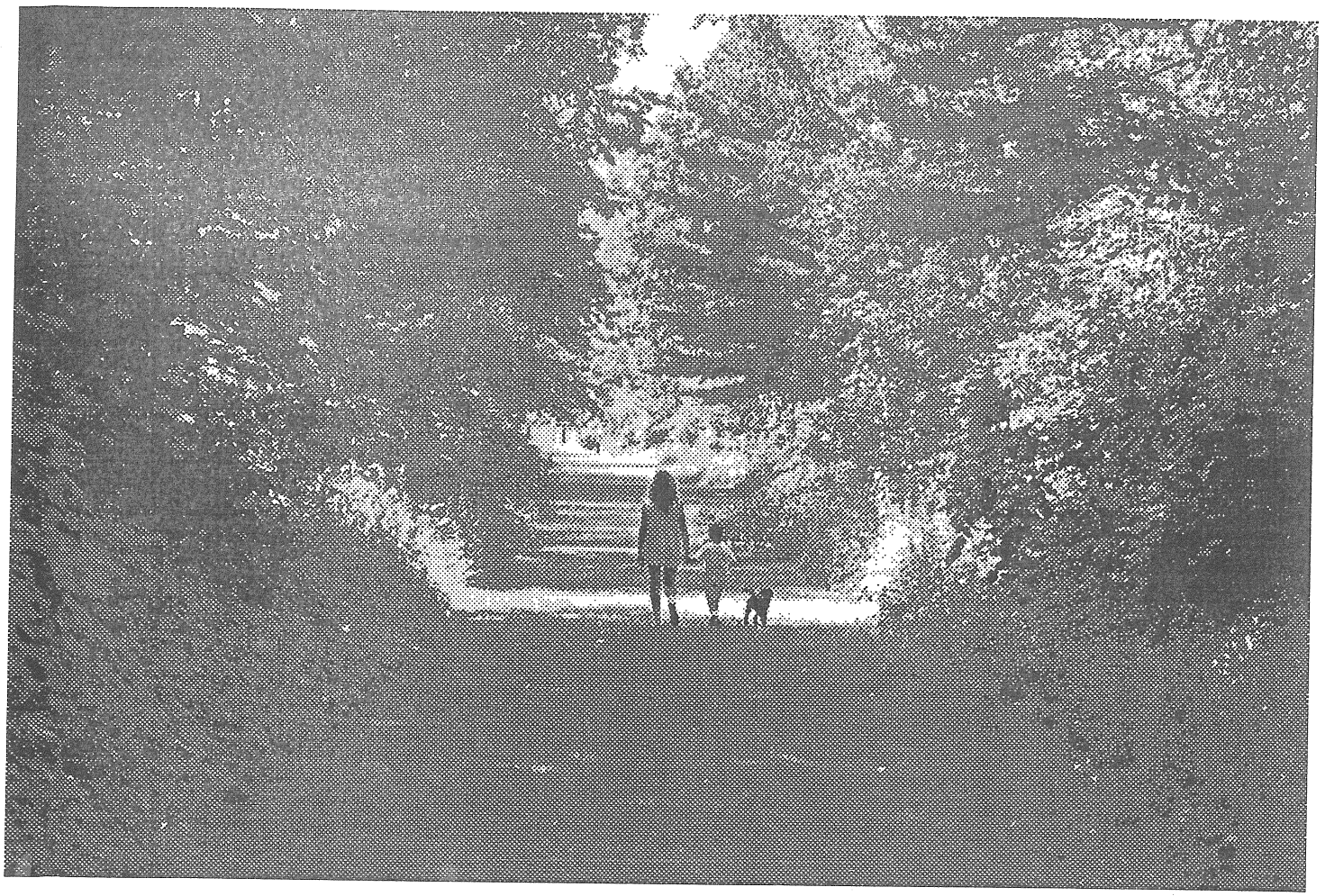
KING'S MARK ENVIRONMENTAL REVIEW TEAM



REPORT FOR

NORTH CANAAN GREENWAY

NORTH CANAAN,
CONNECTICUT

King's Mark Resource Conservation and Development Area, Inc.

NORTH CANAAN GREENWAY

NORTH CANAAN, CONNECTICUT

Environmental Review Team Report

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

Wallingford, Connecticut

for the

North Canaan Inland Wetlands Commission

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

JULY 1991

ACKNOWLEDGMENTS

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

* Dr. Norman Gray, Geologist
  University of Connecticut Department of Geology and Geophysics
  486-4435

* Kathy Johnson, District Conservationist
  USDA - Soil Conservation Service
  567-8288

* Larry Rousseau, Forester
  Department of Environmental Protection - Forestry Unit
  379-7085

* Judy Wilson, Wildlife Biologist
  Department of Environmental Protection - Western District
  485-0226

* Dr. Russell Handsman, Archaeologist
  American Indian Archaeological Institute
  868-0518

* Linda Cardini, Regional Planner
  Northwest Connecticut Council of Governments
  868-7341

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

Finally, special thanks to Meg Enkler of Litchfield S&WCD and Mr. Fred Ruggles and Tom Zetterstrom (contributed photos) of North Canaan Inland Wetlands for their cooperation and assistance during this environmental review.

EXECUTIVE SUMMARY

Introduction

An environmental review was requested by the North Canaan Inland Wetlands Commission for the North Canaan Greenway, located near the Town center. The greenway is composed of several parcels of land, some of which the Town has rights to and some the Town is hoping to acquire. The review centered on Site A which is a small 8-acre parcel, Site B which is a larger 62-acre parcel and a railroad right-of-way.

Currently, the parcels of land are used on an informal basis for passive recreation and hunting. The proposed greenway site is comprised of forests, wetlands and open fields. The greenway will provide the Town with opportunities for recreation, flood protection, wildlife preservation, open space, aquifer protection and environmental education.

The purpose of this review is to inventory and assess existing natural resources, particularly wetland and water resources, and discuss the impacts of development. This environmental information will be used to assist the Town in guiding conservation and development in this area.

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

Topography and Hydrology

The site is comprised of a picturesque valley with a small northward flowing stream surrounded by slopes on the north and south sides that are as steep as 1 to 5. There is a northwest trending bedrock spur approximately 400 feet east of the junction of North Elm, Railroad Street and Falls Road. Total relief on the ridge is approximately 50 feet. Land north of the ridge is almost perfectly flat and marshy.

Bedrock Geology

Bedrock is relatively shallow, and outcrops are common. The exposed rocks are schists and impure marbles of the Ordovician Walloomsac Formation and dolomitic marbles belonging to the Upper Cambrian-Lower Ordovician Stockbridge Formation. The bedrock ridge intersected by the proposed greenway is underlain by Walloomsac schist. A series of small knobs found south of the Walloomsac ridge are outcrops of an impure unit within the Stockbridge Formation. The layering of the marble of the northern most knob is of geologic interest because it is bent into an arch or anticline.

Surficial Geology

The 2 major surficial geologic deposits that occur on the site are till and stratified drift. Till is a compact mixture of clay, silt, sand and boulder-sized mineral and rock fragments. The unconsolidated surficial materials are relatively thin within the proposed greenway. However, the stream valley is filled to a depth of 18 to 20 feet of silt and fine sand. Stratified drift is found north of the ridge and primarily contains sand and gravel.

Soil Resources

The major soil limitations are wetlands, soils that are shallow to bedrock, seasonal high watertables and steep slopes. These limitations do not preclude development, but indicate the need for precise planning. The soils present include Alluvial Land, Amenia Silt Loam, Birdsall Silt Loam, Deerfield Loamy Fine Sand, Farmington Extremely Rocky Silt Loam, Farmington Very Rocky Silt Loam, Hinckley Gravelly Sandy Loam, Made Land, Merrimac Sandy Loam, Peat and Muck and Scarboro Loamy Fine Sand. The variation in soil types along with other variables allow the proposed greenway to have very high potential as a recreation and study area.

Forestry Considerations

The present commercial value of the forested land is low due to the size and quality of the predominant sawtimber-sized trees, the lack of established access and the presence of wetlands and watercourses. Of greater value is the properties' aesthetic, watershed, wildlife habitat and passive recreation potentials. Vegetation cover types found on the properties include planted field, (i.e., softwoods), hardwood swamps, softwood stands, mixed hardwood stands, old field, open field and cropland. The diversity of the growth and the linear configuration of Site B lends itself to the establishment of nature trails. Tree identification and forest succession should be highlighted along these trails.

Wildlife Considerations

Wildlife habitat at the proposed greenway consists of forest, wetlands and open fields. A variety of wildlife is expected to use this area, including deer, ruffed grouse, weasel, raccoon, beaver, otter, fox, coyote, hawks, owls, songbirds, reptiles and amphibians.

Wetlands are very important to wildlife and serve valuable functions, including water recharge, sediment filtering, and flood storage. Conservation of wetlands should be practiced whenever possible. A buffer of 100 feet of undisturbed vegetation is recommended around any wetland to preserve its value and use by wildlife. Open space areas are also important and should contain a variety of habitats and be connected. Streams are used as travel corridors by many wildlife species and could be used to connect open space areas.

The acquisition of Site B would offer the opportunity for people to view wildlife and various wildlife habitats. The building of a trail would create some disturbance, but it would be minimal. Hunting could also be utilized because Site B might accommodate a limited number of archery hunters. Site A may be too small for a trail, but could be an interesting stop on an educational field trip.

Threatened and Endangered Plant and Animal Species

According to the Natural Diversity Data Base, there are no Threatened or Endangered Species or Connecticut "Species of Special Concern" at the proposed greenway.

Archaeological Resources

No prehistoric sites have been recorded at the proposed greenway. However, for more than 10,000 years Indian people periodically settled and used much of the area that is now North Canaan. The Indians were attracted to the ecological richness of wetlands and chose the lands surrounding the wetlands to settle on. Considering the known archaeological richness of North Canaan, it is very probable that the proposed greenway contains prehistoric sites. The greenway would preserve these sites because it would become in effect an archaeological conservancy.

Planning Considerations

Land use in the area is woods, wetlands, farmland and rural residential. Commercial uses and single-family residential abut the proposed greenway. The North Canaan Plan of Future Development includes a recommendation to acquire land from the State for a Town park/open space, namely Site A. The North Canaan Inland Wetlands Regulations permit a recreation greenway in the proposed location. A greenway is a consistent use according to the Regional Plan of Development. The proposed greenway is considered to be a village by the Regional Plan.

The existence of State-owned land no longer needed for the original purpose presents an opportunity for the Town. Paths could be created and a few picnic tables added for passive recreational use. The parcels of land could eventually be linked together to form one large greenway. The Town should appoint a committee or individual to move ahead with the plans and consult with ConnDOT. The Canaan Heritage Land Trust may be able to assist the Town.

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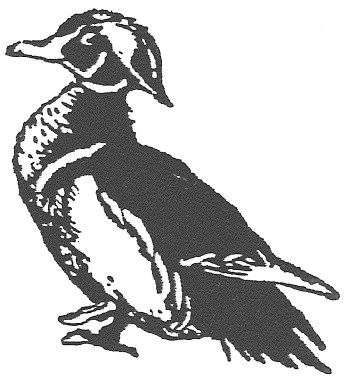


INTRODUCTION

An environmental review was requested by the North Canaan Inland Wetlands Commission for the North Canaan Greenway. The proposed greenway study area includes 3 parcels of land. Site A is an 8-acre parcel located just off North Elm Street and is owned by the Connecticut Department of Transportation (ConnDOT). However, the Town currently leases this parcel. Site B is a 62-acre tract of land that runs north from Granger Lane to Clayton Road and is also owned by ConnDOT. ConnDOT acquired these parcels for the relocation of Route 7 which never took place. The third parcel is a railroad right-of-way owned by the Housatonic Railroad Company which the Town has permission to use. Access is provided by Granger Lane and North Elm Street.

The North Canaan Greenway may provide the Town with opportunities for recreation, flood protection, wildlife preservation, open space, aquifer protection and environmental education. The greenway is primarily comprised of undisturbed forest land, a mowed railroad right-of-way and open fields.

The purpose of this review is to inventory and assess existing natural resources and discuss recreational opportunities, erosion and sediment (E&S) controls and the maintenance and regulatory activities necessary to maintain the greenway. Specific objectives include:

1) Assessing the hydrological and geological characteristics of the site, including geological development limitations and opportunities;

2) Determining the suitability of existing soils to support planned recreational development;

3) Discussing soil erosion and sedimentation concerns;

4) Assessing the impact of recreational development on the existing vegetation;

5) Assessing the impact of recreational development on wildlife; and

6) Assessing planning and land use issues.

THE ERT PROCESS

Through the efforts of the Town of North Canaan and the King's Mark ERT, this environmental review and report was prepared for the Town. This report primarily provides a description of on-site natural resources and presents planning and land use guidelines. The review process consisted of 4 phases:

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

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

3) Identification of resource problem areas; and

4) Presentation of planning and land use guidelines.

