment before being acceptable for various domestic uses.

During the ERT's field review, team members observed a gravity spring flowing from a $\frac{1}{4}$ - $\frac{1}{2}$ " pipe along side a hiking trail in the northeast corner of the site. A gravity spring occurs where water percolates laterally through a permeable material, which overlies a relatively impermeable substratum (e.g., a compact layer of till or bedrock). It may also occur simply where the ground surface intersects the water table. The spring, which had a low discharge at the time of the ERT's field review probably fluctuates from season to season depending on ground water storage. During dry periods it may dwindle to a mere seep or may even disappear during extremely dry periods. According to Center officials, the quality of the water flowing from the spring, which is frequently used by hikers, is not known. It is recommended that the Center contact the local health department and request the water be tested for bacteriological, physical and chemical quality. If the water is found to be satisfactory, perhaps efforts could be made to reconstruct the area around the pipe outlet so that water can be more easily obtained with drinking cups, canteens, etc. On the other hand, if the water is found not potable, the spring should be posed as unfit for human

FIGURE 5 WATERSHED MAP



Scale 1" = 2000'

WATERSHED BOUNDARY

DIRECTION OF STREAMFLOW

SITE LOCATION

consumption or the pipe removed. It is also recommended that the hand pump well in the community garden area be tested for the same parameters mentioned above if this has not already been done.

FLOOD HAZARDS

There is a Flood Boundary and Floodway Map for the city of Ansonia prepared by the Federal Emergency Management Agency which identifies areas that are subject to flooding for both the 100 and 500 year storm. A "100 year flood" is a flood with a one percent chance of occurring in any given year. Likewise, a "500 year flood" is a flood with one chance in 500 of occurring in any given year. As shown in Figure 6, the areas subject to flooding during the storms mentioned above appear to lie along the outer limits of Great Milan Swamp in the southern portion of the property as well as areas along Two Mile Brook in the central portions of the property. It should be noted that the limit of the study conducted to create the flood boundary map terminates at the inlet to the farm pond on the site. It is likely that other areas upstream of this point are also subject to flooding during a 100 and/or 500 year storm. Also, there may be low-lying areas particularly in the northwest section of the property that although are not indicated on the Flood Boundary Map may be subject to flooding during periods of heavy rainfall. In terms of future development of the Nature Center for passive recreation, areas subject to flooding should probably be avoided.

Great Milan Swamp which is + 25 acres in total size (+ 12 acres within the subject site) has an important role in regulating the streamflow of Two Mile Brook. During periods of heavy precipitation, the swamp stores surface water temporarily releasing it more slowly than would otherwise be the case. As a result, the peak flood flows in Two Mile Brook are reduced. The swamp also helps to protect the water quality of the surface water by the various natural biochemical processes that occur in wetlands.

IV. SOILS AND LAND USE POTENTIAL

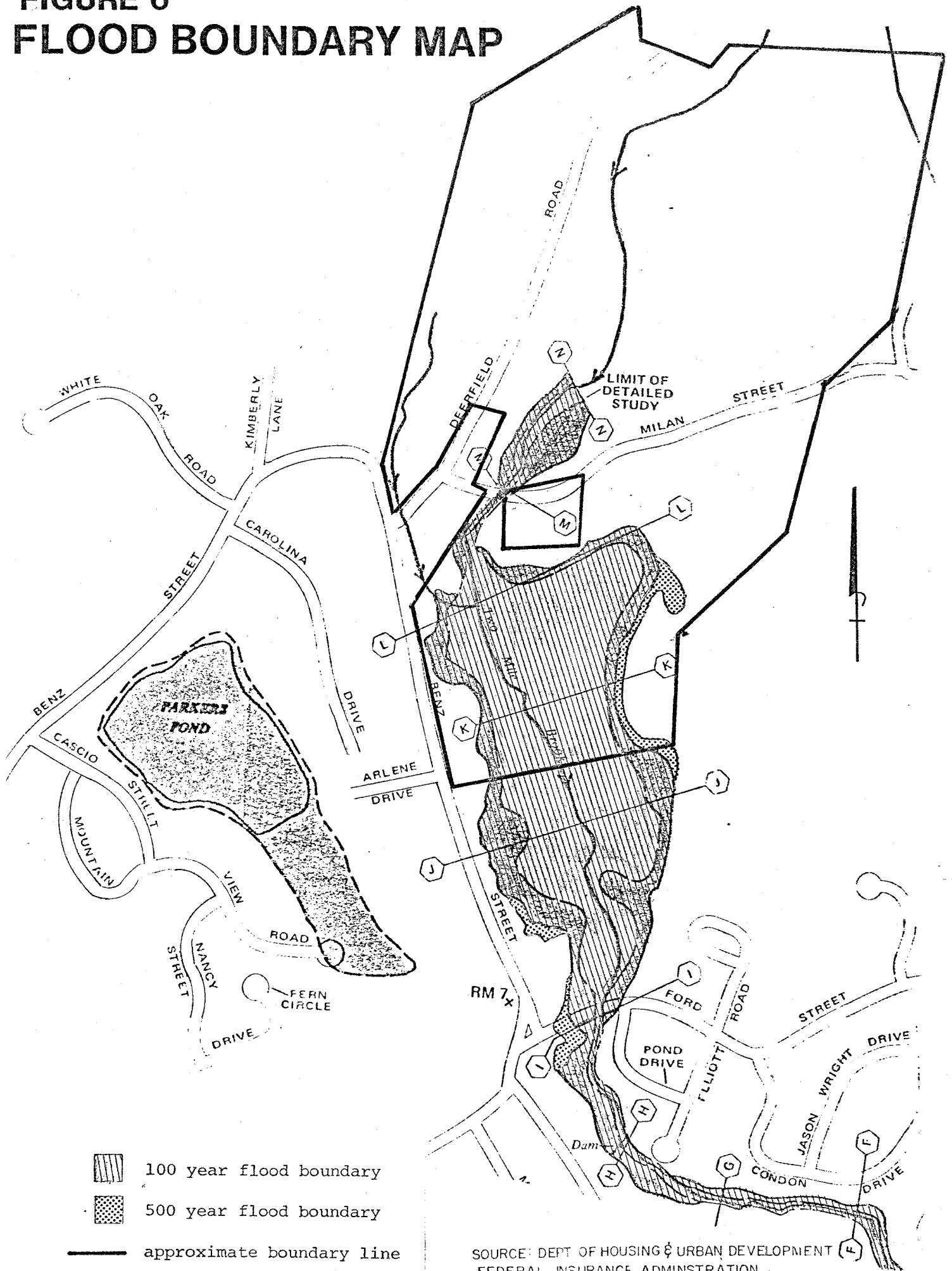
The Appendix of this report contains a Soils Map prepared by the USDA Soil Conservation Service which identifies the major soil types on the property. The Appendix also contains a Soils Limitation Chart and a chart on wildlife habitat potentials. By comparing the Soils Map with the two charts, one can gain an appreciation of the suitability of the various soils for alternate land uses. The major soil characteristics of the site are portrayed in Figure 7.

