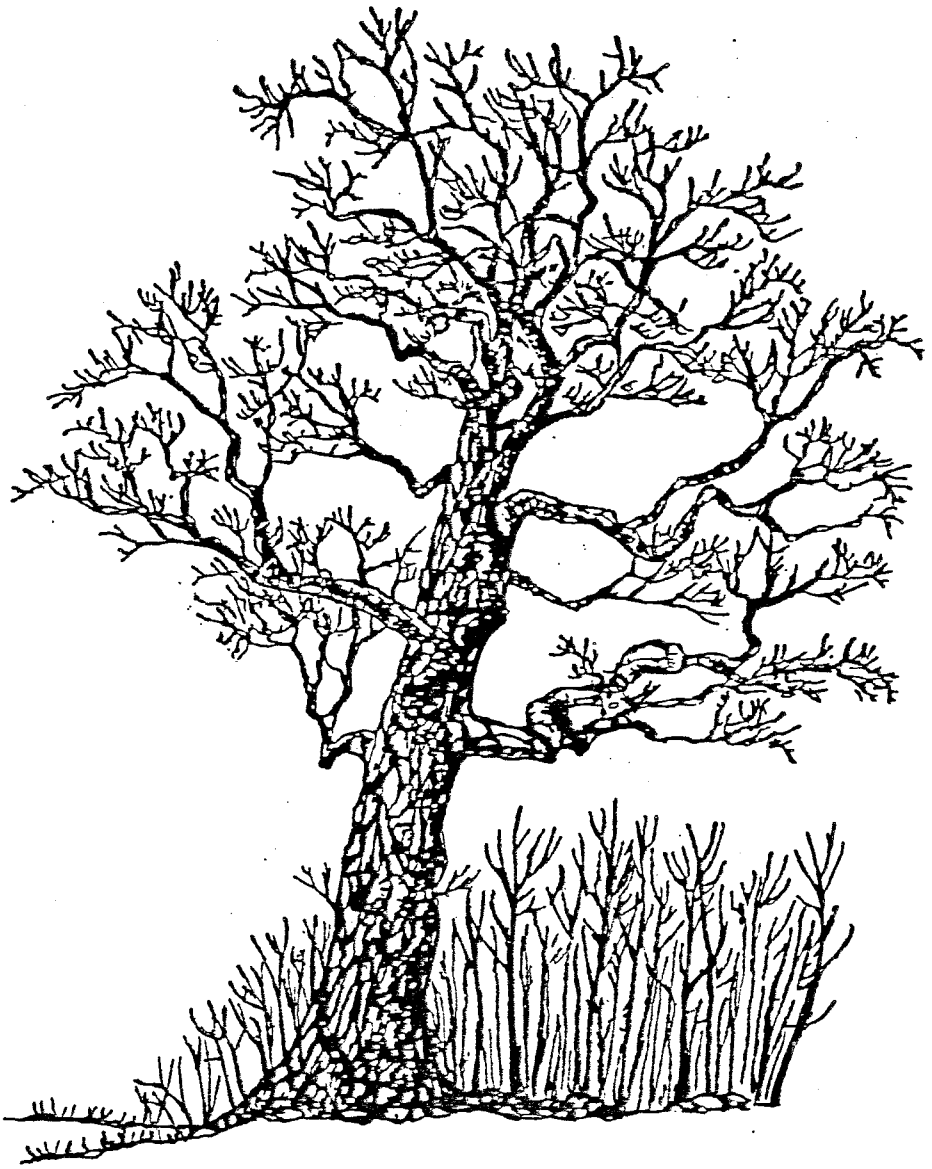
KING'S MARK ENVIRONMENTAL REVIEW TEAM



FAIRFIELD OPEN SPACES

Springer Glen, Millspaugh, Drake Lane, Flower House Drive, Riverfield

FAIRFIELD, CONNECTICUT

FAIRFIEELD OPEN SPACES

Springer Glen, Millspaugh, Drake Lane, Flower House Drive, Riverfield

FAIRFIELD, CONNECTICUT

Environmental Review Team Report

Prepared by the King's Mark Environmental Review Team
of the King's Mark Resource Conservation
and Development Area, Inc.

Wallingford, Connecticut

for the

Fairfield Conservation Commission

This report is not meant to compete with private consultants by supplying site designs or detailed solutions to development problems. This report identifies the existing resource base and evaluates its significance to the proposed development and also suggests considerations that should be of concern to the Conservation Commission and the Town. The results of the Team action are oriented toward the development of a better environmental quality and long-term economics of the land use. The opinions contained herein are those of the individual Team members and do not necessarily represent the views of any regulatory agency with which they may be employed.

OCTOBER 1988

ACKNOWLEDGEMENTS

The King's Mark Environmental Review Team Coordinator, Nancy Ferlow, would like to thank and gratefully acknowledge the following Team members whose professionalism and expertise were invaluable to the completion of this study:

* William Warzecha, Geohydrologist
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* Guy Hoffman, River Specialist
  Department of Environmental Protection - Water Compliance Unit

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  Department of Environmental Protection - Water Resources Unit

* Judy Wilson, Wildlife Biologist
  Department of Environmental Protection - Wildlife Bureau

* Donald Mysling, Fishery Biologist
  Department of Environmental Protection - Fisheries Bureau

* Robert Despres, Regional Planner
  Greater Bridgeport Regional Planning Agency

I would also like to thank Susan Anderson, Secretary of the King's Mark Environmental Review Team for assisting in the completion of this report.

Finally, special thanks to Kenneth Placko, Open Space Manager of the Fairfield Conservation Commission, for his cooperation and assistance during this environmental review.

EXECUTIVE SUMMARY

Introduction

The Town of Fairfield Conservation Commission requested that an environmental review be conducted on the Fairfield Open Space Areas. These areas are scattered along the Mill River, south of the Merritt Parkway. The areas include Springer Glen, a 36-acre parcel, Drake Lane, an approximately 7-acre parcel, Millspaugh, two parcels totaling approximately 5 acres, Flower House Drive, an approximately 2-acre parcel and Riverfield, an approximately 19-acre parcel. These areas are owned and managed by the Town. The areas contain second growth forest, wetlands, wooded swamp and open areas. They provide several trails, access for fishing and some recreation to the Town of Fairfield.

The primary concern of the Conservation Commission is the increased development pressures surrounding the area and competing uses of these tracts. The Commission is interested in ways to increase the different uses of the parcels and in the possibilities of linking the parcels into a wildlife corridor/greenbelt area. Since natural resource information is already available for most of the site, the primary goal of the ERT is to interpret this information and, if necessary, generate any new information in order to provide natural resource management guidelines or alternatives to improve the overall environmental quality, stability and diversity of the resources occupying the site.

The review process consisted of four phases: (1) inventory of the site's natural resources; (2) assessment of these resources; (3) identification of resource problem areas; and (4) presentation of planning and land use guidelines. Based on the review process, specific resources, areas of concern, development limitations and development opportunities were identified. Below is a brief description of the major findings of the ERT study.

Setting, Land Use and Topography

The sites are located in the Mill River Valley in central Fairfield. The sites are mostly wooded and surrounded by residential development. Many of the parcels are located partly or entirely within the Mill River floodplain. The steepest slopes occur on the Flower House Drive parcel.

Geology

The bedrock underlying the sites is divided into three different rock formations: (1) Trap Falls Formation; (2) Beardsley Member of Harrison Gneiss; and (3) Pumpkin Ground Member of Harrison Gneiss. The surficial geology of an area consists of those unconsolidated materials overlying bedrock. Stratified drift (sand and gravel) covers most of the river valley. Areas immediately adjacent to the river are covered by alluvial deposits. A thin layer of till is found in the upland sections of Springer Glen. The geology of the area should not hinder recreational development. The floodplain areas will be subject to flooding and will have limited use for active recreation, but will support passive recreation. The steep slopes of Flower House Drive will hinder recreational uses, and the potential for erosion is high.

Hydrology

The open space areas lie within the Mill River watershed. The Mill River drains approximately 26.5 square miles at the outlet of Swamp Mortar Reservoir. Surface and groundwater runoff from the parcels eventually discharge into the Mill River. The wetland areas and alluvial deposits have important hydrologic and ecologic values such as runoff retention, sediment storage and flood storage. The stratified drift areas have the potential to provide large quantities of water to wells. This potential depends on factors such as thickness of the deposits, texture and proximity to the streamcourse. Testing of the materials will be needed to verify the potential yields. The bedrock is also capable of providing small quantities of water to wells. Ground water in the area is Class GA. Surface water is Class A.

According the the FEMA studies for the area all of the sites except for Flower House Drive contains portions of the 100-year and 500-year flood boundaries for the Mill River.

Water Quality

Water quality for the Mill River is Class A. The river appears to be affected by urban runoff, but still provides water uncontaminated by sewage treatment and industrial discharges. The effects of urbanization can include channelization, loss of cover, increased salts and metals concentrations and siltation. The open space areas provide relief to the river from these impacts. The streamflow fluctuates with the seasons. Several areas are backed up from bridge abutments and informal dams. These deeper areas have cloudy water and abundant plant life. There are no obvious erosion problems but Flower House Drive does have the potential for erosion on the steep slopes. Maintaining a natural vegetation buffer along the river is important in minimizing streambank erosion and water quality damage. Protection of the river and streambanks should be a high priority when considering future uses. Low flow conditions will limit swimming and boating in the summer. Erosion and sedimentation is a concern for all sites and should be addressed if physical changes are made.

Forest Resources

The forestry and vegetative characteristics of the sites have not changed significantly since the Beals and Westover study in 1971. The Springer Glen site contains two stands, one of poletimber and one of poletimber and sawtimber. The small size of the tracts and floodplain areas limit the potential for commercial management. Springer Glen has the best potential for management because of the large size and drier soils. Firewood and cordwood cuts could be planned. Assistance can be obtained from the Connecticut Bureau of Forestry. Springer Glen is suitable for planting Black Walnut, which is suitable for wildlife and lumber. Red Cedars can be salvaged for fence posts or released to provide food and shelter for songbirds. Aspens provide good ruffed grouse habitat and could be encouraged.

Wildlife Considerations

The dumping of trash and brush should be stopped in the open space areas. A setback of 100 feet might be considered between any new development and open space areas to provide a wildlife buffer and to stop people from using the area as their own property. Hunting might be considered on the larger parcels to help control the deer population. Recommendations for enhancing wildlife habitat include maintaining the open fields, creating wildlife openings, creating small wildlife ponds and constructing wildlife/educational trails.

Fisheries

The Mill River is considered a Major Trout stream and is annually stocked with trout. A variety of coldwater species are found in the river. The slight impoundment at Flower House Drive is characteristic of a warmwater pond. Hatchery trout do have the ability to survive angling and the capability to spawn in the river.

Because the areas are to remain as open space the Mill River will be unchanged. The surrounding urban environment is expected to impact the river by introducing sediments, salts, sands and oils from roads and lawn fertilizers and chemicals. Recommendations to protect the river include maintaining a natural buffer zone along the banks, installing erosion and sediment controls during construction, planning trails to avoid areas susceptible to erosion, designing and implementing a stormwater management program, limiting fertilizers and lawn chemicals close to the river and adding several instream structures to provide further fish habitat.

Threatened and Endangered Plant and Animal Species

According to the Natural Diversity Data Base, there are no Federal Endangered and Threatened Species or Connecticut "Species of Special Concern" within the open space areas. Historically, a population of Riverweed (Podostemum ceratophylum) was found in the Mill River. There is no additional information on this species in the area.

Planning Considerations

The Town is interested in linking the parcels to form a river path. There are two possibilities for achieving this goal: a parcel of land between the two Millspaugh pieces may be offered for sale to the Town and/or the Town might consider getting an easement from Bridgeport Hydraulic Company. The Town may also wish to explore easements with river front property owners. The three small sites have no parking areas and are best suited for neighborhood use. Springer Glen has limited parking near the access points. Riverfield has parking at the school. Parking areas and entry points should be marked with signs. Trails are more appropriate for the larger sites. Clear designation of trails will define the walking area and protect wildlife and vegetation. Trails should be far enough from the river to prevent erosion. There is a potential for a variety of activities including hiking, bird watching and plant study. To promote these activities, the Town might wish to print a trail guide. Another popular activity is fishing. This is popular in spring when the river is high and stocked. One approach to management is designating fishing spots along the river. Picnicking is another potential use for designated areas. There is evidence of dumping on the sites which should be cleaned up. Encouraging more use may discourage dumping.

Some recommendations include developing loop trails and educational trails for Springer Glen and Riverfield. Other recommendations include picnic areas, designated fishing spots, car top boating in spring, a ford across the river from the corner of Millspaugh to Drake Lane and discouraging use of the steep paths at Flower House Drive.

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They are also interested in the possibilities of linking the parcels into a wildlife corridor/greenbelt area. Since natural resource information is already available for most of the site, the primary goal of the ERT is to interpret this information, and if necessary, generate any new information in order to provide natural resource management guidelines or alternatives to improve the overall environmental quality, stability, and diversity of the resources occupying the site. Thus, how best to manage the resources and uses of the site is the primary goal of this environmental review.

THE ERT PROCESS

Through the efforts of the Conservation Commission and the King's Mark ERT, this environmental review and report was prepared for the Town. This report primarily provides a description of on-site natural resources, and presents planning and land use guidelines.

The review process consisted of four phases:

1) Inventory of the site's natural resources (collection of data);

2) Assessment of these resources (analysis of data);

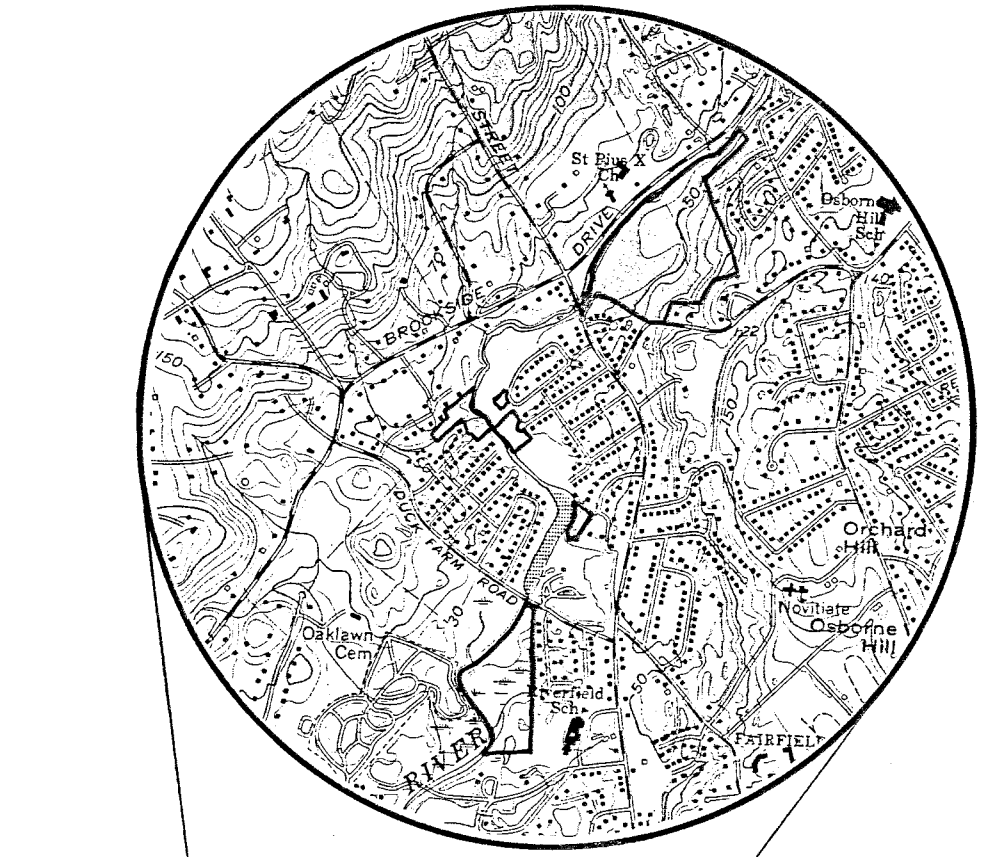
3) Identification of resource problem areas; and

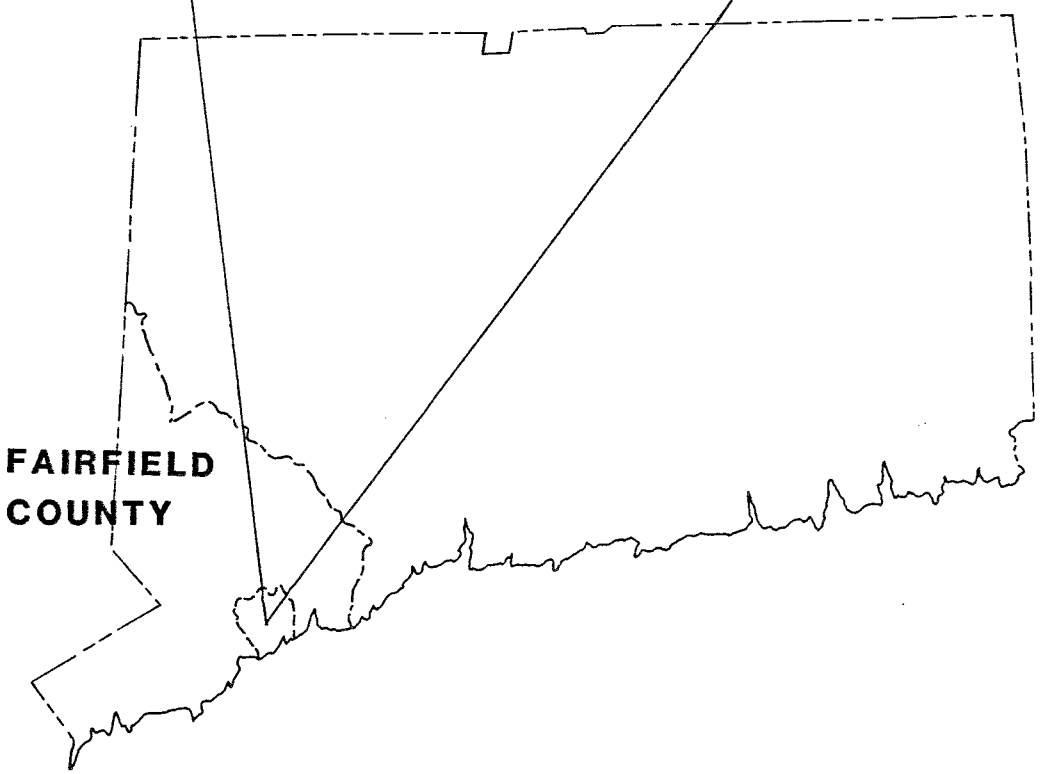
4) Presentation of planning and land use guidelines.

The data collection phase involved both literature and field research. The ERT field review took place on August 31, 1988. Field review and inspection of the site proved to be a most valuable component of this phase. The emphasis of the field review was on the exchange of ideas, concerns or alternatives. Mapped data or technical reports were also perused and specific information concerning the site was collected. Being on site also allowed Team members to check and confirm mapped information and identify other resources.

Figure 1

LOCATION OF STUDY SITE





Once the Team members had assimilated an adequate data base, it was then necessary to analyze and interpret their findings. The results of this analyses enabled the Team members to arrive at an informed assessment of the site's natural resource development opportunities and limitations. Individual Team members then prepared and submitted their reports to the ERT Coordinator for compilation into the final ERT report.

The primary goal of this ERT is to inventory and assess existing natural resources occurring on the site as well as providing management guidelines. Specific objectives include:

1) Provide fish and wildlife management guidelines to enhance fish and wildlife habitat and populations;

2) Assess existing wetland conditions and provide alternatives on how best to manage wetland resources;

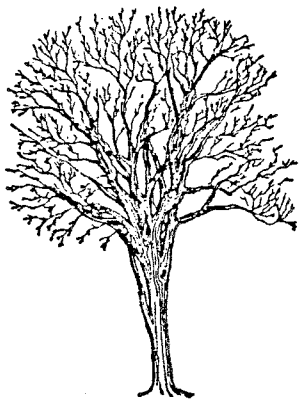
3) Provide forest management guidelines to enhance the diversity of the forest resource;

4) Determine the recreational opportunity of the parcels including possible trails and potential recreational impacts;

5) Assess the environmental condition of the Mill River and the river bank community, and provide river management guidelines; and

6) Provide watershed management guidelines for the site.

PHYSICAL CHARACTERISTICS



SETTING, LAND USE AND TOPOGRAPHY

Springer Glen

Springer Glen is an irregularly shaped parcel of land approximately 36 acres in size that occupies the Mill River Valley in central Fairfield (see Figure 2). The site is bordered on the west and north by Mill River, residential land on the east and Stillson Road on the south. Access is available on the south off Stillson Road and also from the east off Pheasant Lane. The site, which is mostly wooded, is surrounded by moderately high density, residential development. A Town owned open space area parallels the north side of the Mill River, northwest of Springer Glen.

The western half of Springer Glen occupies the Mill River floodplain. Slopes are mostly flat in this area. The eastern portions rise gently towards North Benson Road. Steepest slopes are located near Stillson Road. No major streamcourses were visible on the site, except for the Mill River.

Drake Lane

The Drake Lane parcel is 7 acres in size and is located in central Fairfield (see Figure 3). Access to the site is available off of Drake Lane. The Mill River delineates the eastern boundary of the site. Residential development characterizes the surrounding area. Slopes are generally gentle throughout the parcel. Steepest slopes parallel the eroded streambanks of the river.