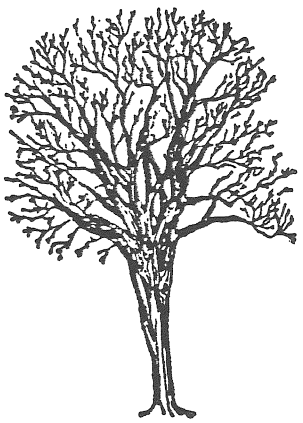
The data collection phase involved both literature and field research. The ERT field review took place on May 8, 1991. Field review and inspection of the site proved to be a most valuable component of this phase. The emphasis of the field review was on the exchange of ideas, concerns or alternatives. Mapped data or technical reports were also perused, and specific information concerning the site was collected. Being on-site also allowed Team members to check and confirm mapped information and identify other resources.

Once Team members had assimilated an adequate data base, they were able to analyze and interpret their findings. Results of this analysis enabled Team members to arrive at an informed assessment of the site's natural resource opportunities and limitations. Individual Team members then prepared and submitted their reports to the ERT Coordinator for compilation into the final ERT report.

Figure 1

LOCATION OF STUDY SITE

PHYSICAL CHARACTERISTICS



TOPOGRAPHY AND HYDROLOGY

Site B of the proposed greenway, a 200- to 300-foot wide strip currently owned by ConnDOT, runs north from Granger Lane 4,000 feet to the intersection of Falls and Clayton Roads. The southern half follows the picturesque valley of a small northward flowing stream. The area drained by the stream is somewhat limited, approximately 210 acres. A northwest trending bedrock spur intersects the proposed greenway strip 400 feet east of the Y-junction of Railroad Street, North Elm Road and Falls Road. Total relief on the ridge is approximately 50 feet. Slopes on both the north and south sides are as steep as 1 to 5. The land north of the ridge is almost perfectly flat and marshy.

BEDROCK GEOLOGY

Bedrock is relatively shallow in the area of the proposed greenway, and outcrops are common (see Figure 2). As a result, the bedrock geology is relatively well understood. An open file report by Ratcliffe and Burger, available for inspection at the Connecticut Geological and Natural History Survey, details the geologic interpretation of the Ashley Falls quadrangle which includes North Canaan. The rocks exposed along the proposed greenway strip are schists and impure marbles of the Ordovician Walloomsac Formation and dolomitic marbles belonging to the slightly older Upper Cambrian-Lower Ordovician Stockbridge Formation. The Walloomsac schists (Ow on Figure 3) are well foliated, dark grey to dull gray colored rocks containing millimeter-sized grains of the common rock forming the minerals muscovite, plagioclase, biotite and quartz. These minerals are fairly resistant to weathering. Rocks comprised of these minerals form hills and ridges in northwestern Connecticut. The bedrock ridge intersected by the proposed greenway

is underlain by Walloomsac schist. The Stockbridge marble (Csb on Figure 3) is a light gray or beige rock consisting mainly of the magnesium carbonate mineral dolomite. Although poorly foliated (i.e., splitting into thin sheets), the marble is well-layered with thin beds of quartz and mica rich marbles alternating with thicker beds of pure dolomite. Because dolomite of the Stockbridge Formation is much more readily weathered than the silicate minerals of the Walloomsac schist, it forms the low areas along the proposed greenway strip. Where the mica-quartz interbeds dominate, the Stockbridge Formation stands sufficiently in relief to form small outcrops. A series of small but intriguingly picturesque knobs along the west bank of the stream south of the Walloomsac ridge are outcrops of an impure unit within the Stockbridge Formation. The northern most of these outcrops, the small elliptical knob prominent on the topographic map, is of special geologic note. The layering of the marble at this location is bent into an arch or fold-like form which is geologically referred to as an "anticline." Because the layering or bedding was originally horizontal, its present contorted shape is evidence of the intense deformation experienced by the rocks of the area. Although such folds are common, this one is particularly well-exposed and is unusually obvious.

The Walloomsac ridge itself is a much larger fold structure (see Figure 3), a "synclinal" or trough shaped downwarping. The boundary between the Stockbridge and Walloomsac rocks is of major geologic significance because it is an "unconformity," an ancient erosion surface which separates the deposition of the 2 formations.

SURFICIAL GEOLOGY

Unconsolidated surficial materials are relatively thin within the area of the proposed greenway. The deposits were thoroughly described and mapped by G.W.

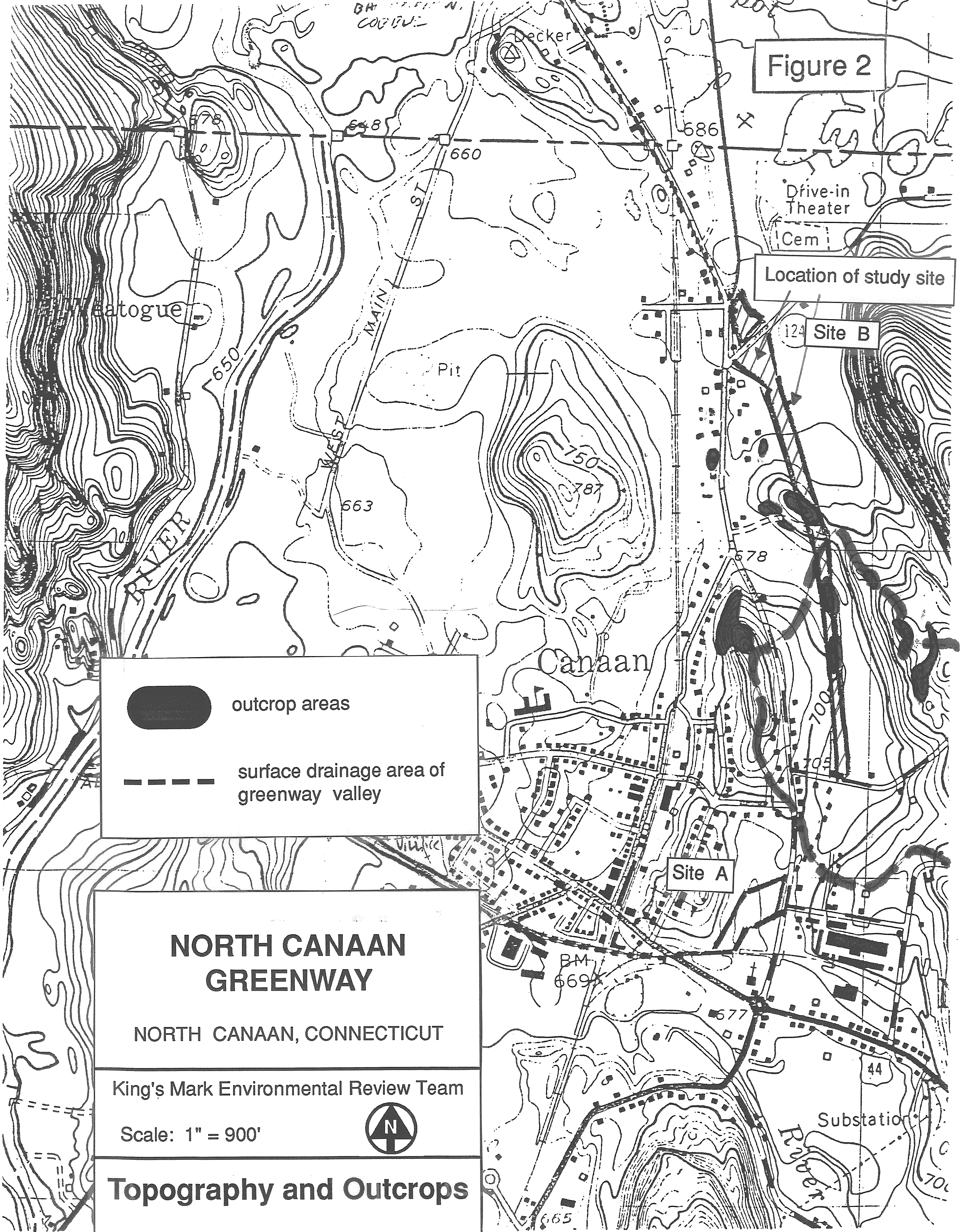


Figure 2
Location of study site
Site B
Site A
Drive-in Theater
Cem
Decker
Pit
WEST MAIN ST
RIVER
Canaan
Substation
River
678
648
660
686
650
750
787
663
678
700
705
124
BM 669
677
44
665
outcrop areas
surface drainage area of greenway valley
NORTH CANAAN GREENWAY
NORTH CANAAN, CONNECTICUT
King's Mark Environmental Review Team
Scale: 1" = 900'
N
Topography and Outcrops

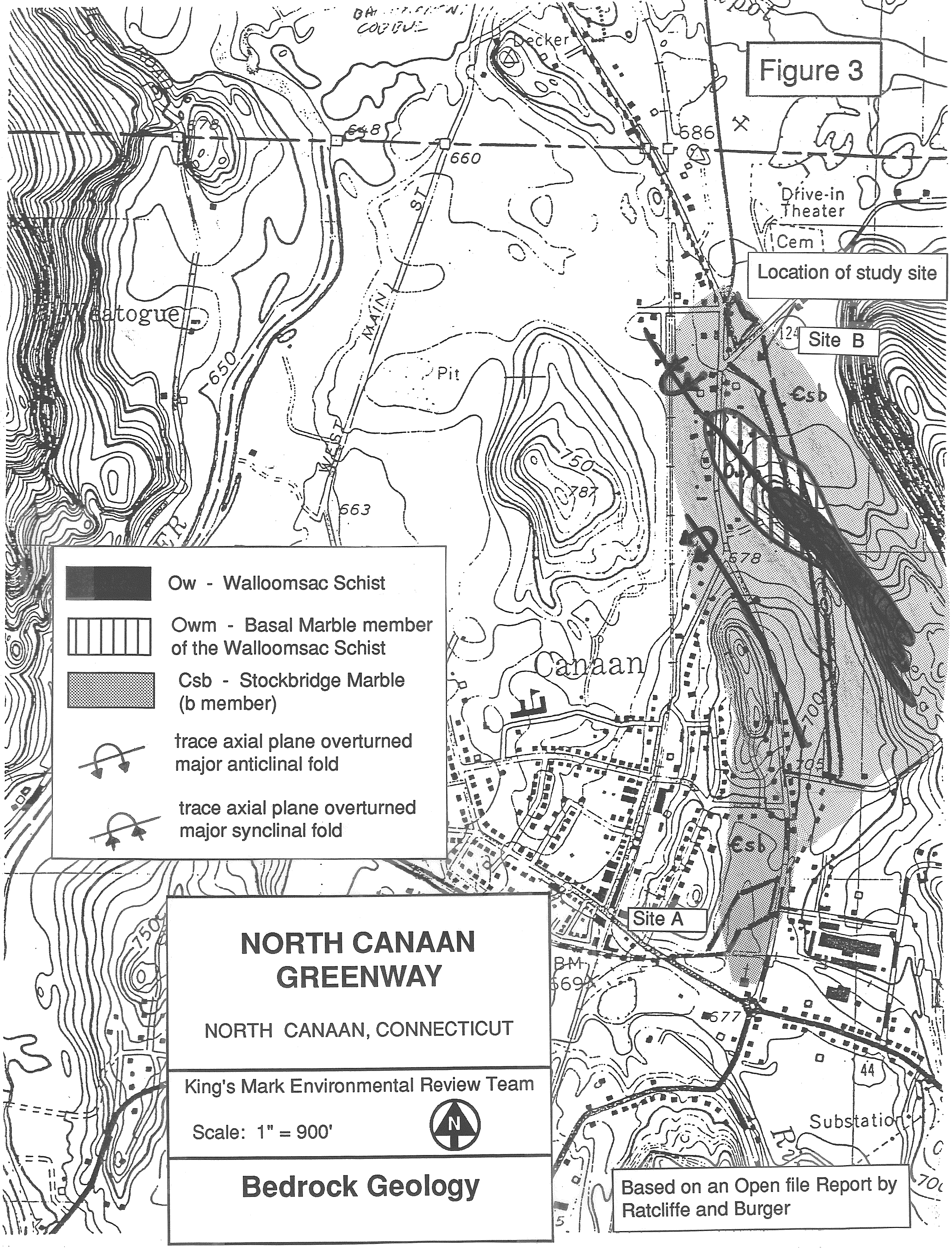


Figure 3
Location of study site
Site B
Site A
Ow - Walloomsac Schist
Owm - Basal Marble member of the Walloomsac Schist
Csb - Stockbridge Marble (b member)
trace axial plane overturned major anticlinal fold
trace axial plane overturned major synclinal fold
NORTH CANAAN GREENWAY
NORTH CANAAN, CONNECTICUT
King's Mark Environmental Review Team
Scale: 1" = 900'
N
Bedrock Geology
Based on an Open file Report by Ratcliffe and Burger
Csb
Owm
Canaan
Decker
Drive-in Theater
Cem
Pit
WEST MAIN ST
Substation
Substatio
BM 569
648
660
686
650
663
750
787
678
700
705
677
44
124

Holmes and W.S. Newman (1971, Surficial Geology of the Ashley Falls Quadrangle, USGS Geologic Quadrangle Map GQ 936). The northwest trending ridge is mantled by a thin (i.e., <10 feet) veneer of glacial till (see Figure 4). Till is a compact mixture of clay, silt, sand and boulder-sized angular mineral and rock fragments deposited by ice. The small stream valley south of the ridge is filled to a depth of 18 to 20 feet by post glacial stream terrace deposits of silt and fine sand. The deposits originally accumulated within the valley of the early post-glacial ancestor of the Blackberry River above the level of a glacial lake. The stream terrace deposits are light gray, stratified and generally mantled by thin accumulations of modern swamp deposits. The area north of the ridge is underlain by stratified deposits of coarser sands and gravel. These deposits were formed as outwash downstream of the retreating continental ice sheet after the disappearance of the glacial lake which had influenced the accumulation of the stream terrace deposits.

