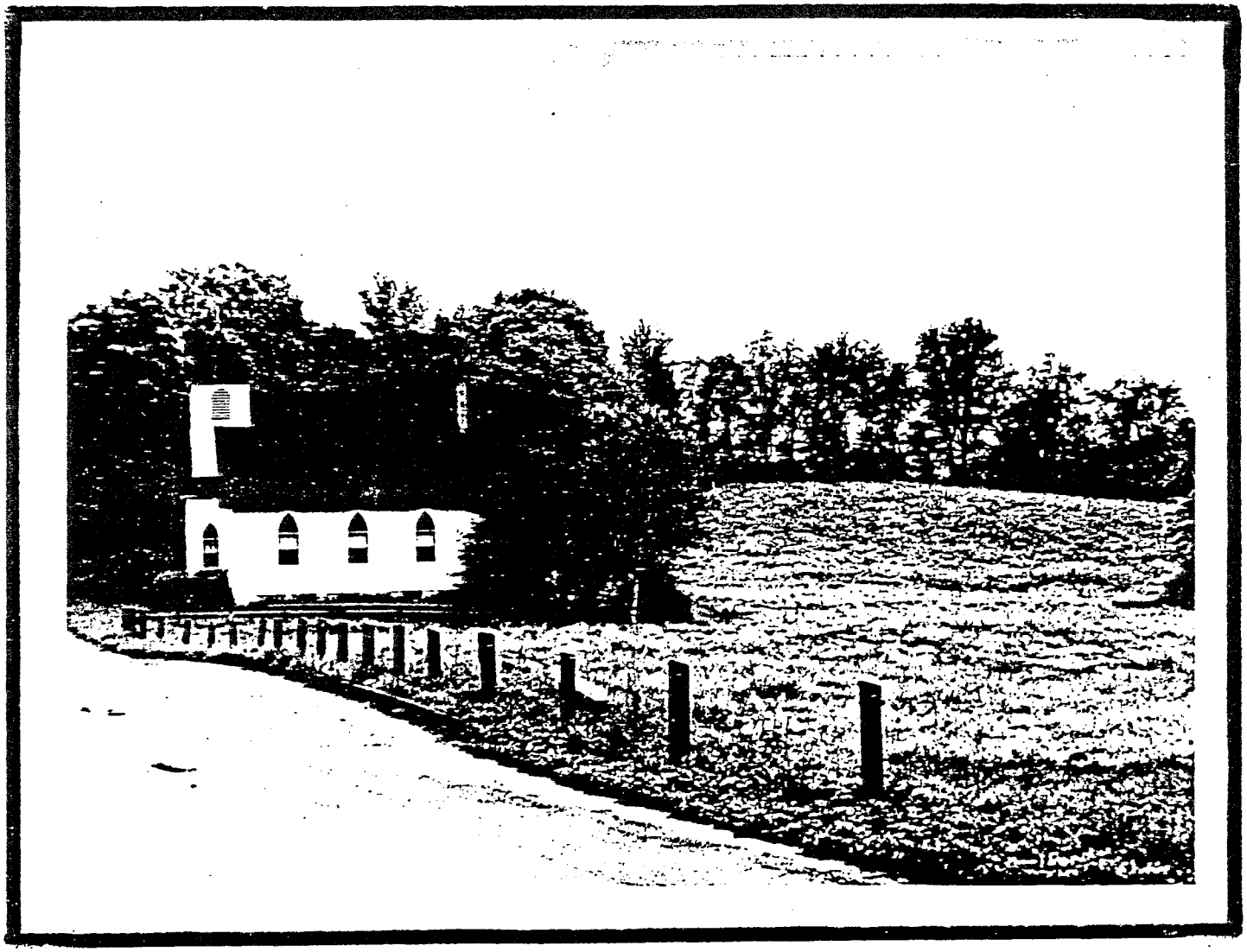
ENVIRONMENTAL REVIEW TEAM REPORT



MERRYALL DISTRICT

NEW MILFORD, CONNECTICUT

King's Mark

Resource Conservation & Development Area

MERRYALL DISTRICT ENVIRONMENTAL REVIEW

New Milford, Connecticut

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

for the

New Milford Conservation Commission

and

The Friends and Neighbors of Historic Merryall

FEBRUARY 1986

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EXECUTIVE SUMMARY

This environmental review was the result of requests from the New Milford Conservation Commission and the Friends and Neighbors of Historic Merryall group. The ERT was requested to assist the town in identifying and evaluating the natural and cultural resources in the Merryall District in order to guide future growth or development in this area.

The review process consisted of four phases: (1) inventory of Merryall's natural and cultural attributes; (2) assessment of Merryall's resources; (3) identification of natural or cultural resource limitations and opportunities; and (4) formulation of planning alternatives.

The Merryall District encompasses approximately 11 square miles in the northeast - northcentral region of the Town of New Milford. The District is situated in a highly diverse and dynamic growth region. With ready access to urban, natural and transportation resources, the Merryall District is in an unique position to promote and plan for the conservation and development of the area.

The Merryall District is characterized by mostly rough and rugged terrain, with forests and woodlands dominating the landscape. It has a rich diversity of historical resources and agriculture is still very active in the area. Both factors play an important role in maintaining the rural integrity of the Merryall District.

Through the inventory and assessment process, specific resources, areas of concern and opportunities were determined. They fall into the following categories: (1) physical characteristics;

(2) biological resources; (3) cultural assets; and (4) planning considerations and alternatives. They are summarized below.

Physical Characteristics

Except for the valley areas, the topography of the Merryall District is characterized by mostly rough and rugged terrain. Moderate to steep slopes may limit development in these areas.

The watershed areas for the West Aspetuck River, Merryall Brook and Denman Brook are relatively lightly developed. Several geologic limitations include steep and precipitous slopes and shallow to bedrock and till-based soils having seasonally elevated water tables and slow percolation rates. On-site wells and septic systems will be required with any new development. Because of these development limitations, it seems likely that the study area is best suited for low intensity development.

The principal aquifer underlying the study area appears to be of crystalline metamorphic rock. The quality of the water supply should be good. There is a chance, however, that the underlying bedrock may be mineralized with iron and/or manganese.

Numerous areas in the Merryall District have development limitations due to shallow to bedrock and wetland soils. Additional soil constraints include slopes greater than 15 percent and poor septic effluent filtering capabilities.

Biological Resources

The great expanse of mixed vegetation plays an important role in maintaining the aesthetic quality of the Merryall District, in providing a water storage capacity, and in providing both wildlife habitat and a renewable resource (i.e., wood).

The potential for forest management in the Merryall District is high. An active forest management program for private forest landowners will enhance the forest resource in the District.

As areas in the Merryall District are developed, there will be an immediate impact on wildlife due to habitat loss or disturbance, and human and vehicular activity. However, backyard wildlife habitat management practices such as providing food, water or shelter will benefit existing wildlife populations.

Ella Fohs Camp Pond and the West Aspetuck River offer excellent fishing opportunities in the Merryall District.

Additional residential development or agricultural activities within the Merryall District watershed neglecting to employ the best lake management practices may increase nutrients into lakes and ponds, thus accelerating eutrophication.

Wetlands are very important ecosystems from an ecological and hydrological standpoint. Since wetlands in the District are underlain by calcareous rock, they are ecologically diverse and biologically productive. Wetlands also maintain high water quality through biochemical processes and reduce stormwater runoff. For these reasons, every effort should be made to protect these areas.

Cultural Assets

The Merryall District's landscape and associated prehistoric and historic records are largely intact. This offers the Town and its citizens an unique opportunity to work towards an historic preservation plan.

Increase the awareness about the District's rich and important archaeological and architectural resources.

Use the preliminary sensitivity map and architectural inventory to review sections of the town plan for consistency and compatibility.

Initiate systematic surveys of the District's archaeological and architectural properties including its mill remains.

Use existing information to gain support for the creation and management of a preservation district.

Conduct and implement a long-term research plan which explores and interprets the prehistoric and historic records of the Merryall Distirct.

Planning Considerations and Alternatives

The New Milford Plan of Development is in the process of being updated. The plan calls for a mix of residential and open space land uses in the Merryall District. Approximately 50 percent of the area is targeted for low density single-family residential use; 35 percent is projected for permanent open space; and 15 percent is proposed for medium density residential use.

The text of the Plan of Development and current zoning do not support the density of development called for in the Land Use Plan map. This apparent inconsistency should be resolved in the updated version.

One traffic improvement with potential impact upon the rate and type of growth occurring in Merryall is the proposed Route 7 realignment. Since it will intersect at Wellsville Avenue, approximately 2.5 miles from Merryall, growth in the District could be influenced by the completion of the expressway. The new expressway is not expected to generate a significant amount of new through traffic in the District.

The only state program for preserving farmland is the State Department of Agriculture's Purchase of Development Rights Program. The State purchases the development rights to farmland in exchange for its fair market value. The owners convey the development rights to the state. The owner maintains title to the property, but the property can never be developed.

The District has been delineated into five "Zones of Conservation Importance" in order to further identify areas where development would be most suitable and least disruptive. The zones include: (1) Watershed/Inland Wetlands; (2) Farmland; (3) Historic Areas; (4) Scenic/Open Spaces; and (5) Limited Development Areas.

These are a number of land conservation and protection strategies available at the local, state or federal levels as well as private sector initiatives.

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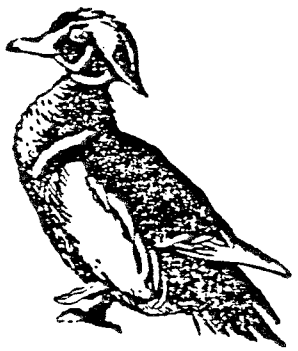


INTRODUCTION

Introduction

The Merryall District study area covers approximately 7,300 acres or 11.4 square miles in the northeast - northcentral region of the Town of New Milford. The District consists of two major sections: (1) Upper Merryall (Erickson Corner) near the Kent border; and (2) Lower Merryall, which is near the center of the entire District. Located approximately 20 miles north of Danbury, the Merryall District, in the Town of New Milford is surrounded by the communities of Washington, Roxbury, Bridgewater, Brookfield, New Fairfield, Sherman and Kent (Figure 1). Except for the valley areas comprising the major streamcourses, the topography of the Merryall District is characterized mostly by a rough and rugged terrain. The West Aspetuck River is the major river in the District. It is fed by numerous tributaries including Denman and Merryall Brooks.

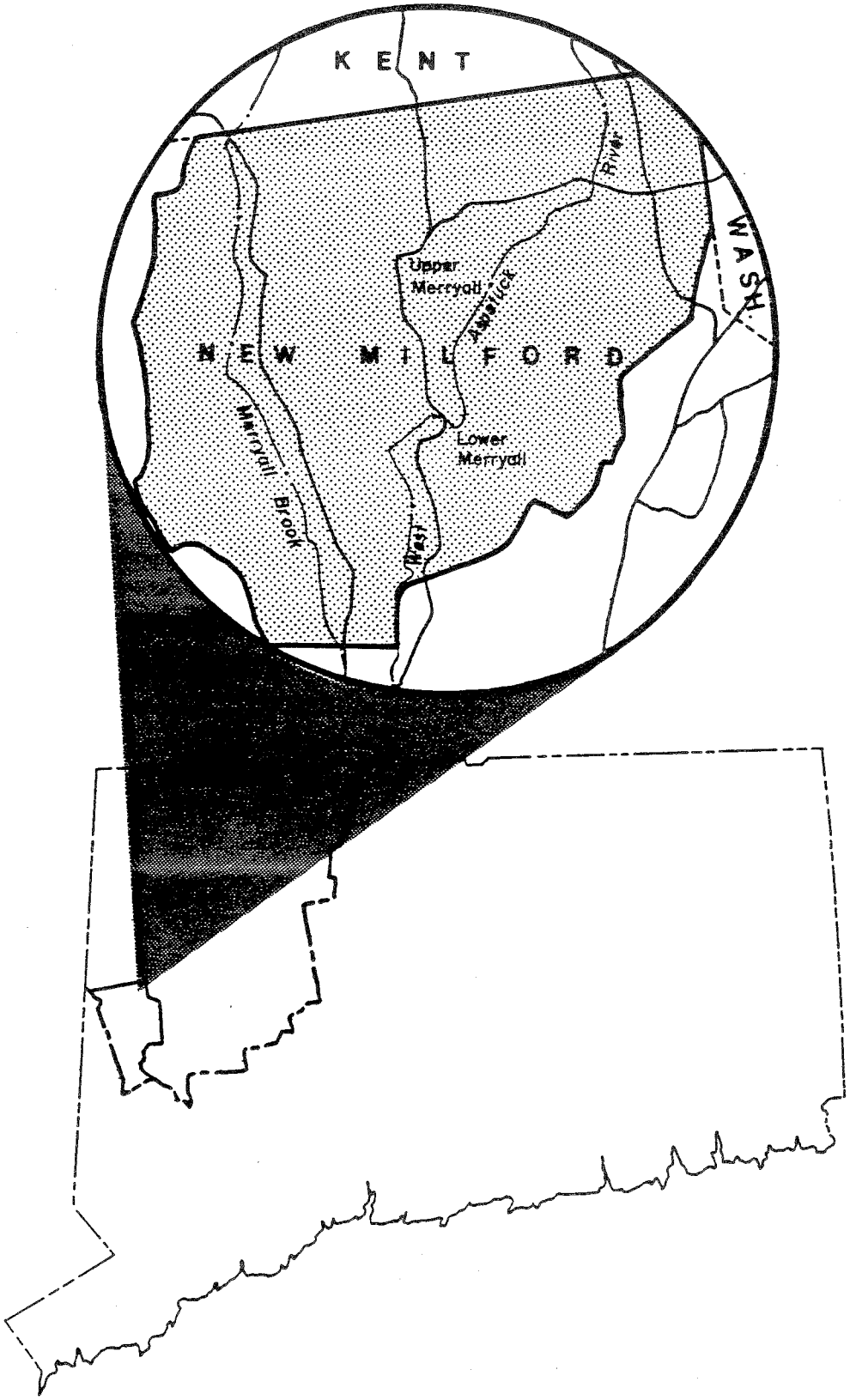
The Merryall District has a diversity of natural and cultural resources. Forests and woodlands dominate the entire region, and is characterized by a mixed mesophytic forest community. There are abundant wetland resources in the District, providing a diversity of habitats for wildlife species. Ponds and lakes also dot the landscape. Agriculture is still very active and plays an important role in maintaining the rural character of the Merryall District.

Goals and Objectives

Through the efforts of the New Milford Conservation Commission, the Friends and Neighbors of Historic Merryall group, and the King's

LOCATION OF STUDY SITE

Figure 1



Mark Environmental Review Team, this environmental review was conducted for the town.

This report does not present a "plan" for the Merryall District. Rather, it provides an information base and a series of alternatives which can be implemented to help conserve the natural and cultural integrity of the Merryall District, and guide development in the area.

The primary goal of the review was to inventory and assess the natural and historical resources of the Merryall District, including Mud Pond. Presently, the Town of New Milford, including the Merryall District, is experiencing rapid growth and development. Numerous areas in the District are subdivided or being developed. This review, however, did not address any specific sites proposed for development. The purpose of this review was to conduct a comprehensive inventory of the natural resource base and to provide natural resource information concerning the Merryall District.

Specific objectives were:

* To provide planning alternatives to guide growth and development in the Merryall District;
* To provide alternatives to protect important farmland;
* To identify important water resources, describing their quantity and quality, and to provide guidelines to protect these resources;
* To assess the environmental conditions of Mud Pond and other water bodies, and present mitigating measures.

The ERT Process

The review process consisted of four distinct phases: (1) inventory of the natural and cultural resource base (collection of

data); (2) assessment of the natural and cultural resource base (analysis of data); (3) identification of natural or cultural resource limitations and opportunities; and (4) formulation of planning alternatives.

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

Once the Team members have 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 Merryall's natural and cultural resource limitations and opportunities. Such an assessment provided a valuable tool for generating planning guidelines or alternatives which could suggest methods for capitalizing on Merryall's attributes and mitigating potential adverse impacts.

PHYSICAL CHARACTERISTICS OF THE MERRYALL DISTRICT

PHYSICAL CHARACTERISTICS OF THE MERRYALL DISTRICT

HYDROGEOLOGY OF THE MERRYALL DISTRICT

Topography

Except for the valley areas comprising the major water courses, such as the West Aspetuck River, Merryall Brook and Denman Brook and their accompanying wetlands, the topography of the Merryall District is characterized by mostly rugged and rough terrain (Figure 2). The underlying bedrock clearly influences the landscape in this area rather than the unconsolidated materials overlying it. Major topographic highs in the study area include Rock Cobble Hill (1,010 ft.), Peet Hill (1,170 ft.), Sawyer Hill (1,000 ft.), Bear Hill (1,281 ft.), and Iron Hill (1,060 ft.). Slopes in these high points range from moderate to precipitous with the majority being very steep.

The river valleys are dominated by flat to moderate slopes. The major valleys in the Merryall District are underalin by relatively moderate relief in these areas. Because marble is composed of relatively soft materials (i.e., dolomite and calcite), it is highly susceptible to weathering and erosion processes. Relatively recent periods of glaciation have also helped to wear down the marble. As a result, bedrock exposures of marble are relatively scarce compared to the surrounding rocks (e.g., schist and gneiss) which are composed of minerals that are more resistant to erosion. In addition, glacial meltwater streams laid down varying thicknesses of sand and gravel deposits over bedrock in the valley areas. In the larger valleys

where sand and gravel deposits are 10 or more feet thick, the topography is influenced more by unconsolidated materials such as sand and gravel than the underlying bedrock.

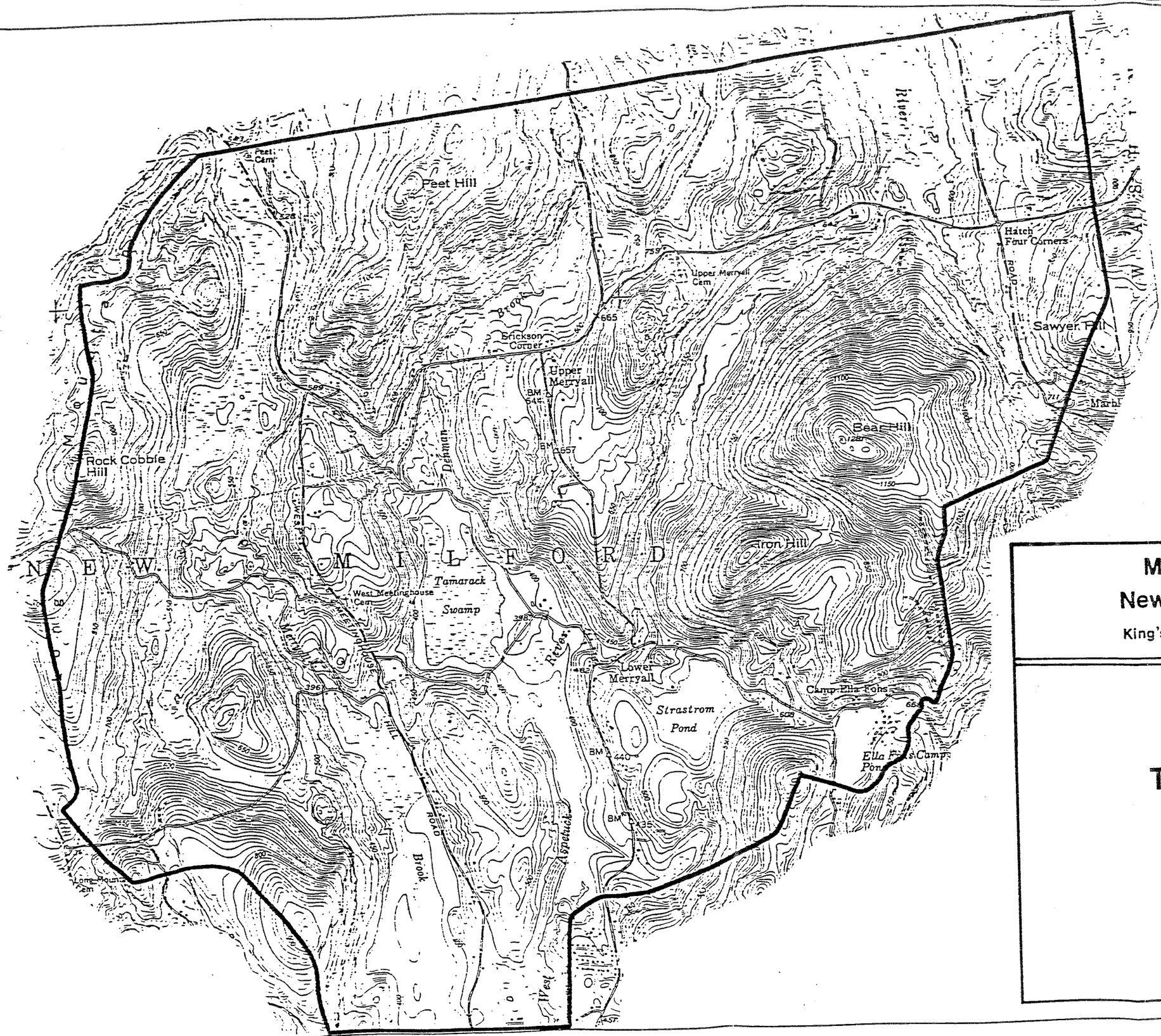
Other major topographic features in the study area include: (1) the calcareous swamps such as Rumin Swamp and parts of Tamarack Swamp which overlie marble rock, and are ecologically and hydrologically important; and (2) the major streamcourses (i.e., the West Aspetuck River and Merryall Brook) and surface water bodies (i.e., Ella Fohs Camp Pond). These areas have a high aesthetic and recreational value.

Maximum elevations in the study area reach 1281 feet above mean sea level at the top of Bear Hill. Minimum elevations reach about 370 feet above mean sea level, primarily along the West Aspetuck River at the southern limits of the Merryall District.

Geology

The study area is located entirely within the Kent topographic quadrangle. There is presently no published geologic information specific to the quadrangle. However, there is preliminary bedrock and surficial geologic data base on file at the Department of Environmental Protection (DEP), Natural Resources Center in Hartford. Referenced for the purposes of this report were Bedrock Geological Map of Connecticut (Rodgers, 1985) and the Soil Survey of Litchfield County. For more detailed information concerning the bedrock geology of the Merryall District, interested persons should review the unpublished information on file at DEP.

Figure 2



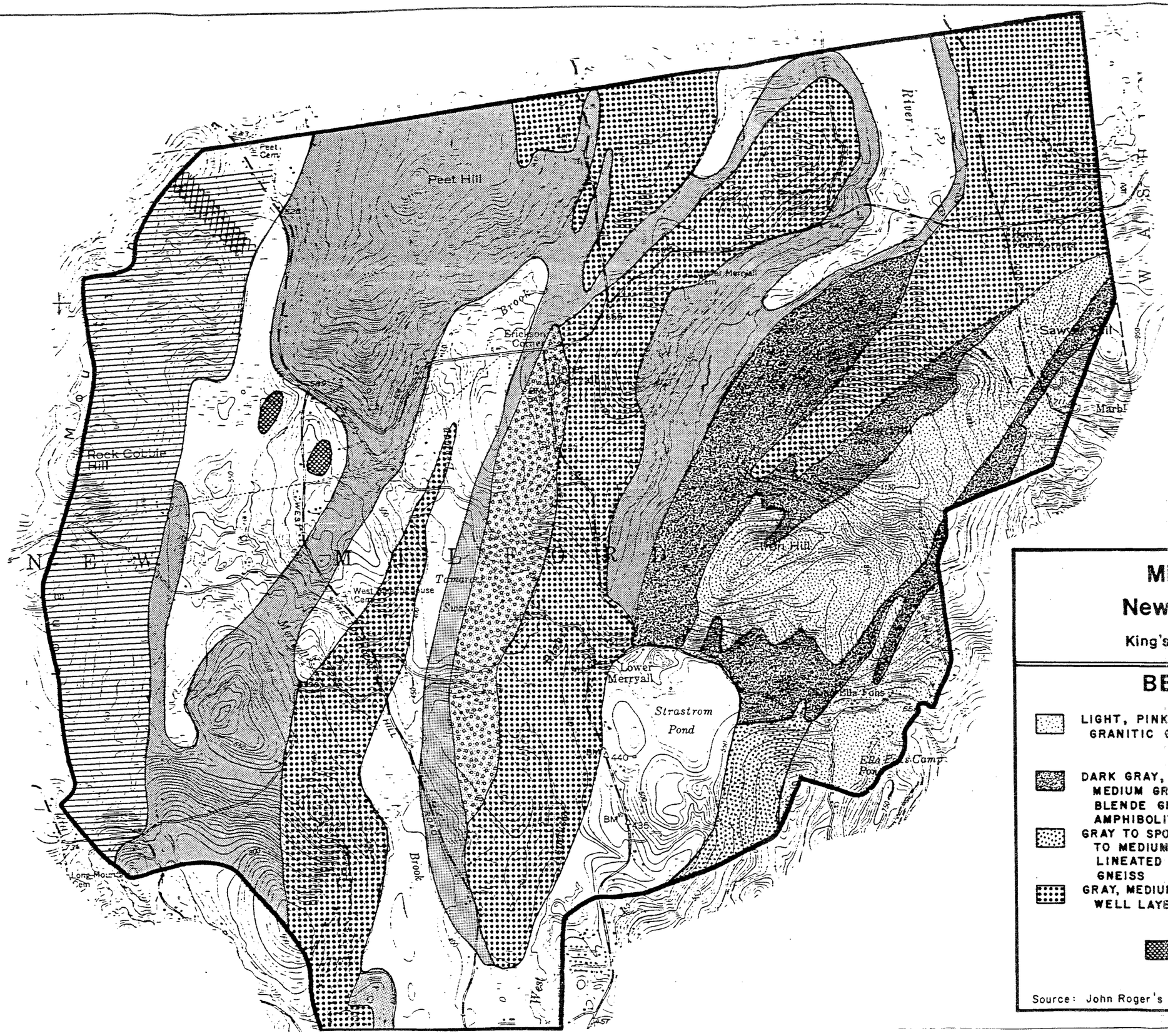
MERRYALL DISTRICT

New Milford, Connecticut

King's Mark Environmental Review Team

TOPOGRAPHY

Figure 3



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MERRYALL DISTRICT
New Milford, Connecticut

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BEDROCK GEOLOGY

- LIGHT, PINK TO GRAY GRANITIC GNEISS
- WHITE TO GRAY DOLOMITIC MARBLE KNOWN AS THE STOCKBRIDGE FORMATION
- DARK GRAY, FINE TO MEDIUM GRAINED HORNBLENDE GNEISS AND AMPHIBOLITE
- GRAY, TAN WEATHERING, FELDSPATIC QUARTZITE, SCHIST AND GNEISS KNOWN AS THE DALTON FORMATION
- GRAY TO SPOTTED, FINE TO MEDIUM GRAINED LINEATED GRANITIC GNEISS
- RUSTY WEATHERING SCHIST AND GNEISSES
- GRAY, MEDIUM GRAINED WELL LAYERED GNEISS
- LIGHT COLORED, FOLIATED GRANITIC GNEISS
- DARK TO LIGHT COLORED SCHISTOSE MARBLE (BASAL MARBLE MEMBER OF WOLLOMSAC SCHIST)

Source: John Roger's Bedrock Geological Map of Connecticut.

Bedrock Geology

The bedrock underlying the study area consists primarily of crystalline metamorphic rock including schist, gneiss, marble, amphibolite and quartzite (Figure 3). The term "metamorphic" refers to rocks that have sustained changes as a result of very high pressures and temperatures within the earth's crust. All of these rocks are very old, about 440 million years, and have been folded generally into north trending belts.

The changes caused by metamorphism include:
(1) re-crystallization of pre-existing minerals to form new and different minerals; and (2) a general alignment of elongated minerals into preferred orientations. Elongated, platy or flaky materials are predominant and parallel in schists causing the layering in the rocks. Muscovite, biotite and chlorite are the most abundant of these minerals. Quartz and feldspar, being more granular are also present in schist. Schists are characteristically slabby, and tend to break apart easily.

Gneisses are generally composed of granular minerals such as quartz and feldspar. They also have thin bands of elongate mineral grains such as muscovite, biotite and chlorite. This mineral arrangement gives the rocks a streaked or banded appearence. The gneisses may be interlayered with schists in some places. Other interlayered metamorphic rocks in the Merryall District include amphibolites (i.e., rocks rich in amphiboles, a certain mineral group) and quartzite (quartz rich, metamorphosed sandstone).

The term "marble" refers to a metamorphic rock composed of the mineral dolomite, but it also contains calcium carbonate. Marbles

differ chemically from schists and gneisses. The carbonate minerals in the marble are subject to relatively rapid erosion since they are soft minerals easily dissolved by acidic precipitation and ground water. Due to the physical and chemical properties of these component minerals, the marble erodes much more rapidly than does the aluminum silicate minerals that make up schists and gneisses. As a result, the topographic highs in the study area are made up predominately by the gneisses and schists rather than the relatively soft marbles.

Some geologists believe that this relatively narrow belt of marble traversing the western edge of Connecticut in a northward direction is the remains of a carbonate bank. It existed at the continental margin of the ancient North American continent during a very early geologic history known as the Ordivicium period (438 - 505 million years ago). This carbonate bank may have been similiar to the Great Barrier Reef off the Austrailian continent. It may have been derived from living corals which inhabitated the area at the time and were subsequently destroyed by the metamorphism that generated the marble from the dolomite and calcite.

Finally, depth to bedrock ranges from zero in rock outcrops to not much more the 10 feet in the West Aspetuck River Valley, northwest of Hatch Four Corners, between Frenchman Road and Sawyer Hill Road.

During the field review, Team members had the opportunity to visit the site of an abandoned feldspar mine know as the George Roebling Mine or the Upper Merryall Beryl Prospect. It is located on the west side of Mine Road and is under private ownership. According

to a publication entitled Connecticut's Minor Metals and Her Minerals (Harte, 1944), the Roebling Mine was operated between 1880 and 1900 and was an important producer of mica. The publication states that, "...high quality mica should split into exceedingly thin sheets; tough, flexible and elastic, and for some uses, it should be very transparent..." Harte further elaborates that, "...Connecticut mica frequently has a structure which prevents splitting into sheets of any appreciable size and much of it is said to unduly hard and brittle..."