Except for a narrow strip of the site along the western border, the site lies within the Mill River floodplain.

Millspaugh

The Millspaugh open space site, about 5 acres in size, is comprised of two parcels: a northern tract located off the west side of Cynthia Drive/Dudley Drive and a southern tract located at the end of Millspaugh Drive (see Figure

3). Both tracts are flat and virtually comprise all floodplains. A narrow strip at the eastern limits of the northern tract constitutes uplands. Both parcels are wooded and are surrounded by small, residential lots.

Flower House Drive

This approximately 2 acre parcel is located between Flower House Drive and Millspaugh Road (see Figure 3). From the crest of the site, the land surface slopes very steeply westward to Mill River. The wooded site overlooks a section of the river that has been widened, probably as a result of sand and gravel mining. Based on observations made during the field review, the topsoil and subsoil on the site appears to have been removed in the past. Land use in the area is high density residential. Municipal sewers and water lines are available to the site.

Riverfield

The Riverfield open space parcel consists of about 19 acres of mostly wooded land northwest of Riverfield School (see Figure 4). The site is bounded on the west by Mill River, and access is available off of Hunter Lane. The parcel is relatively flat throughout. High density residential development characterizes the area. Oaklawn Cemetary lies west of the parcel.

GEOLOGY

Springer Glen

The eastern parts of Springer Glen, which comprise uplands, are covered by till (see Figure 5). Till is a non-sorted sediment that was deposited directly from glacial ice. It consists of a complex mixture of clay, silt, sand, gravel and boulders. The texture of the till on the site is generally sandy, stony and loose. The exact thickness of the till is unknown, but it probably does not exceed 10 feet in most places.

Figure 2

Soil Descriptions found in Appendix A

FAIRFIELD OPEN SPACES
Springer Glen

Fairfield, Connecticut

Topography

King's Mark Environmental Review Team

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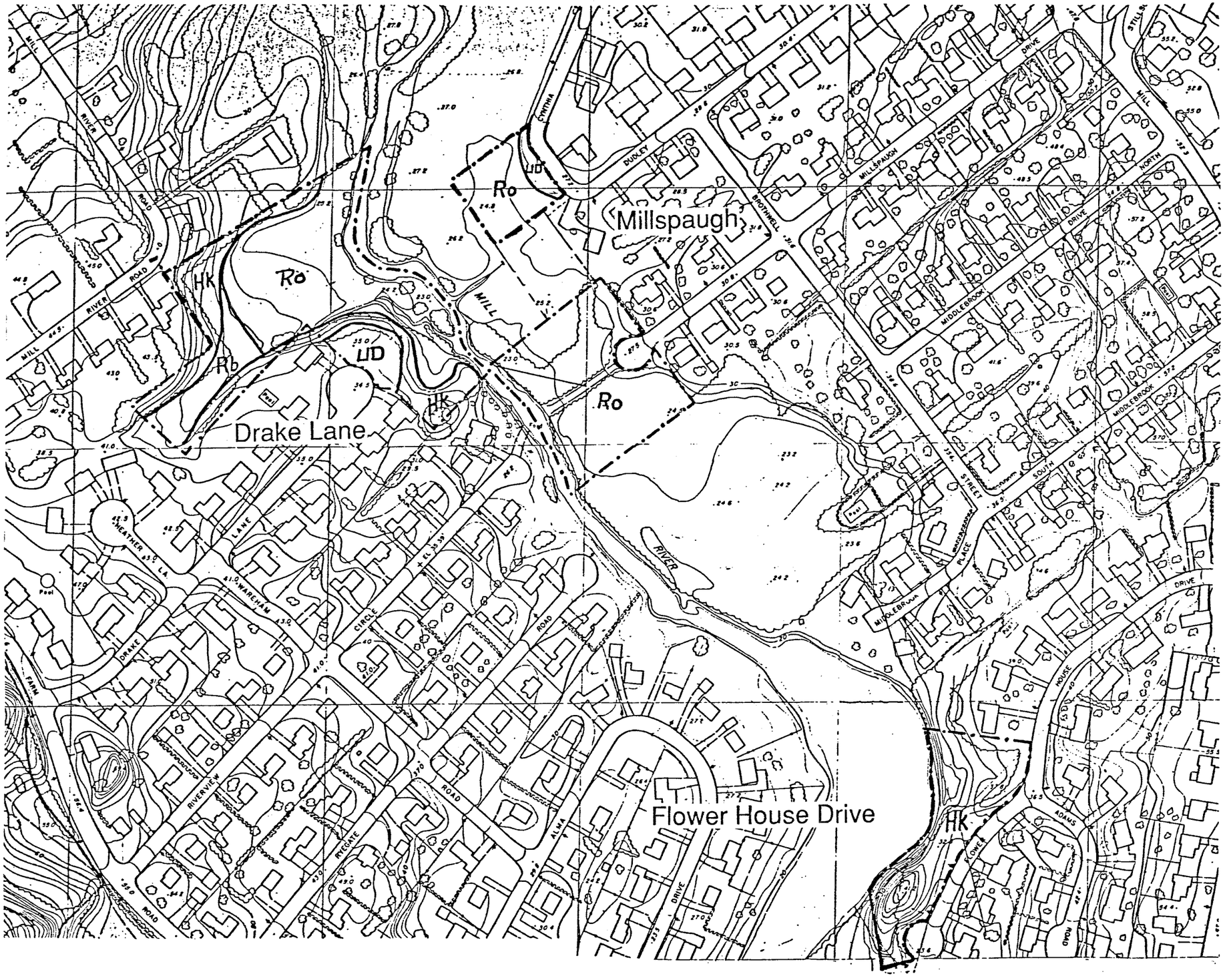
Figure 3



Soil Descriptions found in Appendix A

FAIRFIELD OPEN SPACES

Millspaugh, Drake Lane, Flower House Drive

Fairfield, Connecticut

Topography

King's Mark Environmental Review Team

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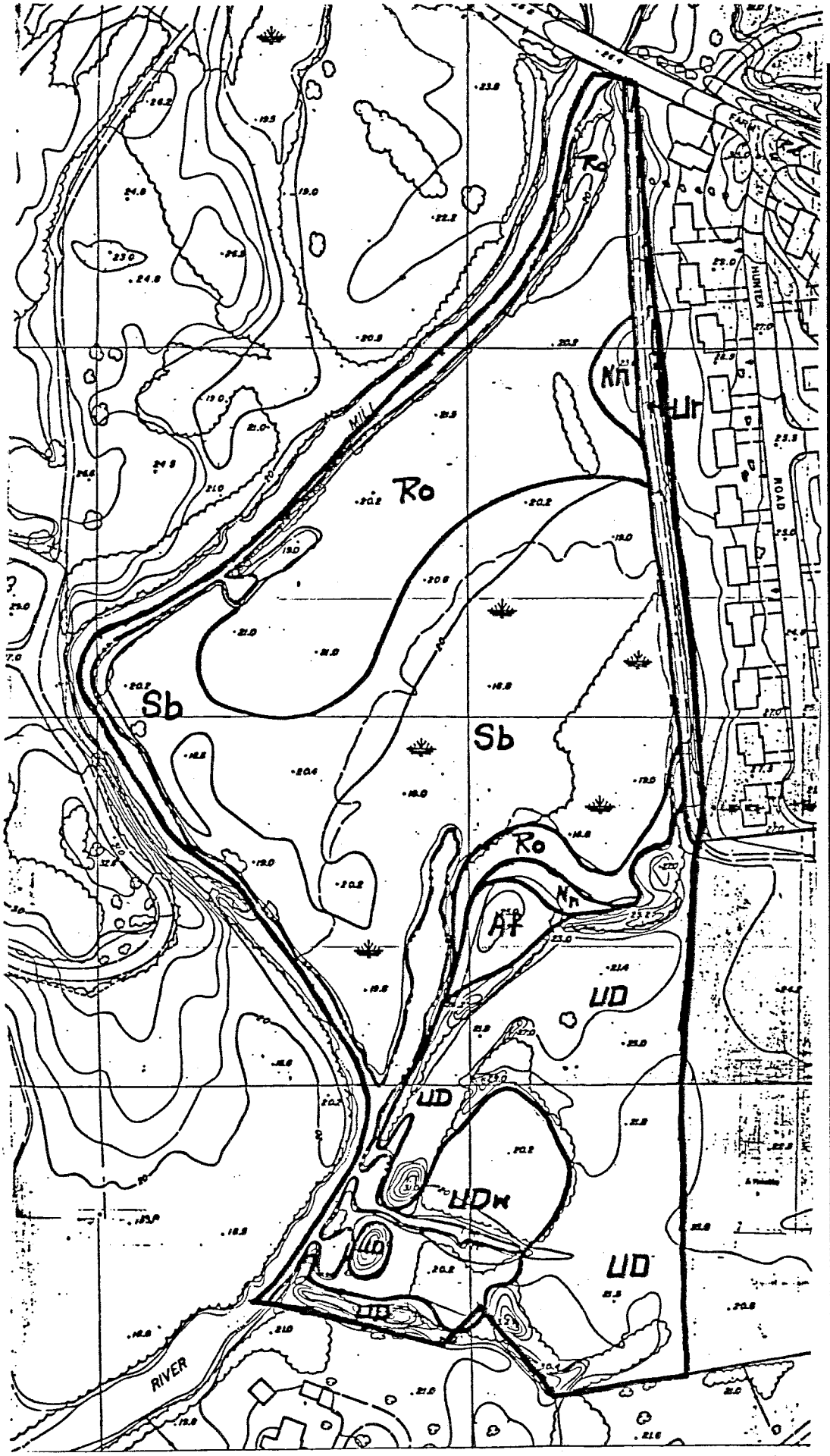
Figure 4



Soil Descriptions found in Appendix A

FAIRFIELD OPEN SPACES

Riverfield

Fairfield, Connecticut

Topography

King's Mark Environmental Review Team

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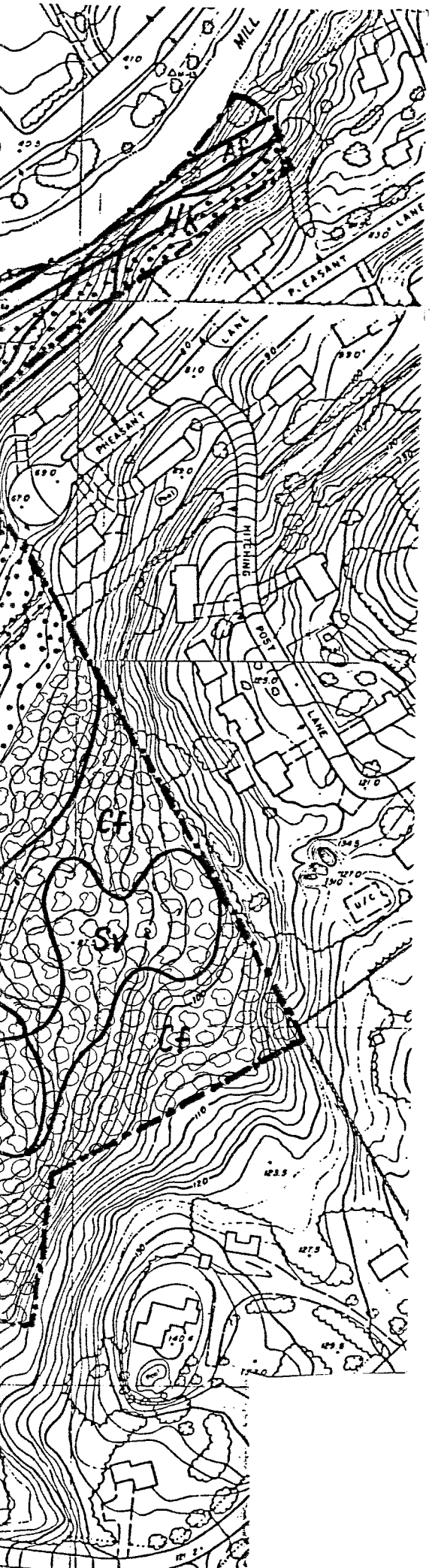

Figure 5

Alluvial Deposits

Till

Stratified Drift (Sand & Gravel)

Soil Descriptions found in Appendix A

FAIRFIELD OPEN SPACES
Springer Glen

Fairfield, Connecticut

Surficial Geology

King's Mark Environmental Review Team

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The western parts of the site are covered by glacial meltwater deposits (stratified drift) laid down in the Mill River Valley. Sand and gravel are the major components of stratified drift. Based on water wells located north and west of the site and along Mill River, the thickness of the sand and gravel in the area ranges from 31 to 67 feet.

Alluvial soils parallel the Mill River on the Springer Glen site. These materials, which are post-glacial, consist of gravel, sand and silt containing variable amounts of organic material. In general, these deposits are 10 feet thick or less and are underlain by glacial meltwater deposits described earlier. The areas covered by alluvium are subject to flooding.

Bedrock does not appear to be exposed on the site. According to the Bedrock Geological Map of Connecticut (Rodgers, 1985), bedrock underlying the site is classified as the Trap Falls Formation (see Figure 6). It is described as a gray to silvery, partly rusty-weathering, medium grained schist.

The geology of the Springer Glen site would pose no difficult obstacles for most recreational uses. The low-lying area in the western parts would be prone to flooding during wet periods and, therefore, have limited use during the wet season and following rainy periods. Slope would also be a limitation in the steeper areas. It would seem favorable to make a connection between Springer Glen and the Town owned park on the other side of the River. Perhaps a temporary bridge could be used to connect these two open space areas.

Drake Lane

Bedrock underlying the eastern section of the Drake Lane site is described as the Trap Falls Formation (see Figure 7). It is the same rock type underlying the Springer Glen site. Bedrock under the western section is describes as the Beardsley Member of Harrison Gneiss, a gray to dark-gray, medium grained, lineated gneiss. The exact depth to the bedrock surface is unknown, but it is probably in the 30-60 foot range.

Overlying bedrock on the site are well sorted to poorly sorted sand, gravel and silt (see Figure 8). These materials were deposited by meltwater streams flowing from wasting masses of glacial ice in the Mill River Valley.

The Mill River has deposited alluvial materials on top of the sands and gravels along the river's edge. Alluvium consists of gravel, sand and silt which may contain variable amounts of organic nature. The areas covered by alluvium are subject to inundation during certain storm events. As such, these areas would have limited use for most recreational purposes during the wet time of the year.

The geology of the upland sections of the parcel, which are covered by sandy, gravelly deposits, should pose no major problems for recreational development. The size of the parcel and limited upland area (dry land) will be the major hindrance. Nevertheless, the sites accessibility to the river and its aesthetic setting make the parcel an attractive open space land.

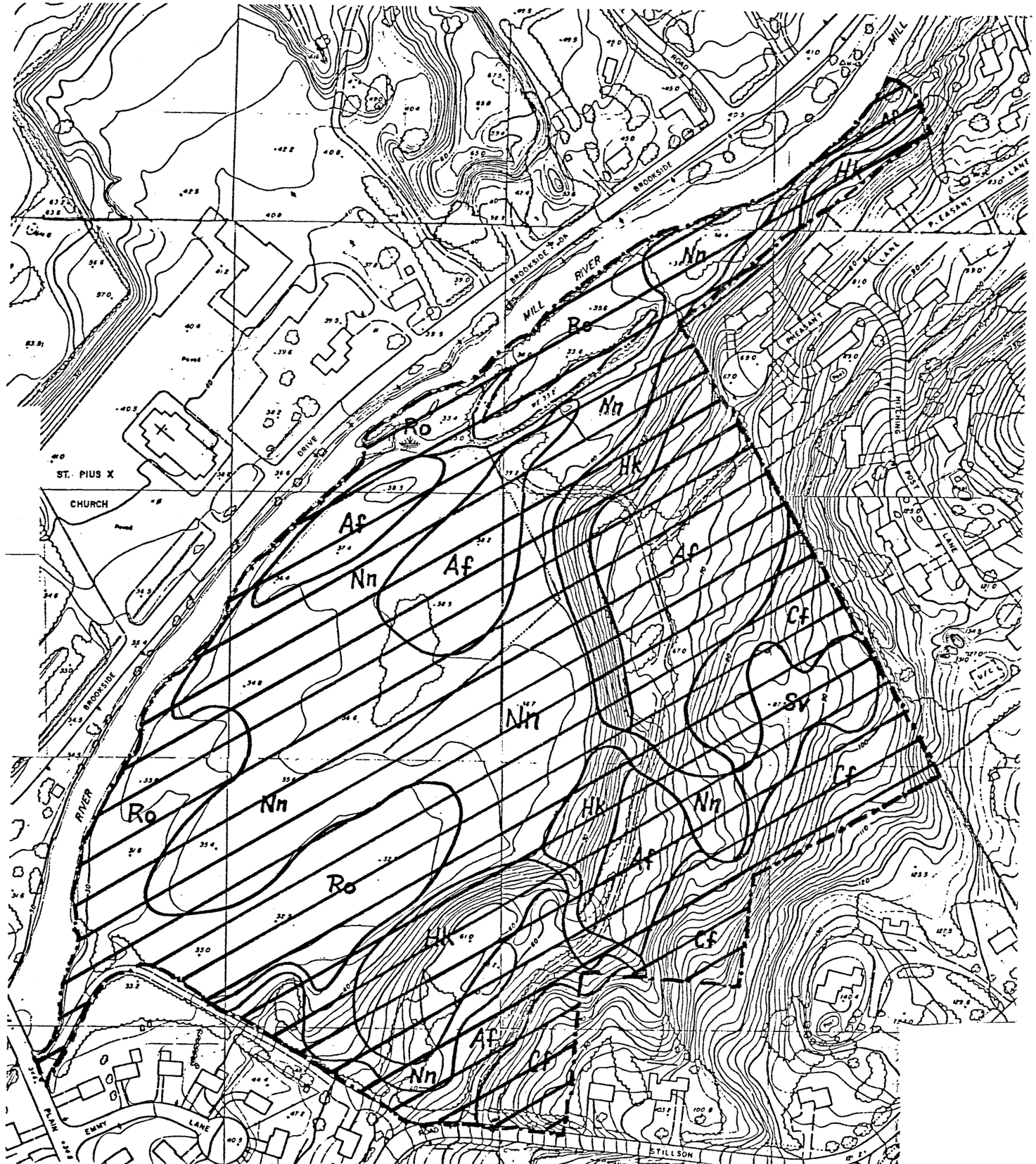
Millspaugh

The Millspaugh site also is underlain by the Traps Falls Formation (see Figure 7). Based on an abandoned Bridgeport Hydraulic Company (BHC) test well just north of the northern tract, depth to bedrock is 49 feet.

Glacial sands and gravels cover bedrock at both Millspaugh sites (see Figure 8). Except for narrow strip of upland area at the eastern edge of the northern tract, the sands and gravels that overlie bedrock on the Millspaugh site have been covered by alluvial deposits.

The major geologic limitation of the Millspaugh site is the widespread presence of floodplains. Because most of the Millspaugh site will be subject to flooding, it will have limited value for recreational development, other than providing access for water related uses to the river.

Figure 6



Trap Falls Formation

Soil Descriptions found in Appendix A

FAIRFIELD OPEN SPACES
Springer Glen

Fairfield, Connecticut

Bedrock Geology

King's Mark Environmental Review Team

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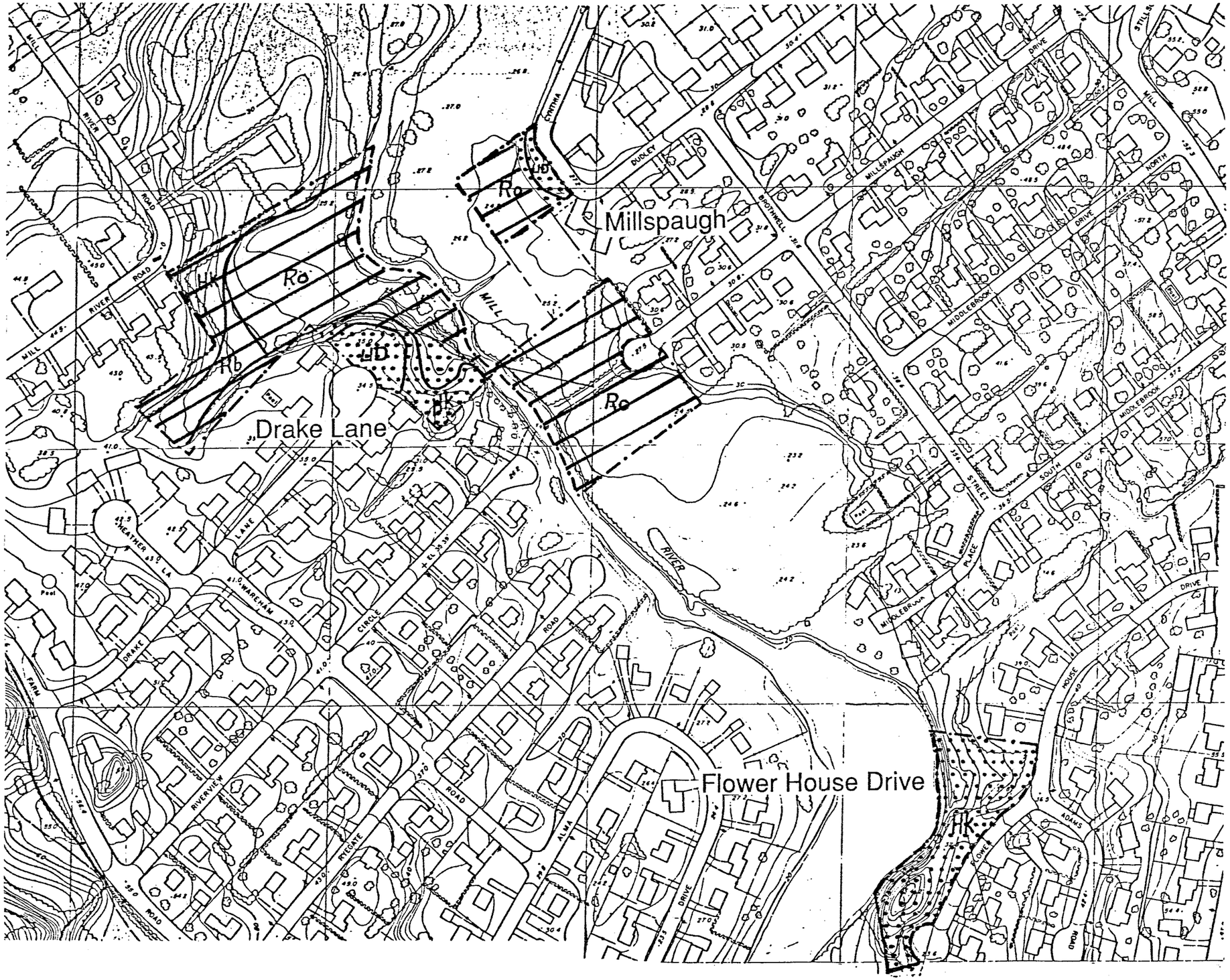
Figure 8



Alluvial Deposits

Stratified Drift (Sand & Gravel)

Soil Descriptions found in Appendix A

FAIRFIELD OPEN SPACES

Millspaugh, Drake Lane, Flower House Drive

Fairfield, Connecticut

Surficial Geology

King's Mark Environmental Review Team

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Flower House Drive

Bedrock underlying the Flower House Drive site is identified as Pumpkin Ground Member of the Harrison Gneiss (see Figure 7). It is described as a gray to spotted, medium to coarse grained, foliated gneiss. Depth to the bedrock surface on the site probably ranges between 30 and 60 feet.