GEOLOGIC RECOMMENDATIONS

The topography and geology along the railroad right-of-way from the ridge south to Granger Lane merits preservation. The juxtaposition of a gently flowing incised brook, a flat floodplain and a curious series of craggy outcrop knobs make for pleasant and interesting topography. The well-exposed anticlinal fold in the outcrop forming the prominent large knob immediately south of the ridge could be a highlight of a nature trail along the greenway.

SOIL RESOURCES

The soils of the proposed greenway are mapped and described in the Soil Survey of Litchfield County, CT 1970. This mapping is suitable for general site planning

purposes (see Figure 5). The soils are briefly described below and in Appendix A, Tables 1-4.

1) **Alluvial Land (Am)**: This soil consists of recent, variable alluvium (i.e., riverwash material) and is subject to flooding. This soil has a high watertable from September to June with an average water depth of 0-1.5 feet and is a regulated wetland soil. The construction and maintenance of passive recreation trails through this soil is severely limited due to soil wetness, but necessary if a trail is to be constructed the length of the proposed greenway. A stream crossing is also required if a trail is built through this soil.

2) **Amenia Silt Loam (AnB, AnC)**: This soil series is made up of moderately well-drained soils that developed in firm to very firm, calcareous glacial till. This soil series has a perched high watertable at a depth of 1.5-3.0 feet usually from November to May. The construction and maintenance of trails through these soils is moderately limited by soil wetness. The AnB soil mapping unit is classified as Prime Farmland. The AnC mapping unit is classified as Farmland of Statewide Importance.

3) **Birdsall Silt Loam (Bz)**: This is a level or slightly depressional, nonacid, very poorly drained soil that developed in waterlaid or windblown deposits of silt and very fine sand. This soil occupies small areas in the valleys and, to a limited extent, in the uplands. The soil has a watertable at or near the surface in winter and spring and is a regulated wetland soil. Permeability is moderate, and available moisture capacity is high.

4) **Deerfield Loamy Fine Sand (DeA)**: This soil is coarse-textured and moderately well-drained. The watertable may rise to within 15-20 inches of the surface during wet periods, usually December through April. The construction and maintenance of trails through this soil probably will not be limited by soil conditions.

5) **Farmington Extremely Rocky Silt Loam (FmC, FmE)**: These soils are somewhat excessively drained or well-drained soils that are shallow to bedrock consisting of limestone or inbedded limestone and schist. The average depth to bedrock is 10-20 inches, but deeper pockets may exist. Steep slopes and shallowness may limit trail construction or maintenance. Trail erosion may occur, requiring upkeep. The bedrock outcrops are aesthetically pleasing focal points and maintain a varied population of wild flowers which add interest to a recreation trail.

6) **Farmington Very Rocky Silt Loam (FaC)**: This soil is undulating to hilly, somewhat excessively drained or well-drained and shallow to bedrock. This soil consists of limestone or interbedded limestone and schist. Depth to bedrock is variable, ranging between 10-20 inches.

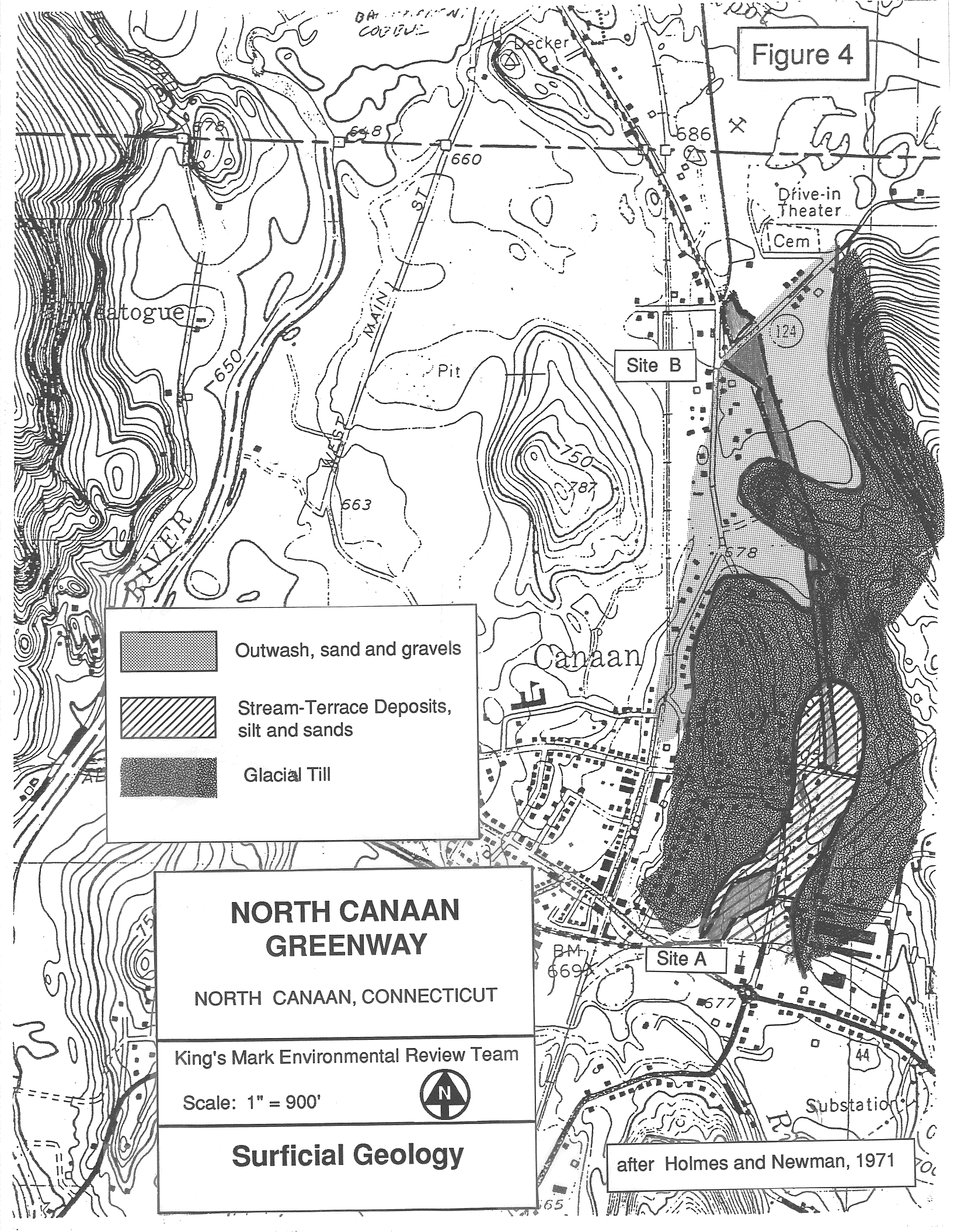


Figure 4
Decker
686
660
Drive-in Theater
Cem
MAIN ST
Housatonic
650
Pit
Site B
124
150
787
663
WEST
RIVER
678
Canaan
Outwash, sand and gravels
Stream-Terrace Deposits, silt and sands
Glacial Till
BM 669
Site A
677
44
Substation
NORTH CANAAN GREENWAY
NORTH CANAAN, CONNECTICUT
King's Mark Environmental Review Team
Scale: 1" = 900'
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Surficial Geology
after Holmes and Newman, 1971

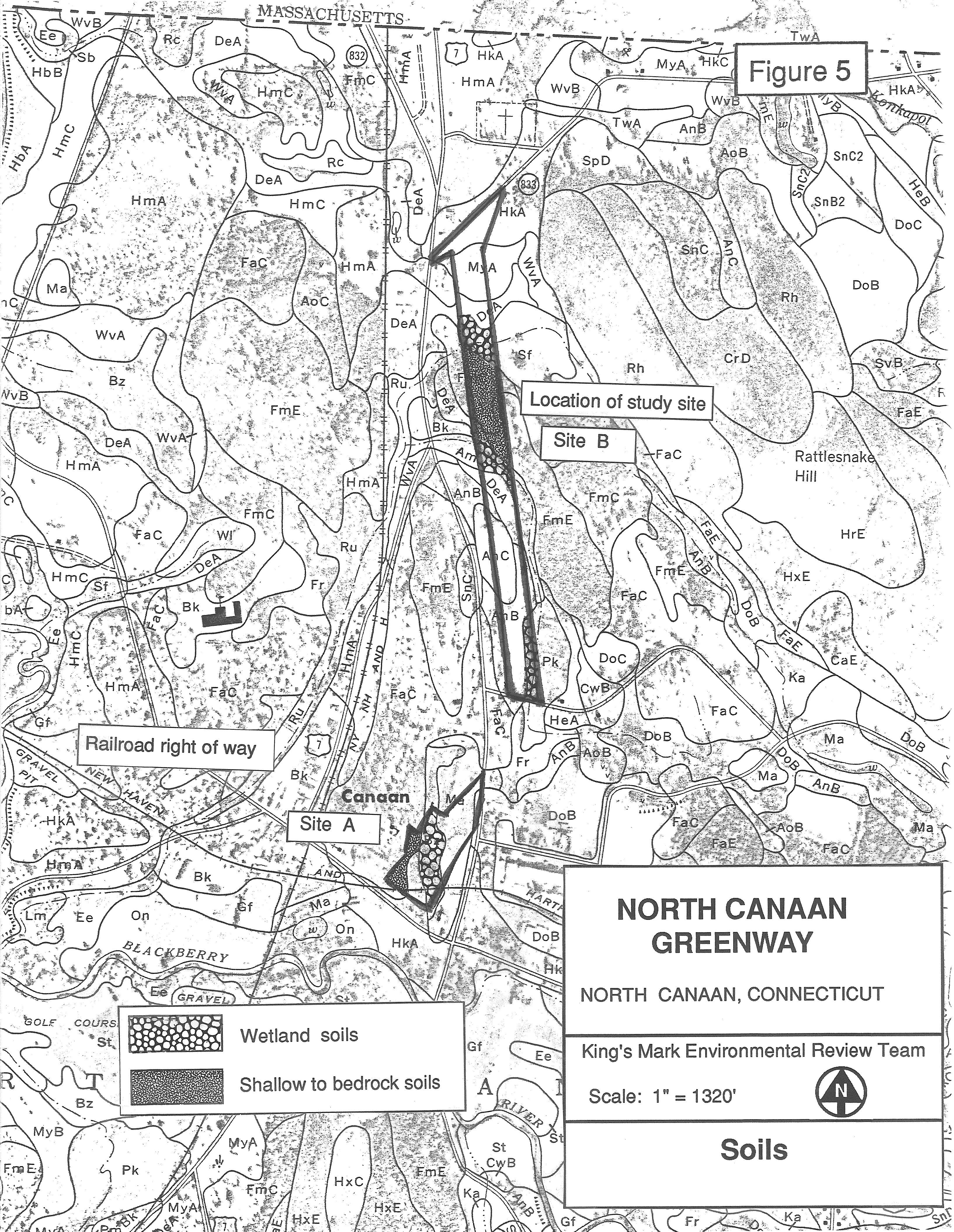
Figure 5
MASSACHUSETTS
Konkapot
Rattlesnake Hill
Location of study site
Site B
Site A
Canaan
Railroad right of way
GRAVEL PIT
NEW HAVEN
BLACKBERRY
RIVER
GOLF COURSE
Wetland soils
Shallow to bedrock soils
NORTH CANAAN GREENWAY
NORTH CANAAN, CONNECTICUT
King's Mark Environmental Review Team
Scale: 1" = 1320'
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Soils

7) **Hinckley Gravelly Sandy Loam (HkA)**: This soil is excessively drained and droughty. This soil developed in deep deposits of stratified sand and gravel that were derived mainly from granite, gneiss and schist. The soil does not pose any significant restrictions for the construction of passive recreation trails. The HkA soil mapping unit is classified as Farmland of Statewide Importance.

8) **Made land (Ma)**: This soil mapping unit consists of filled areas and dumps where trashy material occurs with a varying amount of earthy material. The trashy material includes old brick, plaster and tin cans. The land is extremely variable.

9) **Merrimac Sandy Loam (MyA)**: This soil is excessively well-drained. At a depth of approximately 2 feet, this soil is underlain by stratified sand and gravel derived mainly from granite, gneiss, schist and quartzite. The soil does not pose any significant restrictions for the construction of passive recreation trails. The MyA soil mapping unit is classified as Prime Farmland.

