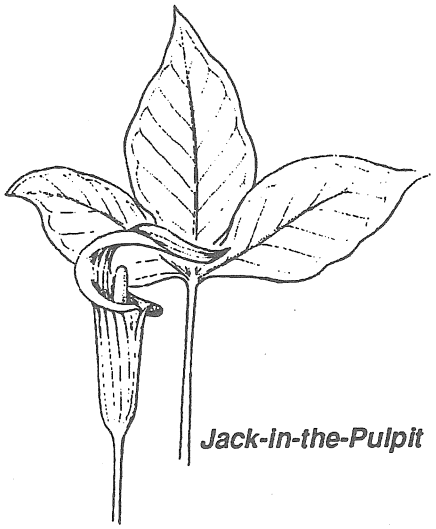
PROPOSED ROUTE 11 GREENWAY

NATURAL RESOURCE INVENTORY

SALEM, CONNECTICUT

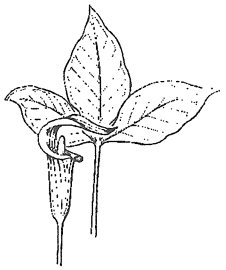


Jack-In-the-Pulpit

Eastern Connecticut Environmental Review Team Report

Eastern Connecticut
Resource Conservation and Development Area, Inc.

Proposed
Route 11 Greenway



Environmental Review Team Report

Prepared by the
Eastern Connecticut Environmental Review Team
of the Eastern Connecticut
Resource Conservation and Development Area, Inc.

for the
Route 11 Committee
Salem, Connecticut

September 1998

CT Environmental Review Teams
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Acknowledgments

This report is an outgrowth of a request from the Salem Route 11 Committee to the New London County Soil and Water Conservation District (SWCD). The SWCD referred this request to the Eastern Connecticut Resource Conservation and Development Area (RC&D) Executive Council for their consideration and approval. The request was approved and the measure reviewed by the Eastern Connecticut Environmental Review Team (ERT).

The Eastern Connecticut Environmental Review Team Coordinator, Elaine Sych, would like to thank and gratefully acknowledge the following Team members whose professionalism and expertise were invaluable to the completion of this report.

The field review took place on Thursday, May 7, 1998.

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I would also like to thank Peter Sielman, Route 11 Committee chairman, David Bingham, Route 11 Committee member, , other members of the Route 11 Committee, Lance Hansen, DEP Greenways Assistance Center, and Joel Stocker and Leslie Kane, UCONN Cooperative Extension System, for their cooperation and assistance during this environmental review.

Prior to the review day, each Team member received a summary of the proposed project with location and soils maps. During the field review Team members were given additional information. Following the review, reports from each Team member were submitted to the ERT coordinator for compilation and editing into this final report.

This report represents the Team's findings. It is not meant to compete with private consultants by providing site plans or detailed solutions to development problems. The

Team does not recommend what final action should be taken on a proposed project - all final decisions rest with the Town and State. 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 town. The results of this Team action are oriented toward the development of better environmental quality and the long term economics of land use.

The Eastern Connecticut RC&D Executive Council hopes you will find this report of value and assistance in developing a vision and plan for the greenway.

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Introduction

The Salem Route 11 Committee has requested assistance from the Eastern Connecticut Environmental Review Team (ERT) in studying the feasibility of a greenway connected to the proposed Route 11 extension. The Eastern Connecticut Resource Conservation and Development Area (RC&D) Council agreed to conduct a natural resource inventory for the Salem portion of the Route 11 project with an emphasis towards planning recommendations for a greenway associated with the highway extension.

The Route 11 project has a long history dating back to 1955 when the State Legislature directed that a planning study be conducted for a transportation corridor between Hartford and New London. In 1972 Phase I section of the Route 11 was completed as an expressway between Route 2 in Colchester and Route 82 in Salem. In the following years studies were conducted to examine the environmental and financial feasibility of extending Route 11 from its terminus at Route 82 in Salem to I-395 and I-95 in East Lyme/Waterford. The most recent study, initiated by CT DOT in 1996, is a combined MIS (major investment study)/EIS (environmental impact study) which at this time is still ongoing.

The ERT studied an approximately 1000 to 4000 foot wide swath about two and one half miles long from Route 82 in Salem southerly to Salem Turnpike in Montville (see Figure 1).