The entire site is covered by deposits of sand and gravel (see Figure 8). The texture of the material becomes finer grained with depth. These deposits were laid down by meltwater streams emanating from glacial ice.

The major limitations of this site are the very steep slopes leading to the river's edge on the west side. The presence of these slopes makes access to the river very difficult and the potential for erosion from foot traffic high. Otherwise, the geology of the site should pose little problems on this small parcel. It seems likely it would be best suited for passive recreational development (i.e., picnicking, hiking and providing access to the river).

Riverfield

Bedrock underlying the Riverfield site is identified as Beardsley Member of Harrison Gneiss and Pumpkin Ground Member of the Harrison Gneiss (see Figure 9). Based on test wells and borings in the area, depth to the bedrock surface ranges between 44 feet and 62 feet. Except for a small upland area of the site at the southern limits, which comprises sand and gravel deposits the remainder of the site lies within the Mill River floodplain (see Figure 10). Alluvial deposits, consisting of gravel, sand and silt containing variable amounts of organic matter, comprise these post-glacial sediments. They are probably 10 feet thick or less in most places and are underlain by sand and gravel deposits ranging between 40 and 60 feet thick. The sand and gravel deposits covering the site contain as much as 50 feet of interbedded gravel and sand.

The major geologic limitation of the site for recreational development include the high percentage of alluvial soils, which are subject to flooding. Because of the site's close proximity to Riverfield School, it seems likely that the presence of floodplains/wetlands on the site have a high scientific and educational potential. In addition, recreational uses such as fishing, hiking or picnicking appear to be the site's greatest potential.

HYDROLOGY

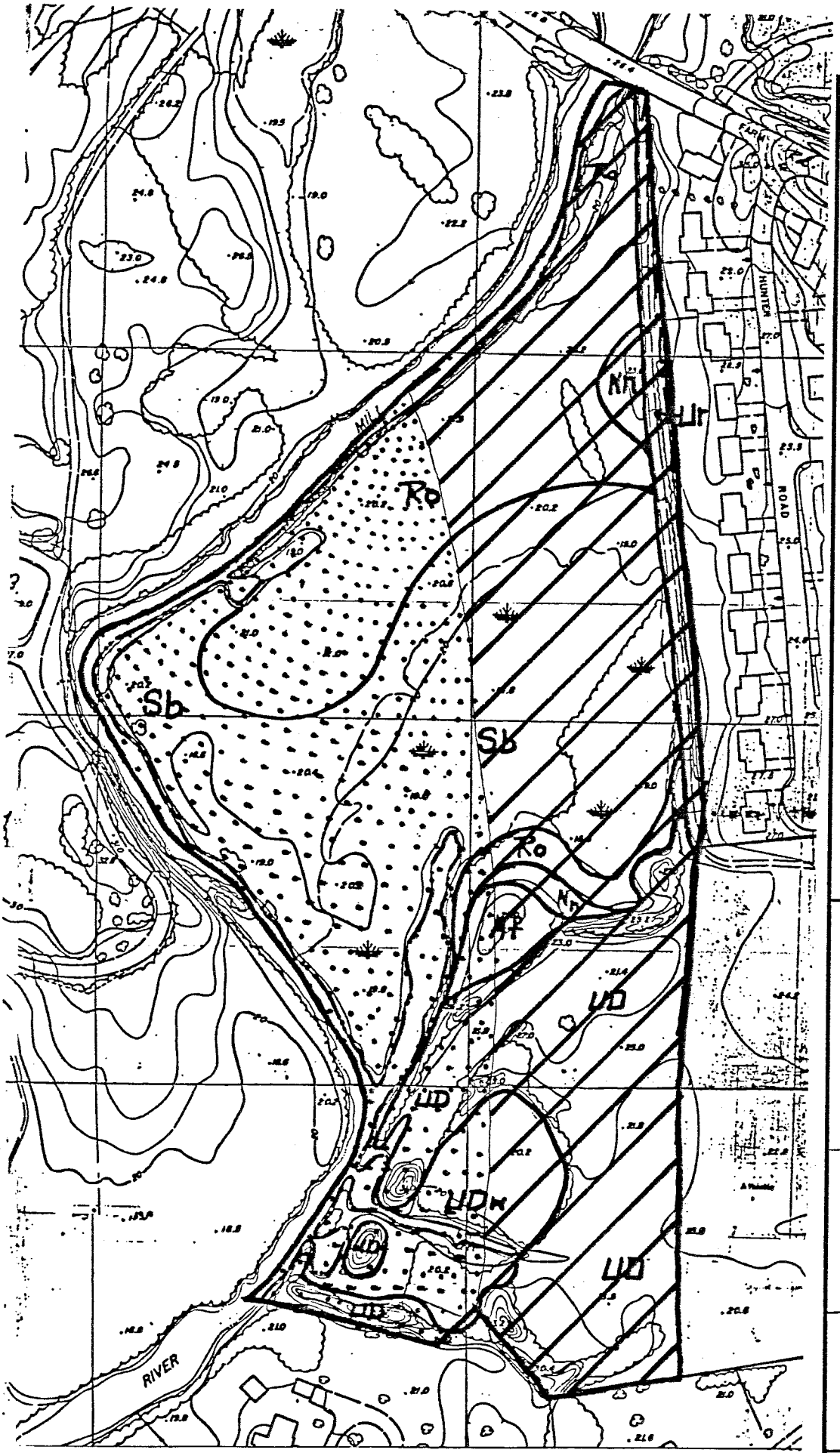
Springer Glen

The northwest boundary of the Springer Glen site is the Mill River. Surface and subsurface flow is generally in a northwesterly direction towards the river. From the outlet of Swamp Mortar Reservoir, which is about 2,000 feet north of Springer Glen, the Mill River drains an area of 26.5 square miles or about 17,000 acres.

The principal wetland area, based on soil mapping data, is in the southern parts. The other regulated areas include the alluvial soils that parallel Mill River. These areas have hydrological values such as runoff retention, sediment storage and flood storage capabilities. They also have important ecologic values.

The sand and gravel deposits in the western half of the site may have potential for yielding large volumes of water to individual wells. The potential of the deposits for yielding large volumes of water depend on several hydrogeological factors such as the texture and saturated thickness of the sand and gravel and proximity to major streamcourses. Hydrogeologic testing of the materials, which includes test wells, are needed to determine the aquifer potential of the site.

Figure 9



Beardsley Member of Harrison Gneiss

Pumpkin Ground Member of Harrison Gneiss

Soil Descriptions found in Appendix A

FAIRFIELD OPEN SPACES

Riverfield

Fairfield, Connecticut

Bedrock Geology

King's Mark Environmental Review Team

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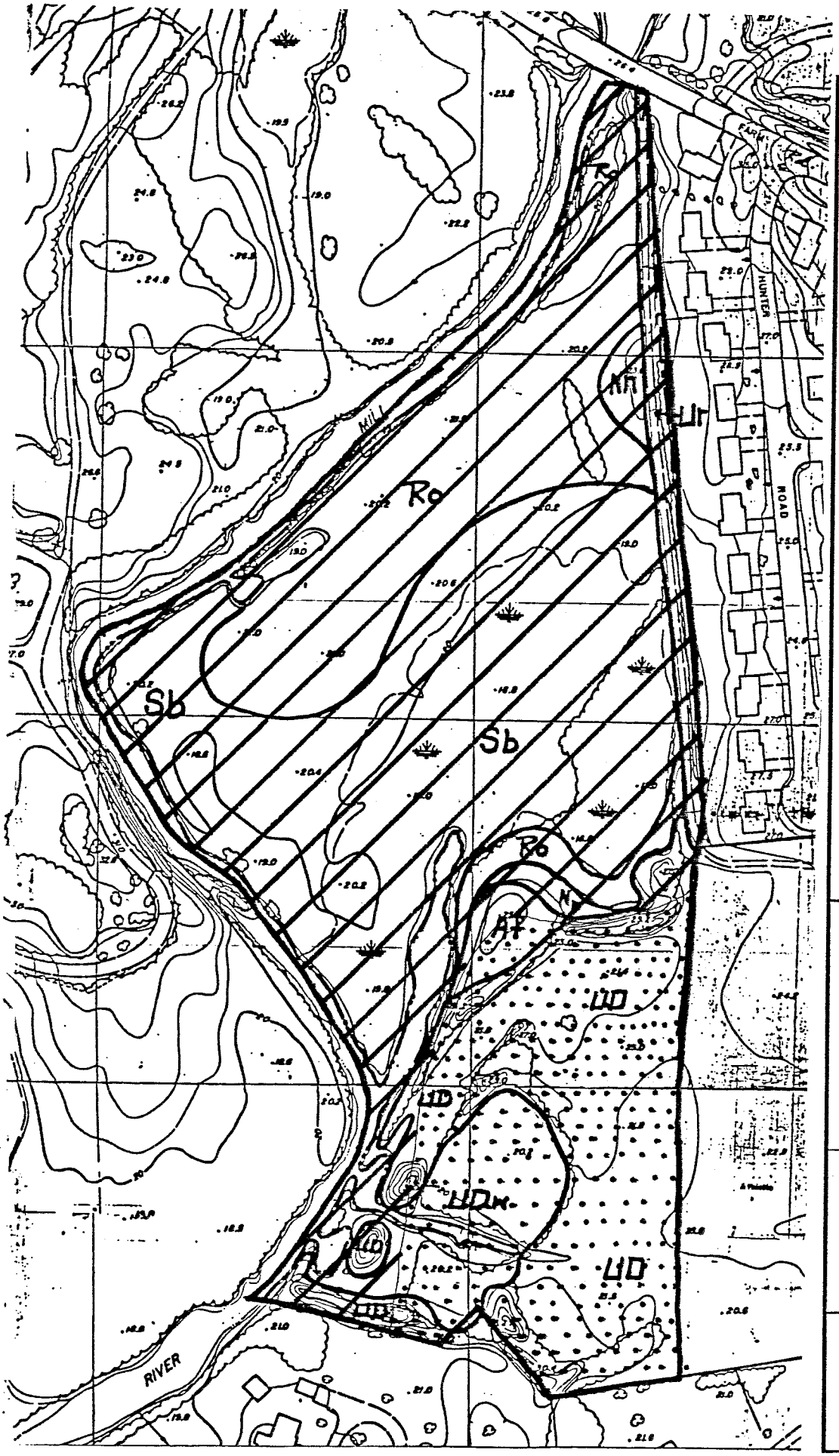
Figure 10



Alluvial Deposits

Stratified Drift (Sand & Gravel)

Soil Descriptions found in Appendix A

FAIRFIELD OPEN SPACES

Riverfield

Fairfield, Connecticut

Surficial Geology

King's Mark Environmental Review Team

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The underlying bedrock is capable of yielding small (3-5 gallons) yields to individual wells. Groundwater beneath the site is classified by the Department of Environmental Protection (DEP) as GA. This means it is presumed suitable for direct human consumption. Surface water quality along the section of Mill River that borders the site is Class A. This means that its character is uniformly excellent and is suitable for drinking water supply and bathing. Discharge of pollutants to the river or any tributaries is subject to restrictions by the DEP.

The natural quality of water from bedrock wells will probably be mineralized with elevated levels of iron and/or manganese. As such, filtration may be required to remove these mineral constituents from the water.

According to the Flood Insurance Study* for Fairfield, the northwest portion of the site lies within the floodway, and the 100-year and 500-year flood boundary for Mill River. A 100-year flood is a flood with a 1 chance in 100 or 1% chance that it will happen in any year. A 500-year flood has 1 chance in 500 or 0.2% chance of happening in a given year. This does not mean that a flood of this size will occur only once in 100 or 500 years. The probability of occurrence remains the same each year regardless of what happened the year before.

Drake Lane

The Drake Lane site is located entirely in the Mill River drainage area. In general, precipitation falling on the site is quickly absorbed by the permeable sands and gravel covering the parcel. As groundwater, it percolates downward to the water table and then is pulled by the force of gravity to the Mill River.

*Flood Insurance Rate Map for the Town of Fairfield prepared by the Federal Emergency Management Agency (FEMA), February 1978.

According to the Water Quality Classification Map of Connecticut, groundwater quality (GA) and surface water quality (A) for Mill River is good. Any recreational development that takes place on the parcel should be consistent with the existing water quality conditions.

The sand and gravel deposits covering the site would be as favorable for groundwater development as the sand and gravel deposits covering the Springer Glen parcel. A hydrogeologic study, which includes test well(s), would be required to determine their exact potential.

The FEMA maps for Fairfield indicate that the eastern, central and western portions of the site lies within the floodway, 100-year and 500-year flood zone of Mill River, respectively.

Millspaugh

The entire Millspaugh site lies within the Mill River drainage area. A stormwater pipe for Millspaugh Drive outlets onto the southern tract tens of feet from the river. It appears road sand is accumulating at the outlet. Every effort should be made to protect Mill River from road sand and debris that collects in the storm water system.

The BHC had a test well north of the northern tract. The gravel packed well, which extended to 49 feet below ground surface, was pump tested at a withdrawl rate of 600 gallons per minute. The well has since been destroyed.

The FEMA for Fairfield indicates that the floodway fringe and 100-year flood boundary encompasses the site.

Flower House Drive

The Flower House Drive site lies entirely within the Mill River drainage area. Depending on the saturated thickness and texture of sand and gravel covering the site, as well as other hydrogeologic factors, the deposits may have potential for yielding relatively large volume of groundwater to

individual wells. Hydrogeologic data for the site is incomplete, and verification requires further investigation. According to DEP, groundwater in the area is classified as GA.

Riverfield

The entire Riverfield site lies within the drainage area of Mill River. Surface and subsurface water on the site moves towards the river. The preservation of the site (particularly the floodplain) as a natural area will be beneficial to water quality and control of flood waters to downstream areas.

Depending upon hydrogeologic factors such as saturated thickness, texture and hydraulic conductivity the sand and gravel deposits may be a valuable groundwater resource, capable of affording high yields to individual wells. Further testing would be necessary in order to confirm the aquifer potential of the deposits. The underlying bedrock would also be suitable as a water source. Bedrock wells generally produce only small to moderate yields, but these yields are usually reliable.

The FEMA for Fairfield indicates that most of the site lies with the Mill River floodway and 100-year flood boundary. The eastern limit of the site lies within the 500-year flood zone.

WATER QUALITY

Existing Water Quality Information

The water quality in the Mill River is Class A from the headwaters to the upper edge of the tidal influence, where it becomes Class B/A. Historically the Mill River has experienced water quality problems in the vicinity of Swamp Mortar Reservoir from failing septic systems near the river. Apparently these problems have been resolved with the installation of sewers in the area. There

also have been sediment contamination problems further downstream (near Route 95) associated with industrial discharge. No routine water chemistry data on the Mill River is available within the DEP Water Compliance Unit, but the river is expected to be effected by urban runoff.

Environmental and Ecological Value of the Mill River

While the Mill River is undoubtedly impacted by urban runoff, it still provides water that is uncontaminated by sewage treatment plants or industrial process effluents. Effects of urbanization and runoff (i.e., channelization, loss of cover, increased metals concentrations, salt and siltation) have degraded the natural conditions of the river. Despite this degradation, the Mill River still appears to exhibit overall good water quality. However, urbanization will continue to threaten the river's water quality. Open space areas such as these provide valuable relief to the river from the surrounding impacts.

Streamflow Characteristics of the Mill River

The water level of the Mill River appears to fluctuate dramatically with the seasons, the summer flows being very low. Water depths for many of the areas observed are only 6-12 inches deep. A couple areas of the river are backed up by small, informal dams or constrictions due to bridges. These areas are characterized by deeper, slower moving water and are found to have cloudy water and abundant macrophyte (aquatic & emergent) growth.

Sedimentation and Erosion

In general, the observed areas do not have obvious problems with erosion and sedimentation. The Flower House site has very steep banks and has the potential to contribute substantial erosional runoff to the Mill River. The Drake Lane parcel has streambanks that were undercut by the river, demonstrating the power and height of the river during high flows.

Erosion and resulting sedimentation of soil particles can add substantial amounts of nutrients, especially phosphorus, to a river. Other sources of phosphorus include failing and non-failing septic systems, lawn and garden fertilizers and vegetation disposal sites. Maintaining a healthy, natural zone of vegetation growth along the stream is important in minimizing streambank erosion and minimizing adverse effects on the water quality.

River Management Alternatives

The five open space areas all border on the Mill River. While not comprising a large percentage of the total land along the river, they are important to this urbanized river because they have remained natural areas.

These areas provide the river with some relief from urban effects and help maintain clean, Class A water in this section of the Mill River. As development pressure in the Fairfield area increases, so does the value of these areas as open space.

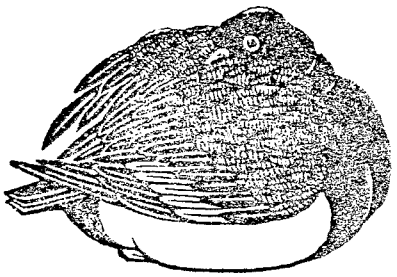
The protection of the Mill River and the existing streambank should be a high priority when considering any additional uses for these properties. The low summer flow conditions make the river of limited value as a recreational source (i.e., swimming). The only area that appears to have enough river width and depth to consider swimming was Flower House Drive parcel. However, this site has by far the steepest slopes and aesthetically poorest water quality and appears to have a high potential for erosion and sedimentation problems.

It is obvious that Springer Glen has the biggest potential for use and is currently being managed as a wildlife area with several walking trails. While this area appears to be well suited for this type of use, it does not appear that the Mill River along Springer Glen is well suited for additional water activities. The river is relatively narrow and shallow in this area and

appears to provide only limited potential for recreational uses (i.e., fishing, swimming, boating). Protection of the existing streambank should be a priority. Additional activities in this area should not promote river use or significantly increase access to the river along Springer Glen.

In general, the other three areas provide either limited access or potential for river activities and would also benefit from limited river use. Erosion and sedimentation is a concern for all five of the areas and should be addressed if any physical changes are made at these sites. Additional information concerning erosion and sediment control can be obtained from the local Soil and Water Conservation District Office.

BIOLOGICAL RESOURCES



No significant insect or disease infestations were observed during the field review. Forest fire danger seems to be minimal because the Mill River and the many moist, lowland areas serve as natural firebreaks.

Forest Management Alternatives

Springer Glen has the best potential for forest management because of its larger size and drier soils. There is a great deal of firewood which could be obtained by cutting out the "weed" trees (those with poor form, insect or disease problems or low commercial value) to give the better quality trees (the crop trees) more room to grow. A technique, called the "crop tree selection method," could be used. In the woodlot, crop trees are selected, roughly 20 feet apart. Trees too close to the crop trees, which compete for sunlight and water, are removed. This method results in a forest consisting of 100 quality trees per acre with enough space to grow vigorously. As the trees grow bigger, this process would be repeated every 10-20 years.

A cordwood cutting program, similar to the one conducted by the Bureau of Forestry on state lands, could be instituted. Trees would be marked for removal, and permits granted or sold to residents to cut a specified amount of wood. The Bureau of Forestry can assist in marking the proper trees for removal.

Many sites in Springer Glen are suitable for planting black walnut trees. When these trees mature, they will produce food for wildlife and, if pruned properly, could also be valuable for lumber. The Bureau of Forestry sells black walnut seedlings at a nominal cost.