As shown on the Soils Map in the Appendix, nine soil types have been identified on the site. Each of these is briefly described below. A more complete description of each soil type may be found in the Soil Survey of New Haven County, USDA Soil Conservation Service, 1979.

AA - Adrian and Palms Mucks. This + 3 acre area is located in the central portion of the site and consists of peat and muck soils with an organic layer 16 to 50 inches thick. The soils are saturated most of the time and water ponds on the surface in winter and spring. These soils are not suited for recreational use but they do serve ecological values, particularly in providing habitat for wetland wildlife.

Ce - Carlisle Muck. This soil is similar to the above described Adrian and Palms mucks, however the organic layers are deeper. The organic layers range from 50

FIGURE 6 FLOOD BOUNDARY MAP



SOURCE: DEPT OF HOUSING & URBAN DEVELOPMENT
FEDERAL INSURANCE ADMINISTRATION

inches to more than 30 feet in depth. These soils are not suited for recreational use but they do provide valuable habitat for wildlife. This soil type occupies approximately 15 acres in the southwestern quarter of the site.

Wa - Walpole Sandy Loam. This nearly level, poorly drained soil is located astride Two Mile Brook as it traverses the northern half of the site. From late in fall until mid-spring, this soil has a water table at a depth of about 8 inches. Although these soils present severe limitations for most recreational land uses, they do have potential for development of ponds and conservation use for environmental enhancement. The two acre pond on the property has been developed in this soil type.

RN - Ridgebury, Leicester and Whitman Extremely Stony Fine Sandy Loams. This soil is also poorly drained. Stones and boulders cover 3 to 25 percent of the surface. A high water table remains within 6 inches of the soil surface during the wettest part of the year. These soils have severe limitations for recreational use but have potential for conservation uses.

HpE - Hollis-Charlton Fine Sandy Loams, 15 to 35 Percent Slopes. This soil consists of moderately steep and steep, somewhat excessively drained and well drained soils on uplands where the relief is affected by the underlying bedrock. The areas have a rough surface and bedrock outcrops, a few narrow intermittent drainageways, and small wet depressions. In most areas, 3 to 25 percent of the surface is covered with stones and boulders. Approximately 40 percent of this map unit is Hollis fine sandy loam, 35 percent is Charlton extremely stony fine sandy loam, and about 25 percent is other soils and rock outcrops.

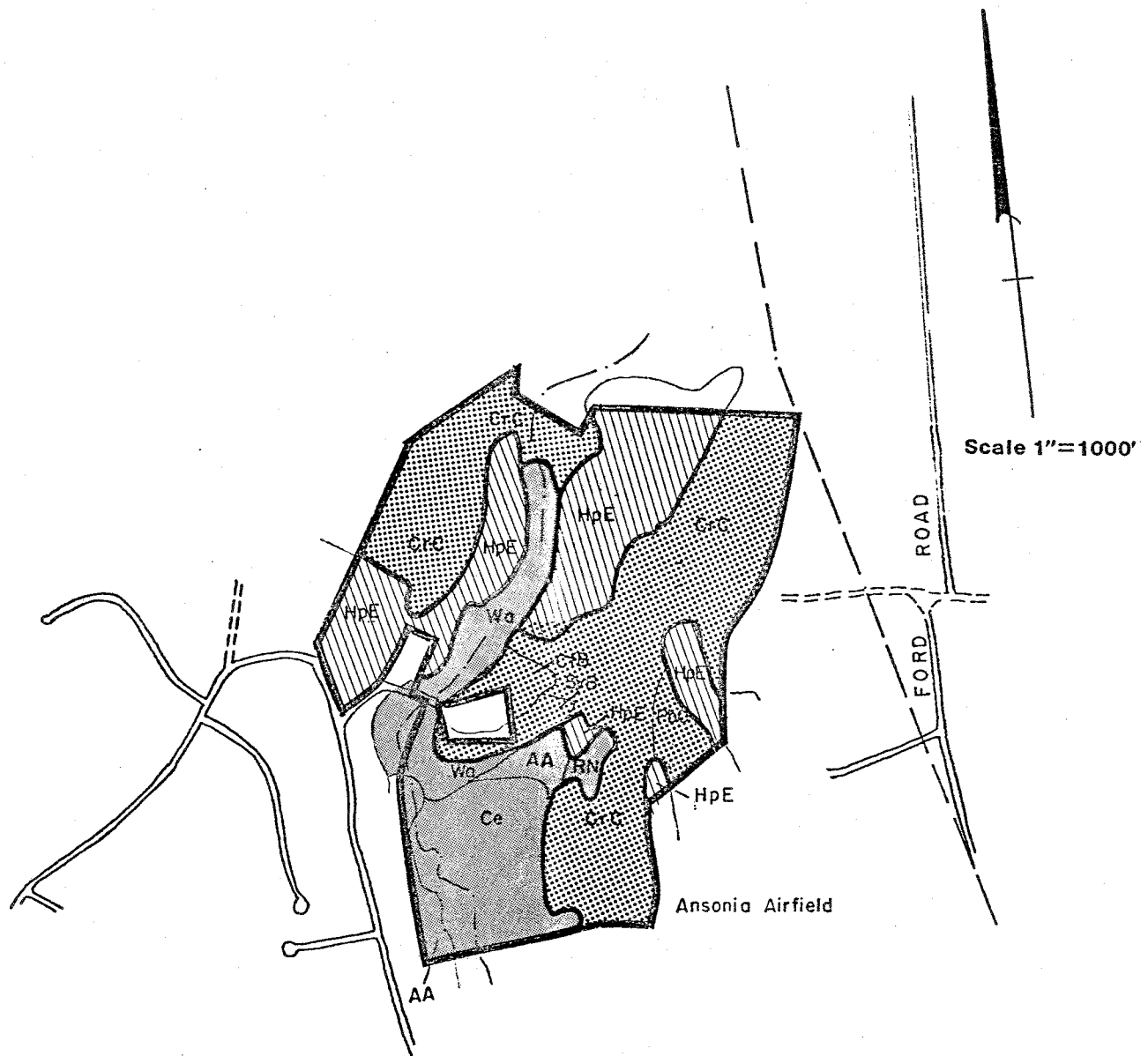
The Hollis and Charlton soils are so intermingled on the landscape that they could not be separated in mapping. The typical Hollis soil has a very dark brown fine sandy loam surface layer 3 inches thick. The subsoil is dark brown fine sandy loam 11 inches thick, and it overlies hard, unweathered schist bedrock. The typical Charlton soil has a dark brown fine sandy loam surface layer 2 inches thick. The subsoil is dark brown, yellowish brown, and light olive brown fine sandy loam 24 inches thick. The substratum, to a depth of 60 inches, is grayish brown gravelly fine sandy loam that has a few firm lenses up to 4 inches thick.