Objectives of the ERT Study

The Route 11 Committee is trying to determine what a greenway should look like if the Route 11 extension is constructed. Basic natural resource information is required for any initial planning efforts and the ERT has provide this information, as well as

recommendations for project development, highlighting areas of concern and citing the need for further study and more detailed information. Due to the ongoing MIS/EIS being conducted some Team members chose to provide fairly general comments and information. Also because no one from CT DOT was available to participate on the review many of the transportation related issues were not addressed and may only be resolved through the MIS/EIS process.

It is hoped that the information contained in this report represents a starting point for the initial planning of the Route 11 greenway.

The ERT Process

Through the efforts of the Salem Route 11 Committee this environmental review and report was prepared for the Town of Salem.

This report provides an information base and a series of recommendations and guidelines which cover the topics requested by the Committee. Team members were able to review maps, plans and supporting documentation provided by the Committee.

The review process consisted of four phases:

1. Inventory of the site's natural resources;
2. Assessment of these resources;
3. Identification of resource areas and review of plans; and
4. Presentation of education, management and land use guidelines.

The data collection phase involved both literature and field research. The field review was conducted on May 7, 1998 and some Team members made additional site visits. The emphasis of the field review was on the exchange of ideas, concerns and recommendations. Being on site allowed Team members to verify information and to identify other resources.

Once Team members had assimilated an adequate data base, they were able to analyze and interpret their findings. Individual Team members then prepared and submitted their reports to the ERT coordinator for compilation into this final ERT report.