The mica extracted from the mine was probably used as a substitute for glass. Other uses included windows in stoves, furnaces and similiar uses requiring great resistance to heat (Harte, 1944). In addition to the mica, potash feldspar (for porcelain and ceramics) and gem beryl, particularly the helidor variety, which is yellow or golden to brown in color, was also mined from the quarry.

The source of mica, beryl and potash feldspar at the site is pegmatite. Pegmatites are of igneous origin or rocks formed from molten magma. They intruded surrounding rocks during mountain building periods hundreds of million years ago. They occur as veins in the surrounding rock and are composed largely of feldspar, quartz, and muscovite with accessory minerals such as tourmaline (schorl), berly, garnet and magnetite. A cursory inspection of tailings at the site yielded all of the above except the beryl and magnetite. Without doubt, this abandoned quarry would be a haven for mineral collectors, yielding numerous and interesting minerals.

As mentioned earlier, marble underlies parts of the study area. It is unknown if any of the marble had been quarried in the past.

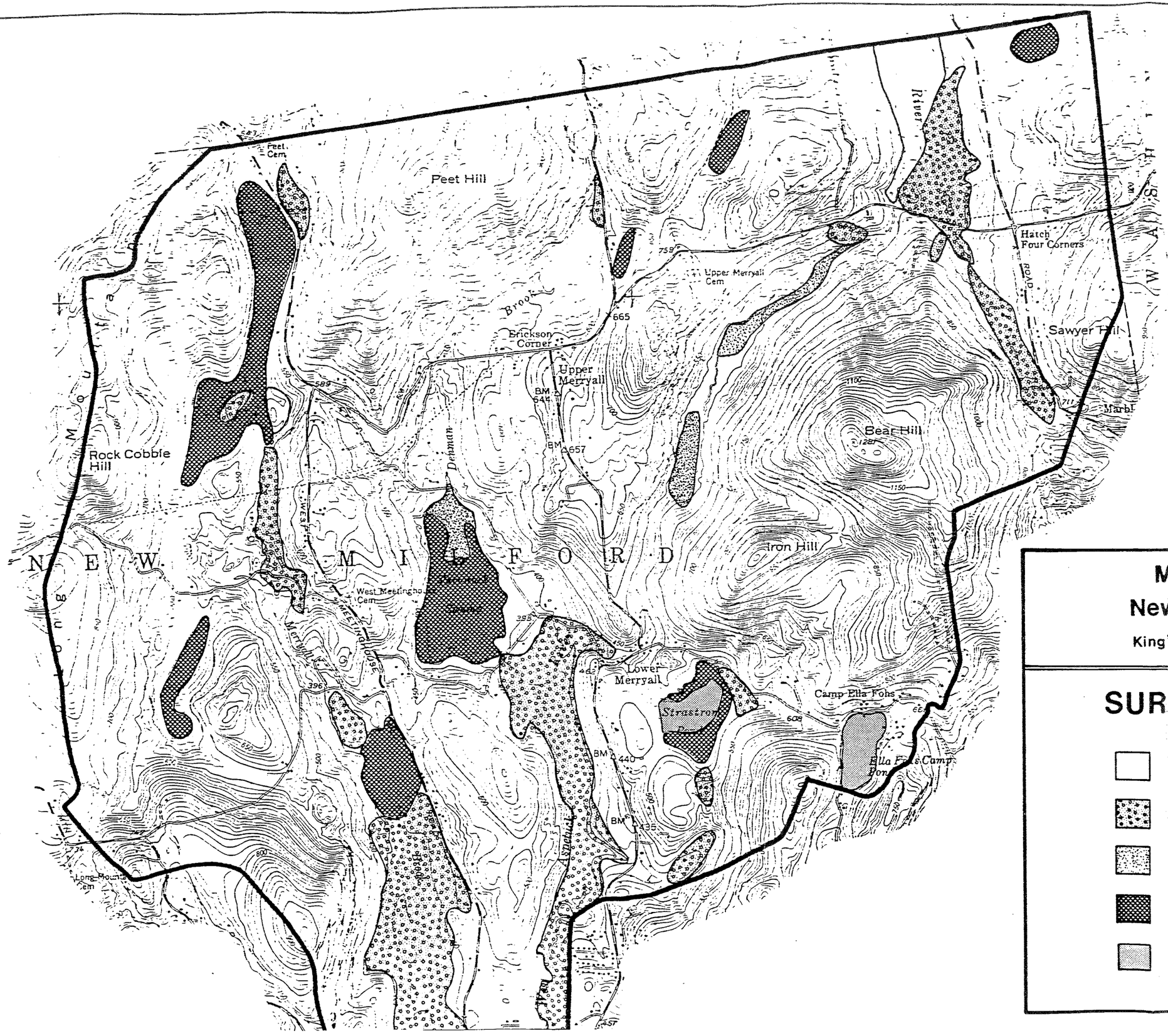
However, the same type of marble was quarried in the Marble Dale section of the Town of Washington. The quarry opened around 1800 (Harte, 1944). The marble was used mainly as a monumental stone. An accessory mineral found in the marble is tremolite. Tremolite is less resistant to weathering, and tends to weather out leaving a pitted face (Harte, 1944). An example of this type of marble may be seen on the outside of the State Capitol in Hartford.

Surficial Geology

Unconsolidated materials overlying bedrock in the study area may be described as the surficial geology of the area (Figure 4). Most of the study area is covered by a relatively thin blanket (i.e., less than 10 feet) of unconsolidated material known as till. Till is a glacial sediment composed of rock particles ranging in size from small clay particles to large boulders deposited directly by glacier ice. The textural components of the till are not sorted. For example, fine grained particles are intermixed with coarse grained particles. The upper portions of a till deposit are usually sandy, stony and friable. Where till exceeds 10 feet in depth (i.e., usually the north sides of hills), there will often be a compact layer underlying the friable till layer.

Another type of glacial sediment found in the study area is a sandy and gravelly sediment called stratified drift. Though minor in terms of distribution and abundance, these sediments were laid down by glacial meltwater during ice retreat. These deposits are restricted primarily to the West Aspetuck River, Denman Brook and Merryall Brook valley areas.

Figure 4



MERRYALL DISTRICT
New Milford, Connecticut

King's Mark Environmental Review Team

SURFICIAL GEOLOGY

- TILL
- STRATIFIED DRIFT (sand & gravel)
- ALLUVIUM
- SWAMP DEPOSITS
- WATER

Based on the unpublished surficial geologic map (Kelly, unpublished) for the Kent quadrangle, the sand and gravel comprising the stratified drift deposits have been or are presently being mined, probably as a source for local construction aggregate. Because of the limited volume of sand and gravel in the study area, its economic value is probably minimal.

The only other widespread surficial geologic deposits, which formed post-glacially, are alluvium and swamp deposits. Alluvial deposits consist primarily of sand, silt and fine gravel deposited along recent stream channels or on floodplains. Layers of clay and coarser gravel may also be present in alluvial deposits. They are generally less than 10 feet thick.

Swamp sediments consisting of sand, silt, clay and decayed organic material cover relatively low lying areas. Swamp sediments were deposited in stagnant, well vegetated bodies of water. The swamps occupying the valleys developed after the last period of glaciation in the state, about 10,000 to 12,000 years ago. As the ice retreated northward, large chunks of dead ice were left behind in the valleys. Meltwater streams emanated from glacier deposited sand, silt and gravel around and over the ice. When all of the ice melted, the glacial deposits collapsed, forming wet or dry basins known as "kettles." Today these ancestral valleys are marked by a chain of swamps, including Tamarack and Rumin Swamps. Organic materials eventually accumulated in these basins or kettles.

Wetlands are very important from an ecological and hydrological standpoint. Since wetlands in the study area are underlain by calcareous rock (i.e., marble), they are ecologically diverse and

biologically productive. Wetlands also maintain water quality through biochemical processes and reduce stormwater runoff. For these reasons, every effort should be made to protect wetlands.

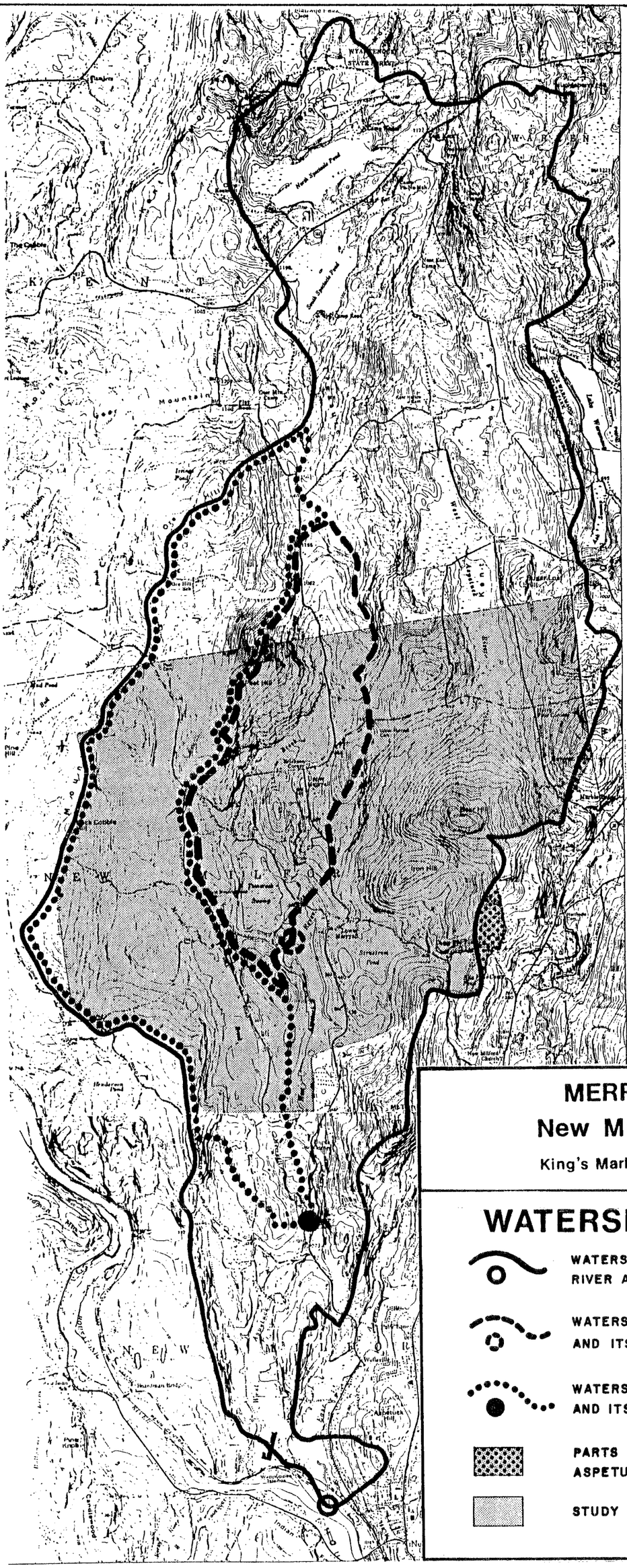
As mentioned earlier, the surficial geologic map for the Kent quadrangle has yet to be published. However, interested persons are encouraged to review unpublished information for the quadrangle at DEP - Natural Resources Center in Hartford. It was compiled from the unpublished surficial geologic map for the Kent quadrangle and the soil survey for Litchfield County.

Hydrology

The three major streams flowing through the study area are the West Aspetuck River, Denman Brook, and Merryall Brook. The latter two are tributary to the West Aspetuck River. Except for about 105 acres in the eastern section of the study area, near Iron, Bear, and Sawyer Hills, all of the land area drains into either Merryall Brook, Denman Brook or the West Aspetuck River. The remaining 105 acres drains in an easterly direction into the East Aspetuck River. Figure 5 delineate the drainage boundaries for each of the above water courses. The watershed or drainage boundaries for a particular body of water comprises all land areas from which water may drain into the surface water body. The drainage boundaries for each of the streams tends to follow along the crests of topographic highs.

As shown in Figure 5, the West Aspetuck River watershed is long and relatively narrow. The watershed as depicted comprises approximately 10,780 acres or about 17 square miles. It originates near North Spectacle Pond in the Town of Kent. The West Aspetuck

Figure 5



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MERRYALL DISTRICT
New Milford, Connecticut

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WATERSHED BOUNDARY

WATERSHED BOUNDARY FOR WEST ASPETUCK RIVER AND ITS RESPECTIVE POINT OF OUTFLOW

WATERSHED BOUNDARY FOR DENMAN BROOK AND ITS RESPECTIVE POINT OF OUTFLOW

WATERSHED BOUNDARY FOR MERRYALL BROOK AND ITS RESPECTIVE POINT OF OUTFLOW

PARTS OF STUDY AREA DRAINING TO EAST ASPETUCK RIVER

STUDY AREA

River flows in a southerly direction, bisecting the watershed enroute to the Housatonic River. The West Aspetuck River watershed has numerous unnamed tributaries flowing into it from the east and west. The only major surface water body within the West Aspetuck River watershed is Camp Ella Fohs Pond, a privately owned pond. Denman Brook, with a watershed of 1,720 acres or 2.7 square miles, is centrally located in the study area. The Brook originates northeast of Peet Hill in the southern portion of Kent. It flows in a southerly direction through Tamarack Swamp and merges with the West Aspetuck River about 750 feet south of Tamarack Road.

The final major stream flowing through the study area is Merryall Brook. It flows is a southerly direction through the western part of the District enroute to the West Aspetuck River. They meet about 3,000 feet south of Hurd's Corner on the west side of Merryall Road. The watershed for Merryall Brook comprises approximately 3,730 acres or 5.8 square miles.

In general, the watershed area for the West Aspetuck River, Merryall Brook and Denman Brook are relatively lightly developed. Several geologic limitations such as steep and precipitous slopes, and shallow to bedrock and till-based soils having seasonally elevated water tables and slow percolation rates, will undoubtedly be a hindrance to development in the area. Since public sewer and water lines do not service the Merryall District, any development will need on-site wells and septic systems. The presence of the aforementioned geologic limitations throughout most of the watershed will necessitate engineered septic systems. Detailed soil testing will need to be conducted to determine if a paticular parcel of land can

support an on-site septic system. Because of these development limitations, it seems likely that the study area is best suited for low intensity development.

According to Connecticut Water Quality Standards and Criteria for the Housatonic River Basin, groundwater within the study area is classified a "GAA." Groundwater classified as "GAA" is suitable for existing or proposed public drinking water use without treatment. Surface water quality of the river, streams, lakes or ponds are classified a "A." A surface water body classified as "A" may be suitable for drinking water supply and/or bathing as well as other uses. Water character is uniformly excellent but may be subject to absolute restriction on the discharge of pollutants. In view of the excellent water quality characterizing the ground and surface waters in the Merryall District, it is imperative that every effort be made to protect existing pristine water quality conditions.

Precipitation which takes the form of runoff flows across the surface of the land until it reaches a brook or other surface water bodies. Precipitation may also be absorbed into the ground. Once absorbed, the water may either be returned to the atmosphere through evaporation and plant transpiration, or it may percolate downward to the water table and eventually become part of the groundwater. Once the water reaches the groundwater table, it moves downslope by the force of gravity, ultimately discharging to the surface in the form of a spring, wetland area, stream or directly into a lake or pond. To a large extent, groundwater flow in the watershed parallels the surface flow pattern. It is controlled mostly by the underlying bedrock.

Based on available natural resource data and mapping information, the study area does not appear to contain any thick, coarse-grained stratified drift deposits that are capable of providing high yields of groundwater for wells. According to a map entitled Groundwater Availability in Connecticut (Meade, 1978), the wetland area paralleling the West Aspetuck River, northeast of Hatch Four Corners and situated between Frenchman Road and Sawyer Hill Road (Kent Hollow Road), are believed to be underlain by coarse-grained stratified drift material. However, hydrogeologic data for this area is incomplete and verification requires further investigation. Commonly, where stratified drift deposits are coarse grained, generally thick and close to a major streamcourse, it may be possible to obtain relatively large volumes of groundwater at approximately 50 to 2,000 gallons per minute.

The principal aquifer underlying the study area appers to consist of crystalline metamorphic rock. Bedrock transmits water by means of an interconnected system of fractures or seams. The amount and natural quality of water withdrawn from a bedrock well depends upon the numbers of water bearing fractures or seams it intersects and on the mineralogy of the rock formation through which the fractures pass.

The schist and gneisses (non-carbonate rocks) underlying most of the study area are usually capable of yielding three gallons per minute or more without penetrating much more than 300 feet of bedrock. It is possible to estimate the probability that any given well could supply three gallons per minute (GPM) (an amount considered adequate to meet most household needs). This is based on

a survey of wells in the Upper Housatonic River Basin (Connecticut Water Resources Bulletin # 21). This study indicates that of 734 crystalline bedrock wells examined, approximately 70 percent yielded three GPM or more; 90 percent yielded two GPM or more; and 96 percent yielded one GPM or more. This report also evaluated the relationship between rock type to well yield. It was found that the carbonate bedrock (i.e., marble) was more productive than the non-carbonate bedrock (i.e., schists or gneisses). In addition, it was found that the gneissic rocks were slightly more productive than the schistose rocks in the basin.

The natural quality of the water supply should be good. However, there is a chance the underlying bedrock, particularly the schists and gneisses, may be mineralized with iron and/or manganese. If the concentrations of these minerals are high, the well water may need to be treated with a suitable method of filtration. Bedrock wells tapping marble may be affected by excessive hardness. Water softening devices are available to surmount hardness problems, but the use of these filter systems may cause significant contamination of groundwater.

SOIL RESOURCES AND CHARACTERISTICS

Major Soil Groups

The soils of the Merryall District vary from well drained, glacial till soils (e.g., Charlton) to very poorly drained organic soils (e.g., Peat and Muck) (Figure 6). Refer to Appendix B for a more complete description of the soil characteristics of the Merryall District.

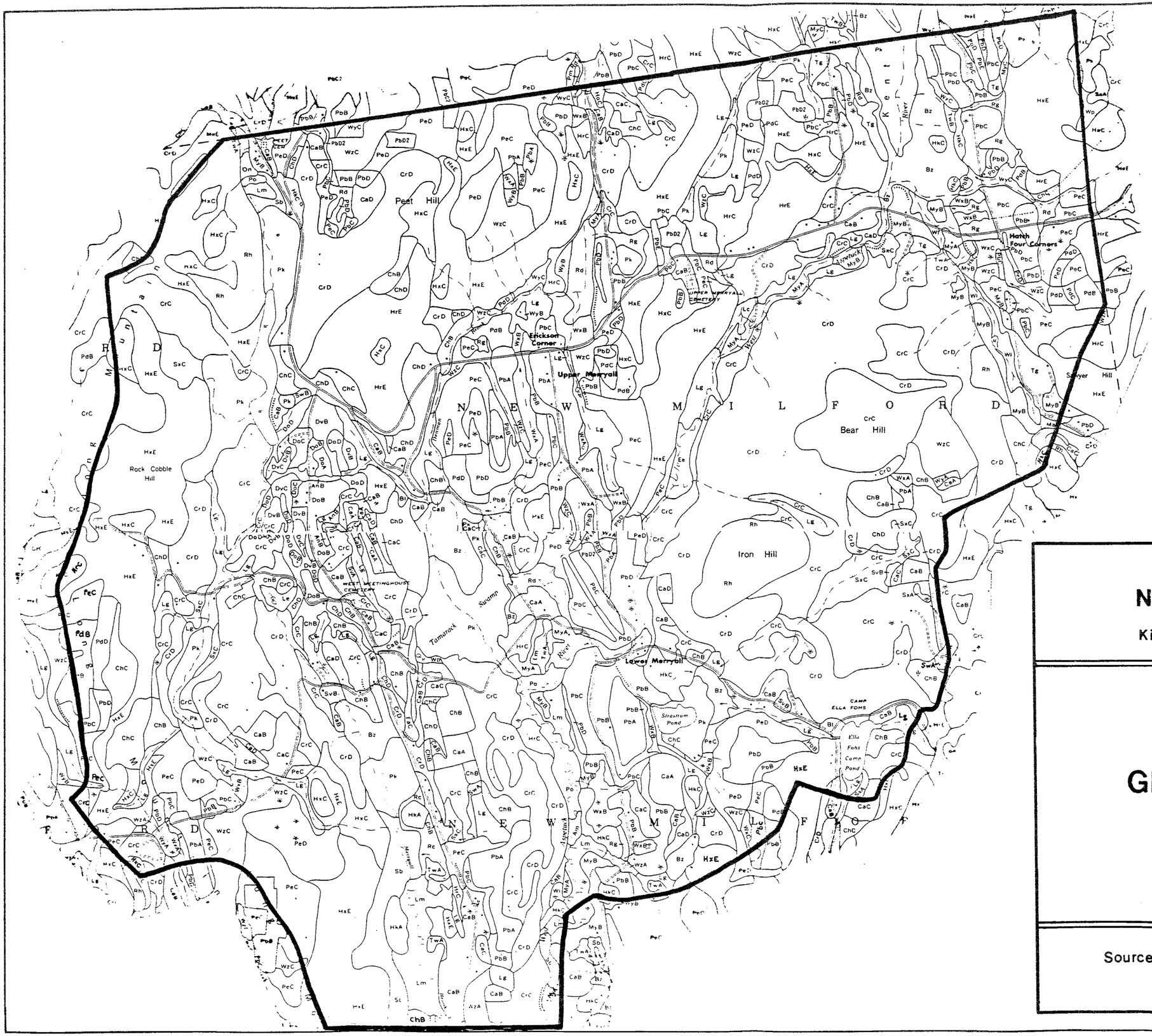
The Merryall District is characterized by five major soil groups: (1) terrace; (2) upland; (3) floodplain; (4) lake terrace; and (5) marsh and swampy.

Terrace soils occur above floodplains in river and stream valleys such as the West Aspetuck River Valley and Merryall and Denman Brook areas. They are underlain by water deposited beds of sand and gravel. In most places, a few inches to three feet of loamy or fine sandy material cover the older, coarser water deposits. Nearly all sources of sand and gravel, and many of the important sources of water supply, are in areas associated with the terrace soils (USDA, 1974).

Upland soils are delineated into three separate groups: (1) friable to firm glacial till; (2) compact glacial till (hardpan); and (3) rocky and shallow to bedrock.

Friable to firm glacial till upland soils are formed in the thicker unconsolidated deposits of till usually occuring on hillsides. The capacity of these soils to hold water for plant growth is good where the till is loamy, but is fair to poor on sandy till. Stones and large boulders are common in these glacial deposits

Figure 6



N

0 1000' 1/2 mile

MERRYALL DISTRICT
New Milford, Connecticut

King's Mark Environmental Review Team

GENERAL SOILS MAP

Source: Litchfield County Soil Survey, USDA Soil Conservation Service

and add difficulty when excavating or earth moving operations are needed (USDA, 1974).

Compact glacial till or hardpan upland soils occur mostly on the tops and slopes of drumlins -- hills that are smoothed and elongated north to south by the movement of glaciers. These soils are underlain by compact glacial till and have a hardpan 16 to 36 inches below the soil surface. Permeability above the hardpan is moderate, but the pan drastically reduces percolation. During wet conditions, excess water in the soil moves downslope above the hardpan. The till commonly contains stones and boulders which create excavating or earth moving problems. These soils have good moisture-retention capacity for plant growth (USDA, 1974).

The third type of upland soil is rocky and shallow to bedrock. They usually occupy narrow ridge tops but most often are on steep sides of slopes. The soils are underlain by hard bedrock and the areas contain barren rock outcrops. In most places hard rock is less than 20 inches below the soil surface (USDA, 1974).

The third major soil group found in the Merryall District is the floodplain soil. These soils occur on nearly level floodplains is stream valleys. They are formed in loamy deposits several inches to a few feet thick overlying sand and gravel layers. These soils are subject to flooding with the lower lying poorer drained soils being flooded most often (USDA, 1974). This group occurs primarily along the West Aspetuck River corridor.

Lake terrace soils are a fourth major soil group found in the study area. Soils of this group occur in areas where glacial lake sediments accumulated. These sediments have a higher content of clay

and fine silt than other soils found in this area. Topography is usually level or gently sloping, with slopes above eight percent occuring along terrace escarpments associated with stream channels. In most places, the fine-textured lake sediments are covered by a coarser loamy or sandy material from several inches to a few feet thick. The permeability rate through the lake sediments is slow and the shrinkswell potential is higher than coarser-textured soil material. This particular soil group can be found along the West Aspetuck River, Merryall and Denman Brooks, and Tamarack Swamp.

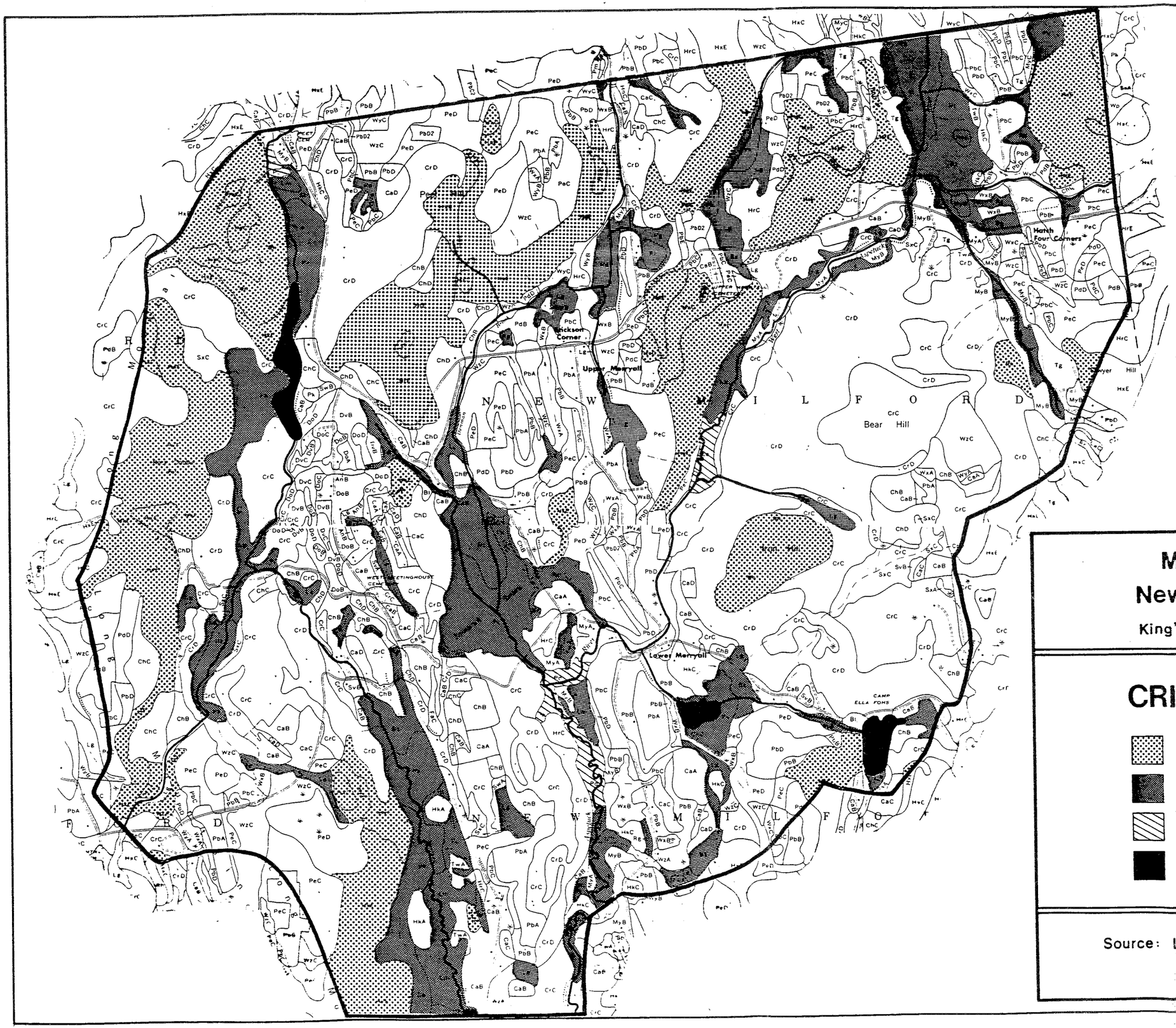
The fifth and final major soil group occuring in the Merryall District is the marsh and swampy soil group. These soils occur in depressed areas where the surface organic deposits are usually five of more feet deep. They are saturated most of the time and water ponds on the surface in winter and spring (USDA, 1974). These soils are associated with Tamarack Swamp, Mud Pond, and Rumin Swamp.

Of the five major soil groups, three dominate. They are in order of abundance and distribution: (1) upland soils - friable to firm, glacial till; (2) upland soils - compact glacial till (hardpan); and (3) terrace soils-over sands and gravels. Rocky and shallow to bedrock upland soils are also prevalent in the District.

Soil Potentials and Limitations

Large areas of the Merryall District have development limitations due to shallow to bedrock or wetland soils (Figure 7). Additional soil constraints include slopes greater than 15 percent and poor septic effluent filtering capabilities. Due to steep slopes and the natural soil erodibility, serious erosion problems could occur with

Figure 7



MERRYALL DISTRICT
New Milford, Connecticut

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CRITICAL SOIL AREAS

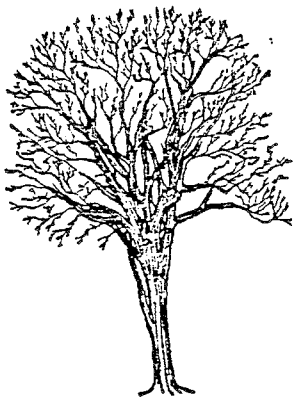
- STEEP, SHALLOW TO BEDROCK
- POORLY and VERY POORLY DRAINED
- WELL DRAINED, FLOODPLAINS
- PERENNIAL STREAMS and WATERBODIES

Source: Litchfield County Soil Survey, USDA Soil Conservation Service

any kind of development in steep areas. However, soil erosion can be minimized by implementing an erosion and sediment control plan.

The remaining lands have varying degress of potential for development depending on soil and slope constraints. Integrating lot size requirements with the degree of soil limitations may help reduce soil erosion, pollution and stormwater runoff problems.

BIOLOGICAL CHARACTERISTICS OF THE MERRYALL DISTRICT



BIOLOCIGAL CHARACTERSITICS OF THE MERRYALL DISTRICT

FORESTRY RESOURCES IN THE MERRYALL DISTRICT

Introduction

The vegetation description for the Merryall District is divided into seven broad cover types. These are described in detail under the heading "Vegetative Types." In general terms, most of the Merryall District is forested, although there are extensive areas of agricultural fields and wetlands. Adjacent to many open farmlands is a category referred to as "old field." These are recently abandoned farmlands giving way to the invasion of trees.