This soil has poor potential for active recreational development. It is limited mainly by steep slopes, shallowness to bedrock, rock outcrops, and stoniness. These same features, however, provide an attractive setting for more passive types of recreational land use such as hiking trails and primitive camp sites. In developing trails through these areas, care should be taken to prevent erosion through the judicious use of erosion control measures.

CrC - Charlton-Hollis fine sandy loams, 3 to 15 percent slopes. This complex consists of gently sloping and sloping, well drained soils on uplands where the relief is affected by the underlying bedrock. The areas have a rough surface with bedrock outcrops and a few narrow intermittent drainageways and small wet depressions. In most areas, 3 to 25 percent of the surface is covered with stones and boulders. Approximately 45 percent of these areas is Charlton fine sandy loam, 30 percent is Hollis fine sandy loam, and about 25 percent is other soils.




The Charlton and Hollis soils are in such a complex and intermingled pattern that they could not be separated in mapping. The typical Charlton soil has a dark brown fine sandy loam surface layer 2 inches thick. The subsoil is dark

FIGURE 7 MAJOR SOIL CHARACTERISTICS



Soil boundary lines derived from smaller scale map (1"=1320') and should not be viewed as precise boundaries but rather as a guide to the distribution of soils on the property.

Adapted from New Haven County
Soil Survey, USDA-SCS

-  = Inland Wetland Soils
-  = Mostly Rocky and Shallow to Bedrock Soils on Steep Slopes
-  = Moderately Sloping Soils

brown, yellowish brown, and light olive brown fine sandy loam 24 inches thick. The substratum, to a depth of 60 inches, is grayish brown, gravelly fine sandy loam that has a few firm lenses up to 4 inches thick. The typical Hollis soil has a very dark brown fine sandy loam surface layer 3 inches thick. The subsoil is dark brown fine sandy loam 11 inches thick, and it overlies hard, unweathered schist bedrock.

Approximately one-half of the site consists of this soil type. While rockiness presents difficulty in developing the soil type, the various outcrops, stones, and boulders provide a scenic and picturesque setting for passive recreational use.

CfB - Charlton Fine Sandy Loam, 3 to 8 Percent Slopes. This gently sloping + 3 acre area just east of the on-site pond is the most developable soil type on the property. If additional active recreational facilities (buildings, ballfields, etc.) are considered desirable in the future, this is an area which should be considered. The soil is fairly easy to excavate but commonly has stones and boulders. Waste disposal systems such as on-site septic systems generally function satisfactorily with normal design and installation. This soil has good potential for landscaping. During construction of recreational facilities, conservation measures are needed to prevent excessive runoff, erosion, and siltation.

This soil is well suited to cultivated crops. Good tilth is easy to maintain. The hazard of erosion is moderate, and controlling runoff and erosion is a major concern. Maintaining good fertility and good organic matter content are also concerns. If this soil is cultivated, minimum tillage, use of cover crops, and including grasses and legumes in the cropping system can help reduce runoff and control erosion. Stones and boulders near the surface are an annoyance when using some tillage equipment.

Typically, the surface layer of this soil type is dark brown fine sandy loam 8 inches thick. The subsoil is yellowish brown and light olive brown fine sandy loam 18 inches thick. The substratum, to a depth of 60 inches, is grayish brown gravelly fine sandy loam that has a few firm lenses up to 4 inches thick.

PbC - Paxon Fine Sandy Loam, 8 to 15 Percent Slopes. This sloping, well drained soil is found on the eastern border of the property.

Typically, the surface layer is dark brown fine sandy loam 8 inches thick. The subsoil is dark yellowish brown and olive brown fine sandy loam 18 inches thick. The substratum, to a depth of 60 inches, is olive, very firm gravelly fine sandy loam.