Figure 1

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Location Map

Scale 1″ = 2000′

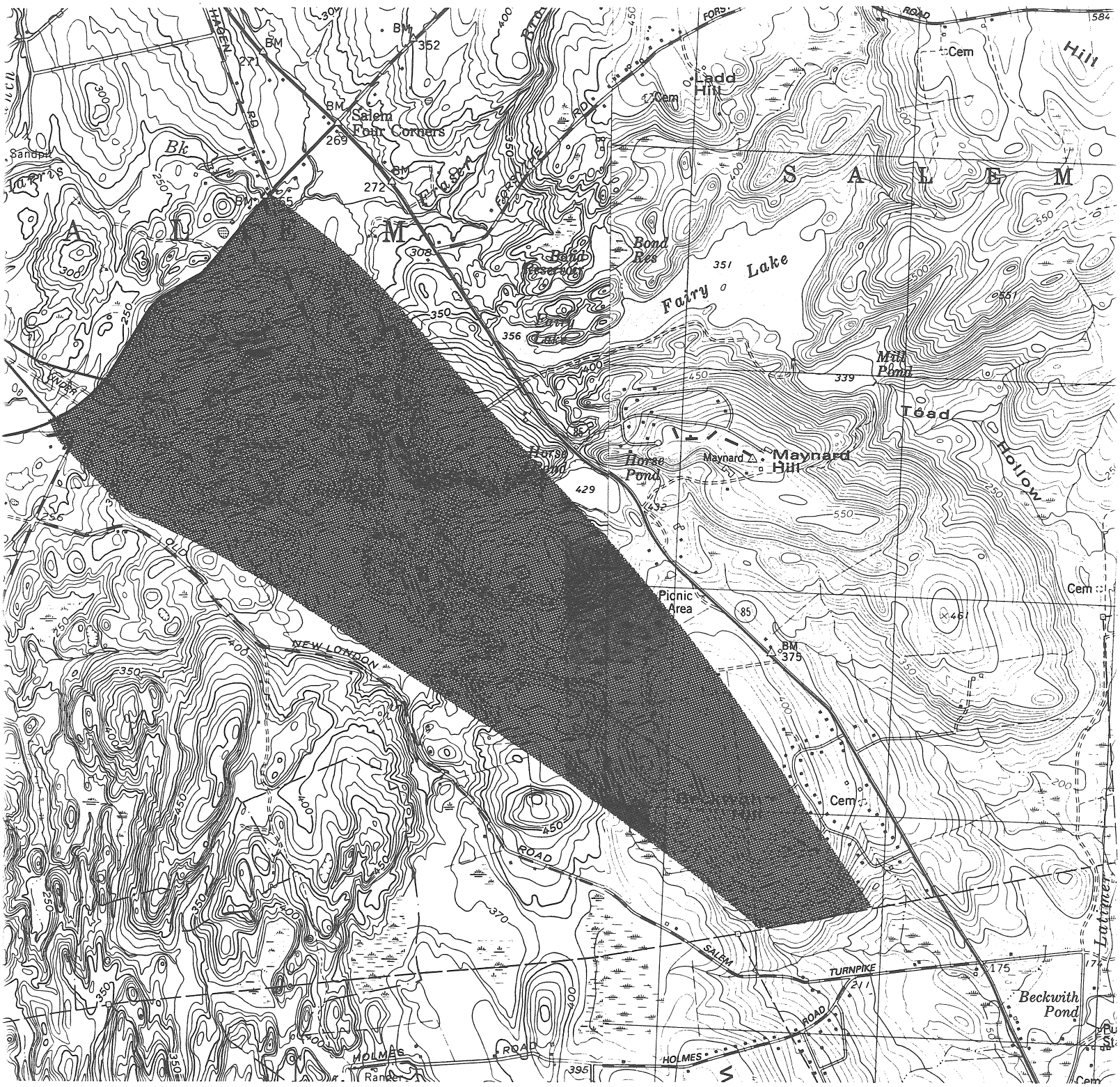
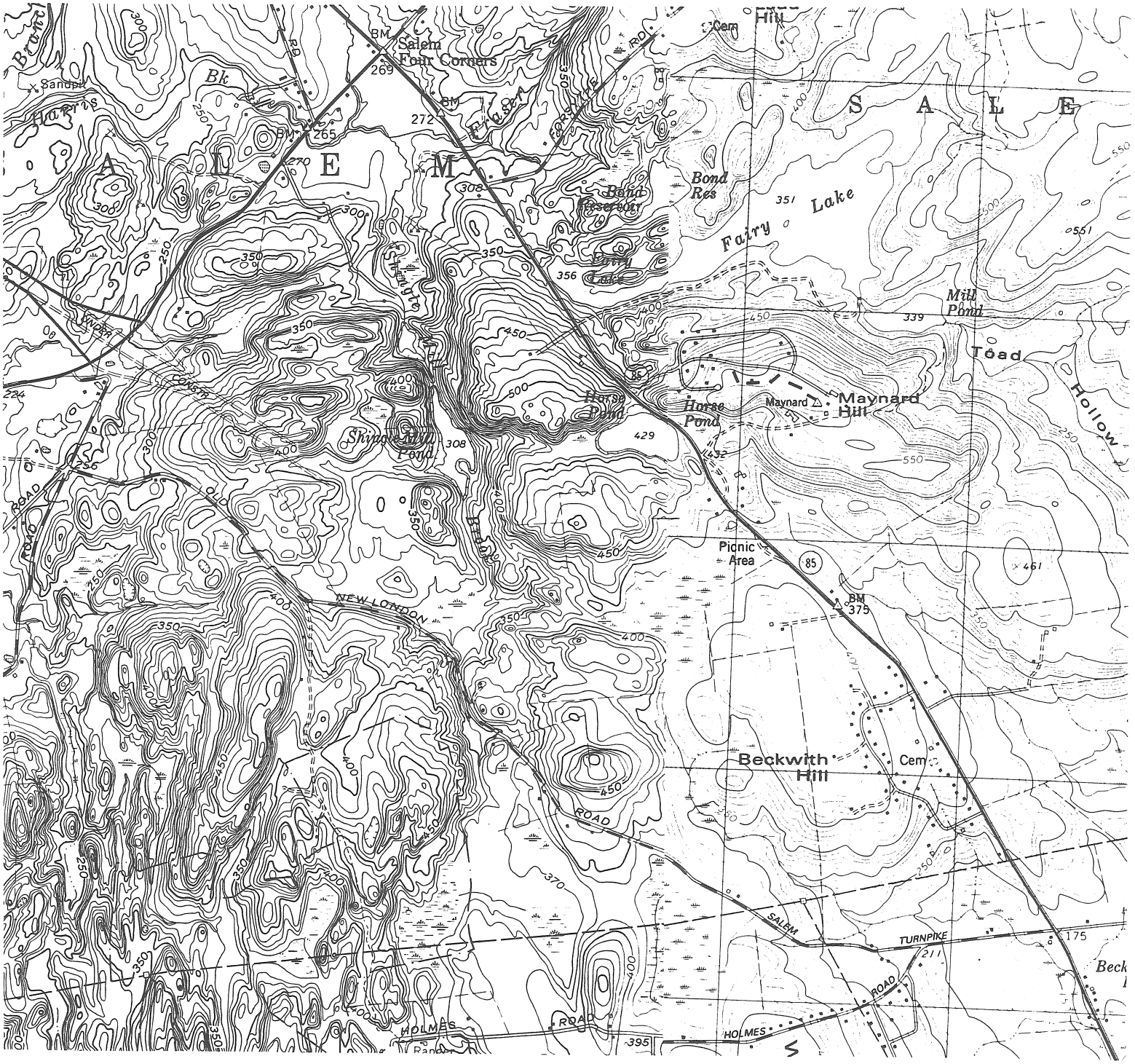