In the forested areas, including old field types, the dominance of one tree species over another is primarily dictated by available moisture, depth of soil, and the water table.

The commercial value of the timber resource in the Merryall District was also investigated. Tree size, quality and species will cause the value of the timber harvested to fluctuate greatly. Sawtimber sized trees (i.e., trees greater than 12" in diameter measured at breast height or (DBH)) are more valuable than smaller stem trees. As a general rule, hardwood species are more valuable than softwood species. The smaller diameter trees (i.e., 4 to 10 DBH) are generally thought of as the "cordwood trees." These are of low value since the value of standing firewood is not high. Additional commercial value of the timber resource might be found in some of the old field type and might consist of post products from red cedar or locust.

The great expanse of mixed vegetation in the study area plays a important role in conserving the aesthetics of the Merryall District, increasing the water storage capacity of the landscape and providing a rich renewable resource in the form of wood. It also plays a critical role in providing habitat for many wildlife species. These amenities can be enhanced by proper forest management.

The majority of the individual stands within the mixed hardwood forest type are even-aged; that is, most of the trees forming the upper crown canopy are approximately the same age. This can not, however, be directly related to tree size. For example, a 12" DBH tree might be standing adjacent to an 18" DBH tree and they both might be 70 years old. The reason for the even-aged stands is that most of the forest land developed from either abandoned farmland or from forest that was clearcutted (i.e., all trees were completely removed). This clearcutting was a result of the high demand for charcoal up until the early 1900s.

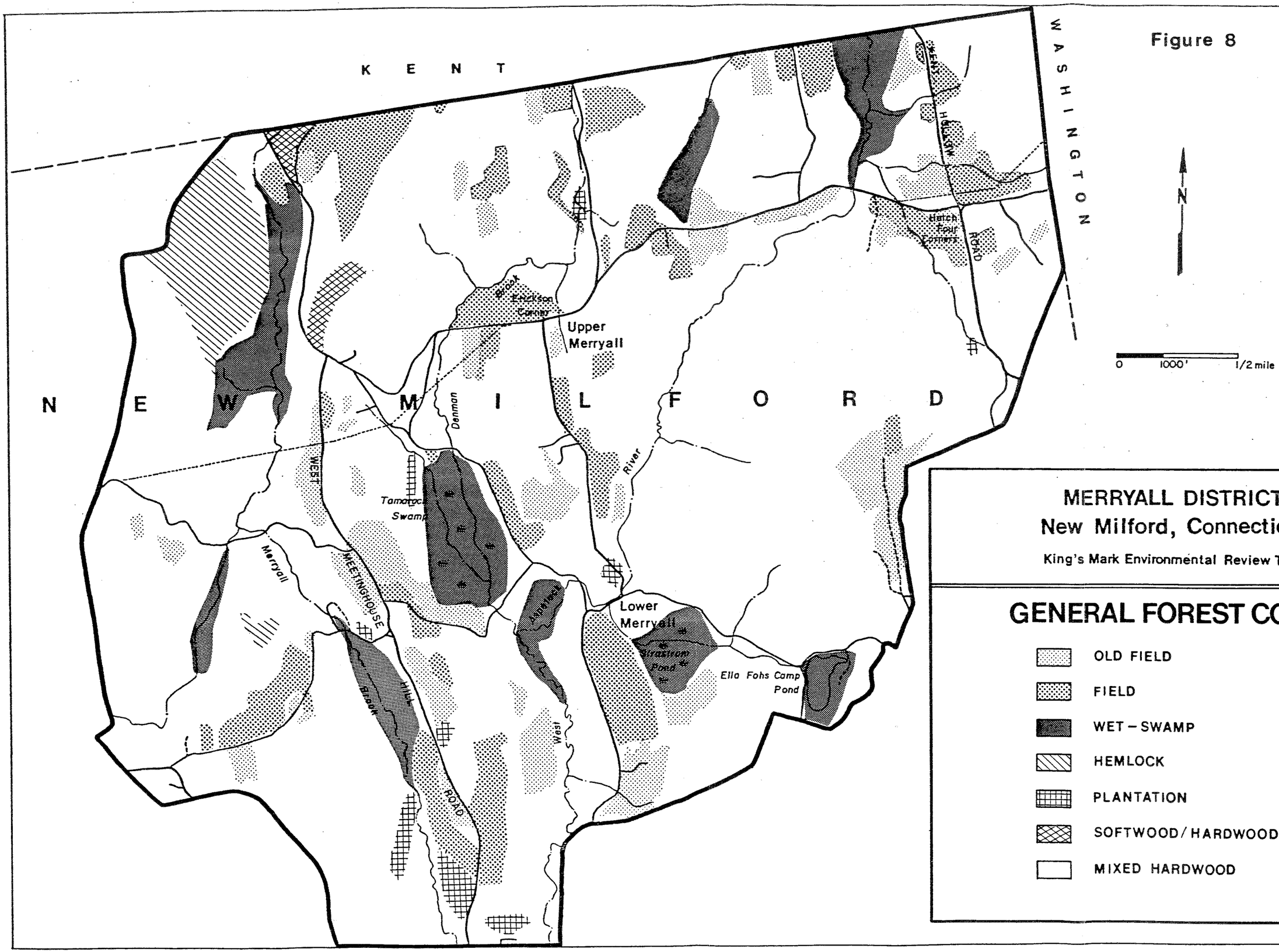
If left undisturbed, the natural character of the landscape will not change dramatically. There will, however, be a long term shift toward more shade tolerant species as the forest proceeds through ecological succession.

Vegetative Types

Mixed Hardwood

This forest cover type by far is the most extensive and ecologically diverse (Figure 8). This type of forest will have at least 60 percent hardwood, and in most cases up to 80 percent or more. Species composition for the most part correlates with existing

Figure 8



MERRYALL DISTRICT
New Milford, Connecticut

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GENERAL FOREST COVER

- OLD FIELD
- FIELD
- WET – SWAMP
- HEMLOCK
- PLANTATION
- SOFTWOOD / HARDWOOD
- MIXED HARDWOOD

soil conditions. On the higher elevations, species most generally encountered will be chestnut, red and white oak, black birch, hickory, and red maple. These sites are apt to have exposed bedrock, thus limiting tree growth. The largest tree stems probably won't exceed 12" to 14" DBH. Height growth is also greatly reduced. There may also be an extensive and dense understory of mountain laurel.

Moving downslope, tree species composition will be altered to include higher concentrations of red oak, sugar maple, red maple, yellow birch, as well as scattered populations of ash and tulip poplar. Most of the highest quality, largest and most valuable trees will be found here. In the older stands, large sawtimber species exceeding 20' DBH will be common. As the slopes approach moisture conditions, tree species composition shifts toward heavier concentrations of red maple, ash and black birch.

Softwood/Hardwood

This is an area where neither softwood or hardwood species exceeds 60 percent (see Figure 8). The hardwoods might be any of the above mentioned species and softwood stems will either be hemlock or white pine or a combination of those.

Hemlock

This forest type is restricted to steep terrain, by available moisture and cool climatic conditions (see Figure 8). Steep, rocky terrain makes many of these areas accessible only by foot. Hemlock can develop into larger sawtimber. This forest type is one of the few timber types that could be classified as a climax forest

community. Hemlock is capable of reproducing itself in its own shade and perpetuation of the species or stand is probable unless it is heavily cut or natural forces open the area up exposing the stand to excessive sunlight. The perpetuation of the other types of species is more difficult as many trees can not adequately reproduce in their own shade.

Plantation

These are areas of planted softwood trees. Species may include red pine, white pine, Norway spruce, larch or a host of Christmas tree species. Usually these areas are in close proximity to residences (see Figure 8).

Old Field

This forest cover type encompasses an age class from 1 to 2 years old and up to 20 to 30 years old (see Figure 8). This is dependent on how fast the trees get established on abandoned agricultural lands.

A distinct difference usually is noticeable between old pastures and old hay fields. The abandoned pasture lands usually contain species such as red cedar, juniper, barberry and multiflora rose. Hay fields, usually are void of these species and are more quickly invaded by trees. This difference is created by animals grazing on the invading trees coupled with their refusal to eat the aforementioned species.

Besides the species already mentioned, it is common to find pine, fire cherry, locust, aspen, black cherry, and ash in the old field

type.

Field

This is open land presently being used to grow a variety of agricultural crops or is presently being grazed (see Figure 8).

Swamp

There are vast areas of wetlands in the Merryall District. Probably the better known is Tamarack Swamp (see Figure 8). All of these wetlands offer a unique habitat for water loving tree species. Red maple is probably the most common tree occupying the wetlands in the study area. Other associates include: (1) swamp white oak; (2) ash; (3) spice bush; (4) highbush blueberry; (5) button bush; (6) nanny berry; (7) pussywillow; and (8) skunk cabbage.

Limiting Conditions

Several factors need to be considered for the maintenance of a natural forest stand. Wetland soil types will have a water table close to the surface of the ground. This allows for shallow root penetration of the trees. Windthrow is a potential hazard here. Large openings and clearings in and along wetland areas should be avoided if possible. These soils as a whole are more sensitive to disturbance.

Trees growing on ridge tops may also be subject to wind damage. These trees often grow in very thin soils (perhaps only a few inches thick) and may be easily toppled if subject to heavy winds. As in wetland areas, trees rely on each other for stability, and heavy

cutting may lead to wind related problems.

Alterations in wetlands which permanently raise or lower the water table or restrict natural drainage may have a negative impact on the vegetation in the immediate area. Raising the water table may drown root systems causing widespread mortality in the plant community. Lowering the water table may also result in plant desiccation.

Several plantations are either pure or contain a component of red pine. This species was extensively planted in the 1930s and 1940s. These trees now have two natural enemies: (1) the red pine scale; and (2) the red pine adelgid. New Milford is well within the range of both, and indeed both have been identified within the Merryall District.

The red pine scale, an insect, has led to the demise of virtually all of the red pine in Fairfield and New Haven counties, and is spreading north and east. It is now in lower Litchfield County with the same result. There are no control methods presently available. The red pine adelgid, another insect, now has been identified as causing much of the problem with red pine. Again there is no control. Once infected, red pine stands will evetually die.

Wildfires are always a concern. Although several thousand acres burn each year in Connecticut, the chances of any one acre burning is low. Traditionally, this area has had a low incidence of fire and there is reason to believe that this will continue.

Perhaps the most limiting condition to forest management is terrain. Extensive areas of steep land (i.e., 30 to 40 percent slope) makes traditional harvesting methods very difficult. The

presence of surface rocks on these slopes virtually eliminates operation. Short stretches of this type, however, can usually be negotiated.

Management Considerations

Overall, the potential for forest management in the Merryall District is high. There are vast areas of both high quality stands and potentially high quality stands. An active forest management program for forest landowners would enhance the forest resource in the Merryall District.

Red pine plantations should be evaluated for signs of insect infestation. Landowners with infected stands have two alternatives: (1) remove the infected stands; or (2) let them die standing. Removal of the trees can be commercially done if enough volume is present. This would result in a net income to the landowner.

Trees which are unhealthy and not growing vigorously due to crowded conditions are most susceptible to further degradation from environmental stress brought on by development, disease, insect infestation or adverse weather conditions. Improvement thinning removes undesirable trees, and reduces competition for sunlight, nutrients and water. Thinnings are designed over time to allow high quality residual trees to improve in health, vigor, quality and stability. These thinnings when implemented properly can improve the aesthetic value of an area, improve tree health and vigor, improve wildlife habitat and provide a variety of wood products.

Improvement cuttings remove trees for a variety of reasons. Individual trees could be harvested due to rot, excessive sweep or

crook, unhealthy crown condition, or the fact that the species is less desireable. This type of cut allows for a hardier, more vigorous stand of trees more capable of thriving under adverse conditions.

Active forest management is limited by several factors. They are: (1) landowner attitude (i.e., many small parcels have numerous owners each with different objectives; this can make forest management more difficult); (2) terrain limitations; (3) lack of knowledge on the part of the landowner as to what his or her alternatives might be; and (4) lack of good markets for some of the lower quality wood.

A public service forester or a private forester may be of assistance in either on the ground planning or the marketing of wood products.

WILDLIFE AND FISHERY RESOURCES IN THE MERRYALL DISTRICT

The study area is divided into five wildlife habitat types. They are: (1) mixed hardwoods; (2) mixed softwoods/hardwoods; (3) conifers; (4) openlands; and (5) wetlands.

Wildlife Habitat Types

Mixed Hardwoods

This habitat type consists of a rich diversity of hardwood species and comprises the largest habitat type in the Merryall District. Forest species composition include chestnut, red and white oak, yellow birch, black birch, hickory, sugar maple, red maple, and scattered populations of ash and tulip. Typical understory species are honeysuckle, barberry, spice bush, grasses, ferns and various hardwood saplings.

Wildlife utilizing such habitats include white-tailed deer, turkey, squirrels, fox, raccoon, red-tailed hawks, owls, numerous passerines and various non-game species.

Mixed Softwood/Hardwood

This habitat type consists of a mixture of the aforementioned hardwood species and hemlock and/or white pine. Understory vegetation is similiar to that found in the mixed hardwoods, with the addition of club moss and softwood seedlings/saplings.

Wildlife species frequenting such habitat includes white-tailed deer, turkey, grouse, squirrels, numerous passerines, raccoon, skunks, accipiters, red-tailed hawks, owls, and numerous non-game species.

Conifers

This habitat type consists of softwood plantations usually comprised of red pine, white pine, Norway spruce, larch, and small scattered stands of hemlock. The understory composition within this wildlife habitat type is generally sparse, with little vegetative regeneration (other than softwoods) due to to a relatively closed tree canopy. The lack of ecological diversity of the conifer wildlife habitat type limits the diversity of wildlife species inhabiting this area. Species utilizing such habitat include white-tailed deer, grouse, woodpeckers, raptors, and various non-game wildlife species. This wildlife habitat type often serves as winter cover during harsh weather conditions.

Openland

This habitat type consists of numerous old fields and agricultural areas reverting back to a natural vegetative cover. Old reverting fields consist of grass, sumac, multiflora rose, barberry, cedar, birch, dogwood and juniper.

Agricultural fields are utilized for the production of various crops, predominantly hay or corn, and as pasture land. Wildlife typically utilizing such areas are white-tailed deer, turkey, grouse, woodcock, fox, rabbits, raccoon, kestrels, red-tailed hawks, skunk, song birds and numerous non-game species.

The value of agricultural lands for wildlife varies greatly depending on individual farming practices.

Wetlands

Within the Merryall District there is a rich variety and amount of wetland wildlife habitat. The West Aspetuck River is the major river, being fed primarily by Merryall and Denman Brooks. There are numerous other perennial and intermittent feeder streams. The major wetland wildlife habitat type in the Merryall District is wooded swamp. Understory vegetation consists of: pond lillies, pickerelweed, skunk cabbage, duckweeds, spicebush, butterbush, dogwood and various herbaceous species. Overstory composition is dominated by red maple. Other species include swamp white oak, ash, and willow. Tamarack Swamp is the primary wetland wildlife habitat in the Merryall District.

Wildlife utilizing wetland communities include white-tailed deer, river otter, mink, muskrat, beaver, woodcock, waterfowl (particularly wood duck and mallards), kingfishers, raccoon, turtles, herons, woodpeckers and various non-game species.

Management Considerations

Since Connecticut is a densely populated and growing state, available wildlife habitat continues to decline. It is therefore prudent to consider maintaining and enhancing significant wildlife habitat areas to protect indigenous wildlife species. The study area represents a large, rich and diverse area valuable to both man and wildlife. The following practices will help maintain or improve wildlife habitat conditions.

Forest Wildlife Guidelines

* Create a diversity of habitat by making small irregularly shaped openings (one-quarter acre to one acre in size) in an east to west direction in order to maximize sunlight. This will encourage fruit producing shrubs important to many wildlife species. Edges of openings should be feathered (i.e., gradually blended into the forest type).

* Pile brush along the ecotone (i.e., edges of openings for small mammals and birds).

* If timber harvest is planned, these practices will enhance wildlife habitat:

    * Encourage mast producing species (i.e., hickory, oak, beech);
    * Leave five to seven snag trees per acre;
    * Exceptionally tall trees (utilized by raptors for nesting and perching) should be encouraged;
    * Trees with vines (berry producers) should be encouraged;
    * Create small openings with feathered edges;
    * Construct small brush piles;
    * Maintain diversity of age classes and species composition.

Openland Wildlife Guidelines

* Early successional stage vegetation essential to many species of wildlife, is limited in Connecticut. Where possible, this habitat type (i.e., agricultural fields, pasture, reverting old fields) should be encouraged.

* Encourage local farmers to participate in the State Farmland Preservation Program.

* Hay and/or sweet corn should be encourged over silage corn to provide cover;

* Hay fields should not be cut prior to August 1, to avoid possible disturbance to nesting birds and mammals; also a 15 foot uncut border should be left surrounding the fields. This border should be mowed every three to five years (after August 1) to maintain early successional vegetation; mowing of borders should be scheduled on a staggered basis.

* Reverting old fields should be mowed every 3 to 5 years to maintain early successional vegetation;

* Large agricultural fields should be broken up with stonewalls or hedge rows.

* Place bluebird boxes along edges of large fields to encourage eastern bluebirds to nest in the study area

Wetland Wildlife Guidelines

* Leave buffer strips (100 feet minimum) of natural vegetation along wetland areas to help filter or trap silt and sediments.

* Several wetland areas within the study area are excellent wood duck habitat; installation and maintenance of nest boxes should be encouraged. The Connecticut Department of Environmental Protection currently has such a program on Mud Pond and Pickhardt Pond. Nest box utilization on the two ponds has averaged 78 percent over the last five years.

* Develop potholes (2 to 5 feet deep) within the seasonally flooded hardwood communities to insure year-round water for wildlife.

* Culverts should have screens to lessen potential damage from beavers.

* Conduct public awareness program to discourage feeding of geese at open water sites due to nuisance goose problems.

* Encourage natural landscaping; limiting chemical lawn applications will lessen potential habitat damage and open water weed problems.

* Retention ponds should be strategically placed and designed to benefit waterfowl.

* Due to numerous nuisance beaver complaints in the area, consider opening the State and Zelessky properties to trapping on a bid basis; landowners should be encouraged to allow trapping before nuisance problems reach a critical stage.

It should be recognized that for optimum wildlife habitat potential, a variety of sucessional stage vegetation is needed. Proper maintenance of openings and field borders need to be conducted. Without maintenance, native vegetation will progress to less desirable stages, lowering wildlife potential in the area.

Proper management of the study area's forest and openlands is essential for the continued re-establishment of the wild turkey in

Merryall. Wild turkeys were re-introduced in New Milford in 1974 and 1975. As early as 1976, sightings of turkey were documented in New Milford. Today the turkey population is considered stable throughout the New Milford area and they are continuing to migrate southward.

As the demand for land increases and areas are developed for residential use, there will be an immediate negative impact on wildife. The primary potential impact would be a direct loss of habitat due to the development of roads, buildings, driveways, or recreational facilities. Another potential impact would be a change in habitat where forest and fields are cleared for lawns and landscaping. A final potential impact will be increased human presence, vehicular activity and free roaming pets. This will drive less tolerant wildlife species from the area, even in places where it has not been physically changed.

A number of previously discussed management guidelines could be implemented in order to minimize negative impacts. In addition, cluster development or large lots (five acres or more) would reduce negative impacts on wildlife, since more undisturbed land would remain.

Also, due to an abundance of residential development presently within the Merryall District, backyard wildlife management habitat improvements would be beneficial. Such activities include providing food, water, cover and breeding areas.

Ella Fohs Camp Pond

Young-of-the-year bluegill sunfish and largemouth bass were observed in this pond by the ERT. Additionally, brown bullhead, golden shiner, and chain pickerel may also be present. This pond appears to be well suited for family and/or children's recreational fishing. The pond appears to be somewhat steep-sided and a minimum of aquatic marcophyte vegetation (both living or decaying) was observed. The presence of an outlet structure (surface water gate and deep water outlet) for lake level control is a considerable advantage in this pond. If used properly this mechanism could serve a dual function, to both control the development of aquatic macrophytes and enhance the existing fishery. Winter drawdowns of several feet every three or four years might be advisable if a weed problem begins to develop. The deep water outlet appeared to be obstructed by sediment and it is recommended that this mechanism be cleared and maintained for future use, if at all possible.

Mud Pond

Mud Pond appears to be a shallow, eutrophic pond and is surrounded by emergent aquatic vegetation. It appeared to be in the late stages of eutrophication and is basically an open water area in a marsh. Most of the species of fish which are thought to occur in Ella Fohs Pond are likely to be found in Mud Pond. Chain pickerel would possibly replace largemouth bass as the primary, predatory/gamefish species in this pond. While the pond appears to

have a good "flow through" due to two feeder streams, it may be susceptible to "winter-kill" because of it's shallowness and extensive areas of emergent, aquatic vegetation. Shore fishing opportunities are practically non-existent in this pond due to the surrounding vegetation and it would likely not have high recreational fishing value for this reason.

Denman Brook

Based on a single observation from the day of the ERT field review and the observed stream flows, it would appear that Denman Brook might possibly have marginal habitat requirements for a small population of wild salmonids. Most likely this would be brook or brown trout. However, the summer and fall of 1985 were abnormally wet, with rainstorms occurring on a regular basis. Therefore, the observed flows in Denman Brook might have also been abnormally high for this particular time of year. If true, then the "normal" summer low flow conditions would greatly limit the potential trout habitat in a stream as small as Denman Brook and negate the possibility of this fishery existing. Other species expected to be found in Denman Brook might be tesselated darter, common shiner, blacknose dace, longnose dace, white sucker and fallfish.

West Aspetuck River

The West Aspetuck River is presently not stocked with trout by DEP, yet it very likely that it is inhabited by some brook and/or brown trout. Both wild fish or stocked trout which have moved into the river from the East Aspetuck River may be present. Due to its

size and the number of feeder streams, this river should have sufficient flow even in dry summer months in providing at least some suitable habitat for salmonids on a year-round basis. All of the species which occur in Denman Brook would likely be found in the West Aspetuck River. This river could provide excellent stream fishing opportunities due to its accessibility and the fact that it is easily wadable.

WATER RESOURCES IN THE MERRYALL DISTRICT

LAKES AND PONDS

Introduction

There are three major water bodies in the Merryall District: (1) Mud Pond, which is outside the immediate study area and discussed later in the report; (2) Ella Fohs Camp Pond, a privately owned pond; and (3) Strastrom Pond, a seasonal or intermittant water body. Development has occured adjacent to Ella Fohs Camp Pond and land adjacent to Mud Pond has been subdivided although no lots have yet been developed. Strastrom Pond is relatively free from development.

Eutrophication

Eutrophication is a natural aging process through which a water body gradually increases in fertility or biological productivity, and accumulates organic deposits. As eutrophication proceeds, the intensity and duration of algae blooms increases. Aquatic plant growth becomes more prolific. The lake becomes shallower and the deep, cold waters are disturbed. During the latter stages of this process, the water body becomes a boggy or marshy wetland.

Under natural conditions, the eutrophication process advances at a very slow rate, usually over thousands of years. However, the activities of man often increase the nutrient and sediment inputs to a water body, accelerating the eutrophication process. This is often referred to as cultural eutrophication.

In general, there are three accepted stages of eutrophication: (1) oligotrophic; (2) eutrophic; and (3) mesotrophic. Oligotrophic water bodies are in the early stages of the aging process, very infertile, have low biological productivity and are highly transparent. These water bodies are also highly oxgenated and relatively deep with little acculmulation of organic sediments on the bottom. Eutrophic lakes and ponds are the later stages of the process, very fertile (i.e., high in plant nutrients such as nitrogen and phophorus), high in biological productivity and low in transparency. Waters occupying the bottom layers of a lake or pond usually show reduced levels of dissolved oxygen, with an abundance of organic matter on the bottom. Finally, mesotrophic water bodies is the mid-range stage between the two extremes of oligotrophic and eutrophic.

Phosphorus has been identified as the critical growth limiting nutrient in the majority of Connecticut lakes. The term "limiting nutrient" refers to the nutrient in the shortest supply relative to plant growth requirements. In general, algae and macrophytes will grow until the supply of some basic nutrient is depleted. Then, any increase in that nutrient will result in a corresponding increase in biological productivity. Similarly, a reduction in that nutrient will reduce potential biological productivity. Enrichment of a lake or pond with plant nutrients is thus the fundamental cause of eutrophication.

Different types of land uses have varying influences on lake eutrophication. Undisturbed woodland contributes lower nutrient loads to a lake than other land uses. The nutrient loading from

agricultural land is generally about five times greater than a woodland. Residential and commerical developments or use typically contribute more than ten times the nutrient loading that results from woodlands. Thus as woodlands or agricultural lands are converted to other uses, the nutrient contribution to the lake increases, advancing the eutrophication process. Although much of this increase in nutrient export from the watershed is inevitable and unavoidable, numerous management practices can provide for some degree of mitigation.

DEP has recently revised (1984) a report entitled "A Watershed Management Guide for Connecticut Lakes." The report discusses the process of eutrophication and methods of control. According to the report, the following factors may contribute nutrients to a water body, thus accelerating the eutrophication process: (1) erosion and sedimentation; (2) septic systems; (3) lawn and garden fertilizers; (4) disposal of yard and garden vegetation; (5) agricultural land; (6) timber harvesting; (7) stormwater runoff; (8) waterfowl excrement; (9) atmosphere; and (10) lake sediments. The key to ameliorating the eutrophication process is to control the nutrient enrichment from the aforementioned sources.

Additional residential development or agricultural activities within the watersheds of the three subject water bodies which do not employ the best management practices will serve to worsen existing conditions. Local agencies or commssions should consider implementing watershed management practices to mitigate the effects of land use changes in the watershed. The nutrient sources which are

potentially the most significant at these ponds are discussed below.

Potential Nutrient Sources

Erosion and Sedimentation

Erosion and sedimentation within a lake watershed is a natural process. The rate, however, can be greatly increased by human activities that disturb the land.

Eroded soil contributes to eutrophication in several ways. For example, nutrients associated with the soil particles are introduced to lakes. Increased sedimentation reduces water depths, creating conditions conducive to growth of aquatic weeds. Organic matter, associated with the particles is decomposed by soil bacteria, depleting oxygen required by aquatic plants and fish.

In 1983, the Connecticut General Assembly enacted legislation entitled "An Act Concerning Soil and Sediment Control" which amends local zoning pursuant to Section 2-8 of the Connecticut General Statutes. This legislation requires the Connecticut Council on Soil and Water Conservation to develop erosion and sediment guidelines and model regulations for municipalities. The legislation also mandates the adoption of municipal erosion and sediment control programs by July 1, 1986.

Lakeside residents and lake users should urge their town to adopt and utilize erosion and sedimentation ordinances in their zoning regulations.

Local officials should correct any existing sources of erosion, sedimentation and runoff within the watershed of the ponds.

Septic Systems

Sewage disposal in residential areas not serviced by sanitary sewers is accomplished with on-lot sub-surface septic systems. When functioning properly, septic systems efficiently breakdown of wastewaters into simple organic compounds. The basic components of the system include a house sewer, septic tank, distribution system, and a leaching field. Sewage is delivered to the septic tank via the house sewer. In the septic tank, solids are physically separated from liquids (primary treatment) by the settling of heavy solids to form a sludge blanket, and the flotation of light solids to form a scum layer. The distribution system delivers the liquids to the leaching field. The liquid effluent is biologically decomposed (secondary treatment) in the leaching system.

A septic system can fail if it is not properly designed, installed or maintained. A failing system will either result in the backflow of wastewaters into the house, or the breakout of wastewaters on the surface of the ground. A failing system can contribute phosphorus and other pollutants to lake waters. A far more important consideration, however, is that a failing septic system is a public health hazard. The public health threat is an overriding concern demanding correction of the problem, irregardless of lake eutrophication.

Lawn and Garden Fertilizers

Lawns and gardens are generally very efficient at utilizing soil nutrients and preventing their loss through runoff and leaching. However, runoff and leaching of nutrients can occur if fertilizer

applications exceed nutrient requirements, or if fertilizers are applied prior to storm events causing runoff. These situations can be avoided if fertilizers are matched to soil requirements, and if applications are timed to avoid periods of runoff. Soil test kits can be purchased from the University of Connecticut Cooperative Extension Service county offices. The samples are analyzed at the Extension Service Laboratory, and the results identify soil nutrient deficiencies.

Yard and Garden Vegetation Disposal

Leaves, grass clippings and other vegetative material from yard and garden maintenance should not be deposited in a location where the material may be washed into a lake or pond. Vegetative material will add to the sediment in the lake and will provide plant nutrients upon decomposition. Each property owner should select a suitable site away from the lake or other water courses for the composting of vegetative material.

Waterfowl

Ducks and geese are generally considered attractive wildlife assets often enhancing the aesthetic appeal of a lake. However, large numbers of migratory waterfowl spending considerable periods of time on a lake or pond can contribute appreciable loadings of phosphorus and nitrogen to lake waters. In a study of one Connecticut lake, it was estimated that the phosphorus in the excrement of four geese in one month was equivalent to the total annual loading of phophorus from 2.5 acres of watershed land. In

order to quantify the impact of waterfowl on a lake, it is necessary to develop accurate information on waterfowl populations, feeding habits, resting areas, and periods of occupancy. In the absence of detailed information, it should be recognized that large flocks of migratory waterfowl utilizing a lake or pond for many weeks can be an important factor in the eutrophication process.

Lake Management Alternatives

In the absence of algae or aquatic weed information, it is difficult to make specific recommendations on appropriate control techniques. The following is a brief overview of the most common algae and weed control techniques and potential problems associated with them. There are disadvantages to any weed control method. A few of the problems which may be encountered are:

(1) Those macrophytes resistant to the control methods employed may multiply due to a reduction in competitive pressures from other species.

(2) If the weeds are removed, the loss of fish habitat, spawning areas and a food source for fish and other aquatic organisms may be incurred.

(3) After the weeds are removed, nutrients could be made available to algae and subsequently, "blooms" may occur.

The most common means of aquatic weed control are: (1) winter drawdown; (2) weed harvesting; (3) chemical treatments; (4) drawdown and excavation; and (5) hydraulic dredging. Each of these control methods are discussed below.