While this soil type is suitable for a variety of recreational uses, the + 4 acres of this soil type on this particular site is not readily accessible.

SvB - Sutton Fine Sandy Loam, 3 to 8 Percent Slopes. This is a gently sloping, moderately well drained soil. About four acres of this soil type is found in the central portion of the property.

Typically, the surface layer is dark brown fine sandy loam 8 inches thick. The subsoil is dark brown and yellowish brown, mottled fine sandy loam 20 inches thick. The substratum, to a depth of 60 inches, is brown and light olive brown fine sandy loam and gravelly fine sandy loam that has a few firm lenses up to 4 inches thick.

This soil has a seasonal high water table at a depth of about 20 inches from late in fall until mid-spring. This characteristic limits the potential use of this soil for septic systems, ball fields, etc. The soil is well suited to landscaping, however, and also to cultivated crops. The Community Garden for the Center is located in this area and appears to be an excellent use of this soil type.

V. FOREST MANAGEMENT

Of the 104 acres comprising the Ansonia Nature Center, 54.1 are in open, mowed fields or recreation play fields. The remaining 49.9 acres are forested. The Center is valuable for its diversity of successional stages, ranging from open field through early stages of forest development to stages approaching maturity. Properly approached, this area can provide a valuable outdoor classroom for adult as well as youth usage. Five types of vegetation occur on the property as noted in the Forest Stand Map (see Figure 8). Each of these is described below.

TYPE 1. Mixed Hardwoods - 13.0 acres. This moist site is variably stocked with primarily medium quality large pole-sized red maple. Drier portions contain some red and white oaks, black birch, beech, and cherry. The understory consists of large patches of spicebush and sweet pepperbush which tends to be dense. Black birch, yellow poplar and red maple saplings are scattered throughout. Ground cover here includes lily of the valley, wild strawberry, skunk cabbage, poison ivy, greenbriar, false solomon's seal, jewelweed, horse balm, golden rod and various mosses and ferns. Cardinal flower was found here, as well.

Management here should be aimed at enhancing recreational potential via removing culls and situations posing a danger to hikers. This could be done via a fuelwood thinning under the supervision of a private forester. Harvesting should be done during the winter months when deep frost will support vehicular traffic.

TYPE 2. Cedar-Mixed Hardwoods - 25.4 acres. This reverting pasture is fully stocked with red cedar, red maple, black birch, gray birch, hickory, red oak, and cherry saplings and poles of varying quality. The understory here consists of seedlings of the same species, barberry, multiflora rose, honeysuckle, and common juniper. Ground cover here includes various grasses, poison ivy, virginia creeper, common cinquefoil, and scattered lowbush blueberry.

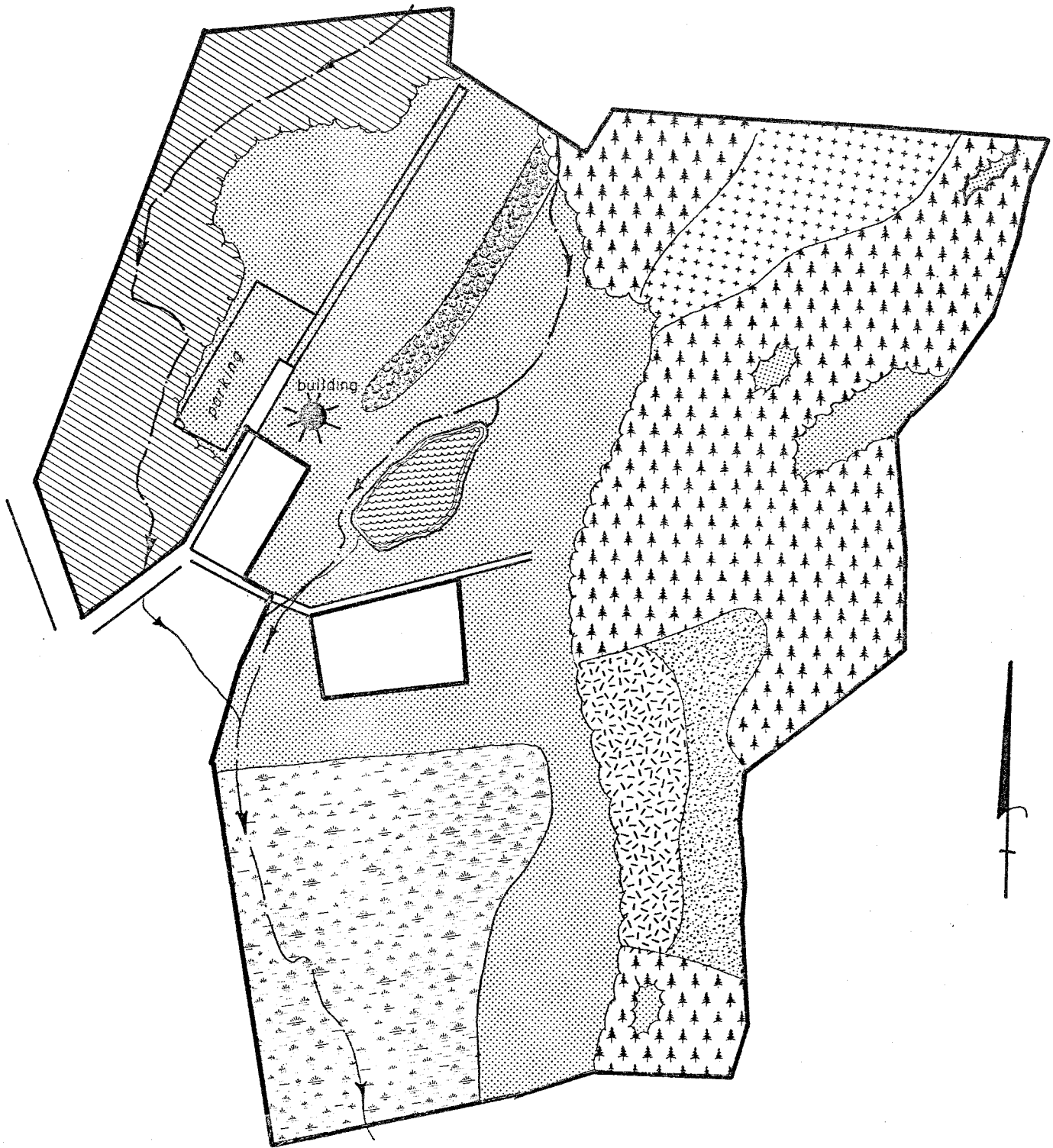
Due to the very young nature of this stand, meaningful management efforts should wait for approximately 10 years. The removal of a portion of the understory in localized areas may aid in developing sight lines and vistas which will benefit the recreational "experience". Care should be taken, however, to leave the better quality stems to become the main stand in the future.