The dead and dying red cedars can be salvaged for fence posts. Cedars with healthy crowns should be released because they are highly beneficial to songbirds.

Figure 11

Wildlife Opening

3 Stand Number

Soil Descriptions found in Appendix A

FAIRFIELD OPEN SPACES
Springer Glen

Fairfield, Connecticut

Forest Stands

King's Mark Environmental Review Team

0 200

In an effort to increase recreation and help reduce the growth of the deer herd in the area, the Commission could consider allowing hunting (possibly archery hunting) on some of the larger tracts of land where it is deemed compatible with other recreation taking place there.

Springer Glen: This tract is the largest of the open spaces reviewed. Because of its large size, it can offer habitat to some species of wildlife which require a larger area of habitat in which to live.

In addition to the openings currently being created in the red maple stand there area several other recommendations that could be carried out on the site to help maintain and enhance the wildlife habitat there.

1) Roadside edges could be daylighted. That is, trees and brush could be cut back about 10 to 20 feet alongside the road edge to create varying heights of vegetation. The shortest vegetation at the roadside edge would be followed by a shrub zone on up to the sapling size trees. This creates an area of abundant food and cover for wildlife.

2) Continue to maintain the open field area by mowing 1/2 alternately every 2 to 5 years. This will help maintain the area in a grassy herbaceous state, highly useful to wildlife.

3) Create some additional small openings in the forested areas. This will increase habitat diversity and help make the site more attractive to a variety of wildlife.

4) As suggested, an impoundment could be created where the seasonal wet depression is, if the water supply were sufficient and the topography would allow deep enough water to permit some water level manipulation. By regulating the water level, certain types of aquatic vegetation could be encouraged while discouraging other types of vegetation less favorable for wildlife food and cover requirements.

   To increase the value of the pond for wildlife it should have a variety of vegetation, submergent and emergent in the pond, with shrub and herbaceous plants around the edge. An island in the pond would help to increase the diversity of the pond and add cover and possibly a nesting area for birds or waterfowl.

   Creation of a pond for wildlife would add value to the site for wildlife, but the increased value would be limited due to the small size of the proposed pond/impoundment.

5) There is little that can be done to improve the wildlife habitat in the Riverside Park area because of the intense use it receives by people picnicking, fishing and walking. Many people feed the ducks. The feeding of migratory waterfowl is not advocated, because in the long run it is detrimental. It encourages wild ducks to become adapted and less wary of people, creating an artificial situation. The foods fed to ducks are usually nutritionally improper. Feeding ducks may even cause them to stay in an area that otherwise has unsuitable habitat or may cause them to stay after ice up in the fall. A group of ducks encouraged to stay in an area by feeding can help increase the eutrophication rate of a body of water.

6) Construction of an environmental education trail in this area is also a possibility.

Millspaugh: Much of this 5-acre tract is currently a thick growth of trees and shrubs. This site abuts the river and offers wildlife food and cover in close proximity to the river.

1) To encourage diversity in this small area, several small openings should be made in the thickest areas. This would remove some of the larger trees which are outcompeting the valuable shrubs which provide food and cover for wildlife. The increased sunlight would help to encourage the growth of shrubs and herbaceous plants in the openings.

Flower House Drive:

1) Further degradation of what habitat is available should be prevented by instituting measures to curb the erosion problems on the hill.

2) A buffer of vegetation along both sides of the river should be encouraged. Homeowners abutting the river should be encouraged to allow a buffer of vegetation to grow up 10 to 20 feet wide to enhance wildlife habitat. This will also help to discourage geese that might come up from the river to graze on residents lawns.

Riverfield: The Beals and Westover (1971) report contains a good description of the biological/vegetative resources and describes in detail the different habitats present and expected use by wildlife.

This area contains a good diversity of habitats including wetlands, forestland, old field and a boggy meadow area. The river running through the site adds to the value of the habitat for wildlife. Because of the diversity and wetlands present, this site offers valuable habitat for many birds, mammals, amphibians and reptiles.

1) Alternately mow 1/2 of the area called "boggy meadow" every 2 to 5 years, in the fall or early winter. This will serve to maintain the area in a grassy/herbaceous stage valuable to various types of wildlife.

2) As recommended in the report by Beals and Westover (1971), the two ponds could be connected to encourage wildlife travel and possibly lessen the stagnation of the water. Connection of the first pond to the river would be recommended, if the end result were at least as much, if not more, water in the two ponds. If water levels could fluctuate with spring floods it might also encourage more aquatic vegetation to grow along the edge of the pond, thus increasing the value of the pond for shorebirds and some waterfowl.

3) Construction of a trail through this site is a possibility. It is a highly diverse area and would therefore make for an interesting and educational trail.

4) Install a wood duck box for educational purposes. This site probably receives too much human use and disturbance and lacks deep enough water with the right type of cover to be good wood duck brood habitat. The box should be installed along the edge of the river, preferably in a pool where there is some shrubby cover nearby. The box should be installed away from the flow of walking traffic. In short, it should be placed where it can be seen but not touched, in order to serve as a possible place for a wood duck to nest and as an educational tool.

In a small but heavily developed and highly populated state like Connecticut, where available wildlife habitat continues to decline on a daily basis, it is critical to maintain and enhance existing habitat. Even though most of these tracts are small, they do represent wildlife habitat for a variety of species, and they also provide the opportunity for the residents of Fairfield to pursue wildlife based recreation.

FISHERIES RESOURCES

Site Description

The Mill River is the most salient aquatic feature of the Springer Glen, Drake Lane, Millspaugh, Flower House Drive and Riverfield Open Space Areas. According to the DEP, the Mill River has Class A surface waters. Designated

uses for Class A waters are: potential drinking water source; fish and wildlife habitat; recreational use; agricultural and industrial supply; and other legitimate uses.

The Mill River flows through an extensive urban area being buffered from development only in those sections held as open space. The stream flows through the open space parcels within wetland and upland hardwood vegetation. The stream averages approximately 25 feet in width and 2 to 3 feet in depth. The stream channel is characterized by riffle and moving pool over a substrate of cobble, coarse sand and sand/silt fines. Constrictions caused by bridge crossings at Duck Farm Road (Flower House Drive Open Space) and Burr Street (Springer Glen Open Space) have formed impoundments on the stream. At these points the depth of water and/or macrophytic growth provide for in-water fisheries habitat. In-stream riverine fisheries habitat throughout other reaches is composed of undercut banks, depth afforded by pools and a dense streambank canopy of woody shrubs. The riparian vegetation affords the stream cooling summertime shade.

Aquatic Resources

The Mill River is listed as a "Major Trout Stream" by the Connecticut Bureau of Fisheries. The river is annually stocked with trout. Because the stream is located within a large population area and is easily accessible to anglers, it receives extremely heavy sportfishing pressure. Stocking rates are adjusted to the fishing pressure demand with the river being yearly allocated a total of 8,380 trout. A combination of brook, brown and rainbow trout are released by one pre-season and three in-season plantings.

In addition to the hatchery trout the following fish species are expected to reside in the Mill River: blacknose dace, longnose dace, common shiner, fallfish, creek chub, tessellated darter, white sucker and American eel.

Information provided by the Town of Fairfield indicated the presence of the following stream dwelling fish species: bluntnose minnow, fathead minnow, bridled shiner, ninespine stickleback and threespine stickleback. These species were not observed at the field review.

The impounded section of the Mill River in the Flower House Drive Open Space is characteristic of a warmwater pond environment. Fish species associated with this type of habitat include: largemouth bass, bluegill sunfish, common sunfish, red breast sunfish, chain pickerel, golden shiner, white sucker, brown bullhead and American eel. Information provided by the Town of Fairfield (see Appendix C) indicated the presence of the following warmwater pond fish species: smallmouth bass, black crappie, yellow perch and carp. As no fish species were observed at the field review, further investigation is required to determine the exact fishery species and the numbers of relative abundance.

Hatchery trout do have the ability to survive angling and remain in the stream throughout the year as was evident by the visual observation of adult brown trout at the field review. It is possible that the adult trout have the capability to spawn within suitable in-stream habitats. Further investigation is required to determine spawning occurrence and spawning success.

Impacts

Because the sites are to remain as open space, the Mill River will be unchanged. However the surrounding urban development is expected to cause the following impacts:

1) During construction soil erosion and sedimentation of the watercourse through increased surface runoff from unvegetated zones is, as research has shown, the major cause of stream degradation. There exists a great potential for increased surface runoff given the drainage patterns of this site.

2) Surface drainage from roads, parking lots and driveways may allow road salts, sands and oils to enter the Mill River. This will result in water quality and stream habitat degradation.

3) Runoff and leaching of nutrients from lawn fertilizers will stimulate excessive aquatic plant growth. Introduction of lawn chemicals may result in "fish kills" and water quality degradation.

4) Any water quality problems and degradation within this area of the Mill River due to increased sedimentation, road and stormwater drainage and lawn chemicals and fertilizers will eventually be observed in downstream areas.

Recommendations

Impacts to the Mill River obviously will be negligible through the open space parcels. Acquiring additional land to connect all open space parcels along the Mill River will form a protective corridor along the stream.

The following measures should be observed in areas currently developed or those slated for development:

1) Maintain at the minimum a 100 foot open space buffer zone along both river shorelines. No construction or alteration of riparian habitat should take place within this zone. The buffer zone should be widened in areas of steeper terrain or otherwise deemed critical.

2) A comprehensive erosion and sedimentation control plan should be submitted and installed prior to the start of construction and maintained through all construction phases. Mitigative measures should include, but not be limited to, detention basins, catch basins, silt fences and hay bales. Surface runoff must not be allowed to directly enter the Mill River. Once construction is initiated, officials from the Town of Fairfield should regularly police any development to ensure that all erosion and sedimentation controls are properly emplaced and regularly maintained.

   At several locations recreational access to the stream has caused streambank erosion. These areas need to be protected from erosion caused by excessive usage. Additional access areas (i.e., trails) should be carefully planned to avoid locations susceptible to erosion.

3) An effective stormwater management plan should be designed and implemented. Stormwaters should not directly enter the Mill River. Several stormdrains from roadways enter the stream in open space parcels. To adequately protect the stream water quality, the Town of Fairfield should construct silt detention basins at the culvert outlets to entrap silt fines and other contaminants, allowing only filtered stormwater to enter the Mill River.

4) Limit liming, fertilizing and the introduction of chemicals to lawns developed close to the river. This will help abate the amount of additional nutrients entering into the Mill River. At several locations homeowners have used the open space land as deposit areas for lawn maintenance debris (i.e., grass clippings, tree/shrub trimmings, road sand, soil). Deposit areas in some instances have been extremely close to the stream. The decay or direct entry of this debris into the Mill River will degrade water quality and in-stream habitats.

5) Shallow riffle areas of the Mill River lack sufficient in-stream cover for stream dwelling fish species. However, because most of these areas are not readily accessible to machinery, the installation of suitable cover (i.e., random boulders) would not be feasible. Consideration may be given to the installation of in-stream structures made from the logs of standing timber within the immediate area, excluding the timber found along the streambanks. These structures can include log crib deflectors and/or logs secured to the stream-bed. The DEP Bureau of Fisheries should be contacted for assistance in the selection and placement of in-stream structures.

THREATENED AND ENDANGERED PLANT AND ANIMAL SPECIES

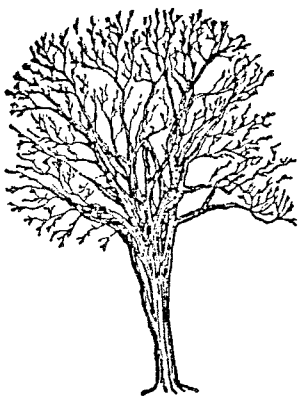
According to the Natural Diversity Data Base maps and file, there are no Federal Endangered and Threatened Species or Connecticut "Species of Special Concern" that occur within the proposed project areas.

Records indicate that, historically, a population of Podostemum ceratophyllum, Riverweed, was known to occur in the Mill River. There is no additional updated information regarding the current status of this population.

Natural Diversity Data Base information includes all information regarding critical biologic resources available to us at the time of the request. This information is a compilation of data collected over the years by the Natural Resources Center's Geological and Natural History Survey and cooperating units of DEP, private conservation groups and the scientific community. This information is not necessarily the result of comprehensive or on-site field investigations. Consultation with the Data Base should not be substituted for

on-site surveys required for environmental assessments. Current researce projects and new contributors continue to identify additional populations of species and locations of habitats of concern, as well as enhance existing data. Such new information is incorporated into the Data Base as it becomes available.

LAND USE AND PLANNING CONSIDERATIONS



PLANNING CONSIDERATIONS

Introduction

The Town of Fairfield owns five open space tracts on the Mill River between Brookside Drive and Perry's Mill Pond. All of these sites contain wetlands and floodplains. The Town is seeking advice on how to improve management of vegetation, wildlife, natural resources and recreation. The tracts support passive individual and unorganized recreation including fishing, picnicking, birdwatching and hiking.

All sites touch fully developed single-family residential areas. Lots range from about 1/4-acre up to two acres. These sites are also adjacent to other wetlands and other open space areas. Most of these sites are covered with trees and other vegetation which provide homes for wildlife. While smaller tracts may be left best in their natural state, the larger ones have recreational potential.

Issues

Linkage: The Town is very interested in linking the tracts by a river path. The parcels are between 800 feet and 1,750 feet apart. There appear to be at least two opportunities to move in this direction. One is to acquire a small wetlands parcel being offered to the Town. This is between the two portions of the Millspaugh site. Another is to negotiate with the BHC for an easement on property extending north of Millspaugh.

Beyond this, the Town may wish to explore negotiating easements with those who own riverfront property. The Town could offer to maintain the path and a vegetative buffer. This may be difficult because of owner resistance and cost. The alternative of Town acquisition of property might be hard to justify in terms of cost.

Access: Millspaugh, Drake Lane and Flower House Drive have no parking areas and would be best suited either for neighborhood use and/or allowed to remain in their natural state. Springer Glen, the largest parcel, has limited parking near access points. This lack of parking could help protect the area. The parking lots at Riverfield School provide access to the Riverfield tract which has an unusually diverse plant and animal habitat. Parking areas and entry points should be marked with signs.

Trails: Trails are more appropriate on the larger sites. Clear marking will define the walking areas for those who enter and will protect the wildlife and vegetation. There should be signs or other markings at the entry points and along the paths. The paths may be covered with gravel or left as a dirt area.

The sites have some maintained paths, some unmaintained paths and former roads. Those which are to be used should be defined, cleared and maintained. Others should be subject to a program of overgrowth. Trails on the river should be far enough from the edge to protect from erosion.

Activities: There is a potential for a variety of limited activities. The most popular ones might be hiking, birdwatching and plant study. To promote this, the Town may wish to print trail maps showing natural features. Trail maps should list plants, birds and other animals to be found. Trees could be marked with signs. Teachers could take students there to learn about nature.

Another popular activity might be fishing. This would be especially popular in the spring when the river is high and is stocked with fish. There are some bigger pools in some areas. One approach to management may be to designate fishing spots along a path on the waters edge.

Picnicking is another potential use for designated areas. The Town may wish to supply benches. This should be limited because of potential litter and maintenance problems.

Maintenance and Dumping: There is evidence of dumping grass, leaves and non-biodegradable material. This should be cleaned up. Areas developed for specific uses should be maintained. Encouraging more use may discourage dumping.

Tracts

Springer Glen: The site is 36.4 acres. It is surrounded by residential development, except for a narrow park across Mill River to the northwest. The site slopes down steeply from the east to a wide plain along the river. It has a diverse habitat. The Town has cut down some trees and cleared some areas to promote a diversity of plants and grasses.

Access points are near the southward bend of Stillson Road and at the Mill Plain Road bridge. Both are near former roads. There is space for parking off Stillson Road and a small parking lot across the Mill Plain Road bridge. This should limit the access of people not living nearby. The former road extends along the southern edge of the site and turns north at Stillson Road along the lower but dry part of the slope. Some of the cleared areas are along this former roadway. This winding path should be developed and maintained. It should be extended to the river and then south along the river, back to the bridge.

There are opportunities for hiking and nature education. There could be one picnic site where the forest was cleared and one possibly along the river. Also, there could be fishing points on the river. There may be some car-top boating potential when the water is higher and near the bridge.

Drake Lane-Millspaugh: Drake Lane and the two Millspaugh parcels are grouped together because they are very close to each other. These tracts are about 1,750 feet downstream from Springer Glen and are relatively small. Drake Lane is 3.6 acres and the two Millspaugh parcels are approximately 5.0 acres.

All are surrounded by 1/4 acre residential lots or wetlands. Drake Lane is on the west side of the river, across 200 feet of BHC owned wetland. Millspaugh is on the east side. The two Millspaugh pieces are connected by a parcel being offered to the Town. Also Millspaugh and Drake Lane connect corner to corner. There is no parking access for any of the areas.

There is a well trod unmaintained path from the end of Millspaugh Drive across a ford to private property at the end of Riverview Circle. Stepping stones across that ford should be removed to reduce the intrusion. They could be reset at the corner where Millspaugh and Drake Lane meet. Paths might be constructed to those points. Based on potential use and neighborhood privacy, it does not appear a bridge is warranted.

The trail from Millspaugh Drive should be retained. There is potential for another trail from Drake Lane north, down hill and through a heavily wooded area to the river. Both could be used for fishing and short walks.

Unless these sites are linked, they should be maintained as small conservation areas and residential buffers, overgrown to minimize human disturbance.

Flower House Drive: About 800 feet downstream from Millspaugh is the Flower House Drive site, about 2.0 acres in size. Flower House Drive has residences in three sides and the river on the fourth. There is no parking. This site is a residential buffer. Town policy is to "enhance wildlife and the aquatic ecosystems." There is a short trail on the ridge which has access from the cul-de-sac and from further up the road. It has two steep paths to the river which do not appear safe. Their use should be discouraged.

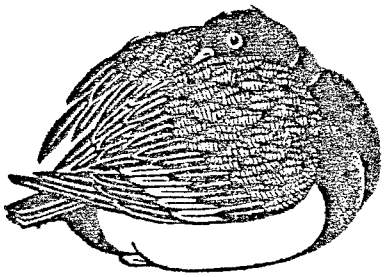
Riverfield: Another 1,000 feet downstream is Riverfield. The site is 18.6 acres. Land uses in the vicinity include single-family residences and Riverfield School to the east and south, and the river and the unused part of a cemetery to the west. The tract comes to a point at the northern end.

This site has access from the parking lot at the school and a smaller lot on Duck Farm Road near the northern point. There should be signs from these points to the site.

A narrow dirt road extends from Duck Farm Road along the eastern edge of the site to the school. There is an existing unmaintained path extending from this dirt road near Duck Farm Road south along the river. This path could be extended to the edge of the area formed by dumping and filling and then back east along the edge of the conservation area to the point where the dirt road enters the school to form a loop trail. There are existing trails opposite the school athletic field which could also be extended. Trails should be marked and maintained.

Because of its diverse plant and wildlife habitat and proximity to the school, it has become a site for educational field trips. This use could be enhanced for hikers with maps and guides to natural features. There are potential fishing spots along the river, particularly when the river is high and stocked. Limited picnic areas could be developed on the river and in the interior.

APPENDICES



Appendix A: Soil Descriptions

AfA—Agawam fine sandy loam, 0 to 3 percent slopes. This nearly level, well drained soil is on plains and terraces in stream valleys. The areas are irregular in shape and mostly range from 5 to 50 acres.

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.

Included with this soil in mapping are small areas of excessively drained Hinckley soils, somewhat excessively drained Merrimac soils, well drained Haven soils, and moderately well drained Ninigret soils. Included areas make up about 15 percent of this map unit.

The permeability of this Agawam soil is moderately rapid in the surface layer and subsoil and rapid in the substratum. Runoff is slow, and available water capacity is moderate. The soil dries out and warms up early in spring. It is very strongly acid to slightly acid.

Most areas of this soil are used for community and industrial development. Some areas are used for corn, vegetables, and nursery crops, and a few are wooded.

The rapid permeability of this soil causes a hazard of ground-water pollution in areas used for onsite septic systems. The soil is unstable and thus is limited for excavations. Quickly establishing plant cover, mulching, and using siltation basins help to reduce erosion and sedimentation during construction.

This soil is well suited to cultivated crops and trees. Minimum tillage and the use of cover crops help to control a slight erosion hazard in cultivated areas. Machine planting is practical in areas used for woodland.

The capability class is I.

AfB—Agawam fine sandy loam, 3 to 8 percent slopes. This gently sloping, well drained soil is on plains and terraces in stream valleys. The areas are mostly irregular in shape and range from 5 to 50 acres.

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.

Included with this soil in mapping are small areas of excessively drained Hinckley soils, somewhat excessively drained Merrimac soils, well drained Haven soils, and moderately well drained Ninigret soils. Included areas make up about 15 percent of this map unit.

The permeability of this Agawam soil is moderately rapid in the surface layer and subsoil and rapid in the substratum. Runoff is medium, and available water capacity is moderate. The soil dries out and warms up early in spring. It is very strongly acid to slightly acid.

Most areas of this soil are used for community and industrial development, and a few are used for corn, vegetables, and nursery crops (fig. 6). Some small scattered areas are wooded.

The rapid permeability of the soil causes a hazard of ground-water pollution in areas used for onsite septic systems. The soil is unstable and thus is limited for excavations. Quickly establishing plant cover, mulching, and using siltation basins help to control erosion and sedimentation during construction.