10) **Peat and Muck (Pk)**: This soil mapping unit consists of organic materials deposited in bogs and swamps where the watertable is at or near the surface most of the year. These materials are the decomposed and partly decomposed remains of plants, chiefly mosses, sedges and cattails and the roots, leaves and stems of woody vegetation. The deposits range from approximately 3 feet to more than 25 feet in depth. The watertable depth ranges from +0.5-1.0 feet from September through June. These areas are underlain by mineral soil. The pH ranges from extremely acid to slightly acid. This mapping unit is a regulated wetland soil. Bringing passive recreation trails to the edge of the wetland may be advantageous for aesthetics or environmental education. The Amenia soils are adjacent to the Pk soils and are suitable for trail construction. Trails through the wetland are not recommended unless they are raised.

11) **Scarboro Loamy Fine Sand (Sf)**: This is a very poorly drained, nearly level soil formed in sandy and/or gravelly material or terraces. This soil occupies wet, low lying areas. The watertable depth ranges from +1-1.0 feet and is typically high year-round. This mapping unit is a regulated wetland soil. The construction of trails through this soil is severely limited due to soil wetness and ponding, but necessary if a trail is to go the length of the proposed greenway. A stream crossing is also required if a trail is built through this mapping unit.

Because the proposed greenway is close to the center of North Canaan and other newly acquired open space areas and because it contains variation in soil type, vegetation and landscape, the greenway has a very high potential as a passive

recreation and nature study area. Appendix B contains additional information regarding Site A.

BIOLOGICAL RESOURCES

FORESTRY CONSIDERATIONS

Vegetation Description

Site A is 8 acres in size. Site B was listed as 51 acres, but when it was laid out on an aerial photo, the area scaled out to be 38 acres. The proposed greenway contains 36 acres of forested and 10 acres of open land. The present commercial value of the forested land is low due to the size and quality of the predominant sawtimber-sized trees, the lack of established access and the presence of wetland soils and watercourses. The aesthetic, watershed, diversified wildlife habitat and passive recreation potentials of the proposed greenway are more valuable.

The forest management potential of the proposed greenway is limited to establishing a property line maintenance program and creating a nature trail system which would highlight tree identification and forest ecology.

Vegetation Type Descriptions

This is a breakdown of the vegetative cover types found on the proposed greenway (see Figure 6). The types are directly influenced by either or both soil conditions and past management. Soil types often dictate the moisture availability which can limit or restrict plant growth. Historical use of the land also influences the present vegetation types and condition.

1) **Planted Field**: This vegetation type is made up of areas which were planted 25 years ago with softwood species. Site A has 3.5 acres planted with scotch pine, white pine and white spruce. Site B has 7 acres planted with white pine and Norway spruce. White pine has seeded in naturally. Hardwood species of aspen, grey birch, white birch, pin cherry, eastern cottonwood and red maple have also seeded in naturally. Shrub species present on both sites are highbush blueberry, red stemmed dogwood, sweet fern, raspberry and multiflora rose. It appears that the soils have been disturbed and are of poor nutrient quality. This is evident by the slow height growth and the low number of trees present.

2) **Hardwood Swamp**: A high watertable and poorly drained soils limit the growth of vegetation to species well-adapted to wet conditions. On both Sites

A and B, this vegetation type contains tree growth of eastern cottonwood, elm, red maple and black willow. Shrub species present include speckled alder, highbush blueberry, red stemmed dogwood, witch hazel and honeysuckle. Forbes include cattail and phragmites. Site A has 1 acre, and Site B has 6 acres of this vegetation type.

3) **Softwood**: The major specie in this vegetative type is white pine. The trees range in size from pole to large sawtimber, with sawtimber being the dominant size class. Site A contains 1/2 acre of this vegetation type, including 1/4 acre of pine plantation. Site B contains 10 acres of this vegetation type. Hardwood species present are black cherry in the overstory and sugar maple in the understory. Shrubs present in the understory are barberry and honeysuckle. The present condition of the trees is poor to average, especially the larger white pine which are crooked and multi-stemmed from previous white pine weevil damage.

4) **Mixed Hardwood**: Site A has 3 acres, with aspen, white ash, black birch, red maple, sugar maple, red oak and white oak present. Tree sizes range from pole to large sawtimber, with sawtimber being the dominant size.

5) **Old Field**: Site B has 6 acres of abandoned field reverting to forestland. Trees present in seedling and sapling growth are aspen, birch, cherry, red maple and white pine. Shrubs include barberry, highbush blueberry and juniper.

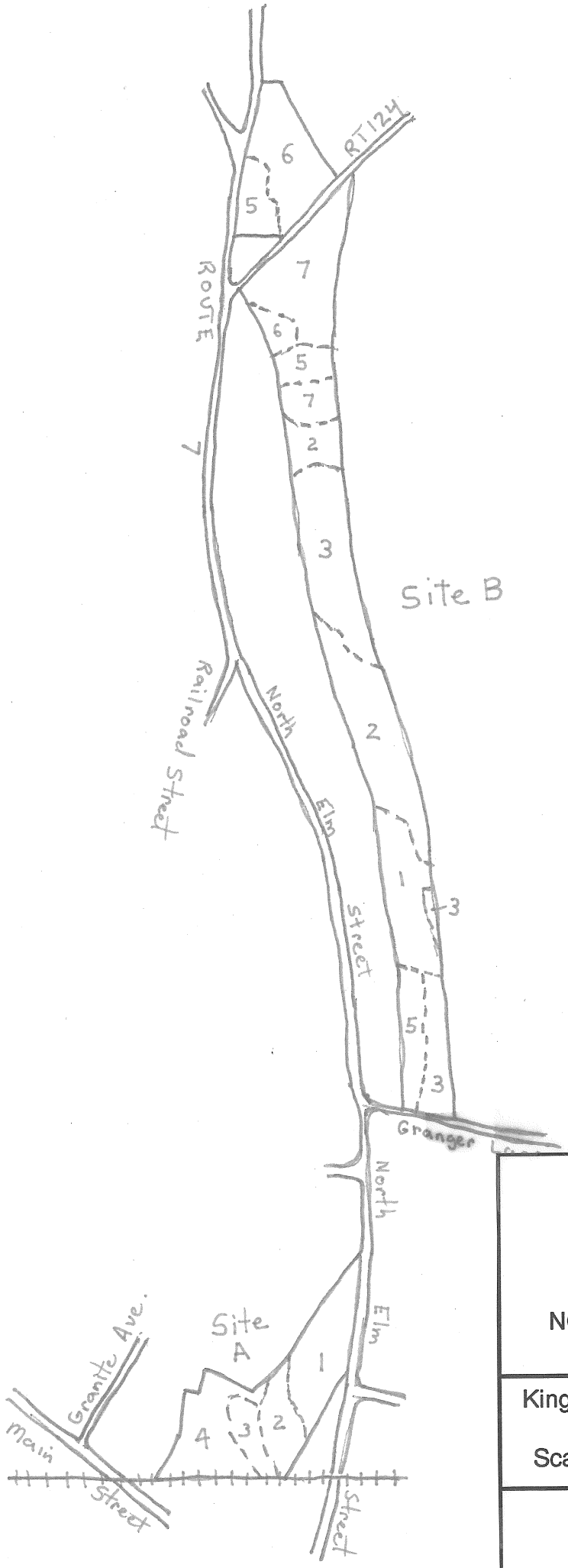
6) **Open Field**: Site B contains 4 acres of hay field or areas kept in grass cover.

7) **Cropland**: The remaining 6 acres of Site B are in fields where tillage crops are raised.

Limiting Conditions, Potential Hazards and Management Considerations

The lack of established access and the location and extent of wetland soils and watercourses restrict forest management activities to the maintenance of property lines (see Appendix C). Wetland soils with high watertables and poor drainage allow for shallow root penetration, and as a result, windthrow is a potential hazard. Openings in and along side wetlands should be avoided. Though the economic potential of the forestland is low, the educational opportunity for the study of forest ecology is great. The diversity of growth and the linear configuration of Site B lends itself to the establishment of nature trails. Tree identification and forest succession should be highlighted along these trails.

Figure 6



----	cover type boundary
1	Planted Field
2	Hardwood Swamp
3	Softwood
4	Mixed Hardwood
5	Old Field
6	Open Field
7	Cropland

NORTH CANAAN GREENWAY

NORTH CANAAN, CONNECTICUT

King's Mark Environmental Review Team

Scale: 1" = 700'

N

Vegetation

Figure 6 Vegetation

WILDLIFE CONSIDERATIONS

Description of Area/Habitats

The proposed greenway primarily consists of Site A, Site B and a section of a railroad right-of-way. These parcels provide a variety of wildlife habitats, although they are quite limited in size.

Wildlife habitat is the complex of vegetative and physical characteristics that provide for all the requirements of wildlife, including food, shelter, resting, nesting and escape cover, water and space. Generally, the greater the habitat diversity and degree of interspersion of various habitat types, the greater the variety of wildlife there is using an area. Because Site A and Site B contain a variety of habitats, including wetlands interspersed over the areas, they provide fair to good wildlife habitat. In addition, because Site B is located next to a large area of relatively undisturbed forest, its value is somewhat greater than if it were an open space surrounded by development.

A variety of wildlife is expected to utilize these parcels to serve all their needs, while many other species find it a place to meet some requirements. These species include, deer, ruffed grouse, weasel, raccoon, beaver, otter, fox, coyote, hawks, owls, catbirds, sparrows, juncos, warblers, frogs, snakes and turtles.

Site A: This small 8-acre parcel contains old field type habitat or early successional stage habitat (i.e., small trees and shrubs interspersed with grass and herbaceous vegetation) and a small area of palustrine forested wetland habitat. There is also a small portion of upland forest and a small intermittent stream which flows from the pond area and adds to the diversity of the entire wetland.

The old field area or area of young trees/shrubs, grasses and herbaceous growth provides a variety of food and cover to a variety of birds and small mammals. Other mammals such as fox may hunt in this area, and deer may browse on the young

saplings and herbaceous growth. This area provides a mix of vegetation and is important for some types of wildlife, because it provides diversity. This old field area or early successional stage type habitat contains aspen, willow, various dogwoods, autumn olive and many other species that provide cover and food.

The palustrine forested wetland area contains overstory trees such as red maple, willow, ash and elm and has a variety of shrubs in the understory. Various ferns, grasses and sedges comprise the ground cover. The diversity of vegetation provides a variety of food and cover and adds value to this small area of wetlands. There is also a small area of wetland surrounding a small area of open water within the palustrine forested wetland that is dominated by emergents, mainly phragmites. Phragmites offer almost no food or cover value to wildlife. Therefore, this area is not as useful as it could be if dominated by a more desirable vegetation specie. Although this wetland area contained on Site A has been impacted and encroached upon by past developments, it still provides some habitat of value to some species of wildlife.

A small area of forestland is also contained within Site A. Hardwood species include maple, birch, ash and ironwood. There is also a small stand of pines that offers some aerial cover for roosting, but offers no cover at ground level because of the large size of the trees.

It appears the Scotch pine and white spruce were planted years ago in a effort to start a plantation. Most of the trees are small and spindly due to neglect. Although evergreens can provide important cover for wildlife, the value of these trees is practically non-existent. Some of the larger trees with more foliage offer some cover and nesting sites to a few species, including robin and mourning dove.

In general, Site A offers wildlife habitat limited in value, mainly because of its small size and encroachment by development. Additionally, the value of the wetland habitat is limited because of the disturbed nature of the site and the invasion of phragmites. However, this area, like all open space areas, provides wildlife habitat

for a variety of edge dwelling species such as raccoons, deer, fox, various birds and small mammals.

Site B: This long, narrow parcel contains a variety of habitats. Habitat types include deciduous or palustrine forested wetlands, hardwood forest and some old field or early successional stage type habitat.

Site B contains wetlands associated with the brook or intermittent stream that runs the length of the parcel. These palustrine tree/shrub wetlands are dominated by an overstory of red maple, ash and an understory of shrubs. Some emergents are found along the brook with a variety of herbaceous growth in the more open areas. This wetland appears to have been dredged to create a channel for drainage years ago. There is also a large area of phragmites in the wetland area near Granger Road. Despite its disturbed nature, the diversity of the wetlands and the greater size of Site B makes this parcel useful habitat for a wide variety of species. This parcel is also more valuable as wildlife habitat because it lies adjacent to a large undeveloped tract of forest.

Site B provides habitat for species such as beaver, deer, fox, coyote, otter, opossum, raccoon, painted turtle, redspotted newt, song sparrows and yellow warblers. Beaver have occupied this area previously and will again at some point. See Appendix D for more information on beaver.

Some forestland is also contained within Site B. Forested areas provide an abundant source of food in the form of mast, berries, buds, insects and catkins. Cover is provided for species such as fox, raccoon, deer and coyote. Nesting and roosting sites for many birds are also provided. The snag trees (i.e., dead trees) in the area are a source of insects which serve as food for many species such as woodpeckers and chickadees. Den trees or trees with cavities can serve as a nesting or denning place for animals such as squirrels and raccoons.

The early successional stage type habitat contained in Site B provides a wide variety of trees, shrubs, grasses and herbaceous plants for a variety of wildlife needs.

Railroad Right-of-Way: The railroad right-of-way obviously provides a very narrow band of habitat and is extremely limited in its value to wildlife. Some edge dwelling species could utilize the vegetation along each side of the track. However, the undeveloped areas of habitat on both sides of the track support the wildlife that might be viewed while walking along the right-of way. The habitat on both sides of the railroad tracks makes the right-of-way a valuable addition to the proposed greenway.