Figure 2

⇑ N

Topographic Map

Scale 1″ = 2000′



Summary

- The Eastern Connecticut Environmental Review Team (ERT) was asked to provide the Salem Route 11 Committee with a natural resource inventory and planning information so they could study the feasibility of a greenway associated with the construction of the Route 11 extension through their town.
- A greenway can mean something different to everyone as the following definition from the CT Greenways Committee illustrates:
    - *A greenway is a corridor of open space that may protect natural resources, preserve scenic landscapes and historical resources, offer recreational opportunities, and provide a place for people to walk, bicycle and move from place to place. Greenways can be located along a waterway or other defining natural feature, such as a ridgeline, or along a man-made corridor such as an unused right-of-way, abandoned town road, woods road, or historic barge canal. A greenway can be as wide as a valley or as narrow as an abandoned rail bed. A greenway can be a greenspace along a highway or around a village. Greenways can be the "missing links" that connect existing protected areas and give all people access to the outdoors.*

      Greenways can serve many purposes: Rural greenways can preserve natural habitats and wildlife migration routes, encourage restoration of valuable landscapes, and support both recreational and educational programs. In our cities and suburbs, greenways can encompass both natural and constructed features, and they area a way for communities to create convenient access to local attractions, fresh air, and green lands.

The ERT was asked to keep an open mind and to envision the "best" greenway to be associated with the Route 11 extension in Salem given the natural resources of the area.

The following bulleted items are brief summaries of the major points from each section of the report. They follow the order of the report.

- Consideration should be given to highlighting the influence of the bedrock geology on the details of topography. The trail should pass close to a prominent outcrop of massive granite gneiss near the crest of one of the ridges and an outcrop of crumbly schist in one of the valleys.
- Most of the upland soils in the study area are rated fair to good for plants, trees and woodland wildlife meaning that specific habitats can be established and maintained and in some cases improved. More difficult soils which would require more intensive management of habitats are located in close proximity to the area already cleared for Route 11.
- Soils limitations for trail development are slight but certain soil types require special planning sue to wetness, slope, depth to bedrock, large stones and slow percolation rates.
- According to the soil survey hydric (wetland) soils make up approximately 10% of the proposed greenway area and are associated with watercourses.
- Development of the hydric soils for trails is severely limited by wetness and ponding and will require special design, intensive maintenance, land reclamation or a combination of measures
- There are eight major vegetation types for mapping purposes identified in the corridor: mixed hardwood forest, softwood forest, field/open, water, residential, urban and powerlines.
- According to information from the DEP Natural Diversity Data Base there are three species of concern in the Route 11 corridor. One is a State Endangered Species, one is a State Special Concern (Historic) and the other is a Federally Endangered and State Species Concern (Historic).
- The Route 11 corridor contains a diversity of habitats that exist in a relatively unfragmented state. A diverse assemblage of wildlife species is expected to occupy

the area including many species of neotropical migrant birds that require large tracts of unfragmented forest for successful breeding and also large mammalian predators that have large home ranges.