This soil is well suited to cultivated crops and trees. The hazard of erosion is moderate. Minimum tillage, stripcropping, and the use of cover crops help to control erosion and to maintain fertility. Machine planting is practical in areas used for woodland.

The capability subclass is IIe.

AfC—Agawam fine sandy loam, 8 to 15 percent slopes. This sloping, well drained soil is on terraces in stream valleys. The areas are mostly irregular in shape and range from 3 to 20 acres.

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.

Included with this soil in mapping are small areas of excessively drained Hinckley soils, somewhat excessively drained Merrimac soils, and well drained Haven soils. Included areas make up about 15 percent of this map unit.

The permeability of this Agawam soil is moderately rapid in the surface layer and subsoil and rapid in the substratum. Runoff is medium, and available water capacity is moderate. The soil dries out and warms up early in spring. It is very strongly acid to slightly acid.

Most areas of this soil are used for community development. A few areas are wooded, and a few are farmed.

Slope is the major limitation of this soil for community development. The rapid permeability of the soil causes a hazard of ground-water pollution in areas used for onsite septic systems. The soil is unstable and thus is limited for excavations. Quickly establishing plant cover, mulching, and using siltation basins help to control erosion and sedimentation during construction.

This soil is suitable for cultivated crops and trees. The hazard of erosion is severe; minimum tillage and the use of cover crops help to control erosion in cultivated areas. Machine planting is practical in areas used for trees.

The capability subclass is IIIe.

CfB—Charlton fine sandy loam, 3 to 8 percent slopes. This gently sloping, well drained soil is on hills and ridges. The areas are mostly irregular in shape and range from 4 to 100 acres.

Typically, the surface layer is very dark brown fine sandy loam 6 inches thick. The subsoil is strong brown and yellowish brown fine sandy loam 23 inches thick. The substratum is light olive brown gravelly sandy loam to a depth of 60 inches or more.

Included with this soil in mapping are small areas of somewhat excessively drained Hollis soils, well drained Paxton soils, and moderately well drained Sutton soils and small areas of soils with bedrock at a depth of 20 to 40 inches. Included areas make up about 15 percent of this map unit.

The permeability of this Charlton soil is moderate or moderately rapid. Runoff is medium, and available water capacity is moderate. The soil dries out and warms up early in spring. It is very strongly acid to medium acid.

Most areas of this soil have been cleared, and many are used for community development. Some areas are used for hay, corn for silage, pasture, vegetables, and woodland.

This soil is generally suitable for community development. Quickly establishing plant cover, mulching, and using siltation basins help to control erosion and sedimentation during construction.

The soil is well suited to cultivated crops and trees. The hazard of erosion is moderate. Minimum tillage, the use of cover crops, and stripcropping help to control erosion in cultivated areas. Machine planting is practical in wooded areas.

The capability subclass is IIe.

CfC—Charlton fine sandy loam, 8 to 15 percent slopes. This sloping, well drained soil is on hills and ridges. The areas are mostly irregular in shape and range from 4 to 100 acres.

Typically, the surface layer is very dark brown fine sandy loam 6 inches thick. The subsoil is strong brown and yellowish brown fine sandy loam 23 inches thick. The substratum is light olive brown gravelly sandy loam to a depth of 60 inches or more.

Included with this soil in mapping are small areas of somewhat excessively drained Hollis soils, well drained Paxton soils, and moderately well drained Sutton soils and small areas of soils with bedrock at a depth of 20 to 40 inches. Included areas make up about 15 percent of this map unit.

The permeability of this Charlton soil is moderate or moderately rapid. Runoff is rapid, and available water capacity is moderate. The soil dries out and warms up early in spring. It is very strongly acid to medium acid.

Most areas of this soil have been cleared. A few areas are used for community development, and a few others are used for hay, corn, pasture, vegetables, and woodland.

Slope is the main limitation of this soil for community development, especially in areas used for onsite septic systems. Such systems need careful design and installation to prevent effluent from seeping to the surface. Quickly establishing plant cover, mulching, and using siltation basins and diversions help to control erosion and sedimentation during construction.

This soil is suited to cultivated crops and trees. The hazard of erosion is severe. Minimum tillage, maintaining a permanent plant cover, and using cover crops help to control erosion in cultivated areas. Machine planting is practical in areas used for trees.

The capability subclass is IIIe.

CfD—Charlton fine sandy loam, 15 to 25 percent slopes. This moderately steep, well drained soil is on hills and ridges. The areas are mostly irregular in shape and range from 4 to 100 acres.

Typically, the surface layer is very dark brown fine sandy loam 6 inches thick. The subsoil is strong brown and yellowish brown fine sandy loam 23 inches thick. The substratum is light olive brown gravelly sandy loam to a depth of 60 inches or more.

Included with this soil in mapping are small areas of somewhat excessively drained Hollis soils and well drained Paxton soils and small areas of soils with bedrock at a depth of 20 to 40 inches. Included areas make up about 15 percent of this map unit.

The permeability of this Charlton soil is moderate or moderately rapid. Runoff is rapid, and available water capacity is moderate. The soil dries out and warms up early in spring. It is very strongly acid to medium acid.

Most areas of this soil are wooded. A few areas have been cleared and are used for community development or for hay or pasture.

Slope is the main limitation of this soil for community development, especially in areas used for onsite septic systems. Such systems require special design and installation to prevent effluent from seeping to the surface. Quickly establishing plant cover, mulching, and using siltation basins and diversions help to control erosion and sedimentation during construction.

Slope and a severe hazard of erosion make this soil poorly suited to cultivated crops. The soil is suitable for trees, however, and machine planting is practical. Minimum tillage, stripcropping, and the use of cover crops help to control erosion in cultivated areas.

The capability subclass is IVe.

HkB—Hinckley gravelly sandy loam, 3 to 8 percent slopes. This gently sloping, excessively drained soil is on terraces, kames, and eskers in stream valleys. The areas are irregular in shape and mostly range from 3 to 30 acres.

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 sand to a depth of 60 inches or more.

Included with this soil in mapping are small areas of somewhat excessively drained Merrimac soils and well drained Agawam and Haven soils. Included areas make up about 15 percent of this map unit.

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

Many areas of this soil are used for community and industrial development. Some scattered areas are used as a source of sand and gravel, and a few areas are used for corn, vegetables, and nursery crops.

The main limitations of this soil for community development are the very rapid permeability in the substratum and droughtiness. The permeability causes a hazard of ground-water pollution in areas used for onsite septic systems. Droughtiness makes watering necessary for lawns, gardens, and shrubs on this soil. The soil is unstable, thus limiting excavations. Quickly establishing plant cover, mulching, and using siltation basins help to control erosion and sedimentation during construction.

The soil is suitable for cultivated crops and trees, but droughtiness is a limitation for both uses. Minimum tillage and the use of cover crops help to control erosion in cultivated areas. Machine planting is practical in areas used for woodland.

The capability subclass is IIIs.

HkC—Hinckley gravelly sandy loam, 8 to 15 percent slopes. This sloping, excessively drained soil is on terraces, kames, and eskers in stream valleys (fig. 9). The areas are irregular in shape and mostly range from 3 to 30 acres.

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

Included with this soil in mapping are small areas of somewhat excessively drained Merrimac soils and well drained Agawam and Haven soils. Included areas make up about 15 percent of this map unit.

The permeability of this Hinckley soil is rapid in the surface layer and subsoil and very rapid in the substratum. Runoff is medium, and available water capacity is very low. The soil dries out and warms up early in spring. It is very strongly acid to medium acid.

Many areas of this soil are used for community and industrial development. A few areas are used as a source of sand and gravel, and a few small areas are used for corn, vegetables, and nursery crops.

The main limitations of this soil for community development are the very rapid permeability in the substratum, droughtiness, and slope. The permeability causes a hazard of ground-water pollution in areas used for onsite septic systems. Droughtiness makes watering necessary for lawns, gardens, and shrubs on this soil. The soil is unstable, thus limiting excavations. Quickly establishing plant cover, mulching, and using siltation basins help to control erosion and sedimentation during construction.

The soil is suitable for cultivated crops and trees, but droughtiness is a limitation for both uses. Minimum tillage and the use of cover crops help to control a moderate hazard of erosion in cultivated areas. Machine planting is practical in areas used for woodland.

The capability subclass is IVs.

HkD—Hinckley gravelly sandy loam, 15 to 35 percent slopes. This moderately steep to steep, excessively drained soil is on terraces, kames, and eskers in stream valleys. The areas are long and narrow and mostly range from 5 to 30 acres.

Typically, the surface layer is dark brown gravelly sandy loam 3 inches thick. The subsoil is 11 inches thick. The upper 5 inches is strong brown gravelly sandy loam. The lower 6 inches is dark brown gravelly loamy sand. The substratum is light olive brown gravelly sand to a depth of 60 inches or more.

Included with this soil in mapping are small areas of somewhat excessively drained Merrimac soils and well drained Agawam soils. Included areas make up about 15 percent of this map unit.

The permeability of this Hinckley soil is rapid in the surface layer and subsoil and very rapid in the substratum. Runoff is rapid, and available water capacity is very low. The soil is very strongly acid to medium acid. The hazard of erosion is severe.

Most areas of this soil are wooded. A few areas are used as a source of sand and gravel, and a few scattered areas are used for community and industrial development.

The main limitations of this soil for community development are slope and the very rapid permeability in the substratum. The permeability causes a hazard of ground-water pollution in areas used for onsite septic systems. Droughtiness makes watering necessary for lawns, gardens, and shrubs on this soil. The soil is unstable, thus limiting excavations. Quickly establishing plant cover, mulching, and using siltation basins help to control erosion and sedimentation during construction.

Slope restricts the use of equipment and, along with droughtiness, makes this soil poorly suited to cultivated crops and trees.

The capability subclass is VIs.

Nn—Ninigret fine sandy loam. This nearly level to gently sloping, moderately well drained soil is on plains and terraces in stream valleys. The areas are irregular in shape and mostly range from 3 to 15 acres. Slopes range from 0 to 5 percent.

Typically, this soil has a surface layer of very dark grayish brown fine sandy loam 10 inches thick. The subsoil is brown fine sandy loam 16 inches thick and is mottled in the lower part. The substratum is light yellowish brown, mottled gravelly loamy sand to a depth of 60 inches or more.

Included with this soil in mapping are small areas of somewhat excessively drained Merrimac soils, well drained Agawam and Haven soils, and poorly drained Raypol and Walpole soils. Included areas make up about 15 percent of this map unit.

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. The soil dries out and warms up slowly in spring. It is very strongly acid to medium acid.

Many areas of this soil are used for hay, corn, vegetables, and nursery crops. Some scattered areas are used for community development, and a few small areas are wooded.

The seasonal high water table is the main limitation of this soil for community development. The water table makes special design and installation of onsite septic systems necessary. Slopes of excavations are commonly unstable. Where outlets are available, footing drains help prevent wet basements. Quickly establishing plant cover, mulching, and using siltation basins help to control erosion and sedimentation during construction.

This soil is well suited to cultivated crops and trees, but drainage is needed in some of the farmed areas. Minimum tillage and the use of cover crops help to control a moderate hazard of erosion in cultivated areas. Machine planting is practical in areas used for woodland.

The capability subclass is IIw.

Rb—Raypol silt loam. This nearly level, poorly drained soil is in depressions on plains and terraces. The areas are irregularly shaped and mostly range from 3 to 45 acres. Slopes range from 0 to 3 percent.

Typically, this soil has a surface layer of black silt loam 6 inches thick. The subsoil is grayish brown and light brownish gray, mottled silt loam and very fine sandy loam 13 inches thick. The substratum extends to a depth of 60 inches or more. It is 3 inches of brown, mottled loamy sand underlain by mottled sand.

Included with this soil in mapping are small areas of moderately well drained Ninigret soils, poorly drained Walpole soils, and very poorly drained Saco and Scarboro soils. Also included are a few areas of soils that have loamy material to a depth of more than 40 inches. Included areas make up about 20 percent of this map unit.

This Raypol soil has a seasonal high water table at a depth of about 6 inches from fall until late spring. The permeability of the soil is moderate in the surface layer and subsoil and rapid or very rapid in the substratum. Runoff is slow, and available water capacity is moderate. The soil dries out and warms up slowly in spring. It is very strongly acid or strongly acid in the surface layer and subsoil and strongly acid to slightly acid in the substratum.

Most areas of this soil are wooded. A few scattered areas are used for hay, pasture, corn, and vegetables, and a few small areas are used for community development.

The seasonal high water table and the rapid permeability in the substratum limit this soil for community development. Ground-water pollution is a hazard in areas used for onsite septic systems. Excavations in the soil are commonly filled with water, and many areas do not have drainage outlets. Quickly establishing plant cover and using siltation basins help to control erosion and sedimentation during construction.

The soil is suitable for cultivated crops. Many areas need drainage, but a lack of suitable outlets makes the soil difficult to drain. The soil is poorly suited to trees. The high water table restricts root growth, and many trees are uprooted during windy periods.

The capability subclass is IIIw.

Ro—Rippowam fine sandy loam. This nearly level, poorly drained soil is on flood plains of major streams and their tributaries. The areas are long and narrow or irregularly shaped and mostly range from 3 to 30 acres. Slopes are less than 3 percent.

Typically, this soil has a surface layer of very dark grayish brown fine sandy loam 5 inches thick. The subsoil is brown and gray, mottled fine sandy loam and sandy loam 19 inches thick. The substratum is dark gray loamy sand and grayish brown gravelly sand to a depth of 60 inches or more.

Included with this soil in mapping are small areas of moderately well drained Pootatuck soils and very poorly drained Saco and Scarboro soils. Also included are a few areas with a surface layer and subsoil of silt loam. Included areas make up about 15 percent of this map unit.

This Rippowam soil is subject to frequent flooding. It has a seasonal high water table at a depth of about 6 inches from fall until late spring. The permeability of the soil is moderate or moderately rapid in the surface layer and subsoil and rapid or very rapid in the substratum. Runoff is slow or very slow, and available water capacity is moderate. The soil dries out and warms up slowly in spring. It is mainly very strongly acid to slightly acid, but some layers above a depth of 40 inches are medium acid or slightly acid.

Most areas of this soil are wooded. A few areas are used for hay, pasture, and corn, and a few small scattered areas have been filled and are used for community development.

The frequent flooding and the seasonal high water table are the main limitations of this soil for community development. Extensive filling is needed for onsite septic systems. Excavations are commonly inundated by water, and slopes of excavations are unstable when wet.

This soil is suitable for cultivated crops. The high water table and frequent flooding limit farming, but most areas are seldom flooded during the summer. The soil is poorly suited to trees. Wetness limits the use of equipment, and the seasonal high water table restricts rooting depth and causes the uprooting of many trees during windy periods.

The capability subclass is IIIw.

Sb—Saco silt loam. This nearly level, very poorly drained soil is on low flood plains of major streams and their tributaries. The areas are mostly long and narrow and range from 5 to 60 acres. Slopes are mostly less than 1 percent.

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.

Included with this soil in mapping are small areas of moderately well drained Pootatuck soils, poorly drained Rippowam soils, and very poorly drained Adrian, Carlisle, and Scarboro soils. Included areas make up about 15 percent of this map unit.

This Saco soil is subject to frequent flooding. The water table 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. Runoff 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.

Most areas of this soil are wooded or covered by marshgrasses and sedges. A few areas are used for pasture, and a few small areas have been filled and are used for community development.

The frequent flooding and high water table limit this soil for community development, especially for onsite septic systems, and make the soil generally unsuitable for cultivated crops or commercial tree production. The use of equipment is impractical, and a shallow rooting depth causes the uprooting of many trees during windy periods.

The capability subclass is VIw.

SvB—Sutton fine sandy loam, 3 to 8 percent slopes. This gently sloping, moderately well drained soil is in slight depressions and on the sides of hills and ridges. The areas are irregular in shape and mostly range from 4 to 40 acres.

Typically, this soil has a surface layer of dark grayish brown fine sandy loam 8 inches thick. The subsoil and substratum are yellowish brown, mottled fine sandy loam to a depth of 60 inches or more.

Included with this soil in mapping are small areas of well drained Charlton and Paxton soils, moderately well drained Woodbridge soils, and poorly drained Leicester and Ridgebury soils. Also included are a few areas of soils with slopes of less than 3 percent or more than 8 percent. Included areas make up about 15 percent of this map unit.

This Sutton soil has a seasonal high water table 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 dries out and warms up slowly in the spring. It is very strongly acid to medium acid in the surface layer and subsoil and very strongly acid to slightly acid in the substratum.

Many areas of this soil are used for community development. A few small areas are used for pasture, hay, corn, and vegetables, and a few are wooded.

The seasonal high water table limits community development and makes special design and installation of onsite septic systems necessary. Footing drains help prevent wet basements. Quickly establishing plant cover, mulching, and using siltation basins and diversions help to control erosion and sedimentation during construction.

This soil is well suited to cultivated crops and trees. Artificial drainage is needed in most farmed areas. Minimum tillage and the use of cover crops help to control a moderate erosion hazard in cultivated areas. Machine planting is practical in areas used for trees.

The capability subclass is IIw.

UD—Udorthents, smoothed. This unit consists of areas that have been altered by cutting or filling. The areas are commonly rectangular and mostly range from 5 to 100 acres. Slopes are mainly 0 to 25 percent. The material in these areas is mostly loamy, and in the filled areas it is more than 20 inches thick. Some of the filled areas are on flood plains, in tidal marshes, and on areas of poorly drained and very poorly drained soils.

Included with this unit in mapping are small areas of soils that have not been cut or filled. Also included are a few larger urbanized areas and a few small areas containing material such as logs, tree stumps, concrete, and industrial wastes. A few areas have exposed bedrock. Included areas make up about 30 percent of this map unit.

The properties and characteristics of this unit are variable, and the unit requires onsite investigation and evaluation for most uses.

This unit is not assigned to a capability subclass.

Ur—Urban land. This unit consists of areas where urban structures cover more than 85 percent of the surface. Examples of such structures are roads, parking lots, shopping and business centers, and industrial parks. Most areas are in the towns of Bridgeport, Danbury, Fairfield, Norwalk, Shelton, Stamford, and Stratford. The areas are commonly rectangular and range from 5 to 500 acres. Slopes range from 0 to 8 percent but are dominantly less than 5 percent.

Included with this unit in mapping are small areas of Udorthents and areas of excessively drained Hinckley soils; somewhat excessively drained Hollis soils; well drained Agawam, Charlton, and Paxton soils; and moderately well drained Ninigret and Sutton soils. Included areas make up about 15 percent of this map unit.

This unit requires onsite investigation and evaluation for most uses.

The unit is not assigned to a capability subclass.

Appendix B: "The Pine Creek and Mill River Watersheds"
by Beals and Westover

The Pine Creek and Mill River Watersheds
Fairfield, Connecticut

An Ecological Guide to Open Space Land Use

Whitney Beals
Peter Westover

Apprentices in Land Use Planning
School of Forestry, Yale University
New Haven, Connecticut
1971

Prepared for
The Fairfield Conservation Commission

Late Successional Forest. If human encroachment on a small forested area such as this one (Fig. 6-F) does not increase, this is an area that will almost manage itself. The woods lie next to closely spaced housing, however, and to preserve the character of the forest, care should be taken to ensure the following:

1. That residents do not extend private use onto the tract of public land: trash and construction debris that have accumulated along the north edge of the area can be hazardous to children playing and a detriment to the appearance of the woods and should be removed. Further dumping should be prevented by regulation and enforcement.

2. That the borders of the public forest are well marked. A fence should be erected along the northern edge of the woods to supplement the few short stretches of private fence already established. Access gates might be placed at intervals, and signs or markers identifying the area as public open space should be installed.

Other Wooded Areas.

In most cases these areas can be of greatest value to the Town without plantings, thinnings, or other alterations. The area on the west side of the river below the lower pond — a roadside area primarily of oak and sycamore that includes some spruce and hemlock (Fig. 6-V)— is adaptable to trail construction most of the way to Sturges Road bridge, although periodic maintenance will probably be necessary in the most heavily overgrown spots. Most other wooded areas will also be adaptable to walking paths.

The Ponds.

Pioneer and early successional vegetation is beginning to thrive in and around the pond, having taken root since the dredging operations in 1957. Extensive physical alterations to the ponds are inadvisable, as they would most likely cause the areas so changed to revert again to an unprotected, unvegetated condition. Certain less drastic management steps can be recommended, however:

1. Encourage shrub and herbaceous or weed growth along pond edges, especially where the banks are now bare. Young willows may be planted where there is enough soil. Pond-side residents should be encouraged not to lay bare the banks of the ponds, but to leave several-foot wide strips of unmown weeds, grasses, and emergent aquatics along these edge areas.

2. Control sources of pond contamination. Many fish, particularly bass, are now caught in these ponds every year. Eating them may present certain risks, however, as coliform bacteria counts in the area have been found to rise as high as 2,900 per 100 ml. during certain times of year. The inflow of toxic materials in immediate and upstream areas should be eliminated.

3. If trout stocking upstream does not provide sufficient put-and-take supply for the mill ponds, which are deep enough for trout to overwinter, stocking should be considered for the ponds themselves.

4. Protect plants along pond edges. Plants other than those mentioned above should in many cases be protected for their biological and food value for fish and other creatures.