Recommendations

The railroad right-of-way offers a ready made trail. No new disturbance to existing habitat would occur while building a trail. If use of the trail was limited to walking and biking, disturbance to wildlife along the right-of-way will be minimal. The right-of-way certainly offers an opportunity for people to view wildlife as they pass through the undeveloped land found on either side of the right-of-way. Maintaining open space on either side of the right-of-way is important in terms of providing wildlife habitat and preserving the opportunity to view wildlife. If possible, some option to purchase additional land along the railroad right-of-way should be pursued.

Site B offers the opportunity for viewing wildlife and various wildlife habitats. Building a trail will create some disturbance, but it will probably be minimal. The parcel already suffers some disturbance from residents of the adjacent development. The trail, if constructed, should be thoughtfully placed and correctly constructed so that additional erosion does not add to the siltation already occurring in the wetland. Some wildlife species might find the addition of a trail intolerable, but this is unlikely. Most species currently utilizing this habitat would probably adapt quickly to a trail.

An additional form of wildlife-based recreation that could possibly take place on Site B is hunting. Although this parcel is fairly narrow, it could accommodate a limited number of archery hunters during the season. As the deer herd expands and the number of deer damage/nuisance complaints grows, it is important to open as many areas as possible to hunting so that deer numbers can better be controlled.

Although Site A is probably to small for a trail, it might make an interesting stop on an educational field trip or plant identification course. Additional developments such as ballfields and parking lots will decrease the amount of habitat available to wildlife simply by eliminating habitat and by increasing the level of disturbance to areas already suffering disturbance.

Wetlands: Because wetlands increase the habitat diversity of an area and offer a variety of food and cover to wildlife, they are important areas to consider for protection. Acre for acre, wetlands and their associated riparian zones exceed all other land types in wildlife productivity. In addition to their value as wildlife habitat, wetlands serve other valuable functions, including water recharge, sediment filtering, flood storage, etc. For these reasons, the development of, filling in and/or crossing of wetlands should be avoided or limited whenever possible. Conservation of wetlands should be pursued whenever possible.

If possible, the proposed open space areas should be protected from further siltation. Silts and sediments tend to fill in a wetland over time, causing drastic changes in the vegetational composition and degradation of the wetland wildlife habitat values.

Because of the importance of wetlands to wildlife and the fact that wetlands are limited in quantity and continue to dwindle on an almost dally basis in Connecticut, it is always preferable to chose the option or path of development that least impacts wetlands. The value of wetlands increases as the quantity of the resource

diminishes. A buffer of at least 100 feet of undisturbed vegetation is recommended around any wetland to preserve its value and use by wildlife.

Old Fields or Early Successional Stage Areas: If the early successional stage vegetational areas are not maintained, they will grow into mature forest. This will decrease the diversity of habitat found on the proposed greenway. Maintenance of these areas can be accomplished through a combination of brush mowing and brush cutting. Although these fields and early successional stage areas are limited in value as wildlife habitat, acquiring these areas will contribute to the conservation of wetlands and open space for wildlife habitat. Additional more valuable areas of wildlife habitat/open space should be identified and pursued as part of a Town master plan so that habitat diversity and wildlife habitat values can be conserved on a larger scale.

Planning for Open Space Areas

Open space areas should meet certain requirements if they are to benefit wildlife. Open space areas should contain a variety of habitats. Many times the only open space areas are small islands of wetlands (usually unbuildable land) interspersed among development. This does not provide for the needs of a large variety of wildlife. Open space areas should be connected. Setting aside an "island of open space" surrounded by development is the least desirable for wildlife. The logical basis for the wildlife corridor/open space system is the stream/wetland corridor. Woodlands are important to wildlife, and the ecotones formed at wetland and woodland edges provide additional habitat where a dense understory provides cover and screening from human disturbance, making these areas important for protection. There should also be ancillary corridors that extend from this system into and through the developed area, encouraging the movement of wildlife into and through residential development. The area should have natural travel pathways (i.e., streams, valleys and ridgetops) for wildlife to enter and exit to other open space

areas outside the development. The open space area is more valuable to wildlife if not traversed by roads which may impede the movement of wildlife. Additionally, a buffer of at least 100 feet of undisturbed vegetation is recommended around any wetland to preserve its value and use by wildlife.

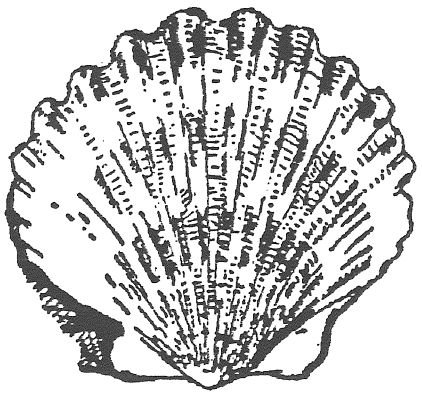
In a small but heavily developed and populated State like Connecticut, where available habitat continues to decline on a daily basis, it is critical to maintain and enhance, where possible, existing wildlife habitat.

THREATENED AND ENDANGERED PLANT AND ANIMAL SPECIES

According to Natural Diversity Data Base maps and files, there are no known extant populations of Federally Endangered and Threatened species or Connecticut "Species of Special Concern" occurring at the proposed greenway.

Natural Diversity Data Base information includes all information regarding critical biologic resources available at the time of the request. This information is a compilation of data collected over the years by the Natural Resources Center's Geologic and Natural History Survey and cooperating units of DEP, private conservation groups and the scientific community. This information is not necessarily the result of comprehensive or site-specific field investigations. Consultation with the Data Base should not be substituted for on-site surveys required for environmental assessments. Current research projects and new contributors continue to identify additional populations of species and locations of habitats of concern, as well as enhance existing data. New information is incorporated into the Data Base as it becomes available.

ARCHAEOLOGICAL RESOURCES



ARCHAEOLOGICAL RESOURCES

The prehistoric archaeological resources of Canaan have been studied by research groups from the American Indian Archaeological Institute (AIAI) in Washington, Connecticut since the 1980s. Extensive surveys have been conducted along the terraces and floodplains of the Housatonic River and the landforms adjacent to Robbins Swamp. Further to the east, along Squabble Brook, the length of the Whiting River and the upper reaches of the Blackberry River, the Town's archaeological richness is also well documented. No prehistoric sites have been recorded on the proposed greenway. However, it is possible to use the existing knowledge to assess the archaeological sensitivity of the greenway parcels.

For more than 10,000 years, Indian peoples periodically settled and used much of the area that is now North Canaan. There are very few properties in Town which do not contain prehistoric sites between 10,000 and 500 years old. The focus of this long-term tradition of Native settlement and land use was an extensive system of wetlands, shallow lakes, ponds and streams which once covered more than half of North Canaan's total area. This system began to form in the early post glacial period, approximately 13,000 years ago. Since then, its extent and ecological richness have varied constantly, in part as a response to regional environmental change. However, the system never became extinct. Parts of it can still be seen today in Robbins Swamp and the smaller wetlands and ponds along Squabble Brook and the Whiting River.

Attracted by the ecological richness of wetlands, Indian peoples periodically occupied and reoccupied the lands which surrounded them. Each successive wigwam settlement overlapped with the ones that preceded it, so that through time, the archaeological record became a continuous complex of artifacts and associated features such as hearths and pits (see Appendix E). The result is that the landforms

surrounding such long-term wetland systems predictably contain rich and significant complexes of prehistoric archaeological sites. There are localities in North Canaan where the archaeological record seems to stretch continuously in a long and linear pattern for several miles.

Considering the known archaeological richness of North Canaan, **it is very probable that the proposed greenway contains prehistoric sites**, especially on the slightly elevated landforms which either border the proposed greenway or are located directly within it. It is expected that these sites will be primarily between 6,000 and 500 years old. These archaeological resources are situated in the upper 20 centimeters of soil and can easily be disturbed by activities such as extensive land clearing, logging or the leveling of ground for recreation facilities. Once the integrity of such sites is disturbed, their patterning is destroyed and their future research importance will be lost forever.

The proposed greenway will preserve any archaeological resources within it as long as the lands are not extensively cleared or disturbed. A relatively benign system of trails and interpretive signs (focused on environmental eduction, archaeological preservation and the Town's long Native American history) is preferable to more active and intensive recreational use which would destroy prehistoric archaeological sites.

The proposed greenway would in effect become an archaeological conservancy where some of North Canaan's rich and important Native American heritage can be preserved for the next generations. The AIAI is willing to cooperate with the ConnDOT and local Commissions to prepare a management and preservation plan for the greenway.

LAND USE AND PLANNING CONSIDERATIONS

PLANNING CONSIDERATIONS

Existing Land Use and Development Pattern

Site B of the proposed greenway is a linear tract running in a northwesterly direction beginning at its southern end in the vicinity of Daisy Hill Road and ending at Cemetery Road to the north. Currently owned by ConnDOT, Site B was acquired for the relocation of Route 7 which never took place. Lands within the proposed greenway are undeveloped, including woodlands, wetlands and farmland.

The proposed greenway is currently used on an informal basis for walking, bird-watching and other wildlife observation and by children playing, as evidenced by a tree hut/play house in the woods. There is a beaver lodge in a pond created by beaver activity, and remains of a white-tailed deer were observed.

Surrounding land uses include primarily single-family residential and commercial uses, with rear yards backing onto the proposed greenway. A recently constructed town-house development is in view south of the proposed greenway. A mix of farm fields and commercial uses lies to the north.

Current Municipal Land Regulations

Local plans and regulations affecting the site include the Plan of Development, Subdivision Regulations and Inland Wetland Regulations.

North Canaan Plan of Development: The Plan of Development Future Land Use Map (Figure 7) includes a recommendation to acquire land from the State of Connecticut for a Town park/open space, namely the 8-acre parcel shown as site F on Figure 4 of the Plan of Development. This parcel is Site A of the proposed greenway. The Town Board of Selectman voted in May of 1991 to lease the land from ConnDOT, noting that it must be used for parking or recreation.

Proposed Future Land Use appears to be "neighborhood commercial" for the portion of Site B north of the Route 7/North Elm Street junction and "medium density

residential" for the portion of Site B parallel to North Elm Street . The lines on Figure 7 are difficult to pinpoint as to exact property boundaries. Therefore, the larger map at the Town Hall should be consulted. Devoting some of the land within neighborhood commercial or medium density residential areas to open space could enhance the commercial and residential properties.

North Canaan Inland Wetland Regulations: These regulations govern activities within any inland wetland (based on soil type) or watercourse and 100 feet beyond the wetland or watercourse. Permitted uses within regulated areas include farming and related uses, a residential home for which a building permit was approved before July 1974, uses incidental to enjoyment or maintenance of residential property and outdoor recreation, including hiking, horseback riding and nature study. Therefore, a recreation greenway is consistent with the uses spelled out in the inland wetlands regulations.

North Canaan Subdivision Regulations: The Subdivision Regulations allow for the Planning Commission to require the preservation of up to 15% of the land area in a proposed subdivision for public open space. The regulations state that land reserved should be chosen on the basis of its value in:

1) Protecting and conserving endangered natural, cultural land historic resources, including floodplain wetlands, streambelts, ridgetops, rock outcroppings, stonewalls, substantial specimen trees, important farmland soils as defined by the Soil Conservation Service and other unique and fragile features;

2) Enhancing living conditions;

3) Creating active recreational opportunities, including hiking;

4) Establishing buffer areas between adjoining land uses; and

5) Establishing linkages connecting open spaces.

Figure 7 Plan of Development

This is a planning tool the Commission may utilize if the non-wetlands portion of the land is subdivided into residential lots in the future.

Other Relevant Plans

State of Connecticut Plan of Conservation and Development: The State Policies Plan for the Conservation and Development of Connecticut 1987-1992 is an advisory document governing how the State will make investment decisions involving State funds and how the State will use land it owns.

The plan map appears to designate most of the proposed greenway as Rural Community Center. Locations on the map are "symbolic representations of sites with apparently high potential for local designation." Therefore, it is difficult to be certain where the State Plan boundaries fall in exact relation to this proposed greenway.

The Plan's recommended policy for Rural Community Centers is:

> "Cluster in locally designated centers the relatively higher intensity land uses of residential, shopping, employment and public facilities and services occurring in rural communities."

Because Sites A and B are State property, a review for consistency with the State Plan will probably be required by the Office of Policy and Management before a final decision to convert these parcels to a public open space greenway can be made.

Regional Plan: The Northwestern Connecticut Regional Plan of Development is also an advisory document intended to be a policy guide for Towns in the region. The area in which the proposed greenway is located is considered by the Regional Plan to be a village, distinct from rural or environmentally sensitive areas. The Regional Plan policy for villages is:

> "Villages, particularly those with sewer and water facilities, should continue to be the principal location for future single family and multiple unit development in the region as well as for most new commercial land uses and public buildings consistent with the Town Plan of Development."

A greenway is a consistent use in the village, especially because part of it is recommended for a park/open space in the Town Plan of Development.