Winter Drawdown

If the spillway has the capacity to effectively lower the water

level, the lake may be drawdown in the fall to expose the sediments. Over the winter, the bottom freezes and destroys roots, vegetative parts and viable seeds. Winter drawdown will not kill algae. Winter drawdown should be coordinated with fishery biologists to prevent impacts on fish populations.

Weed Harvesting

Weed harvesting entails the mechanical cutting of the weeds. Although this method provides immediate relief, it may have to be repeated periodically.

Chemical Treatment

The use of any algicide or herbicide within the waters of the State is governed by statute (Section 430 of Public Act 872) and permits are also required from the Pesticide Compliance Unit of DEP. Chemical treatments are generally "cosmetic" and repeated applications may be necessary.

Drawdown and Excavation

Drawdown and excavation is sometimes employed to remove the substrate utilized by the plants for growth. The process increases water depth to levels where plants growing on the bottom will not receive enough light to survive. The effects of this method are generally long-term.

The drawdown and excavation process requires the use of heavy equipment and it must be determined whether the pond bottom can support this weight. This method has a relatively high capital

outlay, but the restorative effects are long term and beneficial.

If this method is given further consideration, a feasibility study should be conducted to "map" lake sediments according to depth composition and underlying substances. Final disposal of excavated sediments should be explored during the feasibility study.

Hydraulic Dredging

Under this method, specialized sediment dredges are employed to remove underwater sediments by suction as a slurry. The slurry must be dewatered prior to final disposal, and the decant water usually must be treated to remove solids and nutrients prior to disposal. The development of dewatering containment basins of suitable size and location is a major and expensive undertaking. However, where environmentally and financially feasible, this method can provide improvement of other methods are unsatisfactory. Hydraulic dredging accomplishes the same goal as drawdown and excavation, but it is more costly due to increased specialization and complexity.

WETLAND RESOURCES IN THE MERRYALL DISTRICT

Location and Description

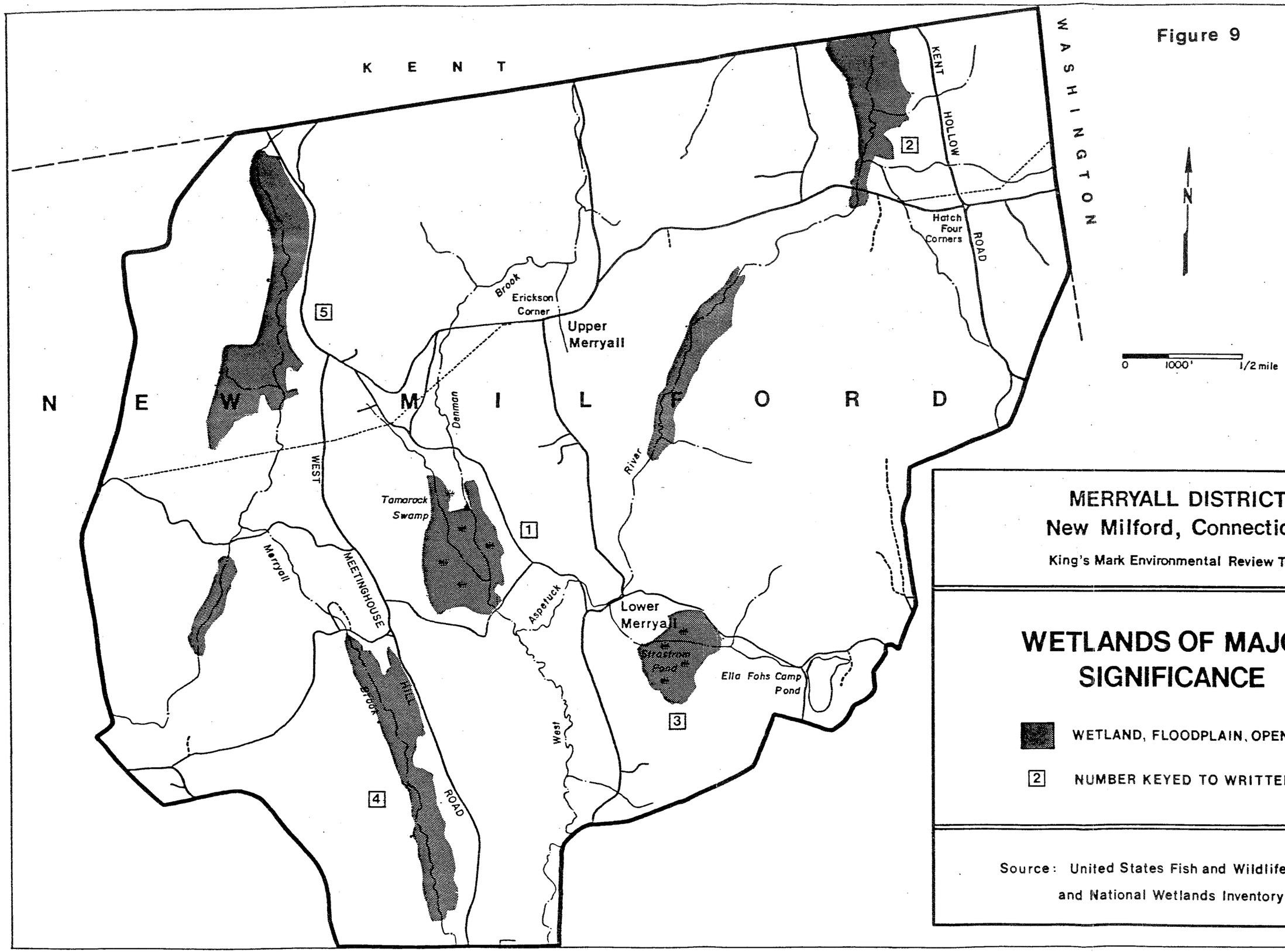
There are five major wetland units within the Merryall District study area. There location and characteristics are described below (Figure 9).

Tamarack Swamp (Number 1 in Figure 9), located in the center of the study area is approximately 100 acres in size. Denman Brook flows into Tamarack Swamp, with the resultant outflow contributing to the West Aspetuck River. Tamarack Swamp is classified as a seasonally saturated deciduous forested swamp under the U. S Fish and Wildlife Service-National Wetlands Inventory (USFWS/NWI) Classification System for Wetlands. Peat and muck organic soils are the predominant soils in this wetland.

The wetland west of Kent Hollow Road (Number 2 in Figure 9) is approximately 100 acres is size. A major headwater wetland of the West Aspetuck River, it receives inflow from a number of tributary streams. The Kent Hollow Road wetland system has been classified as a combination of a seasonnally saturated deciduous forested swamp and an emergent evergreen beaver influenced wetland swamp by the USFWS/NWI. Peat and muck soils are the predominant soils in this wetland.

The Strastrom Pond wetlands (Number 3) comprise approximately 50 acres (including the open water portion of the pond). These wetlands surrounding the pond area are classified as a seasonally saturated emergent scrub-shrub swamp under the USFWS/NWI classification scheme. Peat and muck soils are the predominant soil in this

Figure 9



MERRYALL DISTRICT
New Milford, Connecticut

King's Mark Environmental Review Team

WETLANDS OF MAJOR SIGNIFICANCE

WETLAND, FLOODPLAIN, OPEN WATER

2 NUMBER KEYED TO WRITTEN TEXT

Source: United States Fish and Wildlife Service and National Wetlands Inventory

wetland.

The lower Merryall Brook Wetland System (Number 4) is located on the west side of West Meetinghouse Hill Road in the southwestern corner of the study area. This wetland is approximately 100 acres is size and about two miles upstream of the confluence of Merryall Brook and the West Aspetuck River. Peat, muck, Birdsall, Saco and Limeric soils are represented in this wetland system. These wetlands are classified as a combination of seasonally saturated deciduous, evergreen, scrub/shrub, and deadwood swamp under the USFWS/NWI classification scheme.

The upper Merryall Brook Wetland System (Number 5) is located immediately west of West Meetinghouse Hill Road. It is the most significant wetland area nearest the headwaters of Merryall Brook. The wetland is approximately 100 acres in size, and consists primarily of peat and muck soils, and open water. It is classified as a combination of a seasonally saturated deciduous forested, scrub/shrub emergent wetland.

In addition to the above major wetland system, there are numerous smaller wetlands associated with tributary streams, drainage ways and water bodies. These wetland corridors tend to be located in the upland portions of the study area, and consist of poorly drained till soils of the Leicester, Whitman, Ridgebury soil series as well as some small areas of well drained floodplain soils.

Ecological Values of Inland Wetlands in the Merryall District

Because of the size of the Merryall District, and the number and size of the wetlands contained therein, the evaluation of the

importance of these wetlands for the purposes of this report must be of a general nature. The primary values of the aforementioned wetlands include: (1) hydrologic; (2) water quality; (3) fish and wildlife; and (4) recreational, educational and aesthetic.

Hydrology

The majority of the significant wetlands in the study area are closely associated with the primary brooks, streams, and rivers. These wetlands perform valuable hydrologic functions. For example, by attenuating rainfall and determining flood storage capacity, these wetlands are of significant value in modifying (i.e., reducing) the impacts of flooding within the study area as well as downstream. This function is particularly important due to the placement of many of these wetlands in the upper watershed drainage areas. Conversely, during dry climatic conditions, surface and ground waters retained in these wetlands are re-introduced or released into streams. Hence, water flow is sustained during dry conditions, supporting aquatic life and maintaining water quality.

Water Quality

Wetlands in the study area provide a significant benefit in maintaining surface and groundwater quality. Nutrient uptake, and the settlement and filtration of sediments are accomplished within these wetlands, thereby protecting streams from naturally occurring organic or mineral pollutants. Man-induced pollutants from roadways, street sanding, and development activities are further ameliorated by the filtrative capabilities of wetlands. Finally, the impacts of

agricultural activities on water quality are also buffered by the nutrient uptake and sediment filtrative capabilities of these wetlands.

Fish and Wildlife Habitat

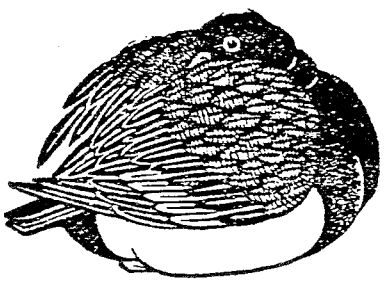
While specific fish and wildlife values are discussed elsewhere in the report, it is necessary to note a few general characteristics or factors which make wetlands important fish and wildlife values. Most of the wetlands in the study area are relatively large contiguous areas, such as 50 to 100 acres is size. They are relatively undisturbed and adjacent to undeveloped lands. These wetlands also exist in topographically and geologically unique positions on the landscape. Thus, due to their proximity or juxtaposition to steeply sloped forested land, open land, streams and ponds, these wetlands provide a highly diverse range of habitat for fish and wildlife.

Recreational/Educational/Aesthetic

The unique and relatively undisturbed nature of the wetlands are ideally suited to passive recreational pursuits such as hiking, hunting, birdwatching, fishing, and in certain locations canoeing. boating and swimming. It is known that certain wetlands support several species of plants, birds, and amphibians rare in Connecticut. Therefore, their educational value should not be underestimated. Furthermore, the size and diversity of these wetlands, water courses and water bodies contributes significantly to the landscape diversity and aesthetic appeal of Merryall.

Finally, all wetlands and water courses in New Milford are regulated by the DEP Water Resources Unit, Wetland Management Section. DEP is acutely aware of the significance and value of the wetlands described herein. It closely evaluates permit applications for their impact on these important resources pursuant to criteria outlined in Sections 22a-41 of the Connecticut General Statutes. The potential exists for municipal jurisdiction over wetlands in New Milford but, to date, no municipal wetland agency has been established.

CULTURAL RESOURCES
OF THE
MERRYALL DISTRICT



CULTURAL RESOURCES OF THE MERRYALL DISTRICT

HISTORIC AND ARCHAEOLOGIAL RESOURCES OF THE MERRYALL DISTRICT

Introduction

Like many other towns in Litchfield County, New Milford has a past that is exceedingly long and rich. Its prehistory began more than 10,000 years ago and its landscapes were subsequently used by many prehistoric populations for hunting and gathering as well as for more permanent settlements such as villages. A recent assessment indicated that more than three dozen prehistoric sites are known from the entire town; however, this probably represents less than five percent of what once existed. Similiarly the landscapes of New Milford became an important focus for historic settlement and land use during the first quarter of the 18th century. Numerous farmsteads, isolated houses, mill sites and industrial hamlets, and urban villages are still present along with their associated landscapes. Together these historic and archaeological resources represent an important and still too often ignored record of the past.

New Milford has a rich heritage, and this significant past is represented by numerous cultural resources. What remains, however is only a fraction of what once existed. Many sites and buildings have been lost to housing developments, industrial growth, and urbanization since the early 1900s. Much of this development occurred in the southern half of the town and along the Route 7 corridor, adjacent to the Housatonic River. To date the Merryall

District, located in the town's northeastern quadrant, has remained underdeveloped. Thus its landscapes and their associated prehistoric and historic records are largely intact. This makes the District almost unique in New Milford and offers the town and its citizens an important opportunity to work towards an historic preservation plan.

Although the following discussion is based only upon prelimiinary studies, it indicates that the District contains important complexes of archaeological sites and historic structures which represents more than 10,000 years of occupation and use by human populations. The integrity of this record, while largely intact, is being threatened by the recent construction of housing developments and the less-obvious subdivision of land for more isolated single-family homes. For example, new housing complexes can be identified along Merryall Road just south of the District's boundary, to the north of the West Meetinghouse cemetary in the District, and along Route 202 between Northville and Marble Dale, near the District's eastern edge. This trend is expected to continue so that the next decade will be a critical one for those interested in studying and preserving Merryall's past.

This discussion has several purposes. It describes what is known about the prehistory and history of the Merryall District and indicates how the region's past is represented by different kinds of archaeological and historic resources. It identifies areas of archaeological sensitivity where historic and prehistoric subsurface sites could be threatened by activities disturbing the ground's surface. It offers guidelines for further study and the development of management policies and a preservation plan.

This section of the report is based upon studies of existing maps, data files and field work in the District. This work and the associated maps are not meant to be comprehensive or definitive. They only serve to illustrate the richness of the District's past and identify how it's cultural resources might be better preserved.

Landscape History and the Prehistoric Archaeological Record

Since the mid-1970s the Research Department of the American Indian Archaeological Institute (AIAI) has undertaken numerous studies whose purpose has been to explore portions of the prehistoric and historic archaeological records of northwestern Connecticut. Each of these projects has had a different geographical focus and has sought to answer different questions. All of these studies have been interested in furthering the aims of archaeological preservation so that important archaeological sites can be protected and managed for future research.

In 1978 and 1979 crews from the AIAI completed field studies of some of the lands situated along the Housatonic River in the Town of New Milford. Several previously-unknown sites were identified; however most of these were situated along the valley floor of the river, far to the west of the study area. The more eastern and upland areas of the Town have never been systematically surveyed. Nevertheless analyses of extant collections from the AIAI, of reports of surface finds from local farmers and others in the District, and of site files maintained by the AIAI indicate that the Merryall Distict has been used for thousands of years.

Certainly one important focus for prehistoric use and settlement was probably the extensive series of wetlands represented on the modern landscape by Tamarack Swamp, the lower and upper Merryall Brook Wetland System and the wetlands associated with the West Aspetuck River. These features would have begun to form more than 12,500 year ago after most of the glacial ice had disappeared from Litchfield County. Detailed studies elsewhere (i.e., Falls Village-North Canaan and Litchfield) have demonstrated that similiar wetlands were used repeatedly by same and different populations over thousands of years. In some settings, the edges of larger wetlands consist of one large unbroken prehistoric site. They are actually the remains of many different campsites located on top of and adjacent to each other.

An intensive archaeological study of the Merryall District would probably recover evidence of similiar patterns of preshistoric land use. The study area is already known to contain evidence of sites. For example, prehistoric artifacts have been recovered from plowed fields around Hatch Four Corners, from a complex of sites in Northville just outside the District's boundaries, from another group of sites in around Kent Hollow to the north, and from disturbed finds recovered in a housing development near the West Meetinghouse cemetary. More than a dozen prehistoric sites have also been recorded from the drainage of the East Aspetuck River, east of the Merryall District.

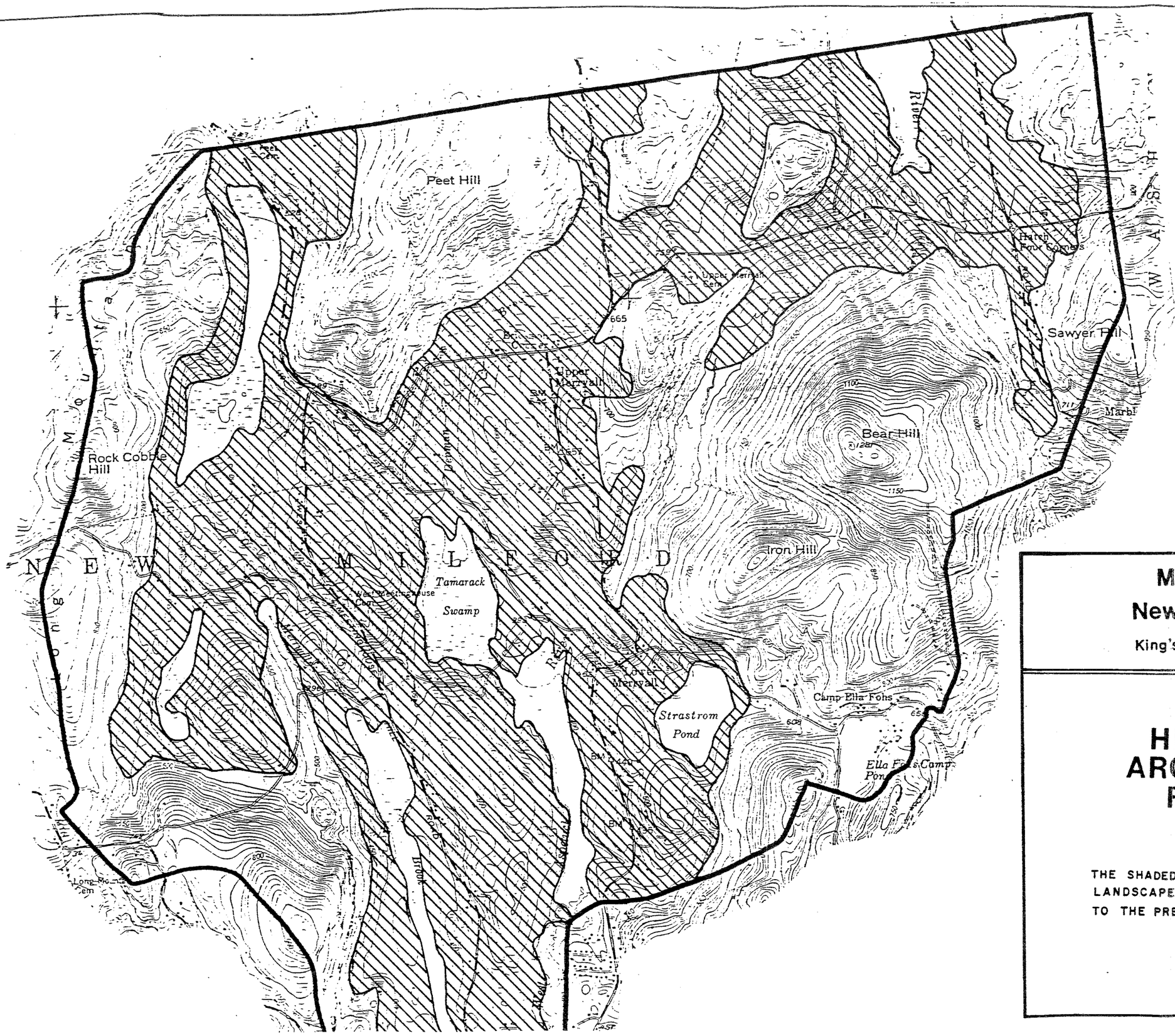
All of these sites and their collections indicate that the District's wetlands and surrounding landforms were used by different groups of prehistoric hunter-gatherers during at least three separate

time periods: (1) the early postglacial period between 10,000 and 7,000 years ago, when the earliest occupants of Litchfield County used the District's lands; (2) the middle prehistoric period between 6,000 and 2,000 years ago, when the wetlands became an important focus for seasonal and perhaps year-round settlements; and, (3) the last prehistoric period between 1,000 and 400 years ago, when small villages or hamlets may have been built by hunter-gatherers who also cultivated crops.

The sites associated with each of these time periods differ in size, complexity, and associated patterns; however they are all equally fragile and still unprotected. The landscapes in the District have been geologically stable for more than 10,000 years. With the exception of the edges of the narrow river valleys and the lower reaches of their tributaries, there has been little significant deposition since the melting of the glacial ice. Consequently most prehistoric sites are expected to lie on or just below the modern ground surface, and could easily be destroyed or disturbed by any construction activities.

In Figure 10, a zone of archaeological and historic sensitivity has been delimited. The boundaries of this zone were drawn on the basis of topography, distance from wetlands, and projected patterns of prehistoric land use. It is expected that the frequency, size, and density of prehistoric sites will be greater within the zone than outside of it. The zone also includes the District's 18th and 19th century buildings, stone foundations, and their surrounding landscapes which would contain associated historic or archaeological deposits. Thus the zone contains those areas which are most

Figure 10



MERRYALL DISTRICT
New Milford, Connecticut

King's Mark Environmental Review Team

HISTORIC AND ARCHAEOLOGICAL RESOURCES

THE SHADED AREAS INCLUDE THOSE LANDFORMS, LANDSCAPES AND HISTORIC BUILDINGS IMPORTANT TO THE PRESERVATION OF MERRYALL'S DISTANT AND RECENT PAST.

important to future studies of the District's past.

Most of the land within the sensitive zone has remained underdeveloped so that it historic and archaeological resources are largely intact. However, some recent losses can be identified by comparing 1980 aerial photographs to the 1971 revised USGS quadrangle sheet. For example, a housing development disturbed much of the knoll along the east side of West Meetinghouse Hill Road, north of the cemetary. This knoll, situated above Tamarack Swamp, probably once contained several prehistoric sites whose integrity and research potential have now been lost.

Despite it preliminary nature, this map of senisitivity can be used as a planning tool until more intensive studies can be undertaken. It identifies critical areas where larger scale subdivisions could jeopardize inobvious archaeological resources. Planning and zoning commissions and citizens groups could also use this map to restrict other destructive activities such as graveling operations to control land use in the near future and to manage the density and location of projected residential growth.

HISTORIC PATTERNS OF LAND USE AND THE DISTRICTS' ARCHITECTURAL RESOURCES

The historic use of the Merryall District began in the early 1740s after some of the area, initially included as a part of a larger land purchase, was surveyed into tiers for subdivision and settlement. Prior to this time, the District must have been known to colonists but farms were not built here. Before 1770 however, farmsteads were being constructed, especially along or adjacent to the 10-Rod Highway which joined New Preston, New Preston Hill, and Merryall to Bull' Bridge in Kent and western New York.

Merryall's mills probably began to decline when, like other mills, they failed to convert to steam power and electricity during the second half of the 19th century. After the Civil War, Merryall farmers followed the general trend toward the specialization of agriculture, turning to dairy and tobacco farming. As in other rural areas, a small population of Polish and Swedish immigrants bought up a few of the soil-depleted New Milford farms. By applying European practices of soil conservation and cultivation, these newcomers developed successful dairy and tobacco farms. Merryall is still populated partly by descendants of these families.

Tobacco cultivation and curing had by 1890 made New Milford a boom town and brought significant profits to Yankee and immigrant farmers in the town. The industry also drew newcomers from other parts of the northeast until the decline of the tobacco economy in the 1920s.

Geographically scattered late 18th and early 19th century farmsteads constitute the great majority of buildings in Upper and Lower Merryall. Generally these complexes consist of a single farmhouse and one to four outbuildings clustered near or straddling the road. Almost all of these farmsteads retain their architectural and environmental integrity, which significantly enhances their cultural or historical values.

In one village setting in the District, Lower Merryall, there is a concentration of late 18th and early 19th century dwellings and mill buildings situated along a low, winding section of the West Aspetuck River. While these buildings have undergone significant changes, including the conversion of most to small dwellings, they

retain the architectural character, small scale, and traditional materials of the original structures.

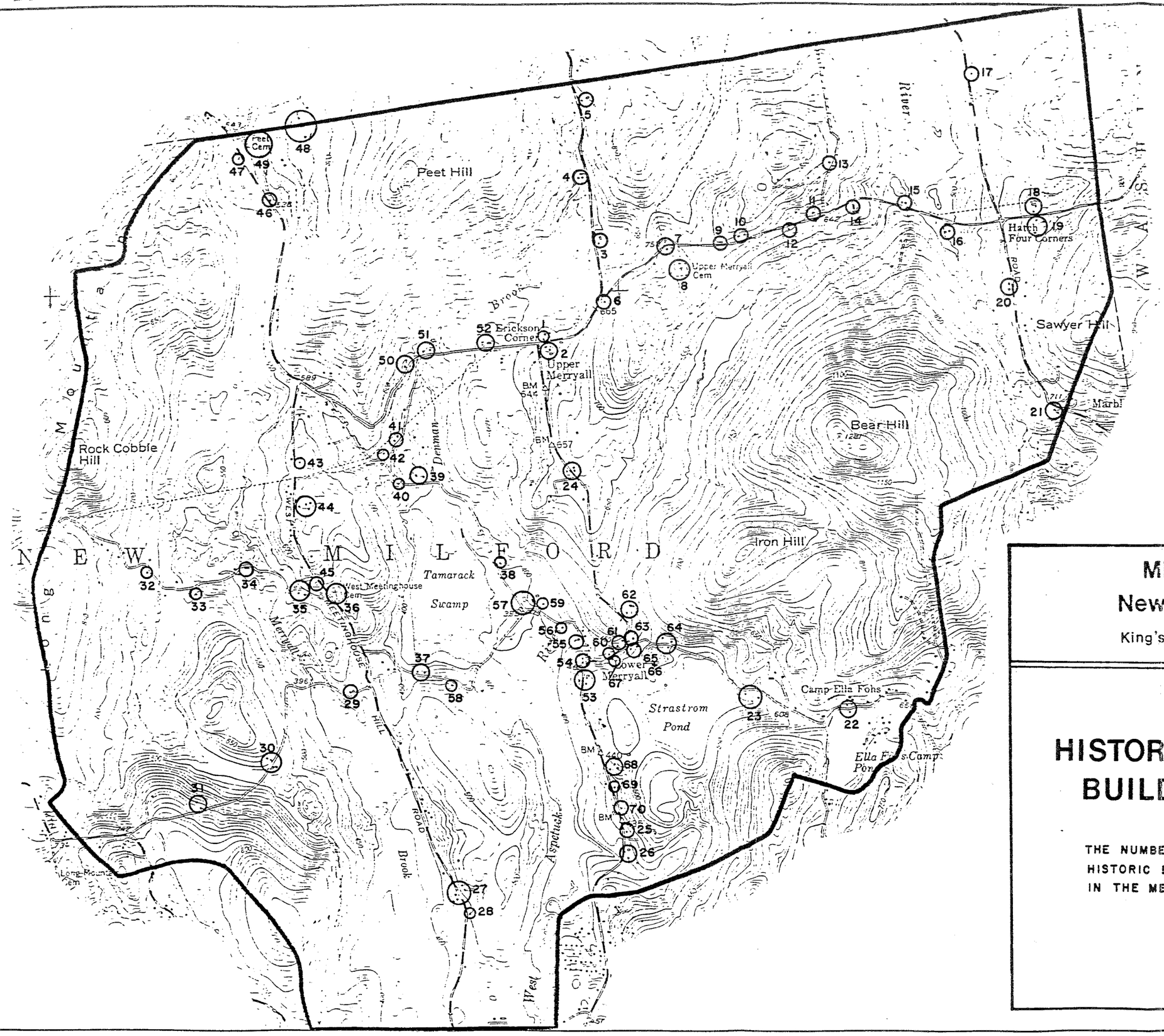
The architecture of the District's older building stock indicates the presence of several scattered farms during the second half of the 18th century. Owing to the growth of milling activities during the first two decades of the 19th century, the construction rate of dwellings and farms accelerated during that period. This growth and sharp increase in building activity after the middle of the century account for the preponderance of early 19th century structures in the District.

The houses of the late Colonial and Revolutionary periods in Merryall are typical of western Connecticut. In Merryall these structures appear in two physical forms: the one and one-half story cape and the two and one-half story house. Both types have gable roofs and are clapboard-sided. Both contain a central chimney and an entry centered in the long side of the building, usually facing the road. The gable roofs of these houses are notably steep, particularly in the two and one-half story form. Few dwellings of the period in Merryall have the rear lean-to addition which usually formed the saltbox shape.

The most prevalent Merryall house type of this period is the symmetrical, five-bay fronted house with a central chimney and door. The second story windows are framed closely below the main cornice. There is plain exterior trim and little or no ornamentation. See Number 1 and 29 in Figure 11.

The dwellings of the Federal period (roughly 1780-1810) are similiar in overall form to the two and one-half story type of the

Figure 11



MERRYALL DISTRICT

New Milford, Connecticut

King's Mark Environmental Review Team

HISTORIC BUILDINGS AND BUILDING COMPLEXES

THE NUMBERS REPRESENT THE LOCATIONS OF HISTORIC BUILDINGS AND BUILDING COMPLEXES IN THE MERRYALL DISTRICT FROM THE 18TH AND 19TH CENTURIES.

previous period, but often have central hallways made evident by two chimneys built symmetrically near the ends of the gables. The entrances often have a glass transom or gabled entry porch. The second story windows are framed lower than those of the earlier period, leaving more wall space below the main cornice. In some cases the cornice and that of the doorway are decorated with very fine dentils. The pitch of the gable roof is flatter that that of the previous period (See Figure 11; No. 57, 59 and 61).

The most prevalent dwelling type in Merryall is the one and one-half and two and one-half story vernacular Greek Revival house. The one and one-half story form is a small, clapboard-sided structure with gable roof and high "eyebrow" windows in the upper half story below the cornice. The entry door is often framed off center on the long side of the building, facing the road. The placement of the chimney varies from the end to the center of the house. This is a distinctly rural form of the period and was built through the 1850s (See Figure 11; No. 15, 20, 32, 42).

One form of the larger, two and one-half story Greek Revival vernacular house retains the overall exterior appearance of the Federal house. However, it exhibits a more elaborate entrance, featuring a high transom light, sidelights, and a substantial enframement of wood. In some cases the entire entrance is recessed behind the front wall of the building. Attic windows in the gable characteristically contain a "plaid" muntin pattern (See Figure 11; No. 2).