The River (Mill Pond Section). Because Town ownership of the Mill Pond tracts includes part of the river itself, the Town can here set an example to private land-owners upriver whose property rights extend to the middle of the river bed and who can legally use or alter any land outside the established channel lines as they see fit. We recommend that a management program for the Mill Pond section of the river begin with these measures:

1. Establish erosion protection for the bend of the river between the two ponds. This can be done either by reducing the slope of the outer bank and there establishing willows or other shrubs, or by reducing the slope and reinforcing the bend with *Macaferri-Gabion basket walls.*[18] Rip-rapping, which would perhaps be more effective in reducing erosion here, would involve the use of heavy machinery in an area where space for maneuvering is limited and where heavy equipment would unavoidably damage the existing vegetation. Slope reduction would probably best be accomplished by transferring earth from the inside of the bend to the outside, if this could be done with limited disturbance of the vegetation.

2. Complete rip-rap protection for the bend of the river just below the old mill dam.

3. Reconstruct the mill dam. The spillway of the rebuilt dam should be located roughly 40 feet east of the existing channel around the old dam, so that the bend of the present channel is eliminated. To block off the existing channel completely, the dam must thus be extended as far west as the embankment where a small trail is now located. The grass-covered earth fill that is banked against the north side of the dam also must be moved to open a channel through the middle of the dam. Until the west end of the dam is rebuilt, this earth could be used to help block the present channel around the dam once the new spillway is completed, as long as care is taken to keep earth from washing down the river.

4. Construct a Macaferri-Gabion wire basket dam just above the bend between the upper and lower ponds, a project that would not require machinery. Such a project would pond the water in this area and help decrease the velocity of the water as it enters the eroded section of the curve.

RIVERFIELD PARK

Vegetation and Physiography

Lying between Duck Farm Road, Riverfield School, and the Mill River is a 20-acre tract of open space called Riverfield Park. The park was recently an area well removed from the bustle of suburban life, but new housing developments immediately to the east of the tract and to the northwest across Duck Farm Road have begun to change the out-of-the-way nature of the park. Extensive areas of herbaceous, shrubby, and arboreal vegetation still very effectively shield much of the park from heavy human use and contribute to the overall diversity of the area.

The park contains examples of almost every stage of natural succession, from pioneer to mature. This latitude of vegetational type, equalled among Fairfield's riverside parks only at the Perry's Mill Pond tracts, makes the park very attractive as wildlife habitat and as an educational area.

[18]Constructed by filling a long wire mesh basket with rocks and closing the basket at the top. The spaces between the rocks fill with silt, making the structure virtually watertight.

PLATE 28

A boggy field at Riverfield Park. Note the abrupt transition between it and the red maple swamp on the left.

Because the playing fields of the adjacent Riverfield School preclude the need for further recreation space in the immediate area, and because the private cemetery across the river from the park protects the river from vehicular access, Riverfield Park should be reserved for wildlife and river conservation, and for educational purposes.

The vegetation of Riverfield Park is divided among the following clearly defined communities.

Red Maple Swamp (Fig. 8-A). Extending southwest from the paved path between Riverfield School and Duck Farm Road is a swamp about 2/3-acre in size. Red maples dominate the vegetation of the swamp, since the water table of the swamp is high enough to produce standing water during the non-growing season.

While only a few young pin oaks and trees-of-heaven have joined the heavy red maple cover in the upper story, the lesser vegetation beneath these trees is picturesque and diverse. Ferns and sedges accompany growths of highbush blueberry, southern arrowwood, poison ivy, arrowhead, mosses, skunk cabbage, boneset, and touch-me-not, as well as smaller herbs such as bedstraw.

The swamp may once have been a true freshwater bog, but because the surface soil is now almost impenetrable the presence of underlying peat deposits cannot be easily ascertained. Whatever its history, the swamp is now unlikely to undergo further major vegetational changes unless the water table or the vegetation itself is in some way altered. A recently installed storm drainage pipe will soon carry into the swamp excess runoff from the housing development on the east side of the swamp, but should not affect the swamp's natural systems unless toxic materials from septic tanks or other sources join the flow of water.

Children from Riverfield School do not frequently travel or play in the swamp because of its wetness. Children on school field trips can view a good example of hardwood swamp vegetation (plate 5) from the paved path without walking in the swamp itself.

Together with the river and the other vegetational communities in the park, the swamp is of high value as bird and small animal habitat.

Boggy Meadow (Fig. 8-B). Visually, the heart of Riverfield Park is a boggy sedge and grass meadow (plate 28) that stretches all the way from the paved walk southwest to the Mill River, a distance of about 250 yards. Joining the sedges, which cover the hummocks of the meadow, are a few maple seedlings, large numbers of herbs — blue vervain, joe-pye weed, goldenrod, milkweed, jack-in-the-pulpit, touch-me-not, hay-scented fern and sensitive fern—and several perennial shrubs and vines, including raspberry (along the river) and Japanese honeysuckle. The area is open but not easy to walk across because of the unevenness of the surface and, in the summer, the density of the herbaceous cover.

Shrubby Field (Fig. 8-C). Adjoining the boggy meadow to its north is an area of greater size dominated by red-osier and alternate-leaved dogwood shrubs and small willows. The area is drier than the hummocky meadow, and supports the seedling and sapling forerunners of a future hardwood forest — gray birch, black birch, pin oak, apple, cherry, and quaking and bigtooth aspen.

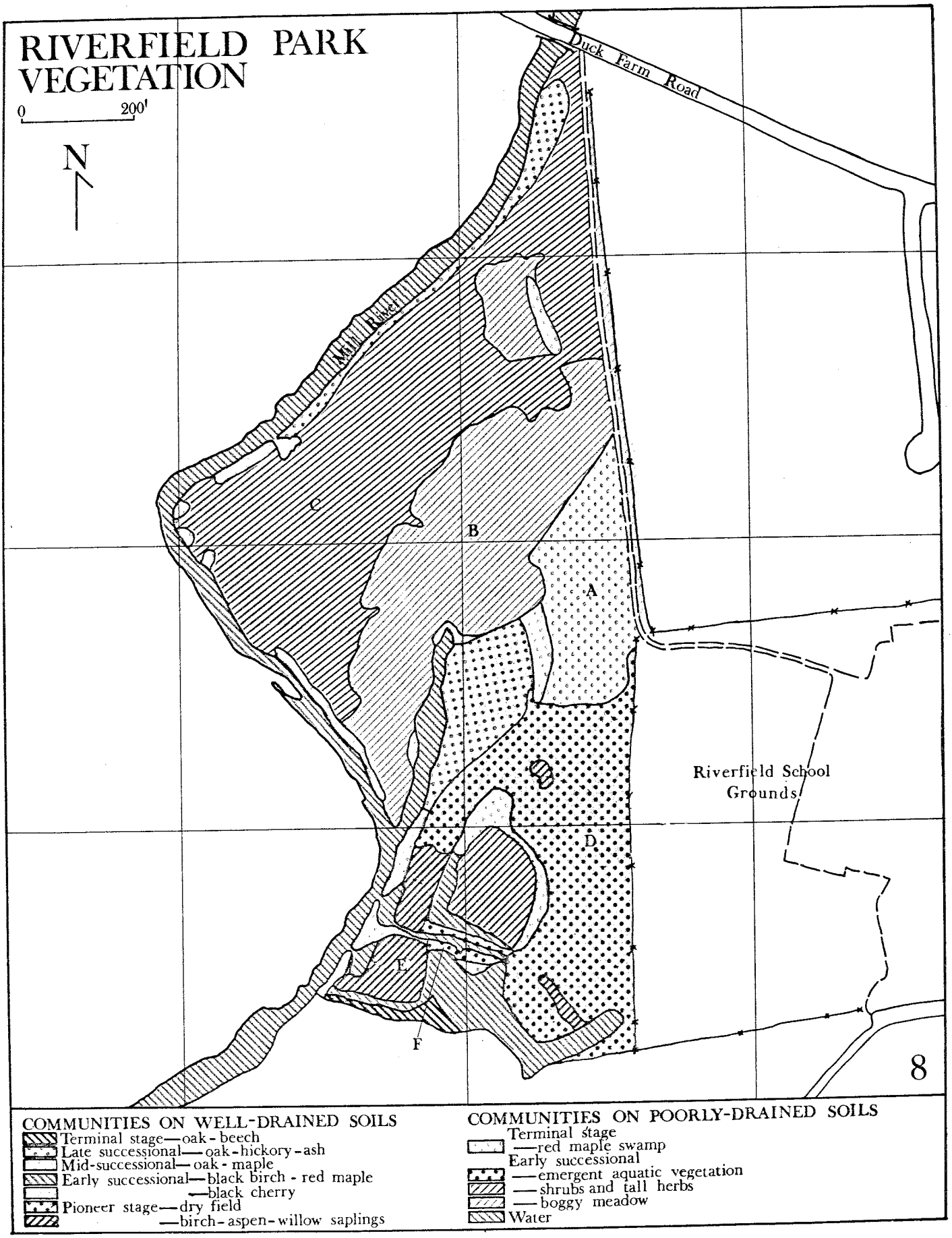
The shrub growth throughout most of the field is quite dense, making walking nearly impossible. An unmaintained foot trail parallels the river from the paved path nearly all the way to the river's elbow (Fig. 9), but the heavy undergrowth of poison ivy becomes especially obvious in the summer. The shrubs are accompanied by a fairly heavy herbaceous ground cover, and offer excellent protection and food sources for birds and animals.

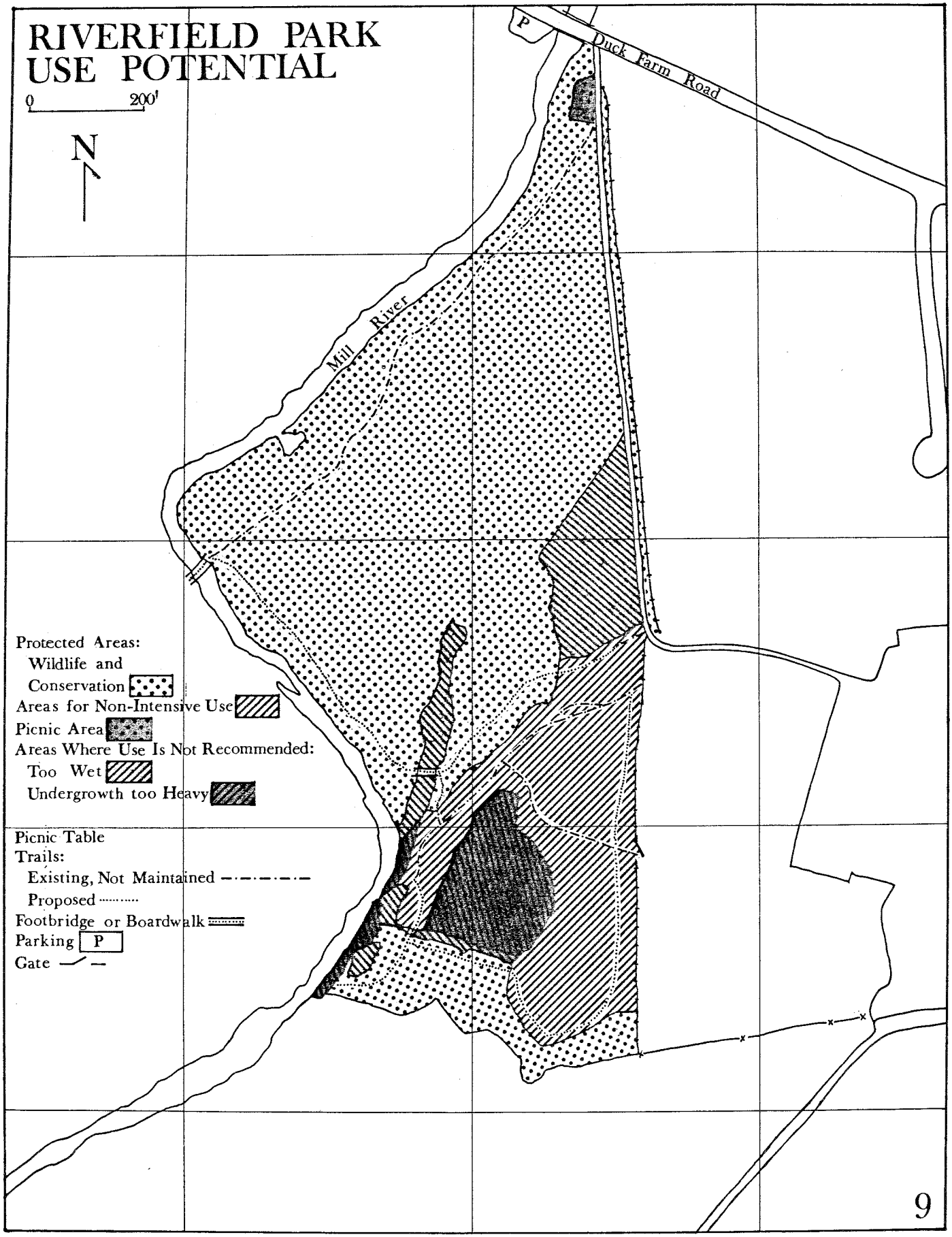
Disturbed Areas. Much of the southern half of Riverfield Park is now covered by pioneer or early successional species that have seeded in after human disturbance. Because the vegetation and topsoil of the areas were disturbed at different times, several stages of plant community development are present within the approximately six acres of disturbed land.

The youngest of these areas, in terms of successional stage, is an excessively well-drained field with very thin topsoil that stretches west from the Riverfield School back fence (Fig. 8-D). Parts of this field are without vegetation, while the rest are covered with grasses and other thinly scattered herbs. Gray birch seedlings are present in less well-drained depressions.

PLATE 29

One of two small pools lying only a few feet from the river in Riverfield Park. Willows and other shrubs are taking hold on the disturbed area.


RIVERFIELD PARK
VEGETATION
0 200'
N
Duck Farm Road
Mill River
A
B
C
D
E
F
Riverfield School
Grounds
8
COMMUNITIES ON WELL-DRAINED SOILS
Terminal stage—oak-beech
Late successional—oak-hickory-ash
Mid-successional—oak-maple
Early successional—black birch-red maple
—black cherry
Pioneer stage—dry field
—birch-aspen-willow saplings
COMMUNITIES ON POORLY-DRAINED SOILS
Terminal stage
—red maple swamp
Early successional
—emergent aquatic vegetation
—shrubs and tall herbs
—boggy meadow
Water


RIVERFIELD PARK
USE POTENTIAL
0
200'
N
P
Duck Farm Road
Mill River
Protected Areas:
Wildlife and
Conservation
Areas for Non-Intensive Use
Picnic Area
Areas Where Use Is Not Recommended:
Too Wet
Undergrowth too Heavy
Picnic Table
Trails:
Existing, Not Maintained
Proposed
Footbridge or Boardwalk
Parking P
Gate

Also in the first stages of succession is an area next to the river in the southwest corner of the park (Fig. 8-E). Here two large sand and gravel mounds of dredged material sit next to two small pools created by the excavation. The area is sandy, with a covering of birch, willow, aspen, and sumac saplings. The mounds themselves are almost entirely barren. The pools are shallow, stagnant, and algae-choked in summer, although one is connected with the river by a foot-wide channel and the other is separated from the river by an earthen bank only two feet wide.

Miscellaneous Successional Areas. Between the dry field and the mound area there are several small groups of mid-successional trees. These include an area of young black birch and red maple; a stand of older oak and black birch; and a belt of young ash, red maple, and oak surrounding a dense field of raspberry, barberry, goldenrod, greenbrier, and mixed grasses. These stands are all transitional, and should within about 50 years succeed to the oak-beech-hickory forest type now found not only adjacent to the red maple swamp but also just outside the southern edge of the park.

The Mill River (Riverfield Park Section). Between Duck Farm Road and the southern end of Riverfield Park — a stretch of about 2/5-mile — the Mill River is fairly slow and deep (one to four feet). Access to it from the east (or park) side is quite limited due to the tangle of shrubs and vines along the banks. A private cemetery abuts most of the west side of the river; use of parts of the cemetery not yet used for burials is confined to walking, fishing, and horseback riding. Piles of lumber and miscellaneous trash can be found in a few locations. The vegetation on the west side of the river is not as dense as that on its east (park) side, but is nevertheless thick enough to protect the banks from erosion.

Because fishing (primarily from the west bank) and boating are both possible along this stretch of the river, regulation of river water quality must be included in management plans for the park. Total coliform bacteria counts measured just below Duck Farm Road in the summer of 1970 were as high as 20,000 per 100 ml., a count attributable to upstream sources rather than to activities in the park itself. Serious efforts must be undertaken both to eliminate these upstream sources and to protect the river water from new sources likely to accompany housing and septic tank construction in adjacent areas.

Area of Emergent Aquatic Vegetation (Fig. 8-F). Extending from the river to the dry field between the mounds there is a muddy area covered by standing water in the winter. The area supports several emergent aquatic species, as well as blackberry, red maple and grape along its edges. The area receives water from underground seepage at its east end, and from the river at its west end.

Management Program

Riverfield Park is an area that will flourish as a conservation and wildlife habitat area without expensive additions or alterations. It can be useful for primary and secondary school education with trash removal and the addition of a small trail system. For the park as a whole we recommend the following measures.

1. Construct and maintain trails (Fig. 9) to join the river trail system. These trails should provide access to the river; the possibility of establishing an additional trail on cemetery land just west of the river should be investigated. A trail on the west side would be easier to maintain, because vegetation there is not as thick as on the opposite banks.

2. Connect the two pools in the mound area with the river by cutting through the intervening bank. This will help eliminate the stagnation of these pools and allow ducks to reach them from the river. The operation will require only manual labor.

3. Establish regular water quality monitoring for this section of the river. Because water quality during the summer has at times been quite poor in this area, upstream and immediate contamination should be found and controlled.

4. Install wood duck boxes at locations near the river in the shrubby field and on the boggy meadow.

5. Clean up trash that has collected in areas that schoolchildren and others tend to use most heavily, particularly near Riverfield School.

FLOWER HOUSE DRIVE TRACT

The two-acre open space tract between Flower House Drive and the Mill River (Fig. 1-R) includes a small, steep hill covered by mature black birch and oak. The hill may be of glacial origin, but is more likely the product of earth-moving dating back to the turn of the century. A small area of old beech and red maple lies just north of the hill. Between the two clumps of trees the ground is nearly bare. The riverbanks within the tract are covered by beech below the hill, but are bare elsewhere.

The Flower House Drive tract is not suited to recreation or other human use, but will serve as an important link between the Millspaugh Drive tract to the north and the areas near Duck Farm Road to the south when the Town acquires additional riverside land in the area. Until then, little active management of the tract should be necessary.

MILLSPAUGH DRIVE TRACT

Vegetation and Physiography

The five-acre open space tract off the end of Millspaugh Drive (sometimes called Millspaugh Park) is surrounded on three sides by housing developments. Open red maple

PLATE 30

This open red maple woods at Millspaugh Drive is partly in public open space (foreground) and partly in private ownership (rear).

woods extends south from the eastern section of the tract, and shrubby field lies to the north. The tract now provides wildlife cover and river protection. In the future, part of the area (Fig. 10-A) could also be adapted to active recreational use.

PLATE 31

Old, second-growth oak dominates this area lying west of the river in the Millspaugh Drive tract.

The vegetational associations of the area include the following:

Red Maple Woods (Fig. 10-B). Stretching south along the Mill River from Millspaugh Drive circle is a three-acre area of red maple woods. Only a small part of this woods is now under Town ownership (for the private section of the woods see Fig. 10-C). Within 50 feet of the river most of the area includes a heavy undercover of dogwood shrubs, spicebush, viburnum, grape, raspberry, and greenbrier, making walking difficult. The greater part of the woods, however, has only a light ground cover of ferns, sugar and red maple seedlings, viburnum, and touch-me-not. Compared with the red maple swamp in Riverfield Park, the woods here are not as wet, having no standing water, and are less mosquito-ridden in summer.

Areas of Shrubs and Tall Herbs. The tract contains two fairly open areas that include goldenrod, asters, joe-pye-weed, vervain and associated herbs, as well as red maple and willow saplings and, east of the river, small patches of *Phragmites* and cat-tail. The shrub-herb area on the west side of the river (Fig. 10-A) is damp, although the recent piping of the seasonal stream that previously ran through the area has drained the spot to some degree. Part of the area on the east side of the river (Fig. 10-D) is somewhat drier; some of the area has been stripped of its topsoil. Frequent use has established a small trail across this area, along which is a strip of panic-grass and other small herbs.

Areas Dominated by Oak and Maple. These small areas are dominated by a few old, second-growth red oaks, and include younger red maple, white ash, ironwood, and flowering dogwood. A few beech and black cherry stems are scattered among them. The undercover is not heavy, but includes some thick tangles of grape and some oak seedlings.

Open, Late-Successional Oak and Hickory (Fig. 10-E and F).

Because of heavy use, occasional ground fires, and clearing procedures, grass is the only surface cover beneath the tract's areas of late successional oak and hickory, which directly abut the most recently built housing developments. The trees are fairly large (all of them more than eight inches in diameter), widely spaced, and adequate for shade. Red maples inhabit the section of the lower oak-hickory area nearest the river, and are accompanied there by a light undergrowth of barberry.

Band of Emergent Aquatic Vegetation (Fig. 10-G). Near the path running from Millspaugh Drive to the river is a mucky area that is probably part of a former streambed. Sedges, pickerelweed, and other emergents grow in the water itself; blueberry and sweet pepperbush fringe the area; and large oaks and maples grow near enough to shade the spot.