- The proposed Route 11 extension has the potential to significantly impact wildlife within the corridor by direct loss of wetlands, alteration of watercourses, description of migration/dispersal routes, upland habitat loss and forest fragmentation.
- A vernal pool was located 1000 feet southwest of the current terminus of Route 11. True vernal pools support a wide diversity of wildlife and often rare and endangered species. Activities in the vicinity of the vernal pool (and other vernal pools if located) should be heavily scrutinized in order to avoid impacts to these highly valuable and fragile areas.
- Amphibians can be greatly affected by wetland alteration and habitat fragmentation. The uplands surrounding vernal pools are critical to their survival. Also road systems can significantly impact their populations by direct mortality and the presence of curbing, berms and drainage ditches disrupts their migration routes. Also forest canopy removal can be detrimental to vernal pool ecology by altering soil and water temperatures, evaporation rates and the import of organic material.
- A comprehensive survey should be conducted to locate all vernal pools and they should be surveyed during the spring and fall migration periods to determine which ones are used and where the major migration/dispersal routes are located. This information is important for locating the least impact highway and trail system.
- Conservation efforts should focus on wetland protection and maintaining a diversity of habitat types in large, continuous blocks.
- Cluster development should be encouraged.
- The highway should be located adjacent to existing openings (development) so that continuous forest could be retained.
- Where the highway must cross wetlands and watercourses, the use of a cantilever bridge design rather than culverts would reduce wetland loss and alteration and provide travel corridors for amphibians and other wildlife.

- A narrow, passive use recreation trail would least impact wildlife within the corridor.
- Traversing wetlands and steep slopes should be avoided. Where wetlands must be crossed, a boardwalk system should be used.
- Priority parcels for purchase and easement acquisition should be those which would protect substantial (500 feet) upland buffers around wetlands and watercourses, and would connect existing protected open spaces.
- Initiating a community outreach program to inform local residents about water quality protection, the effects of habitat fragmentation, and forest and wildlife stewardship would be beneficial.
- The proposed highway will result in the loss and alteration of wetlands which play an important role in maintaining the hydrologic regime of impacted watercourses. Of particular concern is Latimers Brook which will be impacted throughout its basin.
- The proposed greenway could potentially increase the footprint of the proposed highway project and add to the wetland and aquatic impacts along the corridor. This would especially be true if a wide paved multi-use trail was constructed. A paved multi-use trail would require extensive cuts and fills and engineered stormwater drainage. This raises the concern with erosion and sedimentation to streams and wetland habitats. A paved greenway would also increase the amount of impervious surface.
- A narrow, limited use hiking trail constructed to follow the topography and incorporating a boardwalk system through wetlands should minimally impact wetlands and stream habitats.
- The Route 11 Committee should access the need and justification for the greenway and conduct an alternatives analysis of the types of greenway to be constructed.
- The Office of State Archaeology and the Connecticut Historical Commission will be reviewing an archaeological survey conducted this summer for the corridor to

locate Native American and colonial sites. When their review is complete they will be available to discuss areas of significance, avoidance and concern.

- A strong educational component should be built into the greenway.
- Involve the community to give the greenway project strong local support. This may be done by holding special events such as talks, walks and cleanups.
- Work with the CT DOT to use part of the existing "highway" (the cleared area immediately south of Route 82) as a trail.
- Work with landowners in the corridor to obtain easements by donation or purchase regardless of the status of the highway.
- The Route 11 Committee may want to consider unhooking the greenway from the Route 11 extension project. It is believed that a corridor could be preserved regardless of the Route 11 project.
- On a land use basis, the greenway is compatible with the Salem Plan of Development, Salem Zoning Regulations and the Regional Conservation and Development Policy Guide.

Topography and Geology

Topography

As noted by Lundgren (1966) the topography in the area of the proposed Route 11 Greenway is notably "fine textured" and reflects the structure and relative readability of the bedrock units in considerable detail. A series of east-west trending ridges and valleys faithfully trace out the bedrock geology of the site. 50-foot high ridges are underlain by sheets of resistant granite gneisses of the Sterling Plutonic Group, and the intervening valleys by the more readily weathered schists and gneisses of the Plainfield Metasedimentary Group. The trend of the ridges becomes North-South west of the Greenway reflecting a major fold in the rock layers, the hinge of which follows the valley along the Old New London Road.

Geology

Bedrock Geology

The Greenway site is underlain by interleaved layers of resistant of homogeneous granite gneisses and easily eroded schists and gray feldspar gneisses. All rocks are of Proterozoic age (800 million years old) and are part of the Avalon terrane, an ancient continent which collided with North America 300 million years ago.