TYPE 3. Mixed Hardwoods - 4.6 acres. This area is very similar to TYPE 2, but succession has proceeded farther along here and a higher percentage of hardwoods can be found. The understory differs slightly in that witch hazel, smooth sumac, staghorn sumac, highbush and low bush blueberry can be found as well as the species found in TYPE 2. The ground cover remains basically the same. Recommended management here is the same as in TYPE 2.









TYPE 4. Oak-Mixed Hardwood - 3.5 acres. This area is well stocked with medium quality pole and small sawlog sized red oak, red maple, black birch, ash, and hickory. The understory consists of saplings of the above species, flowering dogwood, silky dogwood, sassafras, staghorn sumac, multiflora rose, japanese honey suckle, and scattered red cedar. Ground cover consists of grasses, poison ivy, virginia creeper, golden rod, and various ferns.

Management here should be the same as in TYPE 1. Particular importance should be placed on the removal of large, dead hardwoods which are adjacent to the trails. These represent a serious hazard to users and should be eliminated as soon as is feasible.

FIGURE 8 FOREST STAND MAP



ACREAGE BREAKDOWN

ACRES		ACRES			
	13.0	Mixed Hardwood (pole)		1.5	Planted Area
	25.4	Cedar-Mixed Hardwood (sapling to pole)		38.3	Field
	4.6	Mixed Hardwood (sapling to pole)		14.3	Swamp
	3.5	Oak-Mixed Hardwood (pole - sawlog)		54.1	Total Nonforested
	3.4	Mixed Hardwood (pole - sawlog)		49.9	Total Forested
				104.0	TOTAL

TYPE 5. Mixed Hardwoods - 3.4 acres. This area is similar to TYPE 4, but the percentage of oaks found here has diminished. Scattered large ash and red maple can also be found.

Management recommendations for TYPE 1 apply here as well.

Found within the open fields is a 1.5 acre area which has been planted with a variety of conifers over the past few years. The seedlings are not readily discernable and a conscientious effort should be made at grass and weed control. For at least the next 3 years, the grass and weeds surrounding each seedling should be cut. Failure to do so ensures the failure of the plantings.

Throughout the eastern portion of the Center, there exists a need for development of access lanes for emergency vehicles such as ambulances and fire equipment. Upgrading Milan Road eastward to the primary trails and then upgrading the primary trails, both north and south will provide this much needed access.

VI. WILDLIFE MANAGEMENT

The 104 + acre tract comprising the Ansonia Nature Center is made up of four major wildlife habitat types. These are mixed hardwood forest, hardwood swamp, open land, and open water. Each of these habitat types is described below. The developed recreation portion of the nature center is not evaluated because of its limited wildlife value.

MIXED HARDWOOD FOREST

This habitat type is dominated by a red maple-oak composition with scattered birch, cedar, ash, elm, and hickory. A few apple trees and aspen were observed. The understory consists of sweet pepperbush, spicebush, witch hazel, sumac, barberry, poison ivy, viburnum, grasses, and various fruiting shrubs and vines.

Wildlife observed during the field review included deer browse sign, raccoon scat, kingbirds, and various unidentified songbirds. Other species typically utilizing this habitat type are gray squirrels, flying squirrels, fox, rabbits, opossums, and ruffed grouse.

Enhancement practices to encourage wildlife utilization include:

1. Create diversity of habitat by making small irregularly shaped openings ($\frac{1}{4}$ to 1 acre) located in an east to west direction (to obtain maximum sunlight). This will encourage fruit producing shrubs valuable to many types of wildlife. Edges of openings should be feathered (gradually blended into forest type). Openings should be mowed every three to five years.
2. Pile brush along edges of openings for small mammals and birds.
3. Maintain snag trees as they provide nesting and escape cover for numerous wildlife species.
4. Placement of various size nest boxes in forest to provide nesting cavities for squirrels and various birds. This project can also serve as an educational demonstration to visitors.
5. Where aspen and apple trees exist clearing of competitive vegetation should be conducted to release these high value species. Apple trees should be pruned and fertilized one year after the release.

6. If a timber harvest is planned, consider these wildlife practices:
 - a. Encourage mast producing trees (oak, hickory, beech).
 - b. Leave five to seven snag trees per acre.
 - c. Create small openings ($\frac{1}{4}$ to 1 acre) with feathered edges.
 - d. With brush construct small piles along edge of openings for nesting and escape cover.
 - e. Maintain some evergreen species for cover.

HARDWOOD SWAMP

This habitat type is dominated by a red maple-shrub composition. Although the field review did not actually include this area, typical understory vegetation would include buttonbush, viburnums, dogwoods, spicebush, various mosses and ferns, and skunk cabbage.

Wildlife typically inhabiting such an area (depending on water levels) include ducks, beaver, muskrat, mink, raccoon, woodcock, snipe, various birds, and numerous amphibians and reptiles.

Wetland areas provide critical wildlife habitat and are disappearing at an alarming rate. The area should be maintained in its natural form.