Recreation and Greenway Opportunities

The existence of State-owned land no longer needed for the original purpose presents an opportunity for the Town. The undeveloped, natural features of the land near the village center lend themselves to a greenway for public use.

The greenway could be left as a natural corridor, perhaps improved slightly with a walking and bicycle path and a few picnic tables. Active recreation uses such as ballfields or courts should probably be avoided because this is a narrow strip of land dominated by wetlands and because it abuts private homes. With a few signs and an established trail along the beaver pond, the greenway could also serve as a nature education area for elementary school students. As the Town develops over time, the greenway will be an area of natural beauty to be enjoyed by tourists and residents.

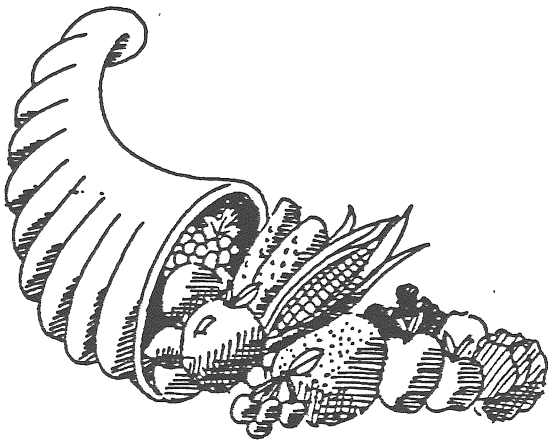
Preserving a greenway through a village center will enhance residential and commercial land uses on either side of the greenway. A greenway should be permanently preserved from development other than the public recreation type uses suggested. This greenway could eventually be linked to other public parkland and recreation parcels, natural areas such as the Blackberry and Housatonic Rivers, the Town-owned access behind Wangum Village and commercial and tourist facilities associated with the Housatonic Railroad and Depot.

Recommendations

The parcels appear suitable and appropriate for a greenway. If Town officials endorse the creation of the greenway, either a committee or individual should be appointed to be in charge of the project. Consultations should take place with ConnDOT and with a potential owner and/or management agency (i.e., the Town or the Department of Environmental Protection). Decisions regarding who would own,

make improvements to and maintain the proposed greenway must be addressed. Possible fund sources for improvements should be explored. In other communities, the assistance of local land trusts has launched open space preservation efforts. The Canaan Heritage Trust may be able to assist Town officials with this project. The Office of the Northwestern Connecticut Council of Governments is prepared to assist the Town in researching the project and preparing for meetings, subject to Council approval. Appendix F contains photographs taken at the proposed North Canaan Greenway.

APPENDICIES



Appendix A: Soil Limitations Chart

TABLE 1: SOIL SYMBOLS AND MAPPING UNIT NAMES

Soil Symbol	Soil Mapping Unit Name
A m	Alluvial land
AnB	Amenia silt loam, 3-8% slopes
AnC	Amenia silt loam, 8-15% slopes
DeA	Deerfield loamy fine sand, 0-3% slopes
FmC	Farmington extremely rocky silt loam, 3-15% slopes
FmE	Farmington extremely rocky silt loam, 15-35% slopes
HkA	Hinckley gravelly sandy loam, 0-3% slopes
MyA	Merrimac sandy loam, 0-3% slopes
Pk	Peat and Muck
Sf	Scarboro loamy fine sand

TABLE 2: SOIL CHARACTERISTICS IMPORTANT TO DEVELOPMENT

Soil Symbol	Permeability (in/hr)	K	Corrosivity to Steel	Corrosivity to Concrete	Flooding	Water Table Depth (ft)	Water Table Kind	High Water Months	Depth to Rock (in)	Frost Action
Am	0.6-6.0	0.20	high	high	freq	0-1.5	apparent	Sep-Jun	>60	high
AnB	0.6-2.0	0.32	mod	low	none	1.5-3.0	perched	Nov-May	>60	high
AnC	0.6-2.0	0.32	mod	low	none	1.5-3.0	perched	Nov-May	>60	high
DeA	6.0-20	0.17	low	high	none	1.5-3.0	apparent	Dec-Apr	>60	mod
FmC	0.6-2.0	0.32	low	mod	none	>6.0	---	---	10-20	mod
FmE	0.6-2.0	0.32	low	mod	none	>6.0	---	---	10-20	mod
HkA	6.0-20	0.20	low	high	none	>6.0	---	---	>60	low
MyA	2.0-6.0	0.24	low	high	none	>6.0	---	---	>60	low
Pk	0.2-6.0	-0-	high	low	none	+0.5-1.0	apparent	Sep-Jun	>60	high
Sf	6.0-20	0.17	high	high	none	+1.0-1.0	apparent	Jan-Dec	>60	high

--- no data available

K - Erodibility Factor
.10-.24 - Low Erodibility
.28-.37 - Medium Erodibility
.43-.64 - High Erodibility

Flooding Classes
None
Occasional
Common
Frequent

TABLE 3: MAJOR SOIL LIMITATIONS FOR DEVELOPMENT

Soil Symbol	Septic System	Excavations	Dwellings	Basements	Commercial	Roads	Lawns	Fill	Ponds
Am	C-7,2,3	C-5,2	C-7,2	C-7,2	C-7,2	C-2,7,8	C-2,7	C-2	C-5
AnB	C-2,6	C-2	B-2	C-2	B-2,9	C-8	B-2	B-2	C-11
AnC	C-2,6	C-2	B-2	C-2	C-9	C-8	B-2,9	B-2	C-11
DeA	C-3	C-5	B-2	C-2	B-2	B-8,2	B-2	B-2	C-5
FmC	C-15,9	C-15,9	C-9,15	C-15,9	C-9,15	C-15,9	C-9,15	C-23	C-11
FmE	C-15,9	C-15,9	C-9,15	C-15,9	C-9,15	C-15,9	C-9,15	C-23	C-11
HkA	C-3	C-5	A	A	A	A	C-22	A	C-11
MyA	C-3	C-5	A	A	A	A	A	A	C-11
Pk	C-12,4,6	C-14,4	C-12,4,10	C-12,4,10	C-12,4,10	C-12,4,8	C-4,14	C-2	C-18
Sf	C-4,3	C-5,14,4	C-4	C-4	C-4	C-4,8	C-4	C-2	C-5

--- no data available

Degree of Limitations

A - Soil properties and site features are generally favorable for indicated use, and limitations are easily overcome.

B - Soil properties are not favorable for indicated use, and special planning, design or maintenance is needed.

C - Soil properties or site features are so unfavorable to overcome that special design, increases in cost and possibly increased maintenance are required.

Types of Limitations

1 Seepage	2 Wetness	3 Poor Filter	4 Ponding	5 Banks Cave	6 Slow Perc
7 Flooding	8 Frost Action	9 Slope	10 Low Strength	11 No Water	12 Subsides
13 Dense Layer	14 Humus	15 Shallow Depth	16 Large Stone	17 Small Stone	18 Slow Refill
19 Piping	20 Dam Seepage	21 Erosion	22 Droughty	23 Area Reclaim	

TABLE 4: TECHNICAL SOIL GROUPINGS

Soil Symbol	CT Regulated Wetland or Floodplain	Cropland Erodibility Rating	Farmland Rating
Am	H	---	---
AnB	---	PEL	P
AnC	---	HEL	I
DeA	---	---	I
FmC	---	---	---
FmE	---	---	---
HkA	---	---	I
MyA	---	---	P
Pk	H	---	---
Sf	HF	---	---

F - Floodplain soil type
HEL - Highly erodible land
I - Farmland of Statewide Importance
H - Hydric soil type
PEL - Potentially highly erodible land
P - Prime Farmland

Appendix B: SCS Correspondence

Agricultural Center
Litchfield, CT 06759
September 25, 1990

TO: Margaret Enkler, District Manager
Litch. Cty. Soil and Water Cons. District

FROM Kathleen M. Johnson, District Conservationist
USDA Soil Conservation Service
Assist. the Litch. Cty. Cons. District

RE: Open Space Proposal Lot 318, State of CT. owned land

FOR: North Canaan Conservation Commission

Situation: On September 12, 1990 I made an on-site inspection of lot 318 owned by the State of CT with Fred Ruggles and Sue Cole of the North Canaan Conservation Commission. The Conservation Commission is requesting an inventory of the property to help determine its value to the town as protected open space.

Comments: The soils on the property are mapped as Ma, Bz and FaC in the Soil Survey of Litchfield County, CT 1970. A brief description of these soil mapping units is as follows:

Ma: Made land (Ma) consists of filled areas and dumps where trashy material occurs with a varying amount of earthy material. The trashy material includes old brick, plaster, and tin cans. The land is extremely variable.

Bz: Birdsall silt loam soils are level or slightly depressional, nonacid, very poorly drained soils that developed in waterlaid or windblown deposits of silt and very fine sand. These soils occupy small areas in the valleys and, to a limited extent, in the uplands. They have a water table at or near the surface in winter and spring. Their permeability is moderate, and their available moisture capacity is high.

FaC: Farmington very rocky silt loam, 3 to 15 percent slopes are undulating to hilly, somewhat excessively drained or well drained soils that are shallow to bedrock consisting of limestone or interbedded limestone and schist. While depth to bedrock is variable it ranges between 10-20 inches.

The area of Made Land extends along North Elm Street. It is gently sloping and appears to be fairly dry. This area could be made into an overflow parking area, which is a stated need of the town. Since the area would not be constantly in use or used during typically wet months, a grassed parking area is probably best suited. Some trees might be kept along the road for aesthic reasons. A 100 foot minimum buffer of natural vegetation could be kept undisturbed along the wetland boundary. Numerous Fringed Gentians were noticed by the Conservation Commission members during the site review. This population will probably not survive if the area is used for parking.

The Birdsall soil is a regulated Inland Wetland in CT. A small watercourse flows through the center of this wetland. The stream and wetland area have a high value for nature study and bird watching if a nature trail is installed on-site. The wetland can be viewed from the edge or a short raised trail could be constructed to get out into it. The wetland can be crossed via the existing railroad bed. The wetland can be walked around at the northern edge of the property. The wetland soil type is also a potential source of water for fire protection if this is needed at some future date. This wetland probably has a high value for stormwater retention and sediment retention because of the manner in which the railroad was constructed. It is an excellent asset to the town.

The Farmington soil consists of both gently sloping and steep areas on-site. The steep areas add variation to a potential nature trail through the property. The flat area in the southwest portion of the site is located in a coniferous forest. This site is an excellent nature study area or picnic site. Picnic uses would currently be limited by lack of rest room facilities.

Because of the proximity of the property to the town center, the variation in soil type, vegetation and landscape, and access to other walking routes via the railroad bed the site has a very high potential as a recreation and nature study area.

Enclosures: Excerpts from "Recreation Ready Reference", Soil Conservation Service, Broomall, PA, 1977.

Appendix C: Forest Practice Description - Boundary Lines

CONNECTICUT DIVISION OF FORESTRY
FOREST PRACTICE DESCRIPTION

BOUNDARY LINES

The adage, "Good fences make good neighbors", can be expanded to include boundary lines. Connecticut is a state with a high population density and generally small, fragmented ownership patterns. Boundaries can be, at times, a maze with no discernable identifying features on the ground.

Boundary lines can be the first line of defense against trespass problems, both accidental and malicious. Well maintained and highly visible boundaries can minimize accidental trespass and, since the possibility of accidental trespass s alleviated, only the most callous timber poacher would chance being caught 'over the line'.

Landowners should consciously allocate sufficient time annually to perform necessary maintenance. Each fall and winter a landowner should locate, brush out, blaze, and paint enough of the boundaries to be able to cover all of them over a 3 or 4 year period.

In general, woodland boundaries should be clear of brush. Trees along the line should be blazed, (a chunk of bark removed with an axe to reveal solid wood), and the blazes painted with a long-lasting latex exterior paint, preferably white. Corners should be prominently identified by locating 3 'witness' trees surrounding the corner and then cutting 3 blazes on each tree, facing the corner point. Again, these blazes should be painted. It probably is not a good idea to blaze and paint your neighbor's trees.

Appendix D: Beaver

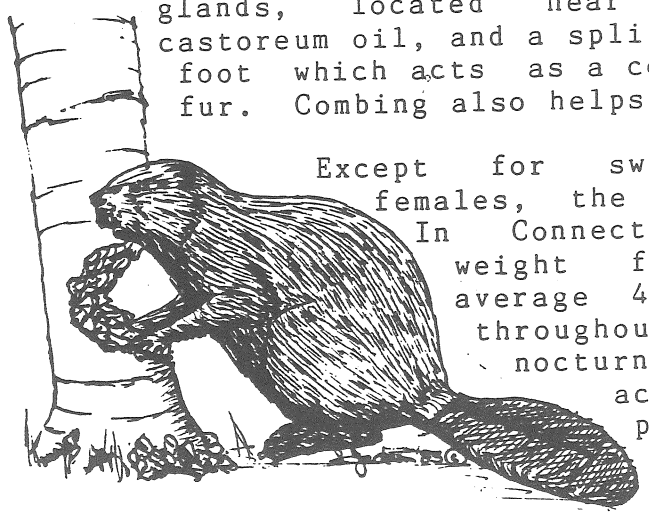
STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION
WILDLIFE BUREAU

INFORMATIONAL SERIES

BEAVER

General

The beaver (Castor canadensis) is the largest rodent found in Connecticut, as well as throughout North America. Inhabiting a semi-aquatic environment, the beaver is well equipped for survival--with short ears, webbed feet, rich brown fur (which acts like a wet suit), along with a unique, paddle-shaped, scaled, hairless tail. The tail is slapped on the water as a signalling device to warn other beavers, used as a prop when standing, and as a rudder when swimming. When underwater, thin membranes protect the beaver's eyes, internal valves automatically close within the ears and nose, and the lips seal tightly around the continuously-growing incisors--an adaptation for feeding underwater. The beaver has a pair of large scent glands, located near the anus, which produce castoreum oil, and a split, second toenail on each hind foot which acts as a comb to spread the oil over the fur. Combing also helps remove insect parasites.