The more urban version of the Greek Revival house is the two and one-half story form which, unlike the other type, has its long side

perpendicular to the road. The gabled end facing the road contains the entrance in the first or third of three bays. The gable is left open or closed to form a classical pediment, and trimmed with broad, flat boards. Two remarkable examples of this type are the stone Hatch farmhouses, located east of Hatch Four Corners (See Figure 11; No. 18 and 19).

The paucity of Victorian style (post 1850) buildings in Merryall reflects the sharp decrease in new local settlement and building activity during this period. The two Smyrski farmhouses (See Figure 11; No. 37 and 70) were built during the 1890s and 1860s, respectively. They are well preserved and typical examples of the vernacular Queen Anne and Italianate styles. The Merryall Chapel, Number 55 in Figure 11, built in 1890, is the only remaining unchanged example of Late Gothic Revival vernacular architecture in New Milford.

Most of the 70 structures and associated older outbuildings noted in this initial survey are significant as substantively unchanged examples of vernacular domestic and farm architecture of the late 18th and early 19th century period in western Connecticut. Their significance is heightened by the extraordinary physical continuity in the District's unspoiled land, vistas, and historic resources (e.g., dwellings, farm complexes, cemeteries, stone walls).

Because of the architectural character, age, and physical integrity of Merryall's older building stock, every effort should be made to properly maintain and protect these structures. Equally important is the preservation of the undeveloped land surrounding these building complexes, especially the farmsteads. Such

preservation efforts would ensure that the original meanings of these buildings and the historical relationships of them to the land would not be lost. Such efforts would also contribute to the preservation of the historic archaeological records associated with each of the houses or complexes of buildings. Such records are buried beneath the contemporary landscapes and contain information about the everyday lives of the people who built, owned, or modified these house-farms such as what they ate, what they bought or how prosperous they were. Studying these later 18th and 19th century archaeological records would also tell us much about how different economic and social classes thought about and used the external spaces that surrounded their houses and whether their thoughts and ideas were transformed as the world around them changed.

Certain areas are of particular significance because they contain buildings and landscapes which embody these historical relationships. Among these are:

* Tamarack Swamp and the lowlands and open hills to its southeast and east, including the chapel, schoolhouse, and farms.
* The mile-long approach to Lower Merryall from the south along Merryall Road, including the older buildings on the east side of the road and the valley to the west.
* Erickson Corner and its older buildings, surrounding open lands and vistas.
* The stone houses east of Hatch Four Corners, the surrounding open land and views.
* Hine Road, especially the historic farmstead (Figure 11; No. 30) and its surrounding open lands as well as the older buildings and landscapes elsewhere along this road.

Working Towards the Long-term Preservation of Merryall's Archaeological and Architectural Resources: Some Guidelines

In the Merryall District the combination of important, intact archaeological and architectural resources and extensive areas of underdeveloped property offers concerned citizens a rare opportunity for conserving or protecting this section of New Milford and Litchfield County. While some recent growth has reduced the amount of undisturbed landscape, what remains should become the focus of a long-term conservation and research effort. The following guidelines summarize some of the steps and goals of such an effort. They are organized, according to their urgency, into two types.

Short-term Needs and Goals

(1) Increase the awareness about the District's rich and important archaeological and architectural resources and how these records represent a unique, fragile, and non-renewable resource.

These educational efforts would be directed towards those agencies, boards, and organizations who control or manage growth and land use in Merryall. Another purpose would be to inform preservation groups such as the Housatonic Land Preservation Trust and Weantinoge Heritage Land Trust about the District's past. These groups are now actively involved in managing open spaces in the District, many of which are archaeologically sensitive, such as the Osuch Farm near the West Aspetuck River.

(2) Use the preliminary sensitivity map and other data, including the initial architectural inventory, to review sections of the 1971-72 Updated Town Plan as well as sections of the newer update now being compiled for New Milford:

(a) Review the 1971-72 recommendations for land use which permit medium density housing in the sensitive corridor along both sides of West Meetinghouse Road for much of its length (Map 5.1 in 1971-72 Plan). Several recent subdivisions here have already been approved and/or constructed and important sites, landscapes, and vistas have been lost.

(b) Review the proposed zoning provisions and land uses in the newer update to assess what effects these policies will have on the District's cultural resources.

(c) Review the draft version of the newer update to determine whether policy statements appear there in support of the work and goals of private land trusts. Such a statement can help these organizations clarify the tax status of proposed donations and also communicates the town's concern about open space and the preservation of farmlands, historic structures, and archaeological sites.

Long-term Needs and Goals:

(1) Initiate systematic surveys, with the help of knowledgeable individuals and organizations, of the District's archaeological and architectural properties including its mill remains.

These surveys would provide up-to-date and much-needed data about the location, size, and integrity of many of the district's cultural resources. Such work might be funded partially through survey grants available from the Connecticut Historical Commission in Hartford.

(2) Use this information and associated studies to gain support for the creation and management of preservation districts such as:

(a) Local historic districts, which require 75 percent approval of property owners and the establishment of a local commission to review design. Such commissions would evaluate and authorize exterior changes to older buildings, the appropriateness of new construction, and the demolition of historic buildings within each district. This designation represents the highest form of legal protection available at the local level.

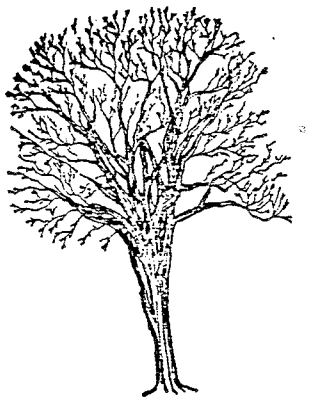
(b) National Register archaeological and historic districts, which would designate several areas for inclusion on the National Register of Historic Places. This designation would require reviews of proposed federally licensed or funded projects which might affect the District's resources.

(3) Use this information and associated studies to prepare a long-term preservation plan for the District which accommodates archaeological and architectural preservation within a management policy which projects and controls patterns of future developments and land use.

(4) Construct and implement a long-term research plan which explores and interprets the prehistoric and historic archaeological and architectural records.

Such work would help the past and present inhabitants of Merryall become more aware of the region's distant and more recent histories and of the people who once lived, used, and built its landscapes.

LAND USE AND PLANNING CONSIDERATIONS



LAND USE AND PLANNING CONSIDERATIONS

The Pressures of Population Growth

The population has grown, and continues to grow, dramatically in New Milford. As shown in Table 1, the population of New Milford has more than tripled in the past 30 years, and this upward spiral is projected to continue.

TABLE 1

Population Growth in New Milford

	1940	1950	1960	1970	1980	1990 (proj)	2000 (proj)
Town Population	5559	5799	8318	14,601	19,420	21,120	23,120

Source: U. S. Census, HVCEO projections

Under current zoning, the Merryall District can be expected to absorb a significant portion of this growth. This conclusion is supported by a report prepared for the Housatonic Valley Council of Elected Officials (HVCEO) in 1979 by John Hayes entitled "Land Use of the Housatonic Valley Region." According to this report, the population of the West Aspetuck River Basin is projected to increase from 1,791 persons in 1978 to 2,380 in the year 2000. This is an increase of over 32 percent. The study area encompasses approximately 75 percent of the West Aspetuck Basin (Hayes, 1981).

It is interesting to note that during this same 22 year time period (1978-2000), the population of the entire Town of New Milford is projected to increase by about 18 percent. Thus, the West

Aspetuck River Basin is projected to increase in population at a rate considerably greater than that of the Town as a whole.

What are the implications of this population growth for existing or future land use? The HVCEO report estimated that of the 9,145 acres in this watershed, more than one-third, or 3,954 acres, are available for development. The number of dwelling units in the watershed in 1978 was estimated to be 597. Under 1978 zoning, the land was estimated to be capable of supporting 3,045 dwelling units, over five times the 1978 figure. The report further projects that by the year 2000, 526 acres of land in the West Aspetuck Basin will be converted from open or "non-developed" land, including farmland, to residential or other permitted uses.

These sobering figures underscore the importance of judicious land planning to direct this growth in order to protect the unique character of the Merryall District.

Planning Considerations

The Town Plan

The New Milford Plan of Development (1972) sets policy to guide future development in the Town. This Plan is in the process of being updated from its present 1972 version. The Plan calls for a mix of residential and open space land uses in the study area. Specifically, according to the Land Use Plan Map, approximately 50 percent of the area is targeted for low density single family residential use (0.5 - 0.7 families per acre); 35 percent is projected for permanent protection as open space; and 15 percent is

proposed for medium density residential use (single and multi-family with 1.5 - 5.0 families per acre).

The Plan calls for several major open space acquisitions in the study area. High priority tracts include Bear Hill, Iron Hill, Peet Hill, Tamarack Swamp, Smyrski Tract, Long Mountain (part), Mud Pond, and an addition to the existing Zalessky Tract Sanctuary west of West Meetinghouse Hill Road. The Plan also calls for the acquisition of streambelts for open space purposes.

The Land Use Plan map is not consistent with current zoning in the area. Current zoning is predominantly R-80 (One-family per 80,000 sq. ft.) with R-40 (One-family per 40,000 sq. ft.) along much of Meetinghouse Hill Road, and R-40 and R-60 (One-family per 60,000 sq. ft.) scattered in patches elsewhere. This zoning prohibits development at the higher densities called for in the Land Use Plan Map. Specifically, the medium density residential land uses of (1.1 - 5.0 families per acre) would not be permitted under existing zoning, nor would the (0.7 families per acre) be permitted in the R-80 zone (Figure 12).

Interestingly, the medium density residential development called for in the study area by the Land Use Plan Map is not supported in the text of the Town Plan. The Plan states that, "...Medium density single-family and multi-family designations are found only in the southern part of town where sewers exist or are proposed in the sewerage plan. The pattern is one of decreasing density out from the Town Center with the northern and eastern part of the Town predominantly low density rural residential..." The Town Plan further states that, ".... as much future development as possible

Figure 12

K E N T

W A S H I N G T O N

N E W M I L F O R D

Route 109

Hatch Four Corners Road

Brook

Erickson Corner

Upper Merryall

Denman

River

West

Tamarack Swamp

Merryall

Meetinghouse

Aspetuck

Lower Merryall

Strasfrom Pond

Ella Fohs Camp Pond

Brook

Hill

Road

West

N

0 1000' 1/2 mile

MERRYALL DISTRICT
New Milford, Connecticut

King's Mark Environmental Review Team

CURRENT ZONING

- R-40
- R-60
- R-80
- INSTITUTIONAL
- PUBLIC PARK
- PRIVATE CAMP

should be concentrated in and adjacent to the Town Center to prevent continuous sprawl over all the rural areas ..."

To conclude, the text of the Town Plan and current zoning do not support the density of development called for in the Land Use Plan Map. This apparent inconsistency should be resolved in the Town Plan update now in progress.

Intensity of Development Suggested by the Regional Plan

A regional land use plan was adopted by the HVCEO, of which New Milford is a member, in 1981. This plan suggests a balance of development and conservation by classifying ample acreage in both categories.

In the regional plan, downtown New Milford receives an Urban Center designation, indicating that growth should be relatively intense. Adjacent to this are categories recommending urban growth, with a more immediate first stage of growth extending northward to approximately Wells Road, and a second priority "Eventual Urban Growth" category extending almost to Hipp Road along Route 202. The case is made in the regional plan that residential densities within this broad band of urban growth along Route 202 should be at a density of three or more dwelling units per acre. These areas contain the potential for accommodating new urban development to the best possible resolution of social, economic and environmental goals. Finally, intensive use of these lands will help attract potential urban uses away from environmentally sensitive areas.

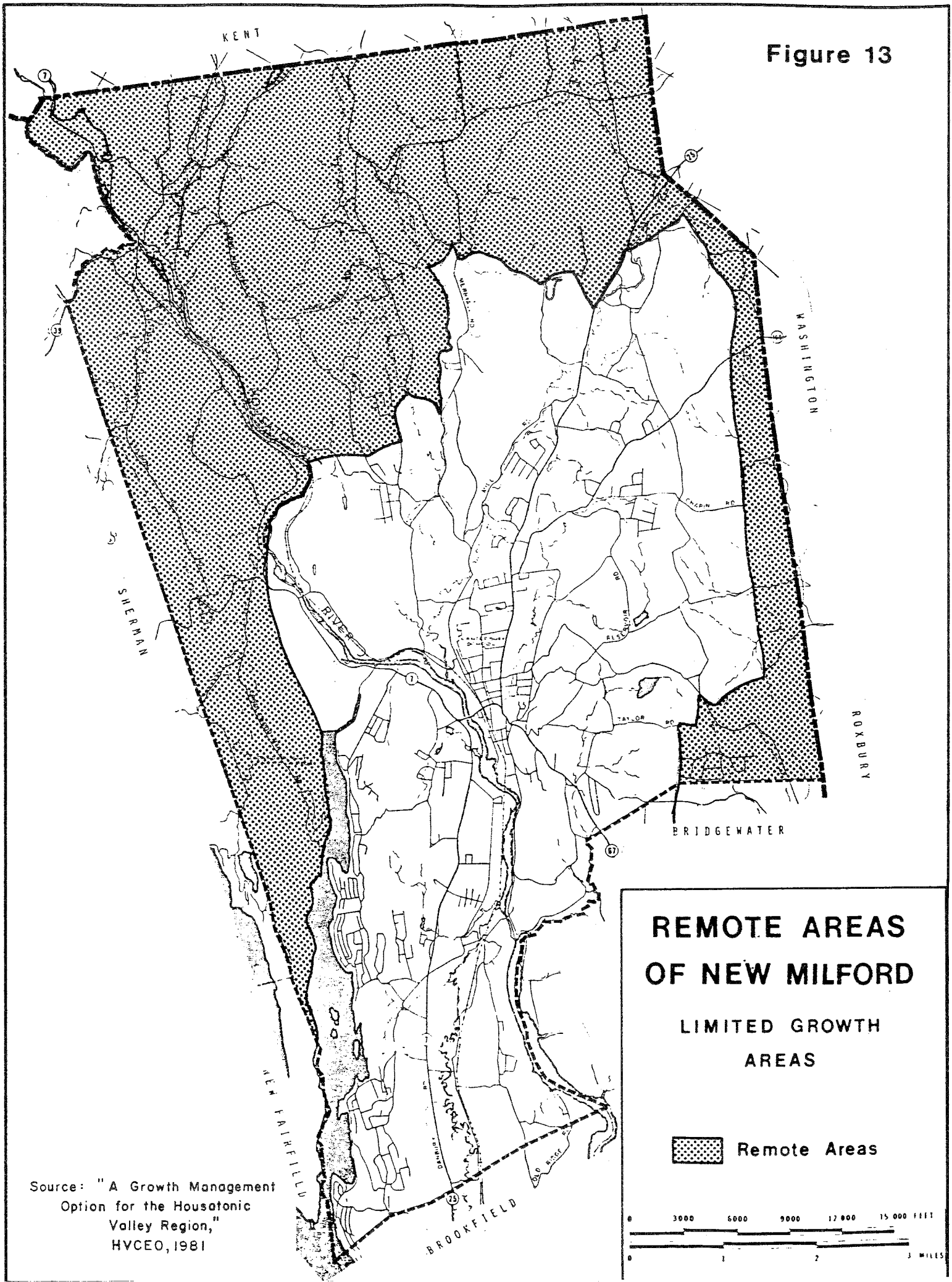
The next HVCEO category adjacent to the future Route 202 growth corridor moves northward up Aspetuck Road and Merryall Road and is a

land use category entitled "Rural." According to the regional plan the section of New Milford in the rural category, "...can absorb some growth, but only in amounts that can permanently be served by on-lot or near-lot septic and well systems that don't impair water quality. By taking extreme caution to insure the permanence of these facilities, sewers and the un-coordinated spread of intensive land uses that often go with them can be kept at the edge of the urban categories..." This category generally encourages traditional suburban development densities of one, one and one half or two acre lots in large parts of New Milford. It is adjacent to and complementary to the urban categories.

Extending further up Merryall Road and covering much of the study area is an HVCEO policy category entitled "Remote Area." According to the HVCEO, "....even lower densities than those derived from environmental carrying capacity are reasonable in remoter areas in order to channel growth pressures to more energy efficient locations...." such as the Town Center. Importantly, the plan also states that, "....in such areas municipal commissions should help insure that economic uses of property remain available to developers by permitting cluster or other sub-division concepts that reduce roadway and other costs."

The HVCEO's Remote Area designation in relationship to Merryall is quite specific (Figure 13). All of New Milford adjacent to the Kent town line lies within this district. The southern boundary of the district is as follows: Beginning at the Housatonic River between Bennett Road and Sawmill Road, proceeding easterly to intersect Bennett Road, crossing Long Mountain Road and continuing

Figure 13



REMOTE AREAS OF NEW MILFORD

LIMITED GROWTH AREAS

Remote Areas

0 3000 6000 9000 12 000 15 000 FEET

0 1 2 3 MILES

Source: "A Growth Management Option for the Housatonic Valley Region," HVCEO, 1981

northeasterly along North Valley Road to the intersection of Briar Lane and Aspetuck Road. The boundary then proceeds northerly along Aspetuck Road to West Meetinghouse Hill Road and then easterly along Meetinghouse Road to the West Aspetuck River. This demarcation line then continues northerly with the West Aspetuck River itself serving as the boundary to the point where it is bridged by Chapel Hill Road. Chapel Hill Road then becomes the boundary for a short distance southerly to Merryall Road, where the boundary continues easterly along Bear Hill Road to Big Bear Hill Road to Route 202. The line then extends northeasterly along Route 202 to Wheaton Road then along Wheaton Road to Upper Church Hill Road.

Thus the vast majority of the Merryall District as defined in this report receives a Remote Area designation by HVCEO. Only a southern section of Lower Merryall bounded by the West Aspetuck River, Chapel Hill Road and Bear Hill Road lies outside of HVCEO's designated Remote Area. Authors of the 1981 plan indicate that the line was purposefully drawn far enough away from New Milford's central area to allow ample room for traditional suburban growth south of it.

The HVCEO plan does not offer a specific minimum lot size for its Remote Area category other than to advise that, "...even lower densities than those derived from environmental carrying capacity are reasonable." A lot size based upon environmental carrying capacity in western Connecticut usually ranges from a minimum of one up to two and one-half acres.

However, in describing its Remote Area policy, the HVCEO plan states that a similar category in the Tri-State Planning Commission's

Regional Development Guide recommends minimum lot sizes of three acres. For perspective, it is also relevant to note that HVCEO applied the Remote Area designation to other municipalities, and that in Newtown a three acre zone is in the Remote Area, and in Bridgewater a four acre zone falls within this classification.

As discussed previously, current zoning within the Merryall District is entirely residential on single-family lots at three densities: (1) One-family per 40,000 sq. ft. (R-40); (2) One-family per 60,000 sq. ft. (R-60); and (3) One-family per 80,000 sq. ft. (R-80). These zones are mixed with no descending order of density northward from New Milford Center. At one point in Upper Merryall an R-40 zone is only about 2,000 feet from the Kent Town Line. This same R-40 zone then extends southward through the heart of Merryall.

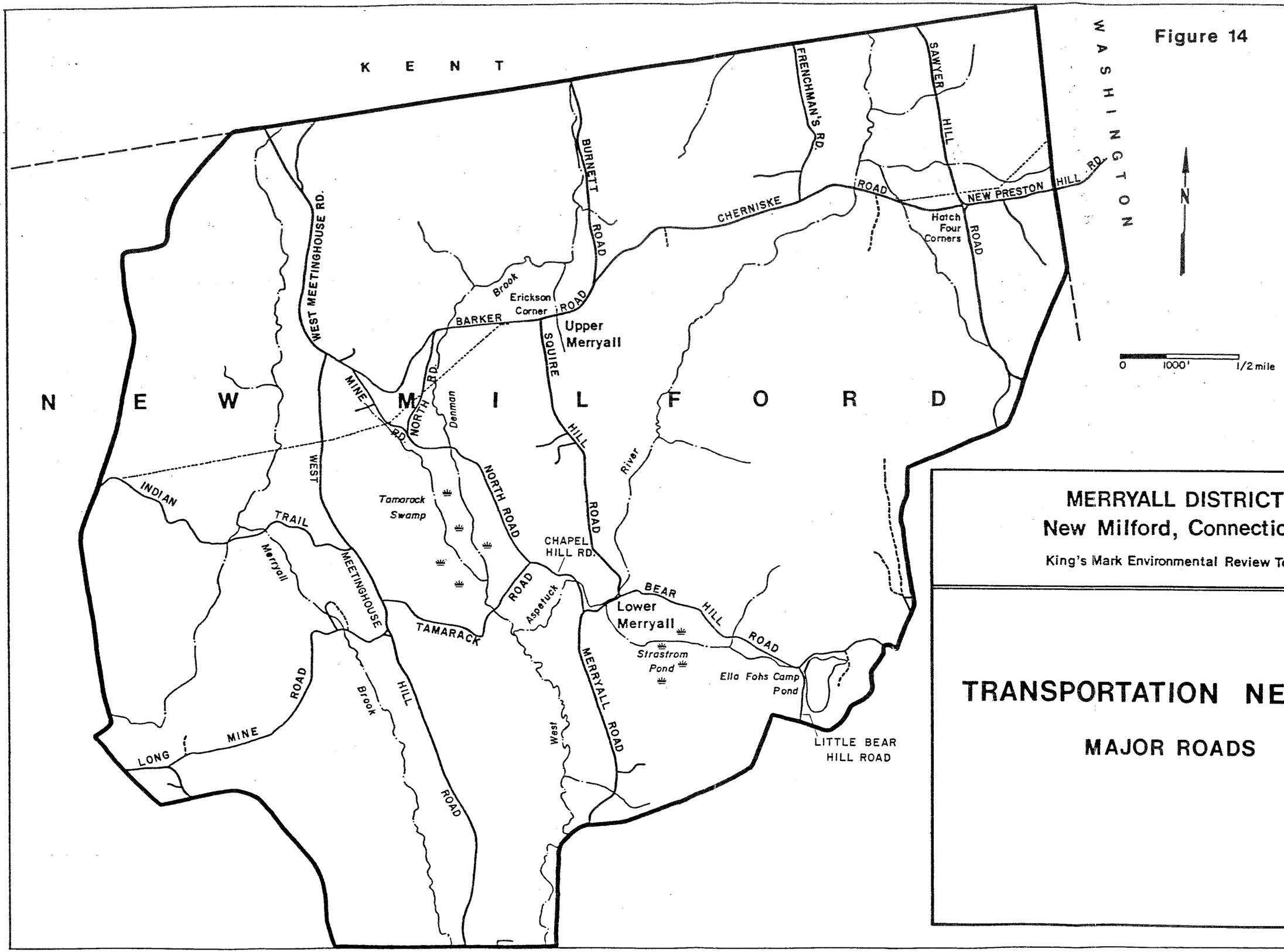
The concentration of residential density in and adjacent to New Milford Center and Route 202, decreasing densities northward is recommended by the regional plan. Since distance from a town's central area is the basic logic for decreasing residential densities is an accepted concept (as employed in numerous towns in Connecticut such as in nearby Bridgewater), and has avoided the charge of arbritrariness, the appropriateness of R-40 and R-60 zones within the boundary of the Merryall District should be thoroughly re-evaluated as part of the Town's current Plan of Development updating process.

Transportation Network

Traffic

As shown in Figure 14, a network of town roads, both paved and

Figure 14



MERRYALL DISTRICT
New Milford, Connecticut

King's Mark Environmental Review Team

TRANSPORTATION NETWORK

MAJOR ROADS

unpaved, traverses the study area. Although no state roads are found within the study area, Route 202 at its nearest point is located about one third of a mile to the east and Route 7 at its nearest point about 1.5 miles to the west of the study area.

That portion of traffic generated within the study area and attempting to leave it can be expected to flow primarily southward via West Meetinghouse Hill Road and Merryall Road towards the center of New Milford. This assumption is confirmed by the State Department of Transportation (DOT) model of traffic flow. It shows that most traffic leaving the study area would travel south towards the town center.

This basic pattern of traffic flow is reflected in the HVCEO's functional classification of roadways for the study area and vicinity. Under this classification scheme, the following roads have been identified as "minor collectors": West Meetinghouse Hill Road southerly to Aspetuck Road, Barker Road, Cherniske Road, New Preston Hill Road, Squire Hill Road, and Merryall Road southerly to its intersection with Meetinghouse Road. These roads "collect" traffic from nearby local roads and channel it to arterial roads such as Route 202 and 7. As a result somewhat more traffic can be expected on the collector roads than the other local roads in the area (Table 2).

As shown in Table 2 the classification of roadways contained in the 1972 New Milford Plan of Development is somewhat different from the above.

Table 2.

FUNCTIONAL CLASSIFICATION OF ROADWAYS

Roadway	Town Plan Classification	HVCEO Classification
West Meetinghouse Hill Rd (Long Hine Rd to Merryall Rd	Major Collector	Minor Collector
West Meetinghouse Hill Rd (north of Long Hine Rd)	Minor Collector	Minor Collector
Merryall Road (south to Sand Rd)	Major Collector	Minor Collector
Squire Hill Road	Minor Collector	Minor Collector
Burnett Road	Minor Collector	Local Road
Barker Road	Local Road	Minor Collector
Cherniske Road	Local Road	Minor Collector
New Preston Hill Road	Local Road	Minor Collector
Sawyer Hill Road	Minor Collector	Local Road
All others	Local Road	Local Road

The significance of these classifications lies in the standards for improvement of the roadways. The Town Plan calls for upgrading the major collectors identified above to handle an average daily traffic level (ADT) of 1,500 to 3,000 vehicles, with a required pavement width of 36 feet. On the other hand, the minor collectors of Squires Hill Road, West Meetinghouse Hill Road north of Long Hine Road, and Sawyer Hill Road are proposed for improvement to handle an ADT level of 750 to 1,500 vehicles, with a required pavement width of

26 feet. The HVCEO does not have specific development standards for its classifications.

The HVCEO staff is not aware of any traffic counts that have been conducted within the study area. The State DOT compiles traffic counts routinely only on state roads. Based on the low density of development in the study area, however, traffic would normally be expected to be light. It should be noted, however, that local residents indicate that some traffic is originating west of the study area and traveling along West Meetinghouse Hill Road, Barker Road, and Cherniske Road to Route 202. It appears that this route offers a scenic "short-cut" for persons attempting to travel from the Bulls Bridge area on Route 7 easterly to New Preston or Washington.

New residential development within the study area can be expected to add traffic to the local road network. According to the Institute of Transportation Engineers, a single-family residence generates ten vehicle trips (in and out), or five round trips, on an average weekday. A new twenty lot subdivision would, therefore, be expected to generate about two hundred additional trips per day in the area.

Influence of Major Traffic Improvements

Increases in highway capacity allow traffic to move faster, thereby shortening the length of time needed to reach an outlying point. Since New Milford is part of a dynamic growth area, its planning region having a higher population growth rate than any other region in the state, the introduction of additional highway capacity can serve to both shift the direction of and induce additional growth.

One such improvement with potential impact upon the rate and type of growth occurring in Merryall is the proposed Route 7 realignment. This proposed expressway is to parallel existing Route 7 through Brookfield and part of New Milford. A section of this relocated roadway from I-84 in Danbury to Route 202 in Brookfield was opened to traffic in 1977.

An additional 9.5 mile segment from Route 202 to a planned terminus just north of New Milford Center remains to be built. An environmental impact statement for this construction will likely be initiated in 1986. In order to speed construction, the HVCEO has proposed a stated development plan whereby meaningful segments of the expressway could be constructed in sequence, thus reducing the funding needed from any one legislative authorization.

Present plans for expressway alignment call for it to cross the Housatonic River just to the west of the confluence of the West Aspetuck River with the Housatonic, and then to terminate at a new connector road that proceeds easterly to intersect with Wellsville Avenue, continuing ultimately to Route 202. Since this new intersection with Wellsville Avenue is only 2.5 miles from the Merryall District study area, growth in the District could be influenced by completion of the expressway.

However, planners have recognized that completion of new Route 7 would equalize growth pressures within the Town between the west side of the Housatonic and the Route 202 corridor on the east side. Growth would be stimulated on the east side. HVCEO's growth plan encourages intensive use of land along Route 202 northeasterly away from the Town Center, and if implemented this growth policy should

help to siphon growth pressures away from the direction of Merryall towards closer and more energy efficient locations.

Construction of new Route 7 is not expected to generate a significant amount of new through traffic in the Merryall District. Access to new Route 7 from the north, except from portions of Kent, would still most easily be achieved by utilizing either existing Route 7 or Route 202.

In years past a controversy existed over the most logical terminus for the Route 7 Expressway. Discussions were held on the need for a Western New England Thruway running the length of New England near its border with New York State. Relocated Route 7 was to serve as this Thruway. A 1968 Connecticut Highway Department report entitled "Connecticut's Major Corridor Needs" contained a map featuring this option. The implications of such construction for Merryall would be far reaching.

This concept is not now a part of DOT's official plans. Public sentiment has moved away from supporting projects that open up undeveloped, rural areas. According to the HVCEO's 1982 regional transportation plan, "...The position of the Northwestern Connecticut Regional Planning Agency (now Council of Governments) is that there will never be a need for the extension of new Route 7 beyond New Milford Center and the HVCEO agrees with this position..."

Scenic Roads

In their efforts to protect and preserve the rural character of the Merryall area, local officials in New Milford may wish to pursue the designation of selected roads as scenic roads under Section 7-149a of the Connecticut General Statutes. This Act allows towns,

by ordinance, to designate roads or portions of roads as scenic. Such designation allows towns to regulate future alterations and improvements of these roads, including widening of the right-of-way or the travelled portion of the road, paving, changes of grade, straightening, removal of stone walls, and removal of mature trees.

According to the Act, "...the power to designate such scenic roads may be delegated by ordinance to a planning commission or a combined planning and zoning commission. The ordinance shall prescribe the standards and procedures to be used to determine which highways or portions of highways shall be designated as scenic roads, except that to be designated as a scenic road, a highway or portion of a highway must be free of intensive commercial development and intensive vehicular traffic and must meet at least one of the following criteria: (1) it is unpaved; (2) it is bordered by mature trees or stone walls; (3) the traveled portion is no more than twenty feet in width; (4) it offers scenic views; (5) it blends naturally into the surrounding terrain; and (6) it parallels or crosses over brooks, streams, lakes or ponds.