Typical enhancement practices to increase wildlife utilization:

1. Erect wood duck boxes.
2. Dig or blast potholes to encourage permanent water sources for waterfowl.

OPEN LAND

The open land habitat consists of one large (5 acre) hay field, grass fields adjacent to the athletic fields, and several small brushy openings located within the mixed hardwood forest type. These areas do create habitat diversity and much edge effect which is valuable to wildlife.

Sign of deer browse and numerous unidentified songbirds were observed during the field investigation. Ruffed grouse, fox, rabbits, and numerous birds will utilize such areas.

Enhancement practices to encourage wildlife utilization include:

1. The large (5 acre) field should be maintained as a hay field. No cutting should be allowed prior to August 1. This will avoid damage to possible bird nests. Also, a fifteen foot uncut border should be left surrounding the field. This border should be mowed every three to five years (after August 1) and not all the same year. These uncut borders are valuable to many wildlife species.
2. The grass fields adjacent to the athletic fields should be mowed

every three to five years (after August 1) to maintain early successional vegetation. Mowing of field borders should be put on a staggered schedule.

3. Small brushy openings should be brushed out to release aspen, apple trees, and numerous other fruiting species valuable to wildlife. Some conifers should be left for cover. Maintenance of these openings should be scheduled every three to five years.

4. Brush piles should be created along the edge of openings for birds and small mammals.

5. Bluebird boxes should be erected at the edges of all openings.

OPEN WATER

This habitat type consists of a two acre open pond. No emergent vegetation existed across the surface of the pond. The edge of the pond was vegetated with various grasses. Elderberry was abundant in the area.

Frogs, turtles, fish, and muskrat sign were observed. Muskrat evidence included scat, trails, and burrows throughout a good portion of the bank of the pond. Since the pond is heavily used by the public, the burrows do present a hazard (refer to enhancement practices discussed below). Other wildlife utilizing such habitat are wood ducks, raccoons, skunk, and red-winged blackbirds.

Enhancement practices to encourage wildlife utilization and resolve burrowing hazard include:

1. Erect one or two wood duck boxes. Due to the lack of emergent vegetation the boxes may not be utilized. However, they will serve an educational purpose.

2. Maintain lower water levels and/or periodically drain pond (spring-early summer) to encourage growth of emergent vegetation for waterfowl cover and food. This practice is probably not compatible with other uses such as boating and fishing however.

3. Muskrat burrowing situation - Although there is muskrat burrowing along the edge of the pond the basic stability of the bank is still intact. Efforts can be directed at direct population control (trapping) or habitat manipulation to make the area less desirable to muskrats. Specific measures include:

- a. Trapping - the easiest means of controlling the population is by use of steel traps (size #1) or a conibear trap. Trapping should be done during the regulated season (November 1 to February 28) so that full value is obtained from the pelt. Upon request a volunteer trapper may be willing to trap in the area.

Metal live traps baited with apples, carrots, or corn have been successful under some conditions. Relocating trapped animals may just be shifting the problem to another area however.

- b. Barriers - barriers have met with various degrees of success.

The practice is expensive, aesthetically unpleasing, and often temporary.

Two inch mesh poultry wire placed on the water side of the pond will provide a temporary (2 to 3 years) means of costly control. Since the wire will eventually rust, it should not be used if swimming occurs.

Asbestos - cement sheets 4' x 8' x 1/8" have given excellent control when buried vertically in the pond bank so that two feet of the board is above the water level and two feet will be below the water level. This solution is costly and unsightly.

A riprap of small rocks or heavy gravel has proven successful but is costly and unsightly.

- c. Other - habitat alteration undesirable to muskrat could be conducted. This could include lowering or draining water in the pond and/or mowing vegetation along the edge of the pond. These practices would be deleterious to many other wildlife species, however.

Since the pond bank is still basically stable, a boardwalk could be constructed around the pond. This would eliminate walking hazards to the public and possibly eliminate the need for any muskrat control.

After evaluating the various alternatives and realizing the constraints under which the Nature Center is operating, the Team's wildlife biologist would recommend construction of a boardwalk. If serious bank destabilization does occur, trapping should be conducted.

The concept of a nature trail throughout the area can be an excellent educational practice and should be developed. The trail should encompass the various wildlife habitats discussed and various enhancement practices. However, too much human exposure can greatly diminish wildlife utilization.

It should be recognized that for optimum wildlife habitat potential, a variety of successional stage vegetation should be encouraged. Proper maintenance of openings, field borders, aspen and apple tree releases, etc. need to be conducted. Without proper maintenance schedules, native vegetation will succeed to less desirable stages thereby lowering wildlife habitat potential on the area.

If any further assistance is desired on wildlife matters, the town or Nature Center should feel free to contact the Western District Wildlife Biologists at 485-0226.

VII. FISHERIES

The existence of pumpkinseed sunfish in the two acre pond located at the site was confirmed as members of this species were observed on their nests during the ERT's field review. Additionally, the pond is likely to be inhabited by largemouth bass and bluegill sunfish. Brown bullhead, chain pickerel, and

golden shiner may also be present.

The muskrat activity along the perimeter of the pond does not appear detrimental from a fisheries standpoint. However, heavy use of these areas by people could result in collapsing banks and increased sedimentation along the north shore of the pond. Fish habitat would correspondingly suffer. It is therefore recommended that a raised plank walk be constructed through the tall grass along the north shore and that hiking traffic be confined to the walk.

Ponds of this type are well suited for family and/or children's recreational fishing use. Construction of the aforementioned planked walk would significantly increase this value by expanding the amount of shoreline available for fishing and by potentially providing for a handicapped fishing area.