Except for swollen mammaries on nursing females, the sexes are indistinguishable. In Connecticut, adult beavers range in weight from 30 - 65 pounds and average 45 pounds. They are active throughout the year, and are often nocturnal. Adults concentrate their activity in the vicinity of a permanent lodge and surrounding habitat.

Biology and Habitat

Beavers are monogamous, having only one mate during the breeding season, and often for life. Breeding occurs in midwinter and, after a gestation period of 100 - 110 days, a single litter of two to five precocial kits is born. Kits are well furred at

birth, with teeth already cut--exact miniatures of the adults. Until they are two years old, the young remain with the adults as a family group or colony. Beavers are sexually mature at age two, but seldom breed until their third year. The adults drive the two-year-olds out of their territory, forcing them to migrate and search for mates and unoccupied areas to establish new colonies. Territorial by nature, they will not tolerate other beavers within their colony's home area. A typical colony in midwinter may include the adult pair, two to four kits from the previous spring's litter, two or three yearlings and one or more two-and-a-half-year-olds. Established colonies are occasionally forced to move if their food supply is depleted, but this may take 10 or more years.

Beavers forage on the bark and twigs of trees such as aspen, willow, birch, maple, apple, alder, cherry, pine, and poplar. In summer their diet is supplemented with aquatic vegetation such as water lilies, pond weeds, and cattails. Often traveling 100 yards or more from their home, beavers will seek a corn, or other crop field, chew the plants off at ground level, and drag the entire stalks back to their lodge. Remaining herbaceous and woody vegetation is often used as construction material in their dams. During the fall, the beaver collects a cache of branches and twigs which provide food throughout the winter when the pond ices-over.

Good beaver habitat is found almost any place there is a year-round source of water, such as streams, lakes, farm ponds, swamps, and wetland areas. Unparalleled at dam building, these aquatic furbearers can build on fast-moving streams as well as slow-moving ones. Depending on the situation, beavers construct bank dens or lodges, and sometimes both; each has two to four entrances. In winter, mud is packed on the inside; once frozen, it provides a barrier from predation. Lodges and bank dens are used primarily for raising young, sleeping, and storing food during severe winters.

Benefits

Although beavers have become a nuisance in many parts of their range, causing considerable damage, the benefits of their existence should not go unnoticed. Some of their valuable characteristics include the following:

1. Adult beavers, as well as kits, provide a source of prey for bobcats and coyotes.

2. Wetlands created by beavers have, to a large extent, increased the availability of wood duck breeding areas by providing dead trees for these and other cavity-nesting birds. Ponds also aid in conserving water, reducing erosion, retarding forest succession, and creating new habitats for aquatic fish and wildlife other than birds.

3. Credited with influencing the rapid settlement of some parts of North America, the European demand for beaver pelt hats and fur clothing kept trappers moving westward. Pelts are prime during the winter months, when the fur is thickest and most valuable. Today, beaver pelts are used for making coats and accessory garments, while the meat is considered a delicacy, readily consumed by those who harvest it.

Problems

The declining fur market demand for beavers, and consequent reduction in beaver pelt value in recent years, has forced many experienced trappers to abandon or shift priorities in their trap lines. In the absence of trapping or predators, beaver colonies would likely expand throughout most watersheds. Simply removing a nuisance beaver will not alleviate the problem as migrating two year-olds will find the removal sites quickly and reoccupy them.

Management of Nuisances

Most of the damage caused by beavers is the result of dam building, bank burrowing, tree cutting, or flooding. Such damage is not only economically significant, but it is also frustrating for landowners and others who utilize the affected areas. Beaver damage totals an estimated 75 to over $100 million per year nationwide.

SJ

Listed below are several recommended control methods:

1. Trapping and Dam Removal--Beaver population control is best achieved through regulated fur trapping. Once the animals are removed, the dam and construction materials should be eliminated. Trappers may be reluctant to trap outside of the regulated season (usually December through February), as pelts are not prime and their value is markedly decreased.

   Due to an overabundance of beavers throughout Connecticut, live-trapping will only postpone a nuisance problem, and/or spread the problem to the new release site. Once beavers have been trapped-out, it is usually necessary to regulate the local population level through subsequent trapping efforts.

Dam removal alone is usually not enough to discourage beavers, but repetitive destruction of the dam and lodge may deter them temporarily.

2. Water Control Devices--Beaver pipes and/or wire culvert pipes have been used with some success to control dam-induced flooding. Listed below are four of the better, simpler water level controls. The Wildlife Bureau is always open to ideas for maintenance-free mechanisms to control water levels at beaver dams.

   a) Wire mesh culvert--this basically requires creating an opening in the beaver dam and inserting a 10-foot-long by 2 1/2-foot-wide wire mesh culvert. (For more information see Roblee reference.)

   b) Corrugated, perforated, plastic drainage--this will work fine for small drainages.

   c) Culvert with wire mesh covering the end--this type of water control device requires daily inspection and possible cleaning.

   d) Culvert with board--replacing the wire mesh of suggestion c) with a piece of 1/2-inch plywood works well in controlling the water level. This device requires daily removal of the board to allow for drainage.

References for Further Reading

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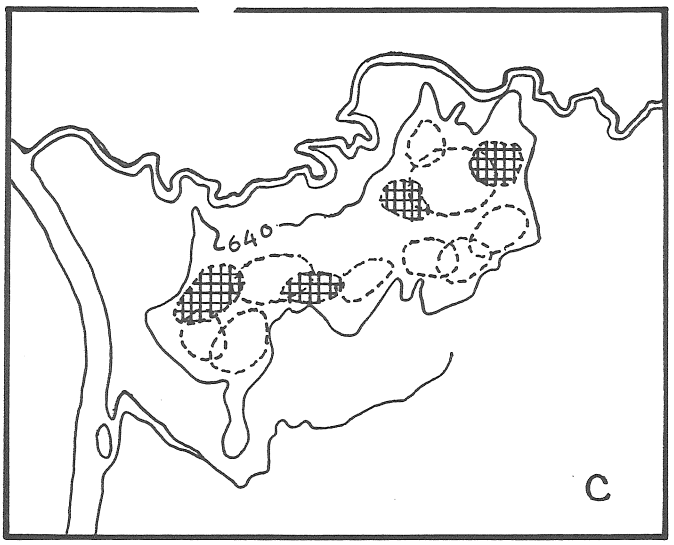
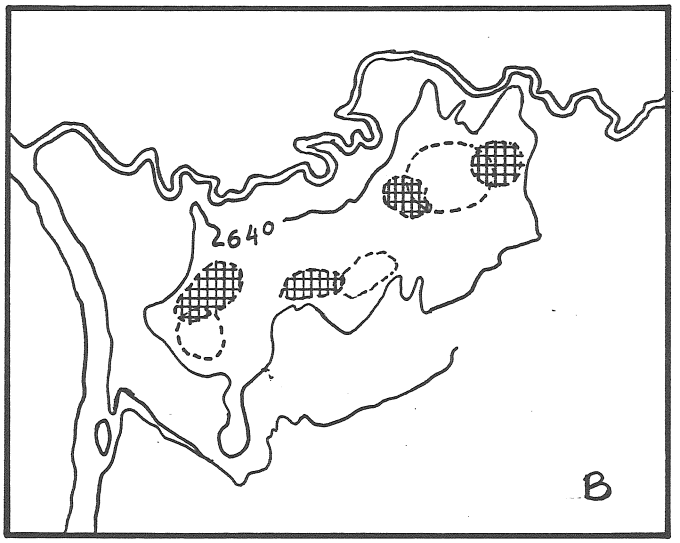
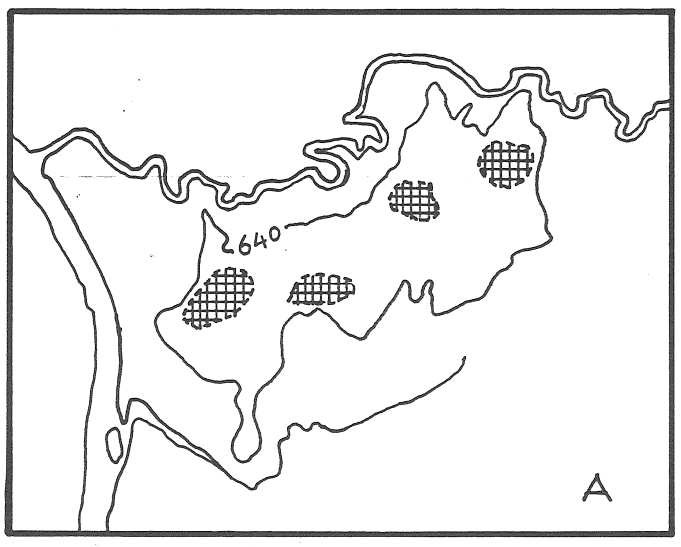
Illustration credits: Steve Jackson and Ned Smith

Appendix E: Redundant Land Use and the Formation of an Archaeological Site Complex