No highway or portion of a highway may be designated as a scenic road under this section unless the owners of a majority of lot frontage abutting the highway or portion of the highway agree to the designation by filing a written statement of approval with the town clerk of such town. The scenic road designation may be rescinded by the same designating authority, using the same procedures and having the written concurrence of the owners of a majority of lot frontage abutting the highway or portion of the highway..."

Field review confirms that many of the roads in the Merryall

District would be eligible for scenic road designation based on the above criteria. Through scenic road designation, the character of the area could potentially be preserved by: (1) restricting the moving or removal of stone walls adjacent to the road; (2) establishing special setback regulations for fences and structures from the roads; (3) restricting the removal of mature trees; (4) preserving selected dirt roads; (5) maintaining the present width and geometry of roadways; and (6) controlling driveway access (i.e., curb cuts) to the roads.

The Town of Redding is currently considering the adoption of a scenic road ordinance. Interested citizens may wish to contact the Town Conservation Commission for a copy of their proposed ordinance and regulations. Also, a copy of the Scenic Road Act is found in Appendix D.

The West Aspetuck River as a Future Water Supply Source

The area drained by the West Aspetuck River includes all but a minute fraction of the Merryall District. The fact that the water draining from this area has been proposed for use as public water supply has implications for all future development within Merryall. This important water supply designation for the West Aspetuck appears in the Connecticut Office of Policy and Management's Conservation and Development Policies Plan (1983). This designation is reflected by the Water Quality Classifications for the Housatonic River Basin adopted by the Connecticut Department of Environmental Protection, and by the Housatonic Valley Council of Elected Officials regional plan.

The 1972 New Milford Plan of Development discusses water supply use of the West Aspetuck River by constructing a dam and reservoir as a possible long range solution to the Town's water supply needs. According to that plan, a dam would be built on the West Aspetuck River at the confluence with Merryall Brook. Another potential location was seen as a point on the West Aspetuck about 1000 feet north of Bear Hill Road. The 1972 plan expressed forward thinking for its time when it suggested that, "...once the potential sites have been chosen, however, regulations can be applied by the Town to protect the watersheds from adverse development..."

As noted, a point on the West Aspetuck River has long been identified by state water resource policy plans as a potential site for a dam and reservoir. However, due to housing development in what state agencies felt was the best proposed reservoir area, the U.S. Army Corps of Engineers in a 1982 study of the area, decided to only review the potential for water course diversion thus negating the need for an impoundment area. Preliminary investigation by the Corps indicates a maximum safe yield of 4.7 million gallons per day (MGD) could be obtained from such a diversion for use outside of New Milford.

Two alternative plans using the West Aspetuck River were proposed by the Corps. The first assumed water would be diverted to the Danbury system, Stamford system and the Greenwich system. This plan would require installation of over 41 miles of water transmission mains ranging in size from 18 inches to 36 inches.

The 4.7 MGD would be diverted between the months of December and May. This alternative, if constructed in 1990, would alleviate the

projected deficits at Danbury, Stamford and Greenwich through the year 2010. The second alternative plan would include diversion of water only to the Danbury distribution system. The water could be diverted through an 18 mile long, 36 inch pipeline. The plan would include diverting 4.7 MGD to the Margerie and West Lake Reservoirs in Danbury.

The issue of the use of water from the West Aspetuck River to meet local needs must be carefully evaluated before any decision is made to transfer this resource out of New Milford. Further development of policy toward use of the West Aspetuck for water supply will likely be induced in 1986 and 1986 by Public Act 85-535, which requires the Connecticut Department of Health Services (DOHS), the HVCEO and water utilities to proceed with long range water supply planning funded by DOHS.

Since land use decisions are often irrevocable, local planning and zoning commissions should obviously regulate proposed water supply watersheds as existing supply sheds. This presents a challenge to New Milford since some local officials may feel that even the multiple water supply designations applied to the West Aspetuck River by state and regional agencies are insufficient as base for regulation without a specific consumer water company identified. However, DEP has set an important regulatory precedent in this regard. All groundwater in the West Aspetuck River drainage area has been given the strictest classification (i.e., GAA) which applies to all water supply watersheds in use in the state, even though no specific consumer has been identified for the West Aspetuck's water.

Local land use regulations are advised to make distinctions in their regulations for areas proposed as water supply watersheds, thereby following the state example. This was confirmed in a 1983 letter from DEP to the HVCEO. In that policy statement, the DEP Commissioner stated in relation to the GAA designation that, "...there are limited areas suitable for public water supply reservoirs or diversions and areas must be protected for future needs. One of the purposes of the classifications is to set forth the general water resource use plans of the state in a comprehensive fashion so they may be considered by both state and local officials in their decisions. In the GAA areas, the DEP is stating that the areas are either being used now or are being considered for future use as public water supply. As such, it is our intention to strictly regulate discharges under our jurisdiction so these limited areas are protected and preserved for future use as water supply.

However, the DEP regulation of industrial discharges and large sanitary discharges is only a part of the effort necessary to protect a watershed. Equally as important are the local planning and zoning type decisions which significantly affect the nature of development in a given watershed. The goal is to have each of the 169 towns in Connecticut incorporating the Water Quality Classifications in the local regulatory process..." The Commissioner went on to say that, "...the local regulatory process should definitely make a distinction in the content of local rules in an area with a GAA classification..."

In 1985, the Commissioner's viewpoint was given the force of law. Of significant relevance to future development in the Merryall

District will be Public Act 85-279 entitled "An Act Concerning the Protection of Public Water Supplies." According to a recent Office of Policy and Management (OPM) summary of this new act it, "...requires, rather than allows, municipal planning and zoning commissions to consider protection of existing and potential public ground and surface water supplies in their plans and regulations..."

As is the case throughout Connecticut, basins designated as existing or proposed water supply watersheds bear little relationship to town boundary lines. The West Aspetuck River Watershed is a prime example, for much of the upstream drainage area lies in Kent and small portions extend into Warren and Washington. Fortunately the DEP's strict GAA designation applies to this entire area, as will Public Act 85-279.

The essential fact is that the purity of water in the streams of Merryall to a great extent correlate with the overall level of development and activity that exists in the drainage basin feeding into them. Another way of saying this is that water quality is a characteristic of the land which contains and yields it for use. Therefore, different land use and density policies should be applied to drainage basins in New Milford depending upon the degree of water purity desired.

Precedents are now developing for local regulation of water supply watersheds. The Town of Sharon, Connecticut has developed a public water supply protection zone. This zone encompasses the entire public water supply watershed and establishes specific regulations for protecting water quality within this zone. In the City of Danbury, the Planning, Health and Public Utilities

departments have held staff level discussions concerning development of a "Water Supply Protection Zone" regulation. The objective of such a regulation would be to reduce, within critical areas of reservoir watersheds, the incidence of pollutants such as storm water runoff, septic wastes, fertilizers, and to decrease the potential of these and other pollutants from successfully reaching the reservoir. This requires the use of such preventive measures as chemical, salt and fuel storage containment systems, treatment of storm runoff, a greater lot size and stringent erosion and sedimentation controls. Water supply watersheds in Danbury serving other towns would be protected in addition to those serving Danbury residents.

THE ROLE OF AGRICULTURAL LAND USES AND FARMING IN THE MERRYALL DISTRICT

Introduction

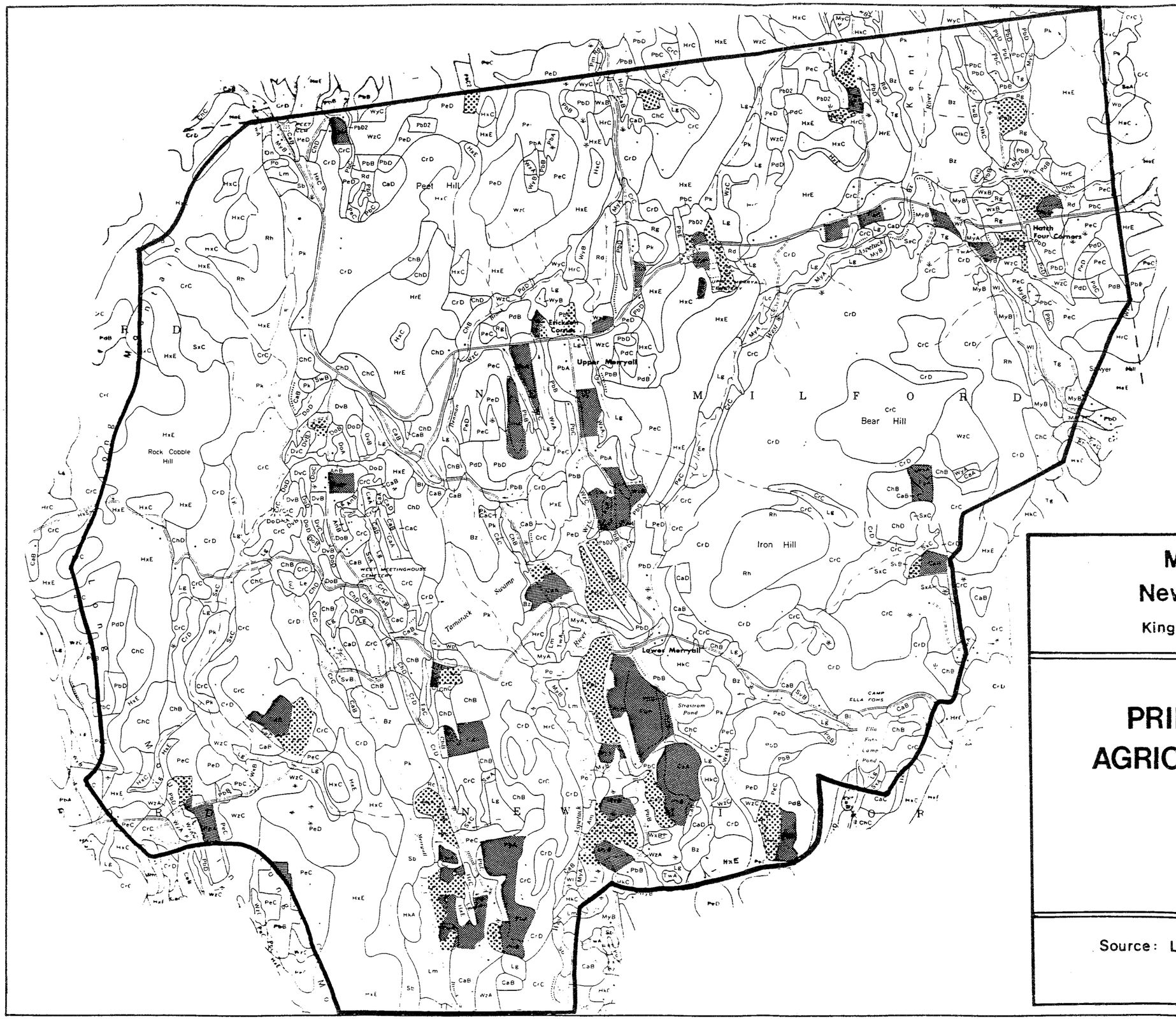
Connecticut is one of the most densely populated states with over 3,000,000 acres of land. The majority of food that is consumed in Connecticut is imported from other regions. It is estimated that less than 50 percent of Connecticut's fluid milk needs are produced locally. Less than half of the in-season fresh fruit and vegetable needs are produced in state. Farmland must be preserved so that Connecticut will have some degree of self sufficiency in food production. As large food producing states grow in population, less food may be expected to be exported. Transportation strikes also affect Connecticut's food supply. The more producing farmland there is in Connecticut, the more likely it will be able to buffer itself against disruptions in food imports.

The most important benefit to preserving farmland is locally produced foodstuffs. Secondary advantages to preserving farmland are open space, flood storage, watershed protection, and wildlife habitat. The value of these secondary amenities to farmland preservation are important in maintaining the integrity of rural areas.

Agriculture in Merryall

The Merryall District contains numerous tracts of active farmland. They occur on prime and important farmland soil, as well as on other soil types less suited to agricultural uses (Figure 15). Most of the farmland in the Merryall District is land owned by

Figure 15



MERRYALL DISTRICT
New Milford, Connecticut

King's Mark Environmental Review Team

PRIME AND IMPORTANT AGRICULTURAL SOIL AREAS

PRIME

IMPORTANT

Source: Litchfield County Soil Survey, USDA Soil Conservation Service

nonfarmers who rent the land to farmers.

There are a number of part-time farms, containing modest acreage of 20 acres or less. These farms produce agricultural commodities (e.g., beef, vegetables, orchards or sheep) that depend on off-farm employment to facilitate the operation. There are several "commercial" operations in the Merryall District. A commercial operation produces a commodity which, from its sales, provides the majority of income to the owners of the operation.

In the study area, there are three commercial dairy farms whose commodity is fluid milk. One of these dairies, in the southern part of the District has applied to the farmland preservation program, and the state Department of Agriculture is actively considering acquiring the development rights to this farm unit. The property is currently being appraised to determine its development rights values, and negotiations with the State are proceeding.

The dairy operation to the north of this farm has been offered for sale. The Housatonic Valley Association reports that the Friends and Neighbors of Historic Merryall group has a signed agreement to acquire this land. If this is true, this unit would be preserved for agriculture.

The third dairy farm is located near Upper Merryall and contains the home, farm (barns and milking facilities) and some support land. It appears that most of the cropland is away from the home farm.

Thus, dairying is the major farming activity in and around the Merryall District. Also, farmers in New Preston and and other areas New Milford rent land in the Merryall District in support of their operations.

The State of Connecticut's Farmland Preservation Program

The only state program for preserving farmland is the State Department of Agriculture's Purchase of Development Rights Program. This program was developed during the mid 1970s and was adopted as a state program by the Connecticut Legislature in 1978.

The program preserves farmland by having the State of Connecticut purchase the development rights to farmland in exchange for its fair market value. The owner conveys the development rights to the State of Connecticut through the deed to the property. The owner maintains title to the property and enjoys all the privileges of ownership, but the property can never be developed. The remaining value in the property is then tied to the agricultural value.

Participation in the development rights program is voluntary. The property owner applies to the Department of Agriculture. The Department then reviews the farm to determine its jeopardy of being lost to development and its agricultural productivity or potential.

The law has also defined, or identified, the development threat as the most important single consideration in evaluating an application. Development threat criteria include: (1) listing land for sale; (2) land in estate settlement; (3) farmers retiring from farming with no family members or partners to carry on the business; (4) low probability of agricultural operation; and, (5) other conditions that may result in the farmland being developed.

The agricultural productivity of the land considers the commodities being produced, the dollar value of the commodities, and the amounts of prime and important farmland soils, as defined by the Soil Conservation Service, USDA. Prime and important farmland soils

are the soils most suited to the production of food and fiber.

In addition to the determination of jeopardy and the evaluation of the agricultural productivity of the farm, the Department of Agriculture considers the agricultural community surrounding the applicant's land. It is important to save farms in agricultural "blocks" in order to maintain the integrity of farming areas. The neighbors most compatible with farms are other farms. Maintaining blocks of farms helps to retain the service support structure of agriculture, such as farm machinery dealers, grain dealers, dairy processors, and others. A tractor dealership is more likely to continue in an area of 30 farms than in an area that is down to its last farm.

The Connecticut Legislature has allocated $22,750,000 to the purchase of development rights program since 1978. Some $9,651,075 has been expended to date, and 6,500 acres of farmland have been preserved. An additional $2,339,680 has been committed for purchases. Twenty-four farms are currently being appraised that have an estimated cumulative development rights value of $9,000,000.

Purchase of Development Rights by the State of Connecticut in Merryall

The Department of Agriculture is negotiating the development rights to a dairy farm in the southern portion of Merryall. The Friends and Neighbors of Historic Merryall are also involved with the preservation of a farm in the District. The third dairy appears to have an insufficient amount of support land to be considered for the farmland preservation program. The owner is encouraged to apply to the program if it is felt that sufficient acreage of support land is included in ownership of the farm.

The Department of Agriculture does consider the acquisition of development rights on "rented agricultural lands" (owned by nonfarmers but used by farmers). The minimum acreage of land in applications for rented lands is 30 acres of active farmland on prime and important farmland soils. This land must be important to the agricultural community around it. Owners of farmland in Merryall that meet the requirements described above are encouraged to apply to the development rights program.

Alternative Methods for Preserving Farmland in Addition to the Purchase of Development Rights Program

The Department of Agriculture realizes that the purchase of development rights program is not the only means of protecting farmland. Local governments and private organizations can play active roles in farmland preservation. A partial list of preservation methods is presented below.

Local Municipal Methods

1. Planning and Zoning Commissions requiring maximum designated open space areas in large subdivision to include agricultural areas. Developers frequently designate wetlands and non-developable lands as open space. Towns may protect agricultural areas if the Town Plan of Development or Open Space Plan designate farmland preservation as a municipal priority.

2. Develop a farmland preservation plan quantifying and qualifying the town's agricultural resources. Include this in the Town Plan of Development or Open Space Plan. This will assist town planners in reviewing development proposals and assist private groups in saving farmland by utilizing Internal Revenue Service tax benefits for gifts of preserved farmland given to the town or acceptable trust or similar organization.

3. Municipal acquisition of farmland by purchase. (This is usually done to protect unique or very important lands such as the last farm in an area.)

4. Municipal acquisition of development rights, in accordance with Public Act 84-184, which enables towns to establish a fund to purchase development rights.

Private organizations (land trust and similar groups)

1. Acceptance of gift of agricultural land (development rights or title).

2. Purchase of agricultural land

Connecticut Department of Agriculture

1. Acceptance of gift of agricultural lands development rights.

2. Review of land use projects requesting federal or state funding. Review of projects adversely affecting important agricultural land may result in denial of government funding.

Summary

* The State Department of Agriculture is negotiating the purchase of the development rights on one of the dairy farms in the District.

* The Department can consider purchasing development rights only after an application has been made.

* It is unlikely that the Department would purchase development rights on farmland that is owned by a conservation group or that does not meet the minimum qualifications as an applicant to the development rights program.

* The State Department of Agriculture would be willing to accept gifts of development rights to agricultural lands that are important to the agricultural communities in and around Merryall.

* The State Department of Agriculture would assist the Town of New Milford in developing local farmland preservation programs or agricultural land sections for the town plan of development or open space plan.

PLANNING GUIDELINES AND ALTERNATIVES

Zones of Conservation Importance

Given the foregoing inventory and assessment of the many natural and cultural attributes of the Merryall District, this final section of the report will strive to delineate the District into specific Zones of Conservation Importance and to further identify areas within the District where development would be least disruptive to the conservation goals listed below. These Zones may be categorized as follows.

Watershed/Inland Wetland Protection Zones

These areas include all perennial streams and water bodies, floodplains, and inland wetlands soils (Figure 16). A 200 foot minimum setback will buffer these water bodies and wetlands from incompatible land uses.

Farmland Protection Zones

These areas include all prime and important farmland soils (See Figure 16). A 100 foot minimum setback will buffer these areas from incompatible land uses.

Historic Area Protection Zones

These areas have been identified as historic sites and areas of historic preservation importance (See Figure 16).

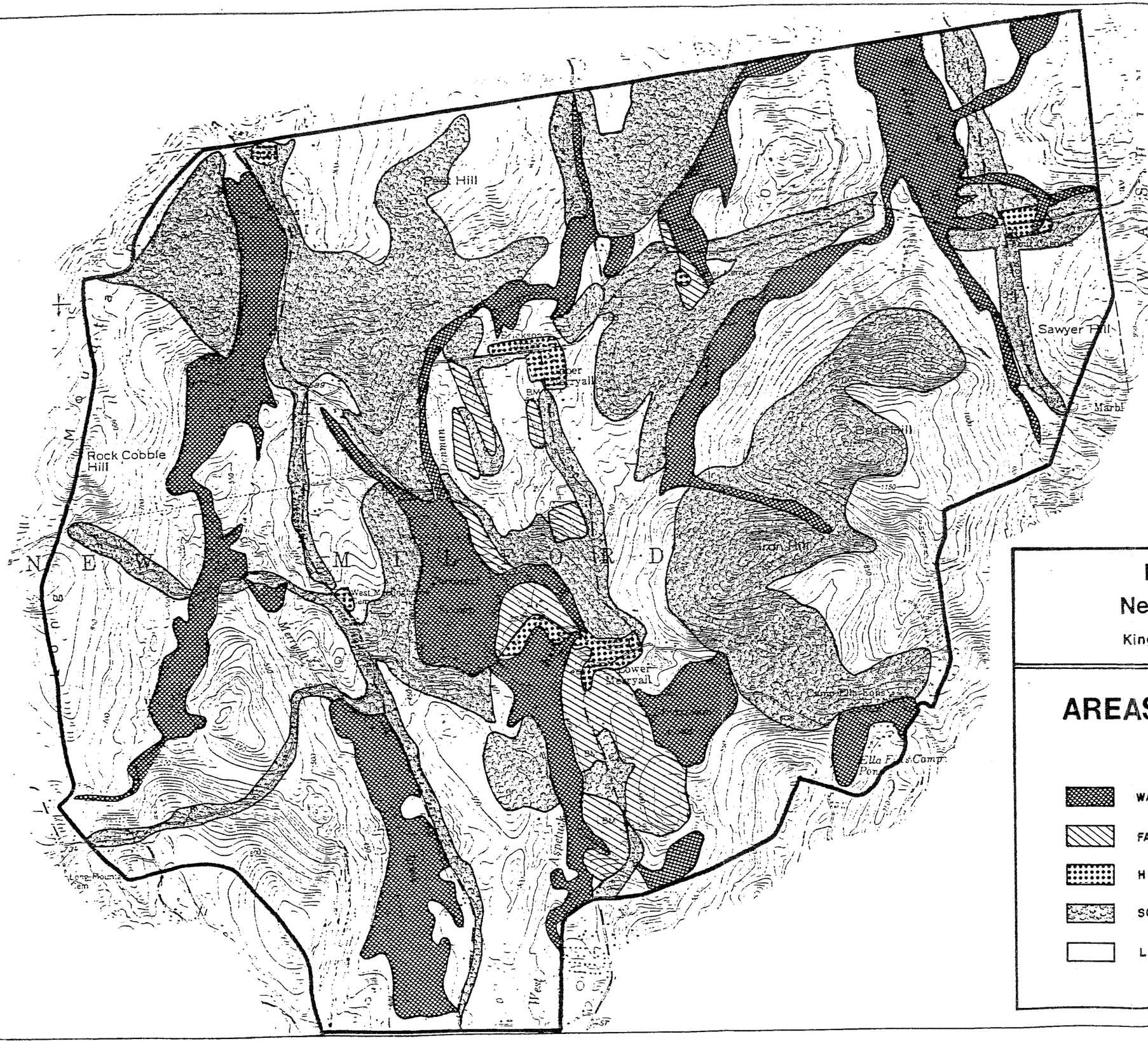
Scenic-Open Space Protection Zones

These areas include all or portions of Zones 1, 2, and 3 as well as scenic vistas along most undeveloped roadsides within the District, all mountain peaks, and all shallow-to-bedrock soils (See Figure 16).

Limited Development Zones (Low Density Housing Development)

These areas encompass all of the remaining land within the District not classified in the preceding four categories. They are suitable for low density housing development (See Figure 16).

Figure 16



MERRYALL DISTRICT
New Milford, Connecticut

King's Mark Environmental Review Team

AREAS OF CONSERVATION IMPORTANCE

- WATERSHED/INLAND WETLAND PROTECTION ZONES
- FARMLAND PROTECTION ZONES
- HISTORIC AREA PROTECTION ZONES
- SCENIC/OPEN SPACE PROTECTION ZONES
- LIMITED DEVELOPMENT ZONES

The first four zones constitute all the major natural and cultural resources discussed in this report as being worthy of protection. The fifth zone allows for orderly, balanced growth in keeping with important conservation concerns.

Since the Merryall District represents New Milford's most rural and scenic area, and is largely undeveloped, this section of the report presents the following alternatives to the Town of New Milford and the residents of Merryall as the best means of protecting the unique rural heritage of the Merryall District.

Land Conservation and Protection Strategies

Strategies and Programs at the Municipal Level

There are a number of actions that the Town of New Milford can take to guide growth in the Merryall District. The principal municipal actions that the Town may wish to consider are as follows.

Inland Wetlands Commission

The Town is encouraged to establish its own Inland Wetlands Commission and draft a comprehensive Inland Wetland Ordinance to expand upon the State's minimum requirements and setback criteria. DEP regulations governing activities within and adjacent to wetlands and water bodies are meant to be bare minimums for the entire State. To protect more adequately the Class A water quality of the West Aspetuck River and Tamarack Swamp, greater set back criteria and limits on activities within and adjacent to these water bodies may b required. The protection of groundwater supplies in the Merryall

District are of critical importance as well.

Subdivision Ordinances

Amend the Subdivision Ordinance section on roads by establishing an intermediary road designation. For example, a "Private Road" designation would allow up to five or six lots on a private road built to town road specifications with the exception of having a gravel finish coat instead of pavement. Adoption of a "Private Road" amendment to the existing Subdivision Ordinance would encourage the development of interior lots rather than follow the current practice of sequential road frontage lots. Limited development of interior lots off private roads tends to enhance owner privacy and protect scenic roadside vistas.

Scenic Road Ordinance

Initiate a Scenic Road Ordinance for the Town of New Milford. State enabling legislation authorizes municipalities to establish a Town Ordinance to be administered by town Planning Commissions or combined Planning and Zoning Commissions to regulate significant improvement of designated roadways provided that such designation is supported by a majority of lot owners fronting on the designated roadway. A copy of the Act can be found in Appendix D.

Open Space Acquisition

Establish an Open Space Land Acquisition Fund for the purpose of acquiring important open space tracts that have value to the Town for scenic areas, open space, watershed protection or passive

recreational uses. This fund could be set up as a line item in the Town's budget and be funded from a variety of sources such as bond issues, grand list, conveyance taxes, donations, Federal Land and Water Conservation Funds, and others.

Historic Districts

Encourage the town and affected residents to seek State and Federal Historic District Classification for those sites and areas identified in this report as having significant historic importance.

Planning and Zoning Commissions

Encourage the Planning Commission and Conservation Commission to take active roles in providing guidance to landowners within the District to seek conservation land planning assistance prior to marketing or developing their land, especially if lands of conservation importance are involved.

Strategies and Programs at the State Level

The following State agencies can provide assistance to the Town of New Milford in guiding planning and development in the Merryall District

Department of Agriculture

The State Department of Agriculture can continue to seek the purchase or donation of Development Rights to lands with prime and important farmland soils on them. Since the Merryall District has a

limited amount of such lands, mostly lying in a contiguous strip in the center of the District, this avenue offers a good but limited conservation potential.

Department of Environmental Protection

The Department of Environmental Protection, through federal participation and funding assistance has several programs geared toward acquisition and protection of important conservation lands. The three principal programs are as follows:

* Pitman-Robinson Funds - This fund is used to purchase and manage lands such as inland wetlands, tidal wetland, and forestland for hunting and other recreational uses . This fund is currently depleted. Therefore, new acquisitions of important natural communities from this fund will be limited.

* Dingle-Johnson Funds - This fund is used to purchase and manage areas used for fishing. These funds are currently designated for acquisitions elsewhere in the State, and are not a likely source for resource protection in the Merryall District.

* Land and Water Conservation Funds - These Federal funds are provided to the State to administer and finance State or Municipal projects involving open space, recreation, land acquisition or development. This fund has been severely limited over the past four years. It is currently just over $800,000 for the entire State. As such, this Fund is not likely to be much of a source for near term land acquisition in the Merryall District.

Although DEP plays a limited role in land acquisition efforts within the District, their sizable technical staff can be called upon by the Town or individual landowners to provide technical asistance in reviewing proposed management and development plans.

Connecticut Historical Commission

This agency can offer assistance to towns and affected local property owners who wish to seek local or Federal Historic District designation. Given the residential nature of the Merryall District, a Local Historic District is probably the more appropriate in this instance. Under the Local Historic District designation process, the Town must first establish a Study Committee to prepare the application and conduct a historical review of the area and structures being considered for designation. The Connecticut Historical Commission works closely with this committee in this effort. The benefits of such a designation are significant in that once an area is so designated, most forms of incompatible land use changes are prohibited. Designation requires the approval of 75 percent of affected residents voting a public referendum.

Strategies and Programs at the Federal Level

Soil Conservation Service

Several of the programs and funds mentioned as State strategies rely on Federal funds or agencies for assistance. The principal Federal agency which can provide substantial technical assistance to towns, landowners and conservation groups is the U.S. Department of Agriculture - Soil Conservation Service (SCS).

The SCS, located in Litchfield, Connecticut can advise landowners on an array of technical matters ranging from land management advice to assistance in discussing future alternatives for important tracts of land. SCS personnel can play valuable advisory roles to town

commissions and conservation groups which have or wish to become active in land protection strategies by helping them identify and evaluate lands of protection importance. SCS may also assist in developing techniques to protect them.

Internal Revenue Service

The Internal Revenue Service (IRS) is seldom thought of as a conservation agency, but in essence they are very much so. One of the principal land conservation incentives for property owners is the Federal tax deduction for gifts of land or partial rights in land (e.g., conservation easements). The 1985 Federal tax code allows for a donor of property to claim as a charitable gift the fair market value (FMV) of the donated property and, depending on the donor's tax rate, take up to 50 percent of the claimed value as a tax deduction on their Federal income tax returns. This provision can be of substantial benefit to a donor in a higher tax bracket and has, over the past four years, led to the permanent protection of nearly 3,000 acres in Litchfield County by either the gifts of land or conservation easements. The tax code may be changed soon, but the provision for claiming as a tax deduction gifts of conservation land and easements will continue.

Strategies and Programs in the Private Sector

Although government participation and cooperation is essential in developing an overall land protective strategy for the Merryall District, perhaps the most important ingredient for success in

conserving Merryall's historic and scenic character is the acive involvement and support of the citizens of the District, especially the large landowners. If the majority of large landowners are unwilling to consider conservation alternatives in Merryall when it comes time for them to divest themselves of their property holdings, even though such alternatives might be as financially rewarding as an unrestricted market sale, then the protection of Merryall District's resources will be considerably more difficult. The following are private sector initiatives that are applicable to the protection of the Merryall District.

Neighborhood Associations

Strengthen existing neighborhood associations such as the Friends and Neighbors of Historic Merryall (FNHM) by increasing membership to include most of the large landowners within the District. Encourage FNHM and large landowners to urge the Town of New Milford and appropriate town commissions to pursue conservation initiatives.