VIII. RECREATION POTENTIAL

As shown in Figure 2, a number of recreational facilities are already present at the Ansonia Nature Center. The "active" recreational facilities (e.g. ballfields, community gardens, picnic pavillion, tot lot) have been clustered in the northwest portion of the property, and are readily accessible from service roads and on-site parking lots. The remainder of the property has been left in a more natural condition and is crisscrossed by a network of footpaths. The concept followed by the Center of clustering active recreational facilities in one portion of the site while maintaining the rest of the site in a more natural state is a judicious one. It allows the Center to offer a wilderness experience in one portion of the site while at the same time providing for active recreation. Clustering of the active recreational facilities also enhances the opportunities for wildlife management and forest management as discussed previously in this report.

The day of the ERT's field review, team members were asked to comment on alternatives available for enhancing access to the on-site pond. It would appear that two alternatives are available: 1) construct a path from the Activity Center to the pond, or 2) construct a small parking lot off the road just south of the pond. Consideration should be given to pursuing both alternatives. With construction of a pathway from the Activities Center to the pond, consideration should be given to installing a switchback system to minimize the grade of the path. The land slopes quite steeply from the Activities Center to the pond, and without such switchbacks, erosion could be a problem as would use of the trail by the handicapped or the elderly. With construction of a footpath in this area, an erosion and sediment control plan should be prepared and implemented under the direction of the New Haven Soil and Water Conservation District.

Easier access could be provided to the pond if a small parking lot were constructed just off the road south of the pond. Slopes are more gentle here, and the pond is less than 100 feet away from the road. As this area is now open hay land, construction of a trail from the roadway to the pond would be greatly simplified. Providing access from this southerly point would greatly enhance direct access to the pond, particularly for the handicapped or elderly.

Along with enhancing access to the pond, consideration should be given to constructing a boardwalk system along the west bank of the pond to enhance its use and enjoyment. As previously discussed, such a boardwalk may "solve" the muskrat problem by keeping hikers and anglers directly off the shoreline where

muskrat burrows are so prevalent. A boardwalk system would also minimize the hazard of erosion and sedimentation by keeping hikers off this sensitive shoreline. To enhance fishing along the west bank of the pond, a jetty into the pond could be constructed as part of the boardwalk system.

The east bank of the pond is more stable than the west bank and is not presently threatened by fishing or hiking.

With construction of a boardwalk system along the west bank, provisions should be made for "easier" crossing of the inlet and outlet streams, particularly for the elderly and handicapped. Ascending and descending ramps with a firm wooden bridge surface and hand railings should be installed. This will permit a very pleasant $\frac{1}{4}$ mile tour around the pond. With construction of the boardwalk and stream crossings, efforts should also be taken to more clearly define a treadway along the east bank.

In addition to the above suggestions, consideration should also be given to:

- 1) creating a handicapped trail to the southwest of the parking lot across from the Activities Center. A winding trail (to minimize slopes) could be constructed from the southeastern corner of the Tot Lot down to the current trail system (which could be upgraded to facilitate use) and then back to the northwestern corner of the parking lot. This would provide a $\frac{1}{4}$ mile trail through a very attractive natural area with a variety of species of vegetation (including the beautiful cardinal flower). Here again, at least two bridges would need to be constructed to cross wet areas. The bridges should be designed to facilitate use by the elderly or handicapped.

A very useful and highly recommended book 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, Mass 02108 for \$6.95). The New Haven Conservation District is also available to assist in the design of trails and bridges. As a number of erosion "problems areas" were noted on the existing trail system throughout the property, consideration should be given to requesting the New Haven Conservation District to prepare a conservation plan for the property. This plan would identify specific erosion and sedimentation control measures which could be employed at specific sites. The Conservation District can be reached at 269-7509.

- 2) removing some vegetation just west of the lookout point in the northwestern portion of the property to enhance views to the west. Not many trees would have to be removed here to dramatically improve the view, and hence the recreational experience offered by the trail.

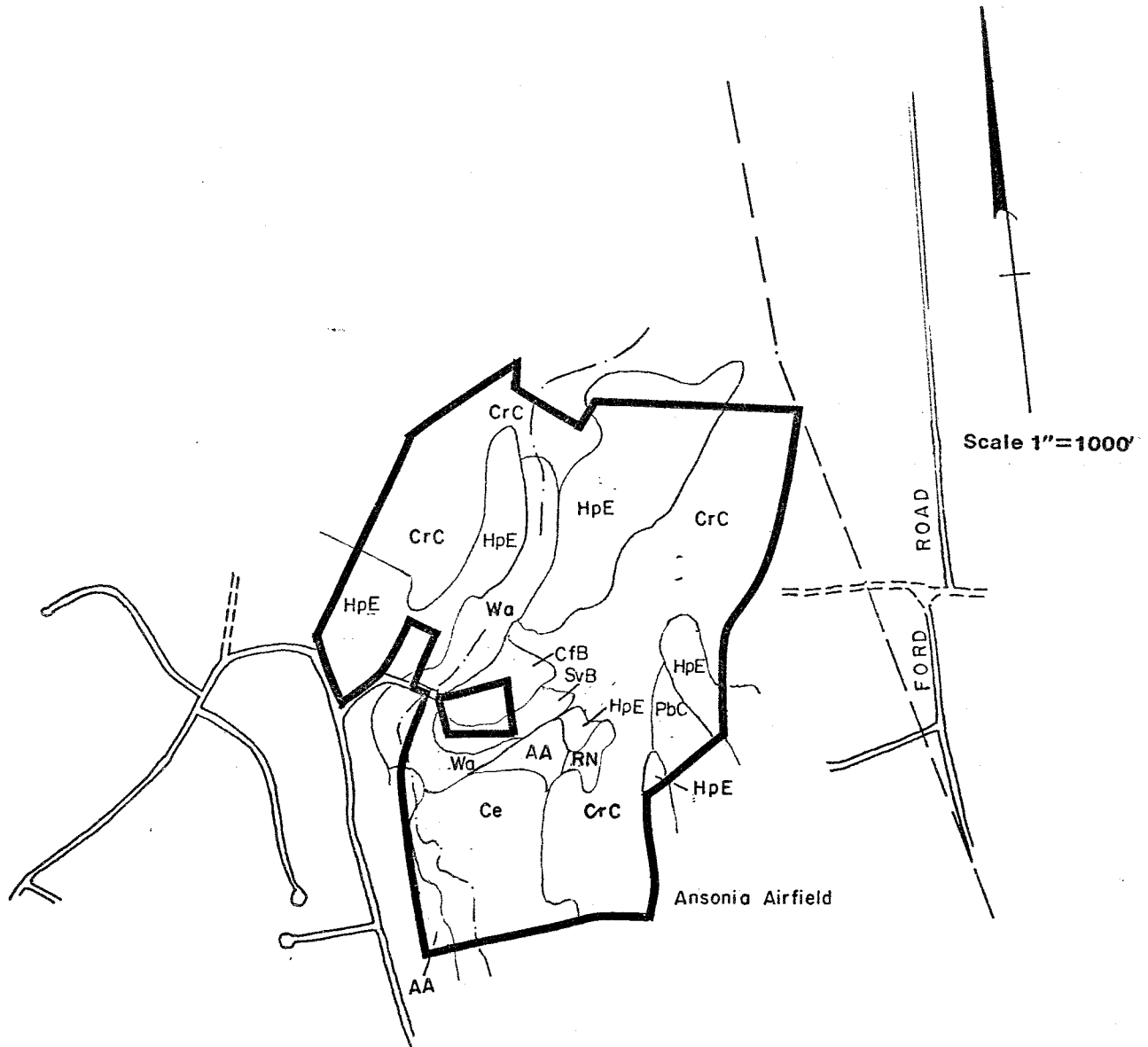
- 3) improving the outlet control structure at the pond. The existing concrete structure was viewed to be in a state of decay. Through upgrading or replacing this structure, it may be possible to better control the elevation of the pond. Assistance in dam design is available from the New Haven Conservation District.