Other Areas. The Millspaugh Drive tract also includes a dry field where neighborhood children congregate (Fig. 10-H); a heavy fringe of pin oak, sycamore, dogwood shrubs, and spicebush along a good part of the riverbanks that is valuable for bank protection; and rows of hickory, cherry, and evergreens along the northwest boundary of the tract.

Management Program

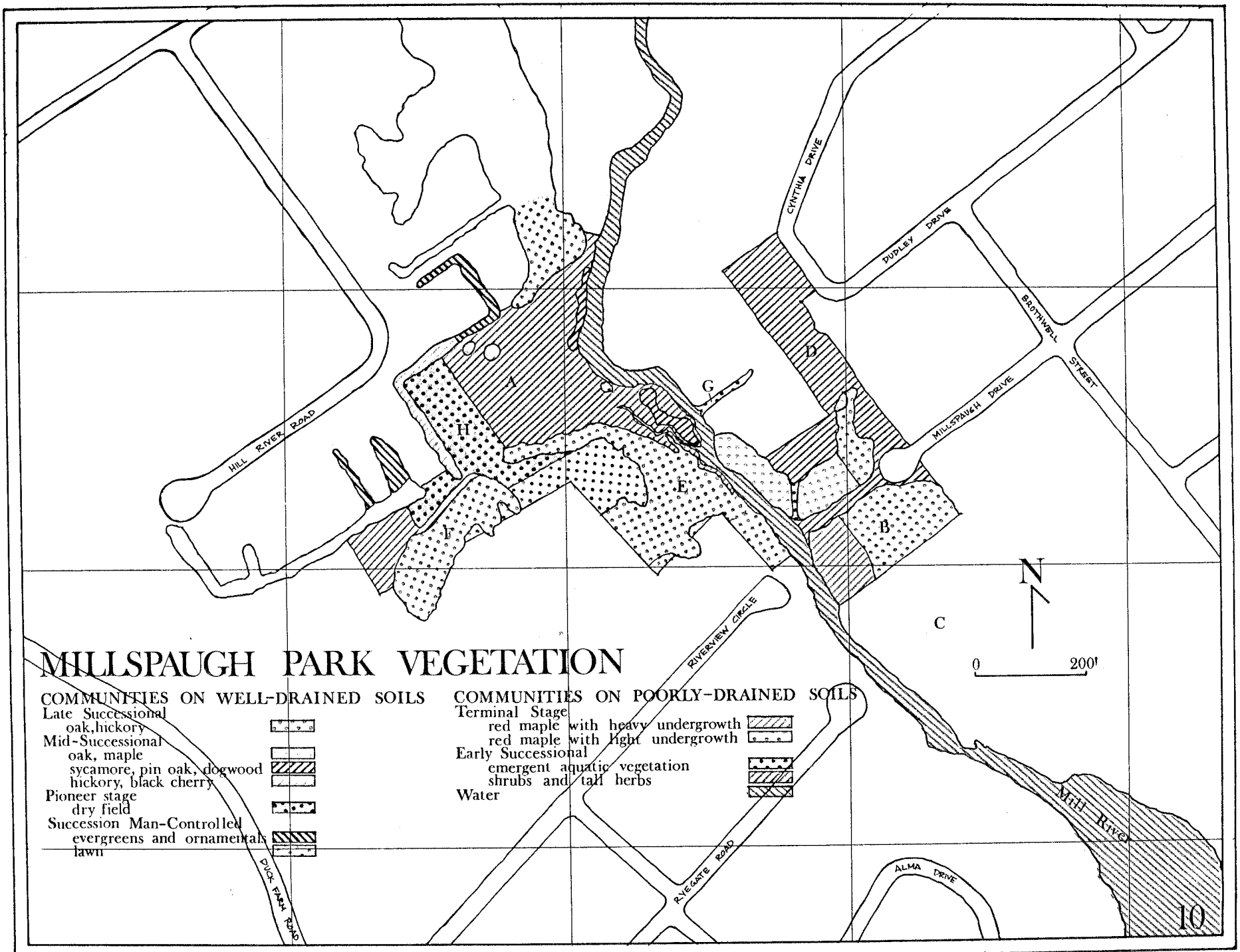
We recommend that management of the Millspaugh Drive tract include the following:

1. Plant a small number of evergreens along the edges of the shrubby northeast section of the tract (Fig. 10-D) for bird roosts. The food plants of this area already attract songbirds and game birds.

2. Construct a ball field in the dry field of the tract (Fig. 1, section proposed for intensive use). While many of the Town's open space tracts along the Mill River are best suited to uses that are as important to the whole Town as to the immediate communities, we believe that this part of the Millspaugh Drive tract is better suited to active recreation for local residents. A moderate amount of earth fill at the river (or downhill) end of the field would level the field, help drain it, and enable it to support short grasses. Retention of a shrub and tree layer between the river and the field would help confine play to the field itself.

PLATE 32

A small ball field or playground would be well suited to this open area at the Millspaugh Drive tract. The river is beyond tree line in background.



MILLSPAUGH PARK VEGETATION

COMMUNITIES ON WELL-DRAINED SOILS

Late Successional
- oak, hickory

Mid-Successional
- oak, maple
- sycamore, pin oak, dogwood
- hickory, black cherry

Pioneer stage
- dry field

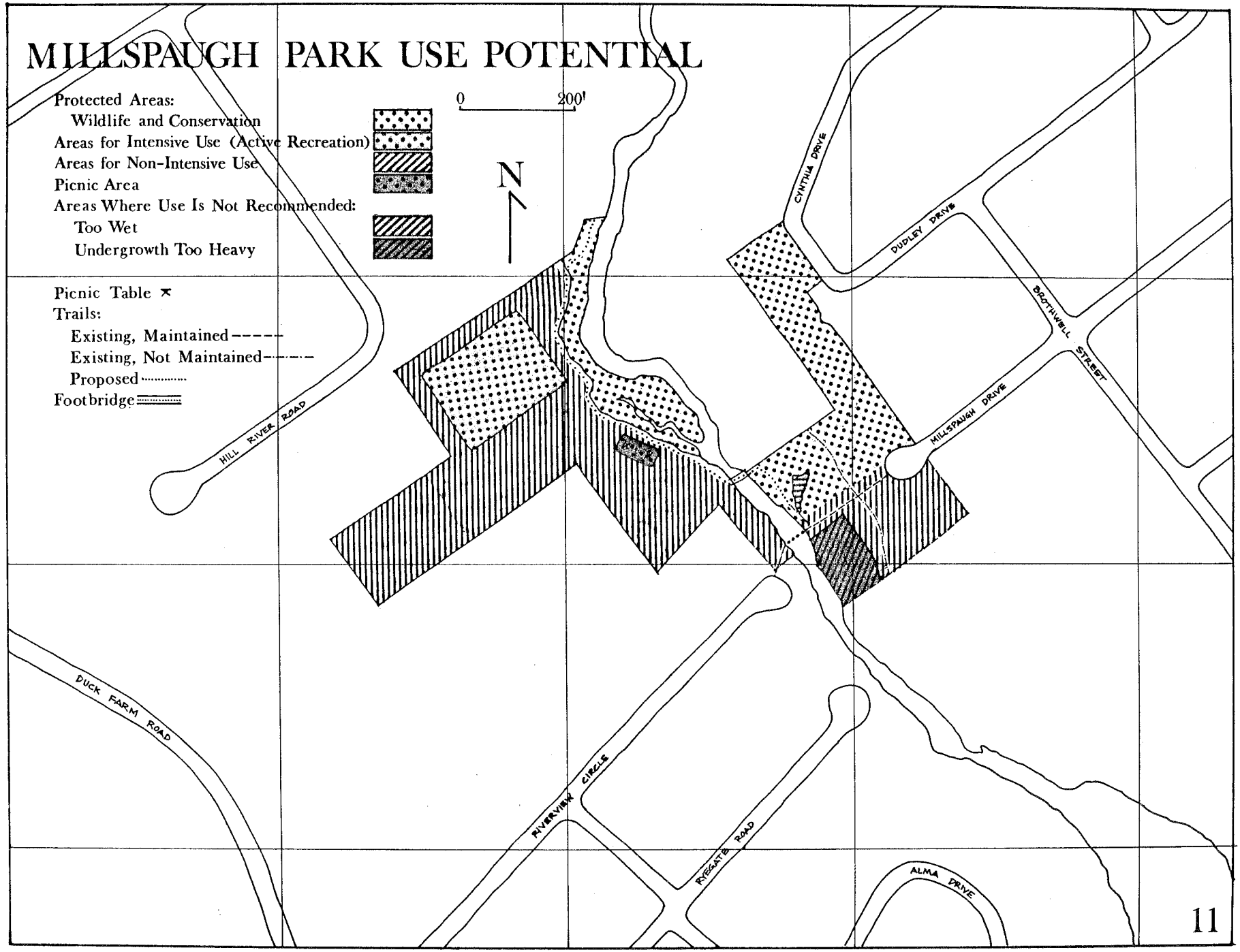
Succession Man-Controlled
- evergreens and ornamentals
- lawn

COMMUNITIES ON POORLY-DRAINED SOILS

Terminal Stage
- red maple with heavy undergrowth
- red maple with light undergrowth

Early Successional
- emergent aquatic vegetation
- shrubs and tall herbs

Water


MILLSPAUGH PARK USE POTENTIAL
Protected Areas:
Wildlife and Conservation
Areas for Intensive Use (Active Recreation)
Areas for Non-Intensive Use
Picnic Area
Areas Where Use Is Not Recommended:
Too Wet
Undergrowth Too Heavy
Picnic Table
Trails:
Existing, Maintained
Existing, Not Maintained
Proposed
Footbridge
0
200'
N
HILL RIVER ROAD
CYNTHIA DRIVE
DUDLEY DRIVE
BROTHWELL STREET
MILLSPAUGH DRIVE
DUCK FARM ROAD
RIVERVIEW CIRCLE
RYEGATE ROAD
ALMA DRIVE

Families living next to the field were questioned about the use of the area for intensive recreation, and were generally in favor of the idea. While some expressed the hope that the field be left to grow into trees, others indicated that a great number of children from immediate and surrounding neighborhoods play in nearby streets because of the lack of a playground, and that to find a ball field children must walk or be driven to Mill Plain Park or to Riverfield School, too far for smaller children to travel to on foot.

3. Continue the Mill River trail through the area. Stepping stones now afford easy crossing of the river at the end of the path from Millspaugh Drive, but the installation of a wooden foot bridge farther upstream would provide better access to the field area and avoid the backyard of the home nearest the river.

RIVERSIDE PARK

Riverside Park, six acres in size, is a narrow riverbank-roadside tract that can be managed most advantageously for picnicking and fishing. The park begins at the Brookside Drive bridge not far below Samp Mortar Dam, and runs between the river and Brookside Drive for almost 2/3 of a mile to the bridge at Burr Street and Mill Plain Road (plates 14 and 17). There it terminates in a picnic area shaded by pin oaks. The park is no more than 30 feet wide along most of its length, but widens to about 150 feet at the picnic area.

Present Use

The river at Riverside Park supports large numbers of mallard ducks during much of the year. Feeding the ducks is popular.[19] Picnicking at the park is heaviest during weekends and weekday lunch hours. Although parking space is limited to the edge of Brookside Drive and to a small grassy area near the Burr Street bridge, the number of picnic tables is often insufficient to accommodate the demand. Dead but unpruned branches of the pin oaks near existing picnic tables could be hazardous to picnickers and fishermen.

Vegetation and Physiography

The vegetation of Riverside Park is limited to open-grown hardwood shade trees with a grass ground cover beneath. Shrubs are absent except for a few small clumps next to the river. In some places, the river bank is well covered with weedy herbs and emergent aquatics, such as arrowhead. Along other areas, vegetation is virtually absent due to stoniness or heavy use. A row of sycamore saplings was planted a few feet from the road along the middle part of the park during the fall of 1970, and a curb was installed on both sides of Brookside Drive.

The area's underlying deposits of sand and gravel would make it the kind of area often used safely for residential development were it not for several limiting factors: 1) the water table is sometimes quite close to the surface; 2) the entire park, as well as a considerable amount of land adjacent to the park on each side of the river, has been inundated by Mill River floods several times in the recent past; 3) the park lies at the northern end of the largest aquifer in Fairfield, an underground water supply that should be protected from contamination (a well dug here could produce an estimated 10,000 to 50,000 gallons of water per foot per day); and 4) although sewer construction for the area has been recognized as a high-priority improvement by Town officials, the area has not yet been provided with a municipal sewer line.

The soil of the park is predominantly alluvial, consisting of the accumulation of topsoil washed down from higher land over long periods of time. As long as it keeps its grass cover, the soil here is not so fine that it will be broken down under extensive recreational use. The underlying gravel deposits probably were distributed as the last glacier receded.

Parts of the river bed along Riverside Park have been altered by dredging; other stretches have not. Erosion in this area has not been a problem. At the midpoint of the park, a small, shrub-covered island splits the river into two channels for several yards and offers cover for birds and small animals.

The park is protected from siltation by Samp Mortar Reservoir, which acts as a settling basin, and silt and sand have only slightly filled in the river bed here. Silt accumulation could, however, pose a problem if the pending North Benson Road housing project is undertaken without proper soil stabilization procedures.

Management Program

The River (Brookside Drive Section).

1. The stretch of river along Riverside Park is shallow and fairly swift. In a few spots children have built small rock dams, but only at the lower bridge is the water actually ponded. Fish habitat could be improved along the length of the river here by the construction of small ponds and falls. This could be accomplished most easily with Macaferri-Gabion dams and volunteer hand labor, since the river here is quite accessible.

2. In the past, the river has been periodically stocked with trout. This should continue on a put-and-take basis if habitat can be improved as suggested above.

Picnic Facilities.

3. Improvement of the picnic areas along the park should be undertaken. Improvements should include: a) additional tables; b) repair and painting of existing tables; c) more frequent mowing of grass area near tables during the summer; d) exclusion of cars from grass areas which, especially near the lower bridge, become quite muddy and compacted in the picnic season; e) marking of parking spaces along the park side of Brookside Drive; f) pruning of dead limbs in picnic areas.

Wildlife.

4. Little habitat improvement can be recommended here because of probable interference with picnicking and picnic area maintenance. Small shrub patches, however, could be established between trees where the trees are close enough together to preclude picnic table installation or other activities. These shrub patches would help provide cover and in some cases food for songbirds and small animals.

[19]Unfortunately, the duck population is sometimes large enough to be a nuisance, if not a health problem, as their droppings contribute fecal bacteria to the river.

CHAPTER 5

LAKE MOHEGAN AND THE CASCADES

The Lake Mohegan Open Space tract is located between Morehouse Highway and the western edge of the North Stratfield section of Fairfield. The Town purchased the tract, 118.6 acres in size, in 1967, shortly before the construction of a housing subdivision on part of the site was to begin. In addition to Lake Mohegan, the tract contains forested areas, several acres of grass-covered land, and part of the Mill River. Because of its location, size, and natural diversity, the Lake Mohegan Open Space tract offers the Town a great variety of recreational and educational uses if the Town can preserve, and in some cases improve, the present state of the tract.

Before Fairfield was settled, the Lake Mohegan tract was covered with a forest of hemlock and northern hardwoods. There was no lake then. The Mill River flowed unchecked along the base of the hill that is now the western shore of Lake Mohegan. Since pre-Colonial days, dams at Easton and Hemlock reservoirs have lowered the volume of the river, and land use practices have altered the forests and created two distinct types of upland vegetation: non-forested areas of shrubs and herbaceous plants, and areas with a continuous forest cover.

The lake, the river, and the upland areas are parts of ecosystems whose ecological characteristics and capabilities for providing open space benefits are discussed below. Even though the ecosystems are distinct, the biological elements of each system must interact with elements of other systems to survive. Management of the tract should be carried out with an understanding of this interdependence.

PLATE 33

The Town owns the east bank (right) but not the west bank of the Cascades north of Lake Mohegan.

THE LAKE

Description

The bed of Lake Mohegan was created by many years of gravel excavation carried out in the stratified drift deposits along the streambed of the Mill River (plate 34). Before the Town acquired the land, the gravel dike between the river and the excavation pit was removed, allowing the river to flood the pit, forming the body of water now called Lake Mohegan.

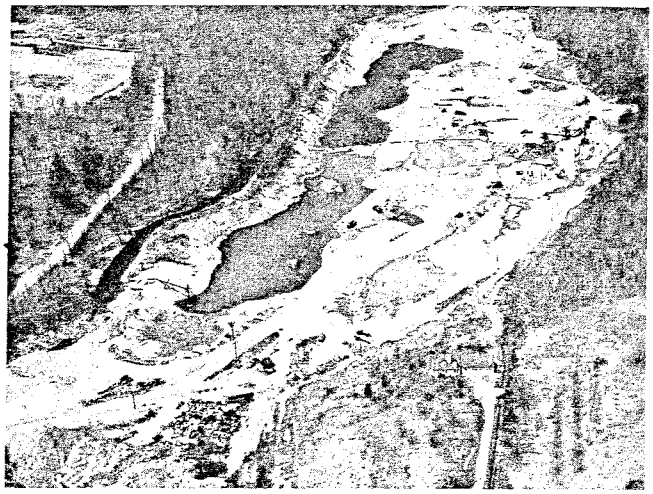


PLATE 34

More than thirty years of gravel operations formed the bed of Lake Mohegan.

The lake is approximately 16 acres in size, and reaches a maximum depth of 35 feet (Fig. 12). The bottom of till, gravel, large rocks, and boulders is covered with a thin layer of fine sediment that has settled out of the lake water. The bottom slopes steeply downward from the shore, at places reaching a depth of twenty feet at a distance of only thirty feet from shore. Depth and bottom steepness severely limit the zone where aquatic plants — submerged, floating, and emergent — can grow; natural succession will be quite slow. The aquatic vegetation now present consists of small areas of water-milfoil and patches of spike-rush. Although the lake is capable of supporting many native fish species, the present fish population is sparse.

Present and Potential Use

Bathing. One of the most important reasons for acquiring the Lake Mohegan tract was to provide Fairfield with a public freshwater bathing facility. In August 1969, the Town completed construction of a sand beach, a combination snack bar and bathhouse, and a 300-car parking lot at the south end of the lake. (Fig. 13-P). Parking at the beach is regulated.[20] The Town employs beach lifeguards and two uniformed parking lot guards during the Memorial Day-to-Labor Day bathing season. The bathing facilities have been popular, with an average weekly attendance of almost 5,000 persons in 1970.

The operation of the bathing facilities at the lake has encountered some difficulties. One of the most significant problems has been the frequency of water quality levels unsuitable for bathing purposes.[21] In August 1969, water samples taken as part of the Town Health Department's pollution monitoring program showed coliform counts close to the limits established for safe swimming. A substantial rainfall occurred the next day, eventually producing an inflow of enough relatively uncontaminated water to reduce the coliform count by dilution. Had the rainfall not occurred, the Town Health Department would have closed the lake to protect bathers.

Appendix C: Species Lists

Wild Flowers

Skunk Cabbage	Symplocarpus foetidus
Partridge Berry	Mitchella repens
Climbing Fause Buckwheat	Polygonum scandens
Common Smart Weed	Polygonum hydropiper
Common Buttercup	Ranunculas acris
Aster, Arrow-leaved	Aster sagittifolius
Aster, Small Whitewood	Aster vimineus
Burdock	Arcticum minus
Damdilion Common	Taraxacum officinale
Fleabane, Common	Erigeron annuus
Goldenrod	Solidago spp.
Thistle, Field	Cirsium discolor
Yarrow	Achillea millefolium
Bur-cucumber	Sicyos angulatus
Japanese Honeysuckle	Lonicera japonica
Common Milkweed	Asclepias syriaca
Queen Ann's Lace	Daucus carota
Clover, White Sweet	Melilotus alba
Pokeweed	Phytolacca americana
Clinquefoil, Common	Potentilla simplex
Clinquefoil, Silver	Potentilla argenrea
Strawberry, Common	Fragaria virginiana
Butter and Egg	Linaria vulgaris
Mullen, Common	Verbascum thapsus
Nightshade, Bittersweet	Solanum dulcamara
Spotted Touch-Me-Not	Impatiens capensis
Wood Sorel, Creeping	Oxalis corniculate
Wood Sorel, Yellow	Oxalis stricta

Amphibians

Frog, Pickeral	Rana palustris
Frog, Leopard	Rana pipiens
Salamander, Two Lined	Eurycea bislineata

Birds

Blackbird, Redwing	*Agelaius phoeniceus*
Cardinal	*Richmondena cardinalis*
Catbird	*Dumetella carolinensis*
Chickadee, Black-capped	*Parus atricapillus*
Cowbird, Brown-headed	*Molothrus ater*
Crow, Common	*Corvus brachyrhychos*
Dove, Mourning	*Zenaidura macroura*
Finch, Purple	*Carpodacus purpureus*
Finch, Common	*Carpodacus mexicanus*
Grackle, Common	*Quiscalus quiscula*
Goose, Canada	*Branta canadensis*
Heron, Green	*Butorides striatus*
Heron, Black-crowned Night	*Nycticorax nycticorax*
Junco, Dark-eyed	*Junco hyemalis*
Mallard	*Anas platyrhynchos*
Mockingbird	*Mimus polyglottos*
Oven Bird	*Seiurus aurocapillus*
Pheasant, Ring-neck	*Phasianus colchicus*
Robin	*Turdus migratorius*
Towhee, Rufous-sided	*Pipilo erthrophthalmus*
Sparrow, Chipping	*Spizella passerina*
Sparrow, Field	*Spizella pusilla*
Sparrow, House	*Passer domesticus*
Sparrow, Savannah	*Passerculus sandwichensis*
Sparrow, Swamp	*Melospiza georgiana*
Starling	*Sturnus vulgaris*
Swallow, Tree	*Iridoprocne bicolor*
Swallow, Bank	*Riparia riparia*
Swallow, Barn	*Hirundo rustica*
Thrasher, Brown	*Toxostoma rufum*
Titmouse, Tuffted	*Parus bicolor*
Vireo, Red-eyed	*Vireo olivaceus*
Vireo, White-eyed	*Vireo griseus*
Warbler, Hooded	*Wilsonia citrina*
Woodpecker, Downy	*Dendrocopos pubescens*

Mammals

Chipmunk	*Tamias striatus*
Cottontail, Eastern	*Sylvilagus floridanus*
Deer, Whitetail	*Odocoileus virginiana*
Mole, Eastern	*Scalopus aquaticus*
Mouse, Deer	*Peromyscus maniculatus*
Opposum	*Didelphis marsupialis*
Raccoon	*Procyon lotor*
Skunk, Striped	*Mephitis mephitis*
Squirrel, Eastern Gray	*Sciurus carloinensis*

MILLSPAUGH

Aquatic Plants

Arrowhead, Broad Leaved	Sagittaria latifolia
Arrow Arum	Peltandra virginica
Pickerel Weed	Pontederia cordata
Watercress	Nasturtium officinale

Flora Inventory

The majority of the flora made up in this open space is Red Maple and Common Spice Bush. Only the area around the riverbank has any species diversity.