Private Non-profit Organizations

Increase involvement of private non-profit conservation groups to work with landowners within the District to seek solutions to land management, protection and development issues. The following organizations could be of particular help.

Litchfield Soil & Water Conservation District - The District specializes in working with landowners in developing conservation

management plans for their properties. This often involves agriculture, forestry, erosion control, streambelt protection and pond development. Another valuable role played by the Conservation District is their willingness and ability to take title to and oversee gifts of conservation easements on farm, forest, and streambelt/wetland parcels.

New Milford Trust for Historic Preservation - This organization, working with the Connecticut Trust for Historic Preservation could play an important role in protecting historic sites within the District. The New Milford Trust has worked to save local historic structures in the downtown area, and the Connecticut Trust has extensive experience in acquiring, restricting and re-selling important historic sites in the State. Both groups should be solicited for support in protecting historic sites in Merryall.

Weantinogue Heritage Land Trust - This New Milford-based land trust has extensive membership and interest in the Merryall District, and should be asked to become even more involved in assisting in the protection of the District's scenic natural areas. The Trust specializes in holding and managing important open space "natural areas" which are to be preserved in perpetuity. Most of their natural area preserves are open to the public for nature study and walks. The Trust also takes conservation easements.

Housatonic Valley Association (HVA) - This regional watershed conservation group offers land planning expertise to landowners in

planning the future use and/or disposition of their property. The HVA works on a consultant/fee basis directly for the landowner or prospective landowner, and involves itself only in projects that have conservation as a key end product.

Other Protective Methods and Strategies

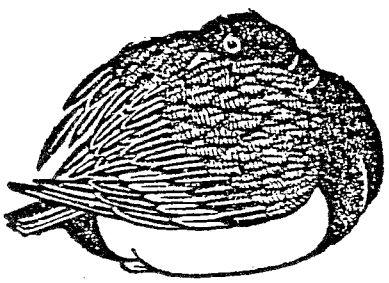
It is encouraged that neighborhood partnerships continued to be formed to acquire, plan and preserve important undeveloped lands of conservation importance, and are in danger of being lost to incompatible development. This method of protecting conservation lands, if properly planned and implemented, has the greatest potential for protecting the historic and rural character of Merryall, more than any other single strategy previously mentioned. This technique usually involves some sales of land to abutters, very limited development of non-conservation portions of the parcel, and the gift of land or conservation easements to a qualified conservation entity such as the Weantinoque Heritage Land Trust or the Litchfield Soil and Water Conservation District. Direct acquisition of an important conservation parcel by a conservation entity for preservation proposes. As has been achieved in other areas of the State, a conservation entity can directly purchase a property to insure that it is protected. This alternative has limitations if the conservation entity has to pay a substantial price for the property, and may require a restricted resale or limited development of non-conservation portions to cover expenses if other funding sources are not adequate. The Naromi Land Trust was able to protect a substantial portion of a 133 acre farm/forest tract in

Sherman in 1983/84 by this limited development approach.

Generally, however, conservation acquisitions are accomplished by the landowner either gifting the land and/or conservation easements to a qualified conservation organization during their lifetime, or by devise in their will, or by selling their property at a price less than the property's fair market value (FMV). This latter technique is called a "Bargain Sale" and the seller/donor can claim, as a tax deduction, the difference between the property's appraised FMV and the final sale price. Municipalities often acquire properties for open space and recreation purposes by this part gift/part purchase method.

By landowners pursuing their own conservation land plans for their property, their personal and financial goals may be met within a conservation framework. This technique is being increasingly pursued throughout northwestern Connecticut.

APPENDICES



APPENDIX A

MUD POND

PHYSICAL AND BIOLOGICAL ATTRIBUTES OF MUD POND

Topography and Setting

Mud Pond appears to be a relatively shallow pond located almost entirely in northern New Milford. A small northern part of the pond lies in the Town of Kent. The pond, with a surface area of about 9.5 acres, is surrounded by swampy materials composed mainly of peats and mucks (organic materials) such as leaves, plants, and roots. It is not known if the pond is natural in origin or artificially impounded. Local people believe that the pond is natural in origin. Examination of a 1934 air photograph of the area revealed that the pond basically has the same shape as today. Soil borings near the outlet would probably reveal whether or not the pond was artificially impounded or natural.

The topography of Mud Pond watershed is characterized by rough and rugged terrain. Slopes range from moderate to very steep with the majority being steep. The only flat areas appear to be the wetland surrounding the pond and north of the pond. The watershed boundary runs along the crest of major topographic highs in the area including Long Mountain, Ore Hill, Bear Mountain, Bull Mountain and Segar Mountain. The maximum elevation in the watershed, is approximately 1360 feet above mean sea level, reached at the top of Treasure Hill. The lowest elevation in the watershed is represented by the surface of Mud Pond, which is normally about 459 feet above mean sea level (Figure 17).

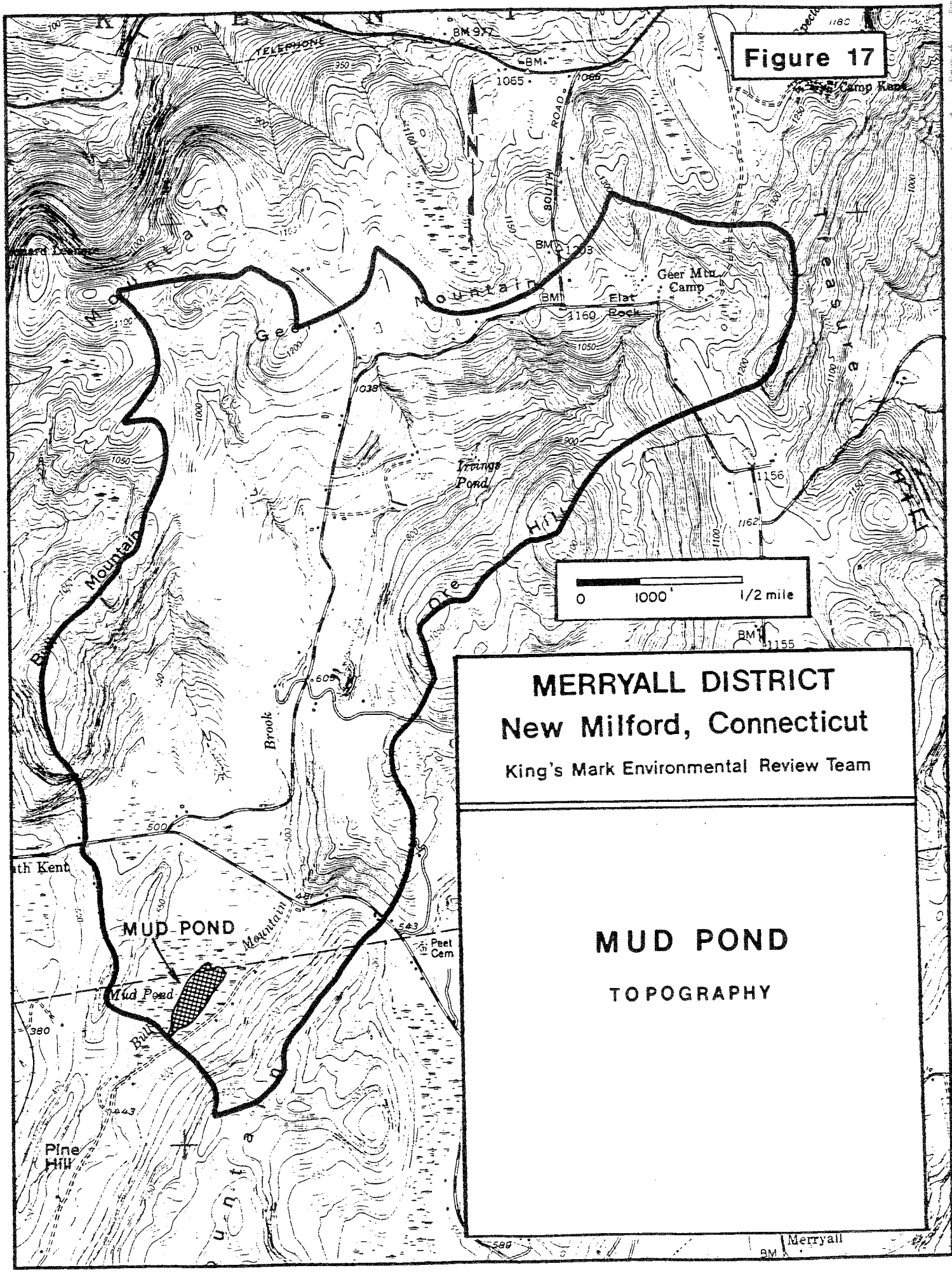


Figure 17
MERRYALL DISTRICT
New Milford, Connecticut
King's Mark Environmental Review Team
MUD POND
TOPOGRAPHY
MUD POND
Mud Pond
Pine Hill
Irving Pond
Geer Mtn Camp
Flat Rock
Camp Kaze
Merryall
0 1000' 1/2 mile

Geology

The Mud Pond watershed is located entirely within the Kent topographic quadrangle. Bedrock and surficial geologic maps for the quadrangle have not been published to date. There is, however, preliminary information available for review at the Department of Environmental Protection's Natural Resource Center in Hartford. Also, reference for this section of the report was John Rodger's Bedrock Geological Map of Connecticut (Rodgers, 1985).

Surficial Geology

The surficial geologic material comprising most of the watershed is a relatively thin blanket of glacial sediment called till (Figure 18). Till is a non-sorted mixture of rock particles ranging in size from clay to boulders. The rock materials were scraped, abraded, and plucked from pre-existing bedrock and soil surfaces by glacier ice, and were redeposited directly from the ice without significant redistribution by glacial meltwater streams. The texture of the till may be highly variable, ranging from a relatively clean sand to the silty, stony, tightly compact material that colloquially is termed "hardpan." In many areas, several feet of relatively loose, sandy till may overlie a compact, silty, crudely layered till. Thickness of the till ranges from zero at rock outcrop areas to probably not much more than 10 feet. There may be some deeper pockets of till, perhaps 20 feet, on the north side of hills in the watershed.

Another type of glacial sediment found in the watershed is stratified drift (See Figure 18). It is, however, minor in terms of both thickness and aerial extent. Stratified drift deposits consists

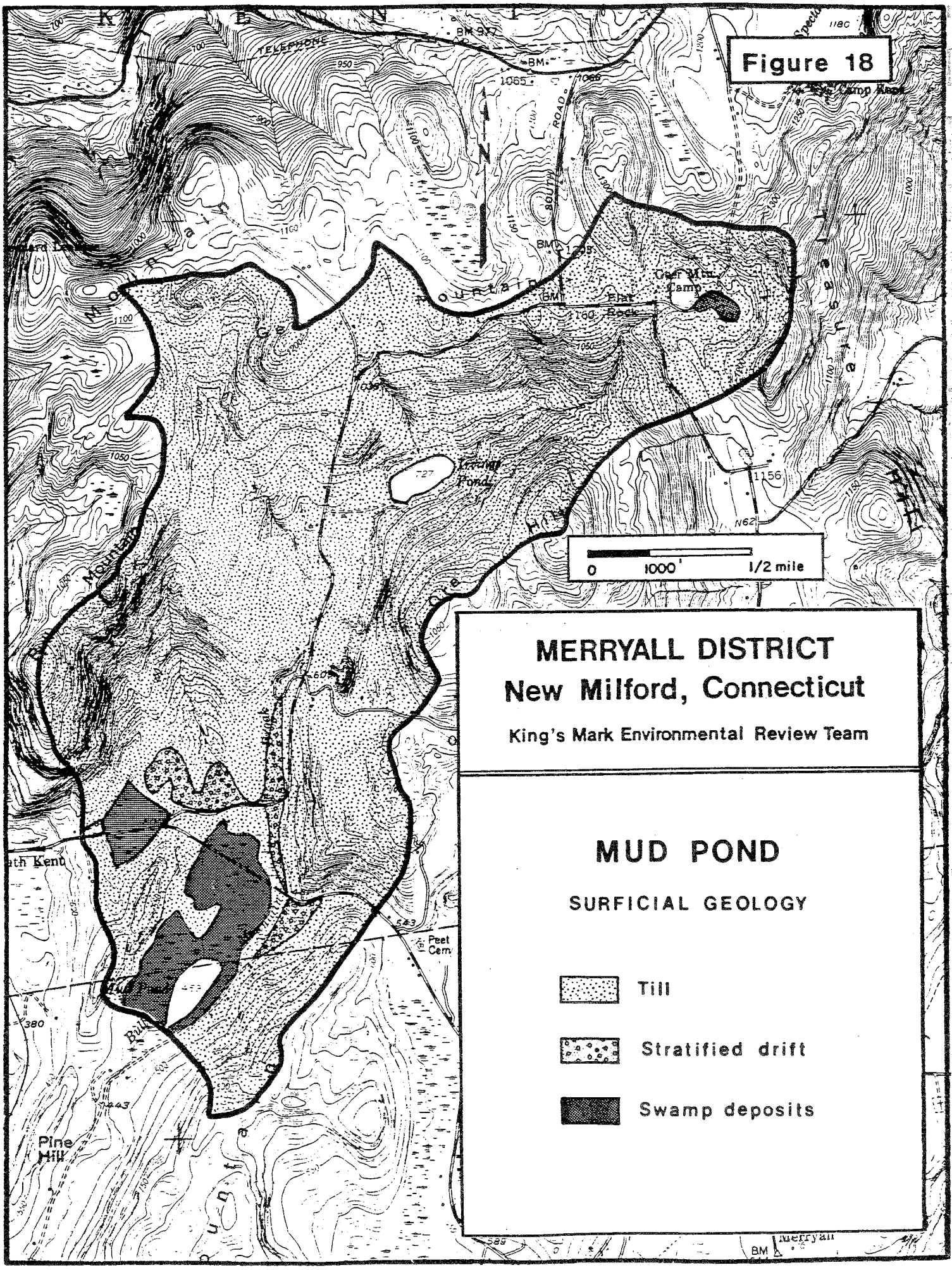


Figure 18
MERRYALL DISTRICT
New Milford, Connecticut
King's Mark Environmental Review Team
MUD POND
SURFICIAL GEOLOGY
Till
Stratified drift
Swamp deposits
0 1000' 1/2 mile
N
Pine Hill
Merryall

of small bodies of sand and gravel that were deposited by glacial meltwaters during the period of ice retreat. These sediments were deposited mainly along Mountain Brook, and also probably underlie the inland-wetland areas north of the pond.

Another type of surficial geologic material, which developed post-glacially are swamp sediments. These sediments consists of sand, silt, clay and decomposing plant materials deposited in areas that are relatively flat and where shallow, standing water is present throughout most of the year.

Bedrock Geology

Bedrock outcrops are extensively exposed throughout the watershed (Figure 19). They consist largely of gneiss, schist, marble and quartzite. All of these rocks are very old, crystalline, metamorphic rocks. The term metamorphic refers to rocks which have been subjected to great heat and pressures within the earth's crust. "Schists" are crystalline rocks with a pronounced foliation or "grain." "Gneisses" are crystalline rocks in which some minerals have become noticeably aligned but, in which no strong foliation exists. They are typically recognizable by a banded appearance. The term "marble" refers to a metamorphosed limestone, either calcite or dolomite limestone. Marbles are generally white or light color due to the large percentage of calcite and dolomite minerals present in the rock. Depending upon the presence of certain accessory minerals, the marble may also take on various tones such as green, red or brown.

"Quartzites" are metamorphosed sandstone which are typically

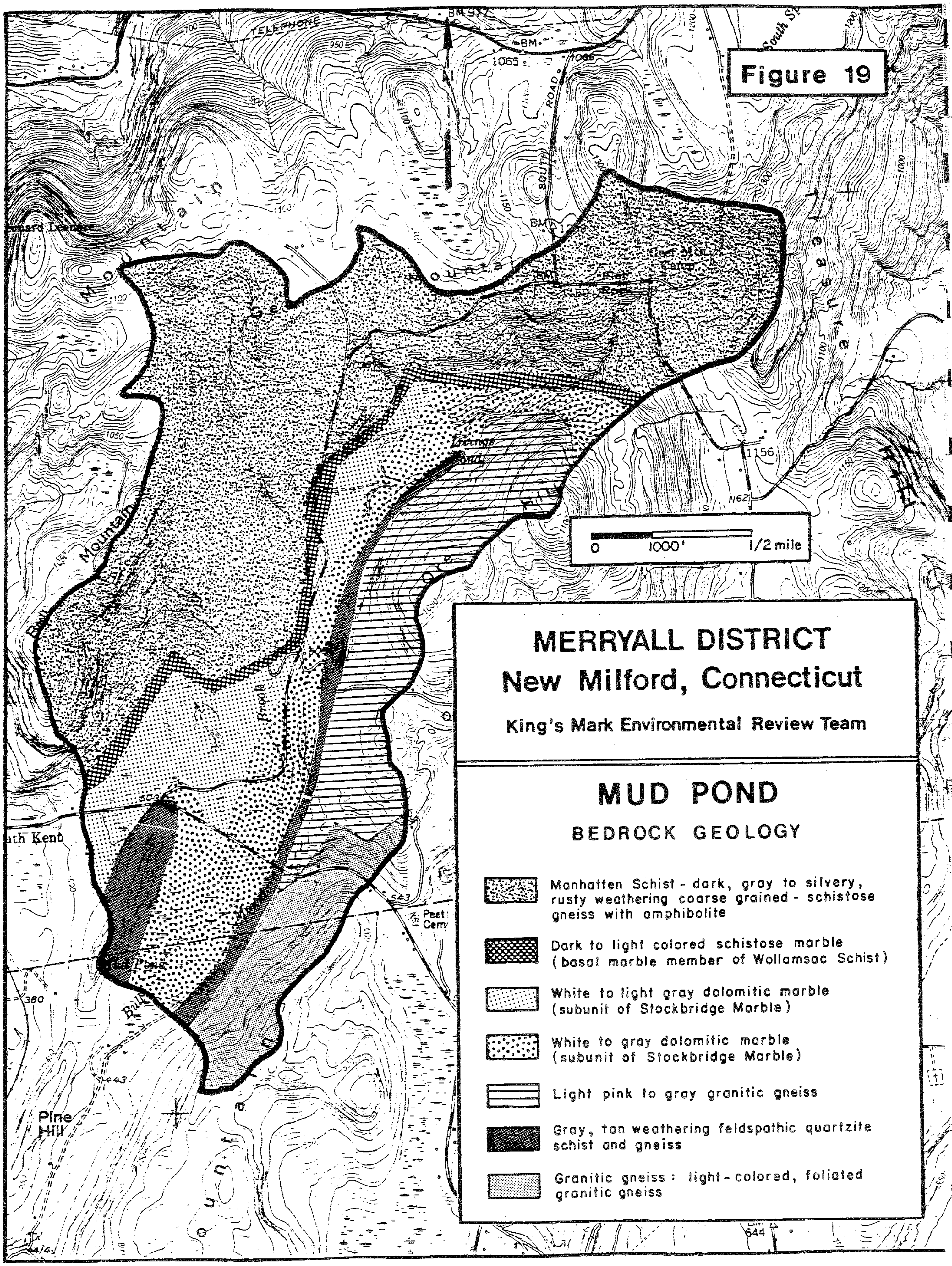


Figure 19
MERRYALL DISTRICT
New Milford, Connecticut
King's Mark Environmental Review Team
MUD POND
BEDROCK GEOLOGY
Manhatten Schist - dark, gray to silvery, rusty weathering coarse grained - schistose gneiss with amphibolite
Dark to light colored schistose marble (basal marble member of Wollamsac Schist)
White to light gray dolomitic marble (subunit of Stockbridge Marble)
White to gray dolomitic marble (subunit of Stockbridge Marble)
Light pink to gray granitic gneiss
Gray, tan weathering feldspathic quartzite schist and gneiss
Granitic gneiss : light-colored, foliated granitic gneiss
0
1000'
1/2 mile
TELEPHONE
Mud Pond
Pine Hill
South Kent
Peet Cem
1156
543
644
380
443

light colored due to the high percentage of the mineral quartz. There are some varieties, however, that may be black to brown. Quartzites typically have a sugary texture to them. Finally, "amphibolites" are crystalline metamorphic rocks composed predominately of the amphibole mineral hornbeams. The color of amphibolites are commonly dark ranging from green to black.

Depth to bedrock ranges from zero in rock outcrop areas to probably less than 20 feet from the surface on the average in the stream valley of Bull Mountain Brook.

Hydrology

Mud Pond is fed by two major water courses: Bull Mountain Brook and an unnamed stream on the western edge of the watershed (Figure 20). Both watercourses flow into the pond at its northern end. The unnamed stream flows generally north to south through the watershed. It originates near Bull Mountain and drains an area of about 413 acres or 0.645 square miles at its inlet to Mud Pond. Bull Mountain Brook originates in the far reaches of the watershed near Geer Mountain Camp, in the Town of Kent. It flows southwest into Irving Pond, then trends in a southerly direction into Mud Pond. At its point of outflow from Mud Pond, Bull Mountain Brook drains an area of 1,950 acres or 3.04 square miles. Total drainage of Mud Pond therefore, is about 2,363 acres or 3.7 square miles.

Much of the Mud Pond watershed, which is mostly in Kent, is only lightly developed; hence, the potential exists for major changes in the quality of surface and groundwater.

Sources of contamination in the watershed will generally have a

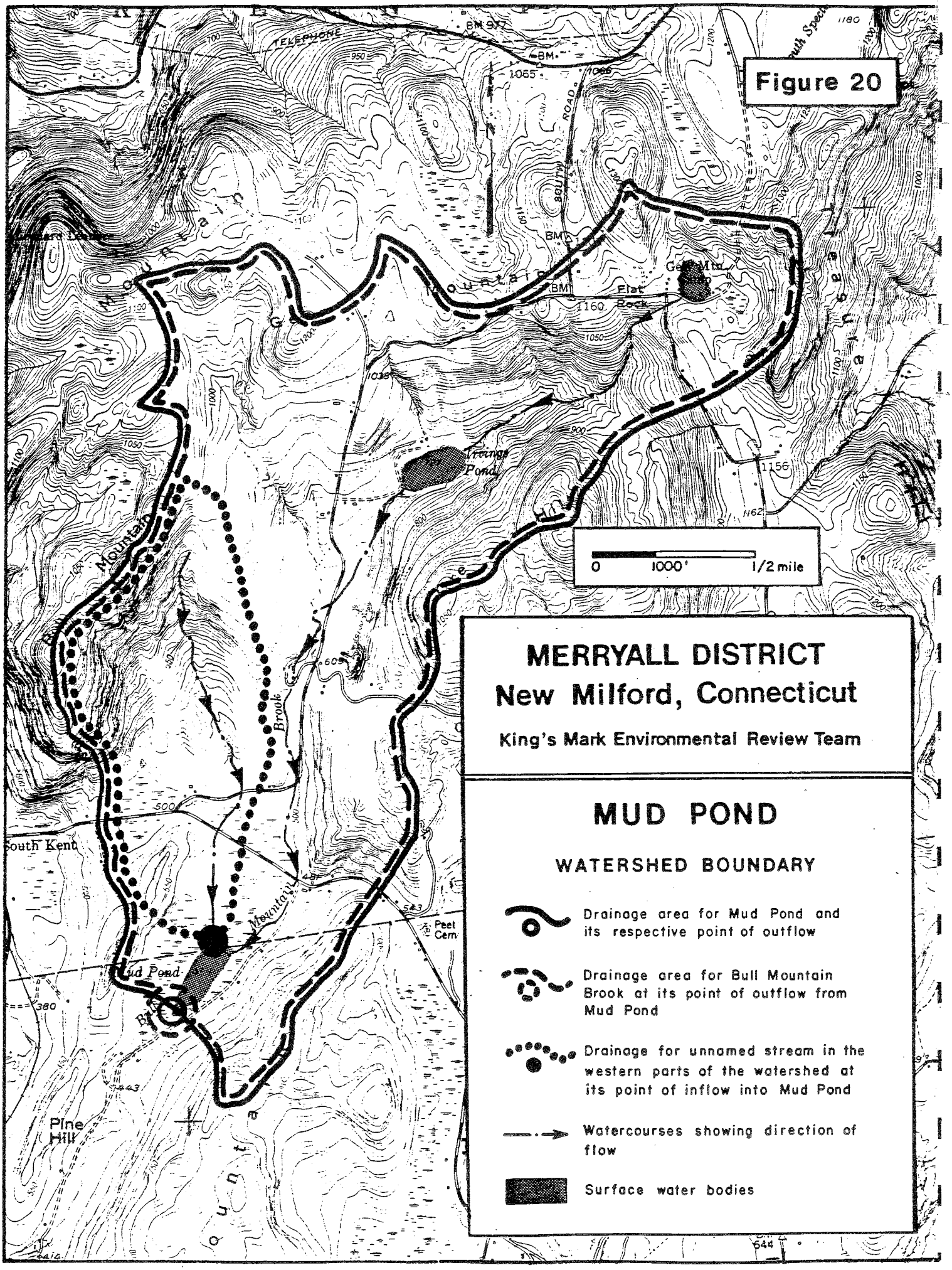


Figure 20
0 1000' 1/2 mile
MERRYALL DISTRICT
New Milford, Connecticut
King's Mark Environmental Review Team
MUD POND
WATERSHED BOUNDARY
Drainage area for Mud Pond and its respective point of outflow
Drainage area for Bull Mountain Brook at its point of outflow from Mud Pond
Drainage for unnamed stream in the western parts of the watershed at its point of inflow into Mud Pond
Watercourses showing direction of flow
Surface water bodies
Mud Pond
Triangle Pond
Flat Rock
Pine Hill
South Kent
TELEPHONE
ROAD
Mountain
Brook
BM
1065
1160
1156
543
380

greater impact on pond water quality if they are relatively close to the pond. Runoff originating in the upper reaches of the drainage area must pass through a series of wetlands or water bodies wherein removal of many contaminants may occur. Runoff will also be purified, in part, by passage through soils. It should also be pointed out that surface water and groundwater are hydrologically connected within the watershed; deterioration of groundwater may lead to deterioration of surface water.

In light of the preceding discussion, it seems clear that the areas of the watershed where development would be least likely to have an adverse impact on Mud Pond are the upland areas, north of Camps, Geer Mountain, and Flat Iron Hills Road. Development of the land surrounding the pond would be most likely to have a negative effect. However, the presence of inland wetland soils around the pond combined with very steep slopes and shallow to bedrock soils, development in the unsewered area will probably be very light.

The wetland areas surrounding the pond serve very important hydrological and ecological functions. Some of the hydrologic functions performed by the wetland include: (1) trapping sediment; (2) reduce peak storm flows; and (3) probably serves as a useful buffer for some dissolved pollutants, removing them from inflowing waters emanating from the upper reaches of the watershed. The wetland also provides valuable habitat for wildlife. For these reasons, the town should be interested in preserving much of the watershed's wetland habitat as possible.

Major causes of water quality changes after development include erosion and wastewater discharges. Erosion may result from increases

in runoff -- a common aspect from development, from clear-cutting of vegetation, from improperly monitored excavation or filling, or from concentrated surface discharges. Erosion causes surface waters to become turbid and allows ponds and lakes to fill with sediment more rapidly than otherwise would be the case. Any development within the watershed should, therefore, be accompanied by appropriate sediment and erosion control measures. Runoff reduction measures should also be considered particularly where development will be intensive.

Wastewater discharges may also cause serious degradation of water quality, depending upon the nature of the discharge and the means used, if any, to mitigate the detrimental effects. Subsurface sewage disposal systems are likely to remain the most common sources of wastewater discharges in the watershed. In general, the soils in the watershed are limited in terms of suitability for septic systems. Compact soil zones (i.e., hardpan), high water tables, extreme stoniness, shallowness to bedrock, and steep slopes are the predominate geologic limitations. In some cases, these limitations can be overcome by engineering techniques, but the techniques must be carefully designed and implemented. In areas where the local health director deems necessary to engineered septic systems, the entire installation process should be carefully monitored. Assuming that all new subsurface sewage disposal systems are properly designed and installed, the systems should pose no serious water quality problems unless the density of systems is too high.

Detailed soil testing in areas proposed for development will be necessary in order to determine subsurface conditions such as, soil types, depth to groundwater table, percolation rates and depth to

bedrock. Once testing has been completed, the town, (i.e., sanitarian or project engineer) should then be able to determine the capacity of the soils on a particular site to accept sewage effluent as well as to determine an acceptable density of development for a particular area in the watershed.

Additional residential development or other activities which do not employ the best management practices will serve to worsen these conditions. Local agencies should consider developing and implementing watershed management practices to mitigate the effects of land-use changes in the watershed.

Wetlands

The wetlands associated with Mud Pond are approximately 80 acres in size. Mud Pond is the major wetland feature in the Bull Mountain Brook watershed. The pond is situated in the hollow between Pine Hill and Rock Cobble Hill, two steeply sloped forested uplands. The area surrounding the pond and its wetlands is relatively undeveloped. The Mud Pond wetland area is classified as a combination of permanent aquatic bed and open water wetland with a perimeter of seasonally, saturated emergent scrub-shrub wetland under the USFWS/NWI classification scheme. Due to its position in the landscape, the pond and associated wetlands posess significant value in flood control, and the maintenance of low flows and water quality in Bull Mountain Brook. Furthermore, the isolation and diversity offered have considerable value for wildlife. The predominant wetland soil types associated with Mud Pond are peat and muck organic soils and the very poorly drained Saco silt loam floodplain soils.