To conclude, the Ansonia Nature Center is an exceptional natural and recreation area which has been well designed and is generally well maintained. Opportunities are excellent for the enjoyment of both passive and active recreational pursuits. The suggestions made in this portion of the report are offered to further enhance the use and enjoyment of the area.

* * * * *

APPENDIX

SOILS MAP



Soil boundary lines derived from smaller scale map (1"=1320') and should not be viewed as precise boundaries but rather as a guide to the distribution of soils on the property.

Adapted from New Haven County
Soil Survey, USDA-SCS

SOILS LIMITATION CHART - ANSONIA NATURE & RECREATION CENTER

Limitation Ratings For:

MAP SYMBOL	SOIL NAME	CAMP AREAS	PICNIC AREAS	PLAYGROUNDS	PATHS & TRAILS
AA	Adrian and Palms mucks	Severe; Wetness, Excess humus	Severe; Wetness, Excess humus	Severe; Wetness, Excess humus	Severe; Wetness, Excess humus
Ce	Carlisle muck	Severe; Wetness, Excess humus	Severe; Wetness, Excess humus	Severe; Wetness, Excess humus	Severe; Wetness, Excess humus
CfB	Charlton fine sandy loam, 3-8% slopes	Slight	Slight	Moderate; Slope	Slight
CrC	Charlton-Hollis fine sandy loam, 3-15% slope	Severe; Large stones	Severe; Large stones	Severe; Slope, Large stones, Depth to rock	Severe; Large stones
HpE	Hollis-Charlton fine sandy loam, 15-35% slopes	Severe; Slope, Large stones	Severe; Slope, Large stones	Severe; Slope, Large stones	Severe; Slope, Large stones
PbC	Paxton fine sandy loam, 8-15% slope	Moderate; Percs slowly Slope	Moderate; Slope	Severe; Slope	Slight;
RN	Ridgebury, Leicester, and Whitman extremely stony fine sandy loam	Severe; Wetness Large stones	Severe; Wetness Large stones	Severe; Wetness Large stones	Severe; Wetness Large stones
SvB	Sutton fine sandy loams, 3-8% slopes	Moderate; Wetness	Slight	Moderate; Slope, Wetness	Slight
Wa	Walpole sandy loam	Severe; Wetness	Severe; Wetness	Severe; Wetness	Severe; Wetness

SOILS LIMITATION CHART CONT'D

NOTES:

1) Limitation ratings from USDA Soil Conservation Service criteria.

EXPLANATION OF RATING SYSTEM: SLIGHT LIMITATION: indicates that any property of the soil affecting use of the soil is relatively unimportant and can be overcome at little expense.

MODERATE LIMITATION: indicates that any property of the soil affecting use can be overcome at a somewhat higher expense.

SEVERE LIMITATION: indicates that the use of the soil is seriously limited by hazards or restrictions that require extensive and costly measures to overcome.

WILDLIFE HABITAT POTENTIALS

Potential As Habitat For:

MAP SYMBOL	SOIL NAME	OPENLAND WILDLIFE	WOODLAND WILDLIFE	WETLAND WILDLIFE
AA	Adrian and Palms mucks	Very Poor	Poor	Good
Ce	Carlisle muck	Very Poor	Poor	Good
CfB	Charlton fine sandy loam, 3-8% slopes	Good	Good	Very Poor
CrC	Charlton-Hollis fine sandy loam, 3-15% slope	Poor	Poor - Fair	Very Poor
HpE	Hollis-Charlton fine sandy loam, 15-35% slopes	Poor	Poor - Fair	Very Poor
PbC	Paxton fine sandy loam, 8-15% slope	Good	Good	Very Poor
RN	Ridgebury, Leicester, and Whitman extremely stony fine sandy loam	Poor	Fair	Fair
SvB	Sutton fine sandy loam, 3-8% slopes	Good	Good	Very Poor
Wa	Walpole sandy loam	Fair	Fair	Good

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.