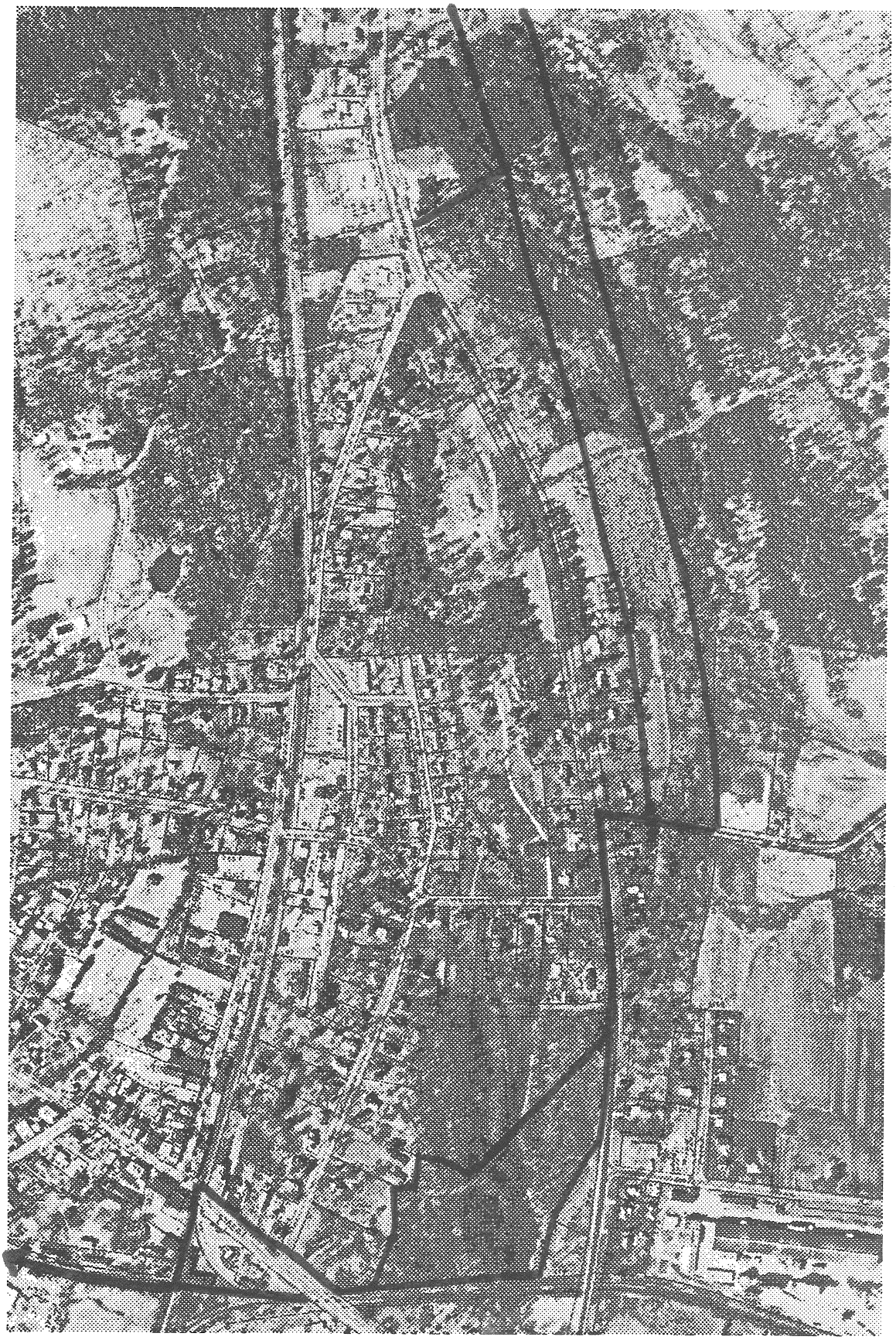




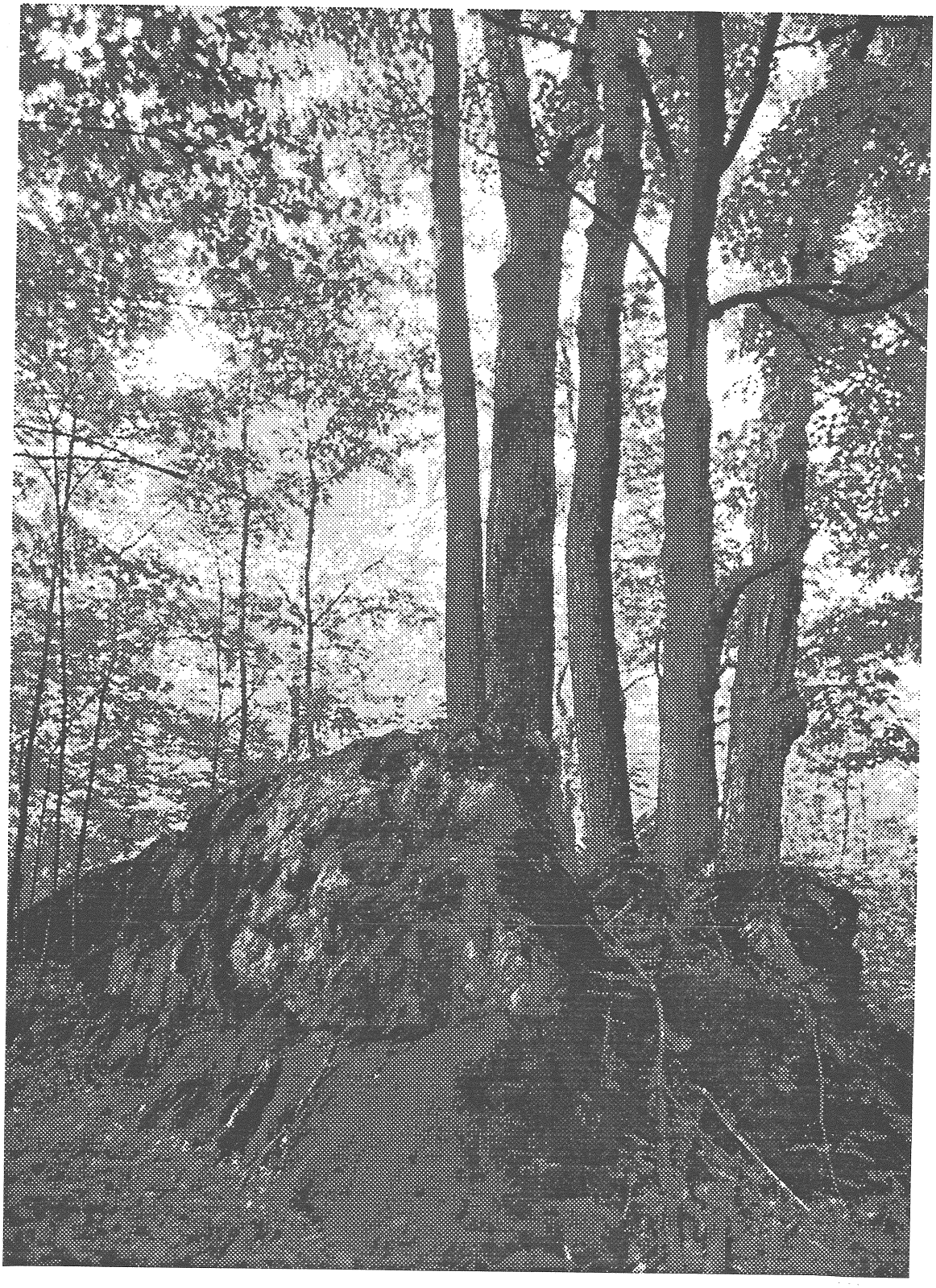
Redundant Land Use and the Formation of an Archaeological Site Complex. Suppose that landforms adjacent to wetland systems are used periodically by Native Americans. Initially each site, representing a period of use or settlement, would be relatively discrete and surrounded by unused space (A). Through time this initial pattern of separation would disappear as sites overlap (compare A with B). Eventually the archaeological record would resemble a large, continuous scatter of artifacts - a site complex (C).

Many of the landforms around North Canaan's wetlands were the focus for this sort of long term redundant use during prehistory. Consequently their archaeological records consist of extensive linear scatters of artifacts, some of which extend for a mile or more.

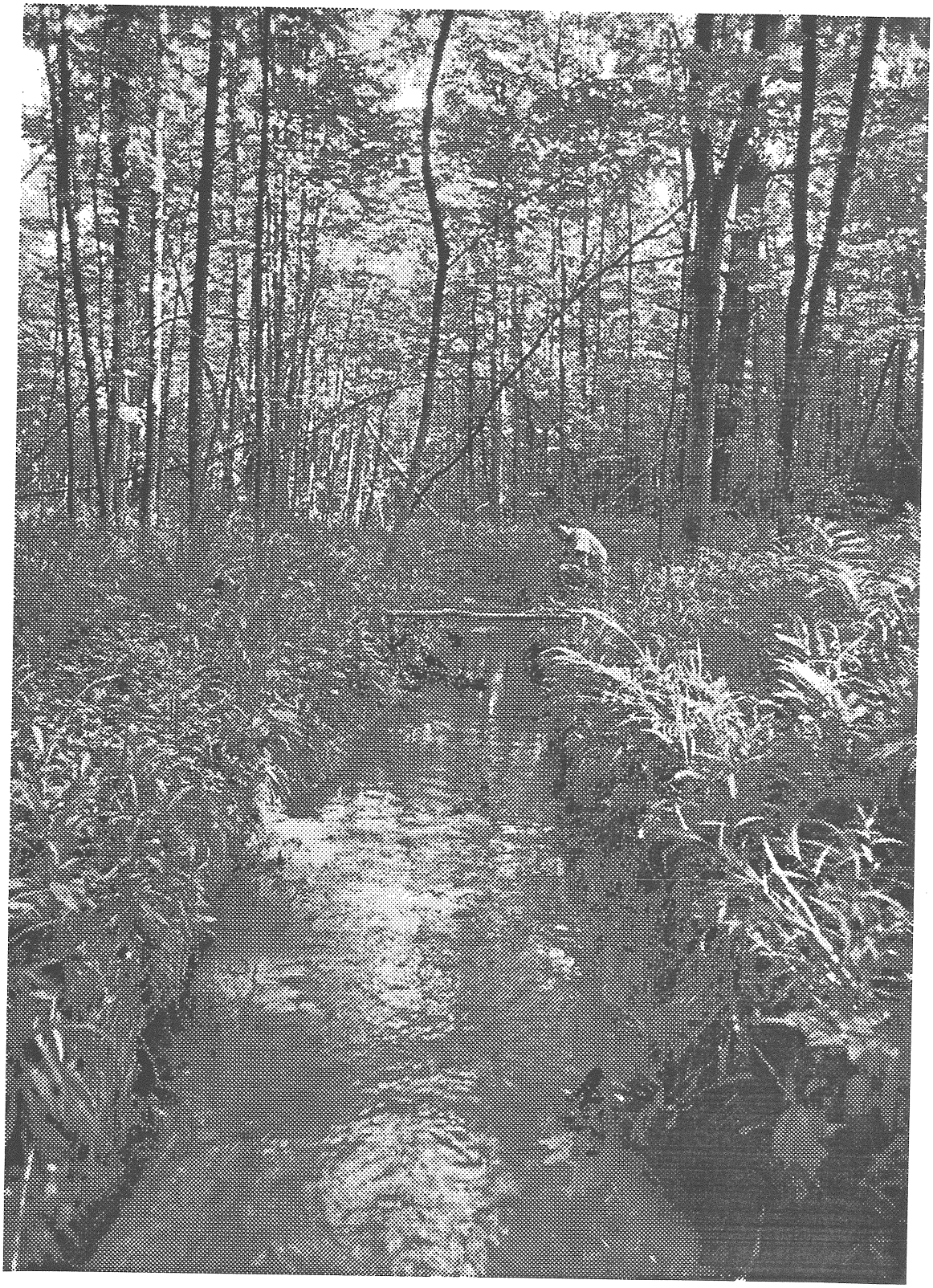
Appendix F: Photographs



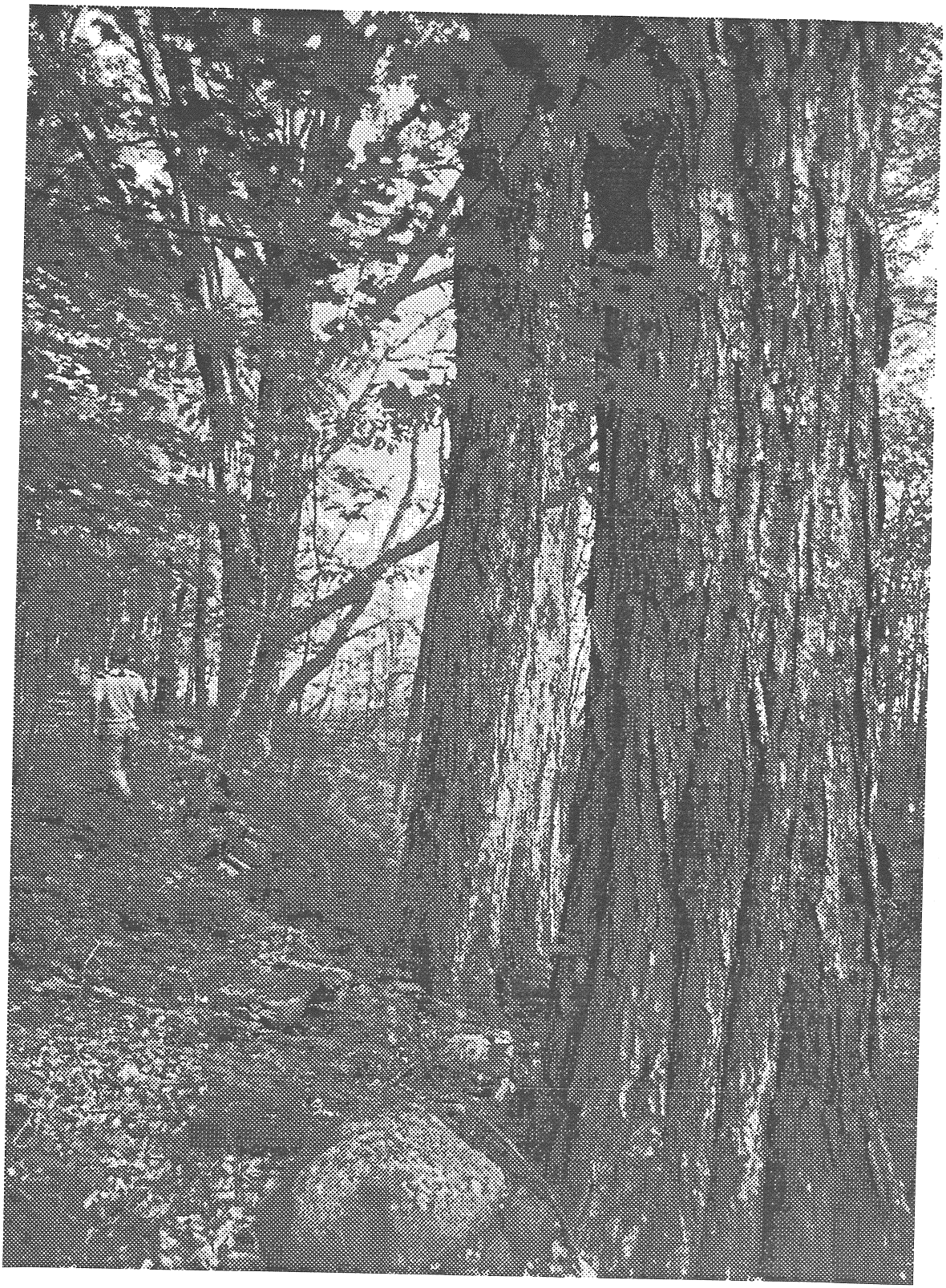
North Canaan Aerial Photograph



Small Limestone Outcrop



Stream



Old Stone Wall

Beaver Activity

Western Terminus of Railroad Right-of-way at Blackberry River

Canaan Union Depot

Railroad Right-of-way East from Route 44

NOTES

ABOUT THE TEAM

The King's Mark Environmental Review Team (ERT) is a group of environmental professionals drawn together from a variety of federal, state and regional agencies. Specialists on the Team include geologists, biologists, soil scientists, foresters, climatologists, landscape architects, recreational specialists, engineers and planners. The ERT operates with state funding under the aegis of the King's Mark Resource Conservation and Development (RC&D) Area - an 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 through 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 land owner/ 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 approximately two (2) reviews per month.

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