APPENDIX B

HISTORIC BUILDINGS AND BUILDING COMPLEXES

A SYSTEMATIC INVENTORY OF THE MERRYALL DISTIRCT

Compiled by:

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New Preston, Connecticut

Note: The numbers in this inventory are keyed to a base map of the Merryall District (Figure 11 on Page 70) in the report

No.	Location and Name	Description
1	Cherniske Road at Erickson Corner, opposite Squire Hill Road (Quinlan).	Mid-18th century dwelling. Saltbox shape, central chimney and entrance. 2 barns. Stands opposite No. 2.
2	Cherniske Road on southeast corner of Erickson Corner.	Ca. 1830 Greek Revival vernacular dwelling. 5-bay with central doorway, which has leaded glass transom and side-lights. 2 barns, 1 shed.
3	Burnett Road, .2 miles north of junction with Cherniske Road.	Ca. 1860 Early Victorian vernacular dwelling. 2 barns, one is gambrel-roofed.
4	Burnett Road, .5 miles north of junction with Cherniske Road. (Novello).	Early 19th century dwelling. Central doorway and chimney. Barn.
5	Burnett Road, .8 miles north of Cherniske Road.	Early 19th century Greek Revival vernacular dwelling. 2 barns - larger one has Victorian cupola. Shed across road.
6	Opposite junction of Cherniske and Burnett Roads. (Carter).	Mid-19th century dwelling. Overlooks Denman Brook hollow to Peet Hill.
7	Cherniske Road, .3 miles east of intersection with Burnett Road. (Rothzeid).	Late 18th or Early 19th century dwelling. Shingled, central chimney. Single room deep. 2 sheds behind house. Overlooks shed across road and steeply descending fields. (formerly Osuch Farm).
8	Cherniske Road, .4 miles east of intersection with Burnett Road. Upper Merryall Cemetery.	Small, square cemetery surrounded by old stone walls. "Established 1794," according to sign on site, but has carved grave stones dating to the 1760s. Cemetery in continuous use. Very large, old cedars. Sites on hillside facing east over Kent Hollow.
9	Cherniske Road, .6 miles east of Burnett. 1874 Beers map reads "F. & G. S." beside building. Forge and gun shop? Feed and grain store?	Mid- to late 18th century dwelling, with additions and alterations, facing across road to northwest side of Bear Hill.
10	Cherniske Road, .6+ miles east from Burnett.	Mid-19th century house with barn, facing Bear Hill.

No.	Location and Name	Description
11	Cherniske Road, .9 miles east of Burnett Road, at corner Frenchman Road.	Early 19th century dwelling with central chimney and porch (later), with turned Victorian posts. Faces Bear Hill. Barn across street.
12	Cherniske Road, .8 miles east of Burnett Road.	Early 19th century dwelling. Bear Hill behind, beyond fields.
13	Frenchman Road, .2 miles north of intersection with Cherniske Road.	Early 19th century dwelling. Clapboard, 1½ story.
14	Cherniske Road, 1.1 miles east of Burnett Road. (C. Donaldson).	Early to mid-19th century Greek Revival vernacular dwelling. Barn and silo. Bear Hill behind, beyond fields. Site of saw and grist mills on W. Aspetuck River about .1 miles east, according to 1874 Beers map.
15	Cherniske Road, 1.3 miles east of Burnett Road. (Charles Lundgren).	Ca. 1840 Greek Revival vernacular dwelling. 1½ story with eyebrow attic windows. Barn and shed. Situated in lowlands of Kent Hollow, near W. Aspetuck River. Faces Bear Hill.
16	Cherniske Road, 1.5 miles east of Burnett Road.	Old barn (age?) and relatively new (20th century) dwelling. Situated .1 miles off road, in low field, under Bear Hill, in Kent Hollow.
17	Sawyer Hill Road, .6 miles north of Hatch Four Corners. 1874 Beers map shows a "Tobacco House" slightly south of the house on opposite side of road.	Early 19th century dwelling. Victorian porch with fancy sawn posts and brackets. Shed. Overlooks Kent Hollow to west.
18	New Preston Hill Road, .1 miles east of Four Corners. (Grossenbacher).	Ca. 1840 stone Greek Revival vernacular dwelling. Inset entrance; sidelights. Large, L-shaped barn behind. Rear overlooks descending fields to Kent Hollow. House stands directly opposite No. 19.
19	New Preston Hill Road, .1 miles east of Four Corners. South side of road. (Neufeld).	Ca. 1840 stone Greek Revival vernacular dwelling. Inset entrance with leaded transom and sidelights. Large, triangular attic window in gable. Barns, sheds. Site overlooks Kent Hollow to northwest.

No.	Location and Name	Description
20	Sawyer Hill Road, .25 miles south of Hatch Four Corners. (F. L. Hathaway).	Early to mid-19th century dwelling. Cape form. Eyebrow upper windows. Vinyl siding. Barn.
21	Sawyer Hill Road, .75 miles south of Hatch Four Corners. 100' from corner of Connely and Sawyer Hill Roads.	Mid-19th century clapboard dwelling. Gable roof. 2 chimneys.
22	Camp Ella Fohs, north side of pond.	Ca. 1800 dwelling. Cape, saltbox form with center chimney and door. 2 dormers. Faces barn across road and pond.
23	Bear Hill Road, south side, directly east of Strastrom Pond. (Cowles Egleson Cardozo).	Early 19th century swelling. 5 bay. Central doorway with glass transom and sidelights. Stucco exterior. Unusual pointed attic windows. Fieldstone foundation and fieldstone silo (approximately 15' of the base) to east of house. Old orchard. View east of wetlands and stream.
24	Squire Hill Road, .6 miles south of intersection with Cherniske Road.	Early 19th century Federal vernacular dwelling. Closed gable containing Palladian window. Shed.
25	Merryall Road, .7 miles south of junction with Chapel Hill Road.	Mid-19th century dwelling. 1½ story with center chimney. Overlooks W. Aspetuck River valley, fields to west.
26	Merryall Road, .8 miles south of junction with Chapel Hill Road. (Diamond).	Late 18th-Early 19th century 2½ story Federal vernacular dwelling. Overlooks W. Aspetuck River valley, fields to west.
27	West Meetinghouse Hill Road, 1.0 miles south of junction with Tamarack Road. (Formerly Warwick; recently sold).	Early 19th century Federal vernacular dwelling. 2½ story. Small cottage to north. Old stone foundation to east. Sheds, barns and silo across road. Property overlooks Merryall Brook lowlands and steep, wooded hillside to west.
28	West Meetinghouse Hill Road, 1.1 miles south of Tamarack Road.	Early 19th century dwelling. Full front porch turns south corner. Barn. Overlooks view as No. 27.

No.	Location and Name	Description
29	Hine Road, .1 miles west of West Meetinghouse Hill Road. (Herberick). 1874 Beers map shows saw mill on pond north of Hine Road on Merryall Brook (about .25 miles west of West Meetinghouse Hill Road).	Late 18th century, Federal vernacular dwelling. Very steep gable roof pitch, center chimney. Glass transom over door.
30	Hine Road, .7 miles west of West Meetinghouse Hill Road.	Ca. 1800 dwelling, 1½ story cape form, central door. Barns. Fields rise steeply behind. House faces rocky pasture. Isolated setting.
31	Hine Road, .9 miles west of West Meetinghouse Hill Road.	Early to mid-19th century dwelling, 1½ story. 2 outbuildings. Overlooks hills to northeast and Tamarack Swamp in distance.
32	Indian Trail, .3 miles east of divergence of power line from road.	Ca. 1840 dwelling. 1½ story. Cape form, with center chimney. Newly shingled. Eyebrow upper story windows. Faces dramatic north-northeast view over swamp to Peet Hill.
33	Indian Trail, .7 miles east of divergence of power line from road.	Mid-19th century swelling. 1½ story saltbox form.
34	Indian Trail, .8 miles east of divergence of power line from road.	Early 19th century dwelling. 1½ story with central doorway.
35	Indian Trail, 1.1 miles east of divergence of power line from road.	Early 19th century Greek Revival vernacular dwelling. Flat board architrave and door surround. 5 bay, central chimney. Sheds. Large barn across road.
36	West Meetinghouse Cemetery.	Ornate Victorian cast iron fence and gate with fleur-de-lis finials. 19th and 20th century grave stones. Former site of Baptist church.
37	Tamarack Road, .25 miles from West Meetinghouse Hill Road. (Terone).	Ca. 1890 Victorian Queen Anne dwelling. Cross-gabled, 2½ story. Front and side porches with turned posts, fancy sawn verge boards and brackets. Fish-scale shingles and bargeboard in gables. Sheds and barns. Sited on steep, open hillside overlooking Tamarack Swamp and hills beyond.

No.	Location and Name	Description
38	North Road, .2 miles from Tamarack Road.	Early to mid-19th century dwelling. 1½ story with front porch. Stands on a knoll in valley, facing Tamarack Swamp. Barn, fields behind.
39	North Road, .6 miles from Tamarack Road.	Late 18th century - ca. 1800 - Federal vernacular dwelling. 2½ story, five bay. Entry has transom and sidelights. "1773" over door. Greek Revival pickett fence in front. Faces south over Tamarack Swamp.
40	North Road, .7 miles from Tamarack Road.	Small, Early 19th century cross-gabled dwelling. One story. Site in junction of 2 valleys, near Tamarack Swamp.
41	North Road.	Mid-19th century dwelling. Tall, 2 bay, 2½ story. 3 story barn. Building is built into side of hill.
42	Mine Road, at corner of North Road. (Boverman).	Early 19th century Greek Revival vernacular dwelling. Eyebrow upper windows. Barn across road. Site in crux of 3 narrow valleys below Peet Hill.
43	West Meetinghouse Road, .3 miles from Barker Road. (C. H. Flynn).	Victorian dwelling (late 19th century). 2½ story. L-shaped, with gabled and hipped roofs. Fishscale shingles; front porch with turned posts and spindle architrave. Large barn behind. Surrounded by fields. House overlooks valley and Rock Cobble Hill to west.
44	West Meetinghouse Road, .6 miles from Barker Road.	Early 19th century Greek Revival vernacular dwelling. Center chimney. Overlooks valley to west and Rock Cobble Hill.
45	West Meetinghouse Road, .1 miles north of Indian Trail.	Early 19th century dwelling. Cape form; central chimney. Overlooks valley and Rock Cobble Hill to west.
46	Barker Road, .8 miles north of West Meetinghouse Road at corner of Peet Hill Road.	Early 19th century dwelling. 1½ story with central chimney. Situated at foot of Peet Hill and across road from swamp below north end of Long Mountain.
47	Barker Road, 1.0 miles north of West Meetinghouse Road.	Early 19th century dwelling. Cape form (altered), eyebrow upper windows. Situated at foot of north end of Long Mountain.

No.	Location and Name	Description
48	Peet Hill Road, at Kent town line. (A. Melief).	Late 18th-Early 19th century Federal vernacular dwelling. Center chimney and doorway. Gabled Federal style entry porch. Sidelights frame doorway. Silo and barns stand clustered around house. High, open hillside site looking across valley to Long Mountain.
49	Off Barker Road, .3 miles north of Peet Hill Road. East side of Barker Road. Peet Hill Cemetery.	
50	Cherniske Road, less than .1 miles west of North Road.	Early 19th century dwelling. 1½ story saltbox form with central chimney and entrance. Dormers. Enclosed front corner porch. Old fieldstone retaining walls. Backs up to Peet Hill's south side.
51	Cherniske Road, less than .1 miles east of North Road. 1874 Beers map shows mill pond, blacksmith, and wagon shop on Denman Brook directly northwest of this house.	Early 19th century dwelling. 2½ story clapboard building with central chimney. Old fieldstone retaining wall. Sheds and barn. House backs up to Peet Hill.
52	Cherniske Road, .3 miles from North Road. (Hediger).	Early to mid-19th century Greek Revival vernacular dwelling. Doorway has leaded glass transom and sidelights and Greek Revival trim. Sheds. Overlooks hollow and Peet Hill.
53	Merryall Road, .1 miles south of Chapel Hill Road. (M. W. Lewis).	Early 19th century Federal vernacular dwelling. Central hall plan and central doorway with transitional Federal-Greek Revival surround. 2½ story, 5-bay form. Several barns stand with a silo in a complex to the north and east of house. Shed across street. House overlooks West Aspetuck River lowlands and hills beyond.
54	West side of intersection of Chapel Hill and Merryall Roads, opposite triangle. (Donald Reap).	Early 19th century Greek Revival vernacular dwelling built off late 18th century wing. Main house is 1½ story with pedimented gable, Greek Revival doorway and eyebrow windows. Barn. Rear overlooks West Aspetuck River lowlands.

No.	Location and Name	Description
55	Chapel Hill Road, .1 miles north of Merryall Road. (Merryall Union Chapel).	Late Gothic Revival chapel built in 1890. Square bell tower rises from steep gabled roof. Pointed-arch windows and tympanum over door. Erected by the community for non-sectarian Sunday school and worship services. Exterior and interior almost completely intact. Surrounded by fields, West Aspetuck River and farmland to west and north. Old schoolhouse (#56) and #58 visible from chapel.
56	Chapel Hill Road, .2 miles north of junction with Merryall Road. (M. Perkins).	Late 18th century schoolhouse converted to dwelling. Gabled, rectangular structure with belfry. Stands in West Aspetuck River lowland. Chapel and farmhouses (#s 57 and 58) visible from schoolhouse.
57	Chapel Hill Road, corner of North Road. (Gawel Farm).	Late 18th century Federal vernacular dwelling. 2½ story, 5 bay with central door. Entry and side porches. Sheds and barns. Farmstead of 200 acres of open hillside and lowlands east of Tamarack Swamp.
58	Tamarack Road, .6 miles west of North Road. (R. M. Tilley).	Late 18th century dwelling. Central chimney, clapboard with late 19th century side porch. Shed. House overlooks entire Tamarack Swamp and hills surrounding.
59	Chapel Hill Road, .3 miles north of Merryall Road, north side of road.	Late 18th century Federal vernacular brick dwelling. 5 bay, 2½ story facade with Federal style central doorway; marble window lintels. Shallow, ½ gabled ell extends to north, probably original house. One of three brick, older buildings in Merryall. Situated in flat lowlands surrounded by hills and swamp. West Aspetuck River runs by rear of house. Other historic buildings, including chapel, schoolhouse, and Gawel Farm, are visible from house.
60	Lower Merryall Center, .1 miles east of junction of Merryall and Chapel Hill Roads, north side of road.	Early to mid-19th century building, possibly millhouse or other utilitarian structure converted to dwelling. Gable roof, barn siding. Stands along road over steep bank to West Aspetuck River.

No.	Location and Name	Description
61	Squires Hill Road, at west corner with center road.	Late 18th century dwelling. 2½ story, 5 bay with central door and chimney. Federal doorway with sidelights and pedimented entry porch. Sited in Lower Merryall center near late 18th and 19th century dwellings and mill houses. Barn. West Aspetuck River passes behind house.
62	Squires Hill Road, .1 miles north of Lower Merryall center road.	Early 19th century dwelling. End chimney saltbox form. House allegedly moved from original mill site on New Preston Hill Road. Mill site directly east on West Aspetuck River.
63	Northeast corner, Squires Hill Road and Bear Hill Road.	19th century utilitarian frame building (possibly a plough shop) converted to dwelling. Stands near other late 18th and early 19th century dwellings and mill buildings.
64	Bear Hill Road, .2 miles east of Lower Merryall Center.	Late 18th century Federal vernacular dwelling, 2½ story, 5-bay, central chimney and doorway. Retains interior Federal style paneling. House faces fields and barn across road.
65	Lower Merryall Center, opposite Squires Hill Road.	Late 18th-Early 19th century dwelling. Victorian alterations such as patterned shingles in gables. Overlooks intersection of Little Bear and Squires Hill Roads, and stands among other late 18th and early 19th century buildings.
66	Lower Merryall Center, less than .2 miles east of Merryall Road. East side of road.	Early 19th century dwelling. 1½ storys with front porch with turned posts. Stands among other contemporaneous 18th and 19th century mill buildings and dwellings.
67	Lower Merryall Center, .1 miles east of Merryall Road. East side of road.	Late 19th century creamery converted to dwelling. Shingle with gable roof. Part of the Lower Merryall Community Center.
68	Merryall Road, about .6 miles south of Chapel Hill Road. Original name: Caleb Bennett House.	Early 19th century brick Federal period vernacular dwelling. 2½ story with central door and 2 chimneys. Original Federal style entry porch. Twin to neighboring house (#69). End wing with summer kitchen and exterior chimney. House retains interior Federal period paneling and trim. Overlooks West Aspetuck River lowlands.

No.	Location and Name	Description
69	Merryall Road, about .7 miles south of Chapel Hill Road.	Same as above; twin to #68. Built by Orange Merwin, prominent local politician and member of Board of Commissioners, Housatonic Canal Company.
70	Merryall Road, about .7 miles south of Chapel Hill Road. East side of road.	Transitional Greek Revival-Italianate dwelling. 2½ story, 3 bay, first bay door. Front verandah with later 19th century decorative woodwork. Barns across street. Twin of house at 54 Bridge Street in New Milford. House overlooks West Aspetuck River lowlands and hills beyond.

APPENDIX C

SOILS LIMITATION CHART

SOILS LIMITATION CHART-MERRYALL DISTRICT, NEW MILFORD, CT

Map Symbol	Soil Name	Septic Systems	Bldg. W/Basement	Roads/Driveways	Landscaping
*Am	Alluvial land	Severe; floods, wetness	Severe; floods, wetness	Severe; floods, wetness frost action	Severe; floods, wetness
+AnB	Amenia silt loam 3-8% slopes	Severe; wetness percs slowly	Severe; wetness	Severe; frost action	Moderate; wetness
B1	Borrow and Fill land loamy material	(ON SITE INVESTIGATION NEEDED)			
*Bz	Birdsall silt loam	Severe; wetness, percs slowly	Severe; wetness	Severe; wetness, frost action	Severe; wetness
+CaA	Charlton fine sandy loam, 0-3% slopes	Slight	Slight	Slight	Slight
+CaB	Charlton fine sandy loam, 3-8% slopes	Slight	Slight	Slight	Slight
#CaC	Charlton fine sandy loam, 8-15% slopes	Moderate; slope	Moderate; slope	Moderate; slope	Moderate; slope
#CaC2	Charlton fine sandy loam, 8-15% slopes eroded	Moderate; slope	Moderate; slope	Moderate; slope	Moderate; low in topsoil
CaD	Charlton fine sandy loam, 15-25% slopes	Severe:slope	Severe; slope	Severe; slope	Severe; slope
ChB	Charlton stony fine sandy loam, 3-8% slopes	Slight	Slight	Slight	Moderate; large stones
ChC	Charlton stony fine sandy loam, 8-15% slopes	Moderate; slope	Moderate; slope	Moderate; slope	Moderate; slope large stones
ChD	Charlton stony fine sandy loam, 15-25% slopes	Severe; slope	Severe; slope	Severe; slope	Severe; slope
CrC	Charlton very stony fine sandy loam	Slight-moderate; slope	Slight-moderate; slope	Slight-moderate; slope	Moderate; large stones. slopes

Merryall District cont'd

Map Symbol	Soil Name	Septic Systems	Bldg. W/Basement	Roads/Driveways	Landscaping
CrD	Charlton very stony fine sandy loam 15-35% slopes	Severe; slope	Severe; slope	Severe; slope	Severe; slope
+DoA	Dover fine sandy loam 0-3% slopes	Severe; percs slowly	Slight	Moderate; frost action	Moderate; droughty
+DoB	Dover fine sandy loam 3-8% slopes	Severe; percs slowly	Slight	Moderate; frost action	Moderate droughty
#DoC	Dover fine sandy loam, 8-15% slopes	Severe; percs slowly	Moderate; slope	Moderate; slope frost action	Moderate; slope
DoD	Dover Fine sandy loam, 15-25% slopes	Severe; percs slowly slopes	Severe: slope	Severe; slope	Moderate; slope small stones, droughty
DvB	Dover stony fine sandy loam 3-8% slopes	Severe; percs slowly	~~Moderate; slope~~ SLIGHT	Moderate; frost action	Moderate; small stones, lg. stone
DvC	" " , 8-15% "	"	MODERATE; SLOPE	" " " , slope	" " " , slop
*+Ee	Eel silt loam	Severe; floods, wetness	Severe; floods, wetness	Severe; frost action wetness, floods	Severe; wetness floods
FaC	Farmington very rocky silt loam, 3-15% slopes	Severe; Depth to rock	Severe; Depth to rock	Severe; depth to rock	Severe, thin laye
HkC	Hinckley gravelly sandy loam, 3-15% slopes	Severe; poor filter	Moderate; large stones slope	Moderate; large stones, slope	Moderate; small stones, droughty, slope
HoC	Hollis rocky fine sandy loam, 3-15% slopes	Severe; depth to rock	Severe; depth to rock	Severe; depth to rock	Severe; thin soil layer
HrC	Hollis very rocky fine sandy loam 3-15% slopes	Severe; depth to rock	Severe; depth to rock	Severe; depth to rock	Severe; thin soil layer
HrE	Hollis very rocky fine sandy loam, 15-35% slopes	Severe; depth to rock slope	Severe; depth to rock slope	Severe; depth to slope	Severe; thin soil layer; slope

Soil Symbol	Soil Name	Septic Systems	Bldg. W/Basements	Roads/Driveways	Landscaping
HxC	Hollis extremely rocky fine sandy loam 3-15% slopes	Severe; depth to rock	Severe; depth to rock	Severe; depth to rock	Severe; thin soil layer
HxE	Hollis Extremely rocky fine sandy loam, 15-35% slope	Severe; depth to rock slope	Severe; depth to rock slope	Severe; depth to rock, slope	Severe; thin soil layer, slope
#*Lc	Leicester fine sandy loam	Severe; wetness	Severe; wetness	Severe; wetness, frost action	Severe; wetness
*Lg	Leicester, Ridgebury & Whitman very stony fine sandy loam	Severe; large stones, wetness	Severe; large stones, wetness	Severe; large stones, wetness, frost action	Severe; large stones, wetness
½ Lm	LIMERICK SILT LOAM	SEVERE; FLOODING, WETNESS			
Ma	Made land	(ON SITE INVESTIGATION NEEDED)			
+MyA	Merrimac sandy loam 0-3% slopes	Severe; poor filter	Slight	Slight	Slight
+MyB	Merrimac sandy loam, 3-8% slopes	Severe; poor filter	Slight	Slight	Slight
#MyC	Merriamc sandy loam, 8-15% slopes	Severe; poor filter	Moderate; slope	Moderate; slope	Moderate; slope
+PbA	Paxton fine sandy loam, 0-3% slopes	Severe; percs slowly	Moderate; wetness	Moderate; wetness, frost action	Slight
+PbB	Paxton fine sandy loam, 3-8% slopes	Severe; percs slowly	Moderate, wetness	Moderate; frost action wetness	Slight
#PbC	Paxton fine sandy loam 8-15% slopes	Severe; percs slowly	Moderate; slope, wetness	Moderate; wetness, frost action	Moderate; slope
#PbC2	Paxton fine sandy loam, 8-15% slopes, eroded	Severe; percs slowly	Moderate; wetness, slope	Moderate; wetness slope, frost action	Moderate; slope low in topsoil
PbD	Paxton fine sandy loam, 15-25% slopes	Severe; percs slowly slope	Severe; slope	Severe; slope	Severe; slope
PbD2	Paxton fine sandy loam, 15-25% slopes eroded	Severe; percs slowly slope	Severe; slope	Severe; slope	Severe; slope low in topsoil

Map Symbol	Soil Name	Septic System	Bldg. W/Basement	Roads/Driveways	Landscaping
PbE	Paxton fine sandy loam 15-25% slopes	Severe; percs slowly, slope	Severe; slope	Severe; slope	Severe; slope
PdC	Paxton stony fine sandy loam 8-15% slopes	Severe; percs slowly	Moderate; slope, wetness	Moderate; slope, frost action, wetness	Moderate; slope. large stones
PdD	Paxton stony fine sandy loam, 8-15% slopes	Severe; percs slowly slope	Severe; slope	Severe; slope	Severe; slope
PeC	Paxton very stony fine sandy loam 3-15% slopes	Severe; percs slowly,	Moderate; slope, wetness	Moderate; slope, frost action, wetness	Moderate; slope large stones
PeD	Paxton very stony fine sandy loam, 15-35% slopes	Severe; percs slowly, slope	Severe; slope	Severe; slope	Severe; slope
*Pk	Peat and muck	Severe; floods, wetness	Severe; wetness, low strength, floods	Severe; wetness, low strength, floods	Slight
*+Po	Podunk fine sandy loam	Severe; floods, wetness, poor filter	Severe; floods, wetness	Severe; floods	Severe; flooding
#* Rc	Raynham silt loam	SEVERE; PERCS SLOWLY, WETNESS	SEVERE; WETNESS	SEVERE; FROST ACTION, WETNESS	SEVERE; WETNESS
#*Rd	Ridgebury fine sandy loam	Severe; percs slowly, wetness	Severe; wetness	Severe; wetness, frost action	Severe; wetness
*Rg	Ridgebury stony fine sandy loam	Severe; percs slowly, wetness	Severe; wetness	Severe; wetness, frost action	Severe; wetness
Rh	Rock land	Severe; bedrock	Severe; bedrock	Severe; bedrock	Severe; bedrock
*Sb	Saco silt loam	Severe; floods, wetness poor filter	Severe; floods, wetness	Severe; floods, wetness, frost action	Severe; floods, wetness
+SvA	Sutton fine sandy loam, 0-3% slopes	Severe; wetness	Severe; wetness	Severe; frost action	Moderate; wetnes
+SvB	Sutton fine sandy loam, 3-8% slopes	Severe; wetness	Severe; wetness	Moderate; frost action	Slight
SwA	Sutton stony fine sandy loam, 0-3% s -s	Severe; wetness	Severe; wetness	Severe; frost action	Moderate; wetnes large stones

Map Symbol	Soil Name	Septic System	Bldg. W/Basement	Roads/Driveways	Landscaping
SxA	Sutton very stony fine sandy loam, 0-3% slopes	Severe; wetness	Severe; wetness	Severe; frost action	Moderate; wetness large stones
SxC	Sutton very stony sandy loam, 3-15% slopes	Severe; wetness	Severe; wetness	Severe; frost action	Moderate; wetness large stones
Tg	Terrace escarpments	Severe; poor filter	Moderate; large stones, slope	Moderate; slope large stones	Moderate; slope small stones, droughty
+TwA	Tisbury and Sudbury soils, 0-3% slopes	Severe; poor filter, wetness	Severe; wetness	Severe; frost action	Moderate; wetness
+TwB	Tisbury and Sudbury soils, 3-8% slopes	Severe; poor filter wetness	Severe; wetness	Severe; frost action	Moderate; wetness
*#Wl	Walpole and Raynham soils	Severe; poor filter wetness	Severe; wetness	Severe; frost action,	Severe; wetness
*Wp	Whitman stony fine sandy loam	Severe; percs slowly ponding	Severe; ponding	Severe; frost action, ponding	Severe; ponding
+WxA	Woodbridge fine sandy loam, 0-3% slopes	Severe; percs slowly, wetness	Severe; wetness	Severe; frost action	Moderate; wetness
+WxB	Woodbridge fine sandy loam, 3-8% slopes	Severe; percs slowly, wetness	Severe; wetness	Severe; frost action	Moderate; wetness
#WxC	Woodbridge fine sandy loam, 8-15% slopes	Severe; percs slowly, wetness	Severe; wetness	Severe; frost action	Moderate; slope, large stones, wetness
WyA	Woodbridge stony fine sandy loam, 0-3% slopes	Severe; percs slowly, wetness	Severe, wetness	Severe: frost action	Moderate; wetness large stones
WyB	Woodbridge stony fine sandy loam, 3-8% slopes	Severe; percs slowly wetness	Severe; wetness	Severe; frost action	Moderate; wetness large stones

Merryall District contd

Map Symbol	Soil Name	Septic System	Bldg. W/Basement	Roads/Driveways	Landscaping
WyC	Woodbridge stony fine sandy loam, 8-15% slopes	Severe; wetness, percs slowly	Severe; wetness	Severe; frost action	Moderate; wetness large stones, slo
WzA	Woodbridge very stony fine sandy loam, 0-3% slopes	Severe; percs slowly wetness	Severe; wetness	Severe; frost sction	Moderate; wetness large stones
WzC	Woodbridge very stony fine sandy loam, 3-15% slopes	Severe; percs slowly, wetness	Severe; wetness	Severe; frost action	Moderate; slope, large stones, wetness

*Inland Wetland Soils

+Prime Farmland Soils

#Additional Farmland or Statewide Importance

EXPLANATION OF
RATING SYSTEM:

1. SLIGHT LIMITATION: indicates that any property of the soil effecting use of the soil is relatively unimportant and can be overcome at little expense.

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

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

Note: Soil limitations based upon USDA Soil Conservation Service criteria.

APPENDIX D

SCENIC ROADS ACT

Sec. 7-149a. Designation of scenic roads. Appeal. Maintenance of highway. (a) Any town, city or borough may, by ordinance, designate highways or portions of highways as scenic roads and may regulate future alterations and improvements on such designated scenic roads, including, but not limited to, widening of the right-of-way or of the traveled portion of the highway, paving, changes of grade, straightening, removal of stone walls and removal of mature trees. No state highway or portion thereof may be designated as a scenic road under the provisions of this section.

(b) The power to designate such scenic roads may be delegated by ordinance to a planning commission or a combined planning and zoning commission. The ordinance shall prescribe the standards and procedures to be used to determine which highways or portions of highways shall be designated as scenic roads, except that to be designated as a scenic road, a highway or portion of a highway must be free of intensive commercial development and intensive vehicular traffic and must meet at least one of the following criteria: (1) It is unpaved; (2) it is bordered by mature trees or stone walls; (3) the traveled portion is no more than twenty feet in width; (4) it offers scenic views; (5) it blends naturally into the surrounding terrain, or (6) it parallels or crosses over brooks, streams, lakes or ponds.

(c) No highway or portion of a highway may be designated as a scenic road under this section unless the owners of a majority of lot frontage abutting the highway or portion of the highway agree to the designation by filing a written statement of approval with the town clerk of such town. The scenic road designation may be rescinded by the same designating authority, using the same procedures and having the written concurrence of the owners of a majority of lot frontage abutting the highway or portion of the highway.

(d) Any person aggrieved by a designation of a highway or portion of a highway as a scenic road pursuant to this section by a planning commission or a combined planning and zoning commission may appeal such designation in the manner and utilizing the same standards of review provided for appeals from the decisions of planning commissions under section 8-28.

(e) Any highway or portion of any highway designated as a scenic road shall be maintained by the town, city or borough in good and sufficient repair and in passable condition. Nothing in this section shall be deemed to prohibit a person owning or occupying land abutting a scenic road from maintaining and repairing the land which abuts the scenic road if the maintenance or repair occurs on land not within the right-of-way, paved or unpaved, of the scenic road.

(P.A. 81-401, S. 1, 4.)

Secs. 7-150 and 7-151. Regulation of plumbing and drainage. Regulation of operation of motor boats. Sections 7-150 and 7-151 are repealed.

(1949 Rev., S. 634, 707; 1957, P.A. 13, S. 12, 24; 1961, P.A. 520, S. 20; P.A. 82-327, S. 12.)

See Sec. 7-148, chapter 268.

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 Keane Callahan, 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.