Red Maple	Acer rubrum
Black Birch	Betula lenta
Bitternut Hickory	Carya cordiformis
Flowering Dogwood	Cornus florida
White Ash	Fraxinus americana
Sycamore	Platanus occidentalis
Cotton Wood	Populus deltoides
Quacking Aspen	Populus tremuloides
Black Cherry	Prunus serotina
White Oak	Quercus alba
Scarlet Oak	Quercus coccinea
Weeping Willow	Salix babylonica
American Elm	Ulmus americana

Vines and Shrubs

Bittersweet	Celastrus scandens
Button Bush	Cephalanthus occidentalis
Silky Dogwwod	Cornus amomum
Red Osier Dogwood	Cornus stolonifera
Burning Bush	Euonymus atropurpureus
Common Spice Bush	Lindera benzion
Honeysuckle	Lonicera spp.
Virginia Creeper	Parthenocissus quinquefolia
Poison Ivy	Rhus radicans
Multiflora Rose	Rosa multiflora
Common Green Brier	Smilax rotundifolia
Bitter Night Shade	Solanum dulcamara
Maple Leaf Viburnum	Viburnum acerifolium
Wild Grape	Vitis aestivalis

Wild Flowers

Arrow Arum	Peltandra virginica
Skunk Cabbage	Symplocarpus foetidus
Cardinal Flower	Lobelia cardinalis
Common Smart Weed	Polygonum hydropiper
Aster, Small Whitewood	Aster vimineus
Burdock	Arctium minus
Dandilion, Common	Taraxacum officinale
Fleabane, Common	Erigeron annuus
Goldenrod	Solidago spp.
Japanese Honeysuckle	Lonicera japonica
Common Milkweed	Asclepias syriaca
Queen Ann's Lace	Daucus carota
Clover, Red	Trifolium pratense
Clover, White Sweet	Melilotus alba
Clover, White	Trifolium repens
Spotted Touch-Me-Not	Impatiens capensis

Amphibians

Pickerel Frog	Rana plaustris
Leopard Frog	Rana pipiens

Birds

Blackbird, Redwing	Agelaius phoeniceus
Cardinal	Richmondena cardinalis
Catbird	Dumetella carolinensis
Chickadee, Black-capped	Parus atricapillus
Crow, Common	Corvus brachyrhychos
Dove, Mourning	Zenaidura macroura
Finch, House	Carpodacus mexicanus
Grackle, Common	Quiscalus quiscula
Jay, Blue	Cyanocitta cristata
Junco, Dark-eyed	Junco hyemalis
Mallard	Anas platyrhynchos
Mockingbird	Mimus polyglottos
Robin	Turdus migratorius
Towhee, Rufous-sided	Pipilo erythrophthalmus
Sparrow, Song	Melospiza melodia
Sparrow, Swamp	Melospiza georgiana
Starling	Sturnus vulgaris
Swallow, Barn	Hirundo rustica
Swallow, Tree	Iridoprocne bicolor
Vireo, Redeyed	Vireo olivaceus
Warbler, Blackpoll	Dendronica striata
Woodpecker, Downy	Dendrocopos pubescens
Yellowthroat	Geothlypis trichas

Mammals

Deer, Whitetail	*Odocoileus virginianas*
Raccoon	*Procyon lotor*
Squirrel, Eastern Gray	*Sciurus carolinensis*

DRAKE LANE

Flora Inventory

The majority of the flora made up in this open space is Red Maple and Common Spice Bush. Only the area around the riverbank has any species diversity.

Red Maple	*Acer rubrum*
Sugar Maple	*Acer saccharum*
Black Birch	*Betula lenta*
Bitternut Hickory	*Carya cordiformis*
Flowering Dogwood	*Cornus florida*
White Ash	*Fraxinus americana*
Red Cedar	*Juniperus virginiana*
Sycamore	*Platanus occidentalis*
Cotton Wood	*Populus deltoides*
Quacking Aspen	*Populus tremuloides*
Black Cherry	*Prunus serotina*
White Oak	*Quercus alba*
Red Oak	*Quercus borealis*
Scarlet Oak	*Quercus coccines*
Pin Oak	*Quercus palustris*
Black Locust	*Robinia pseudoacacia*
Weeping Willow	*Salix babylonica*
Sassafrass	*Sassafras albidum*
American Elm	*Ulmus americana*

Vines and Shrubs

Silky Dogwood	*Cornus amomum*
Common Spice Bush	*Lindera benzoin*
Poison Ivy	*Rhus radicans*
Black Raspberry	*Rubus occidentalis*
Common Greenbrier	*Smilax rotundifolia*
Maple Leaf Viburnum	*Viburnum acerifolium*

Wild Flowers

Arrow Arum	*Peltandra virginica*
Skunk Cabbage	*Symplocarpus foetidus*
Venus' Looking Glass	*Specularia perfoliata*
Common Smart Weed	*Polygonum hydropiper*
Aster, Small Whitewood	*Aster vimineus*
Burdock	*Arctium minus*
Dandilion, Common	*Taraxacum officinale*
Fleabane, Common	*Erigeron annuus*
Goldenrod	*Solidago* spp.
Japanese Honeysuckle	*Lonicera japonica*
Common Milkweed	*Asclepias syriaca*
Queen Ann's Lace	*Daucus carota*
Clover, Red	*Trifolium pratense*
Clover, White Sweet	*Melilotus alba*
Clover, White	*Trifolium repens*
Spotted Touch-Me-Not	*Impatiens capensis*

Amphibians

Pickerel Frog	*Rana palustris*
Leopard Frog	*Rana pipiens*

Birds

Blackbird, Redwing	*Agelaius phoeniceus*
Cardinal	*Richmondena cardinalis*
Catbird	*Dumetella carolinensis*
Chickadee, Black-capped	*Parus atricapillus*
Crow, Common	*Corvus brachyrhychos*
Dove, Mourning	*Zenaidura macroura*
Grackle, Common	*Quiscalus quiscula*
Jay, Blue	*Cyanocitta cristata*
Robin	*Turdus migratorius*
Sparrow, Chipping	*Spizella passerina*
Sparrow, Field	*Spizella pusilla*
Sparrow, House	*Passer domesticus*
Sparrow, Song	*Melospiza melodia*
Starling	*Sturnus vulgaris*
Swallow, Barn	*Hirundo rustica*
Swallow, Tree	*Iridoprocne bicolor*
Woodpecker, Downy	*Dendrocopos pubescens*

Mammals

Deer, Whitetail	*Odocoileus virginiana*
Raccoon	*Procyon lotor*
Squirrel, Eastern Gray	*Sciurus carloinensis*

FLOWER HOUSE DRIVE

Aquatic Plants

Arrow Arum	*Peltandra virginica*
Horn Wort	*Ceratophyllum demersum*
Pickerel Weed	*Pontederia cordata*
Watercress	*Nasturtium officinale*
Waterlily, White	*Nymphaea tuberosa*
Waterlily, Yellow	*Nuphar advena*

Flora Inventory

Red Maple	*Acer rubrum*
Tree of Heaven	*Ailanthus altissima*
Black Birch	*Betula lenta*
Gray Birch	*Betula populifolia*
Pignut Hickory	*Carya glabra*
Shagbark Hickory	*Carya ovata*
Flowering Dogwood	*Cornus florida*
American Beech	*Fagus grandifolia*
Honey Locust	*Gleditsia triacanthos*
Red Cedar	*Juniperus virginiana*
Tulip Tree	*Liriodendron tulipifera*
Sycamore	*Platanus occidentalis*
Cottonwood	*Populus deltoides*
Quacking Aspen	*Populus tremuloides*
Black Cherry	*Prunus serotina*
Choke Cherry	*Prunus virginiana*
White Oak	*Quercus alba*
Red Oak	*Quercus borealis*
Pin Oak	*Quercus palustris*
Yellow Stem Willow	*Salix alba vitellina*
Bass Wood	*Tilia americana*
American Elm	*Ulmus americana*

Vines and Shrubs

Bittersweet	Celastrus scandens
Coast Pepper Bush	Clethra alnifolia
Silky Dogwood	Cornus amomum
Red Osier Dogwood	Cornus stolonifera
Burning Bush	Euonymus atropurpureus
Common Spice Bush	Lindera benzion
Honeysuckle	Lonicera spp.
Shrubby Cinquefoil	Potentilla fruticosa
Common Buckhorn	Rhamnus catharticus
Poison Ivy	Rhus radicans
Stage Horn Sumac	Rhus typhina
Multiflora Rose	Rosa multiflora
Common Green Brier	Smilax rotundifolia
Bitter Nightshade	Solanum dulcamara
Meadow Sweet	Spiraea spp.
Northern Arrow Wood	Viburnum dentatum
Wild Grape	Vitis aestivalis

Wild Flowers

Broad Leaved Arrowhead	Sagittaria latifolia
Jack-in-the-Pulpit	Arisaema triphyllum
Arrow Arum	Peltandra virginica
Skunk Cabbage	Symplocarpus foetidus
Climbing False Buckwheat	Polygonum scandens
Common Smart Weed	Polygonum hydropiper
Common Buttercup	Ranunculas acris
Aster, Arrow-leaved	Aster sagittifolius
Aster, Late Purple	Aster patens
Aster, New England	Aster novae-angliae
Aster, Small Whitewood	Aster vimineus
Aster, White Wood	Aster divaricatus
Aster, Health	Aster ericoides
Black-eyed Susan	Rudbeckia hirta
Burdock	Arcticum minus
Damdilion Common	Taraxacum officinale
Fleabane, Common	Erigeron annuus
Goldenrod	Solidago spp.
Thistle, Field	Cirsium discolor
Yarrow	Achillea millefolium
Common Evening Primrose	Oenothera biennis
Japanese Honeysuckle	Lonicera japonica
Common Milkweed	Asclepias syriaca
Pokeweed	Phytolacca americana
Queen Ann's Lace	Daucus carota
Clover, Red	Trifolium pratense
Rabbits Foot Clover	Trifolium arvense
Clover, White Sweet	Melilotus alba
Tick Trefoil	Desmodium spp.
Mullen, Common	Verbascum thapsus
Nightshade, Bittersweet	Solanum dulcamara
Nightshade, Common	Solanum nigrum
Spotted Touch-Me-Not	Impatiens capensis

Fish

Blacknose Dace	Rhinichthys atratulus
Carp	Cyprinus carpio
Minnow, Bluntnose	Pimephales notatus
Minnow, Fathead	Pimephales promelas
Shinner, Bridled	Notropis bifrenatus
Shinner, Common	Notropis cornutus
Shinner, Golden	Notemigonus crysoleucas
Stickleback, Ninespine	Pungitius pungitius
Stickleback, Threespine	Gasterosteus aculeatus
Bass, Largemouth	Micropterus salmoides
Bass, Smallmouth	Micropterus dolomieui
Black Crapple	Pomoxis maculatus
Blue Gill	Lepomis macrochirus
Pumpkin Seed	Lepomis gibbosus
Red-breasted	Lepomis auritus
Brown Bullhead	Ictaurus nebulosus
Chain Pickered	Esox niger
Tesselated Darter	Ethiostoma olmstedi
Yellow Perch	Perca flavescens
Trout, Brook	Salvelinus fontinalis
Trout, Brown	Salmo trutta
Trout, Rainbow	Salmo gardeneri

Amphibians

Frog, Bull	Rana catesbeiana
Frog, Pickeral	Rana palustris
Frog, Leopard	Rana pipiens
Frog, Tree	Hyla spp.
Salamander, Two Lined	Eurycea bislineata
Toad, American	Bufo americanus

Reptiles

Turtle, Painted	Chrystemys picta
Turtle, Snapping	Chelydra serpentina
Turtle, Spotted	Clemmys guttata
Snake, Garter	Thamnopis sirtalis
Snake, Water	Natrix sipedon

Birds

Blackbird, Redwing	*Agelaius phoeniceus*
Cardinal	*Richmondena cardinalis*
Catbird	*Dumetella carolinensis*
Chickadee, Black-capped	*Parus atricapillus*
Crow, Common	*Corvus brachyrhychos*
Dove, Mourning	*Zenaidura macroura*
Flicker, Yellow-shafted	*Colartes auratus*
Grackle, Common	*Quiscalus quiscula*
Goose, Canada	*Branta canadensis*
Jay, Blue	*Cyanocitta cristata*
Junco, Dark-eyed	*Junco hyemalis*
Mallard	*Anas platyrhynchos*
Mockingbird	*Mimus polyglottos*
Sparrow, Chipping	*Spizella passerina*
Sparrow, Field	*Spizella pusilla*
Sparrow, House	*Passer domesticus*
Sparrow, Song	*Melospiza melodia*
Sparrow, Swamp	*Melospiza georgiana*
Woodpecker, Downy	*Dendrocopos pubescens*

Mammals

Cottontail, Eastern	*Sylvilagus floridanus*
Deer, Whitetail	*Odocoileus virginiana*
Opposum	*Didelphis marsupialis*
Raccoon	*Procyon lotor*
Skunk, Striped	*Mephitis mephitis*
Squirrel, Eastern Gray	*Sciurus carloinensis*
Woodchuck	*Marmota monax*

RIVERFIELD

Aquatic Plants

Arrowhead, Broad Leaved	*Sagittaria latifolia*
Arrowhead, Grass Leaved	*Sagittaria graminea*
Arrow Arum	*Peltandra virginica*
Duckweed, Lesser	*Lemna minor*
Pickerel Weed	*Pontederia cordata*
Waterlily	*Nuphar* spp.
Watercress	*Nasturtium officinale*

Flora Inventory

Red Maple	*Acer rubrum*
Striped Maple	*Acer pensylvanicum*
Tree of Heaven	*Ailanthus altissima*
Black Birch	*Betula lenta*
Yellow Birch	*Betula lutea*
Paper Birch	*Betula papyrifera*
Gray Birch	*Betula populifolia*
Blue Beech	*Carpinus caroliniana*
Shagbark Hickory	*Carya ovata*
Common Catalpa	*Catalpa bignonioides*
Flowering Dogwood	*Cornus florida*
American Beech	*Fagus grandifolia*
Common Witch Hazel	*Hamamelis virginiana*
Red Cedar	*Juniperus virginiana*
Cottonwood	*Populus deltoides*
Quacking Aspen	*Populus tremuloides*
Black Cherry	*Prunus serotina*
Choke Cherry	*Prunus virginiana*
White Oak	*Quercus alba*
Red Oak	*Quercus borealis*
Scarlet Oak	*Quercus coccines*
Pin Oak	*Quercus palustris*
Weeping Willow	*Salix babylonica*
American Elm	*Ulmus americana*

Wild Flowers

Jack-in-the-Pulpit	Arisaema triphyllum
Skunk Cabbage	Symplocarpus foetidus
Rough Bedstraw	Galium asprellum
Climbing False Buckwheat	Polygonum scandens
Common Smart Weed	Polygonum hydropiper
Long Bristled Smartweed	Polygonum caespitosun
Common Buttercup	Ranunculas acris
Aster, Arrow-leaved	Aster sagittifolius
Aster, Large Leaf	Aster macrophyllus
Aster, New England	Aster novae-angliae
Aster, Small Whitewood	Aster vimineus
Aster, White Wood	Aster divaricatus
Aster, Health	Aster ericoides
Black-eyed Susan	Rudbeckia hirta
Burdock	Arcticum minus
Dandilion, Common	Taraxacum officinale
Fleabane, Common	Erigeron annuus
Fleabane, Daisy	Erigeron philadelphicus
Goldenrod	Solidaga spp.
Ragweed	Ambrosia artemisiifolia
Thistle, Field	Cirsium discolor
Yarrow	Achillea millefolium
Bur-cucumber	Sicyos angulatus
Japanese Honeysuckle	Lonicera japonica
Common Milkweed	Asclepias syriaca
Water Cress	Nasturtium officinale
Queen Ann's Lace	Daucus carota
Pokeweed	Phytolacca americana
Cinquefiol, Common	Potentilla simplex
Cinquefoil, Silver	Potentilla argentea
Meadow Sweet	Spiraea latifolia
Steeple Bush	Spiraea tomentosa
Butter and Egg	Linaria vulgaris
Mullen, Common	Verbascum thapsus
Horse Nettle	Solanum carolinense
Jimsonweed	Datura stramonium
Nightshade, Bittersweet	Solanum dulcamara
Nightshade, Common	Solanum nigrum
Spotted Touch-Me-Not	Impatiens capensis
Wood Sorel, Creeping	Oxalis corniculate
Wood Sorel, Yellow	Oxalis stricts

Amphibians

Frog, Pickeral	Rana palustris
Frog, Leopard	Rana pipiens
Salamander, Two Lined	Eurycea bislineata
Toad, American	Bufo americanus

Reptiles

Turtle, Painted	Chrystemys picta
Snake, Garter	Thamnopis sirtalis
Snake, Water	Natrix sipedon

Birds

Blackbird, Redwing	Agelaius phoeniceus
Cardinal	Richmondena cardinalis
Chickadee, Black-capped	Parus atricapillus
Cowbird, Brown-headed	Molothrus ater
Crow, Common	Corvus brachyrhychos
Dove, Mourning	Zenaidura macroura
Finch, House	Carpodacus mexicanus
Flicker, Yellow-shafted	Colaptes auratus
Goldfinch, American	Spinus tristis
Grackle, Common	Quiscalus quiscula
Hawk, Pigeon	Falco columbarius
Junco, Slate-colored	Junco hyemalis
Mockingbird	Mimus polyglottos
Pheasant, Ringneck	Phasianus colchicus
Redstart, American	Setophaga ruticilla
Robin	Turdus migratorius
Towhee, Rufous-sided	Pipilo erythrophthalmus
Sparrow, Chipping	Spizella passerina
Sparrow, Field	Spizella pusilla
Sparrow, Fox	Passerella iliaca
Sparrow, Grasshopper	Ammodramus savannarum
Sparrow, House	Passer domesticus
Sparrow, Song	Melospiza melodia
Sparrow, Tree	Iridoprocne bicolor
Swallow, Barn	Hirundo rustica
Viero, Red-eyed	Vireo olivaceus
Warbler, Black Poll	Dendroica striata
Warbler, Blue-winged	Vermivora pinus
Yellowthroat	Geothlypis trichas

Mammals

Chipmunk	Tamias striatus
Cottontail, Eastern	Sylvilagus floridanus
Deer, Whitetail	Odocoileus virginiana
Muskrat	Ondatra zibethicus
Raccoon	Procyon loter
Skunk, Striped	Mephitis mephitis
Squirrel, Eastern Gray	Sciurus carolinansis
Woodchuck	Marmota monax

NOTES

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, soil scientists, foresters, climatologists, landscape architects, recreational 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 83 town area serving western Connecticut.

As a public service activity, the Team is available to serve towns and/or developers within the King's Mark RC & D Area - free of charge.

PURPOSE OF THE ENVIRONMENTAL REVIEW TEAM

The Environmental Review Team is available to assist towns and/or developers in the review of sites proposed for major land use activities. For example, the ERT has been involved in the review of a wide range of significant land use activities including subdivisions, sanitary landfills, commercial and industrial developments, and recreational/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 site, and highlighting opportunities and limitations for the proposed land use.

REQUESTING AN ENVIRONMENTAL REVIEW

Environmental Reviews may be requested by the chief elected official of a municipality, or the chairman of an administrative agency such as planning and zoning, conservation, or inland wetlands. Environmental Review Request Forms are available at your local Soil and Water Conservation District, and the King's Mark ERT Coordinator. This request form 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 investigate. When this request is approved by the local Soil and Water Conservation District and King's Mark RC & D Executive Committee, the Team will undertake the review. At present, the ERT can undertake two (2) reviews per month.

For additional information regarding the Environmental Review Team, please contact your local Soil and Water Conservation District or Nancy Ferlow, ERT Coordinator, King's Mark Environmental Review Team, King's Mark Resource Conservation and Development Area, 322 North Main Street, Wallingford, Connecticut 06492. King's Mark ERT phone number is 265-6695.