The schists and feldspar gneisses were originally a mixed sequence of marine shales, sandstones and calcareous muds that accumulated along the edge of a pre-Avalon continent. These rocks, which were subsequently metamorphosed to schists and gneisses, are collectively now assigned to the Plainfield Formation. On the most recent geologic map of Connecticut (Rodgers 1985) the rocks are labeled Zp and described as:

Zp Plainfield Formation

Interlayered, light gray, thin bedded quartzite; light to medium gray gneiss composed of quartz, oligoclase and biotite; medium to dark gray schist composed of quartz, oligoclase, biotite, sillimanite; and garnet; and a dark green gneiss composed of plagioclase, quartz, biotite and hornblende.

The resistant ridge-forming granite gneisses were originally igneous dikes and sills intruded into the Plainfield metasedimentary sequence. On the geologic map of Connecticut these rocks are referred to as the Sterling Plutonic group. Two distinct rock types are recognized:

Zsh - Hope Valley Alaskite Gneiss

Light pink to gray, medium to coarse grained, locally porphyritic, variably lineated and foliated, alaskitic gneiss composed of microcline, quartz, oligioclase with minor magnetite.

Zsph - Potter Hill Granite Gneiss

Light pink to gray, tan weathering, fine to medium grained, rarely porphyritic, well foliated (but not lineated) composed of microcline, quartz, oligioclase, biotite and magnetite.

The principal difference between the two rocks is the absence of biotite in the Hope Valley Gneiss (indeed Alaskite is a name for granite lacking any dark colored minerals).

During the collision of Avalon and North America, the area was highly deformed as evidenced by the major fold along the Old New London Road. Late stage faulting also occurred. Two different sets of near vertical faults, one trending E-W and the other NNW-SSE are exposed in roadcuts along the abandoned extension of Route 11. The fault gouge (ground-up rock) along these faults is up to 1 foot thick and is thoroughly altered to kaolin, a clay mineral. As these zones are very weak, they would a present serious geotechnical hazard if a more deep road cut is planned. Although thin quartz

pyrite veins parallel the NNW-SSE fault set, the weathering of this sulfide does not appear to be a major problem as the groundwaters percolating from fractures in the roadcut is unusually iron rich.

Surficial Geology

The upland areas of the site are covered by a thin discontinuous layer of glacial till, laid down by the last major continental glacier to cover the area 20,000 years ago. Till is a homogenous mixture of boulders and rock flour ground-up at the base of the moving ice sheet. As the ice sheet melted some of this material was picked up and transported by melt water. The redeposited material is much better sorted than the till and consists of separate layers of sands and gravel - the finer grained silts and clays having been carried off in suspension by the melt waters. A small area of these sands and gravels is found at the north end of Shingle Mill Brook (Stone, 1992). Although not mapped as such it is likely that similar deposits of sand and gravel underlie the post-glacial swamp deposits in the low area southeast of Shingle Mill Pond.

Recommendation

In planning the route of a trail along the proposed Greenway, some consideration should be given to highlighting the influence of the bedrock geology on the details of the topography. The trail should pass close to at least a prominent outcrop of massive granite gneiss near the crest of one of the ridges and an outcrop of crumbly schist in one of the valleys.

References

Bedrock Geology

Rodgers, John. 1985. Bedrock Geological Map of Connecticut, scale 1:250,000. Connecticut Geological and Natural History Survey.

Lundgren, Lawrence. 1966. The Bedrock Geology of the Hamburg Quadrangle. Connecticut Geological and Natural History Survey QR-19.

Goldsmith, Richard. 1967. Bedrock Geological Map of the Montville Quadrangle, New London County, Connecticut. USGS Quadrangle Map GQ-609.

Surficial Geology

Stone, Janet. 1992. Surficial Materials Map of Connecticut, Connecticut Geological and Natural History Survey.

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Soil Resources

Soils properties affect the type and amount of vegetation that can grow and, consequently, the kind of habitat available to wildlife for food and cover. Furthermore, soil properties determine the degree to which an area can be manipulated and engineered. Understanding the character of soils is, therefore, an important part in effectively and successfully developing a greenway. For this section of the report identification of the soils contained in the proposed greenway site; their suitability to be developed as trails, paths, and picnic areas; and their potential to provide habitat for plant and animal life are based on the information contained in the *Soil Survey of New London County, Connecticut*. Due to the small scale of the soil survey, it should be understood the information in the *Survey* is a guide to be used for general planning purposes, and it is not a substitute for onsite field investigations.

A range of upland soil map units are contained in the study area. Broad categories include Charlton, Canton, Merrimac, Sutton, Sudbury, Agawam, Hollis, Hinckley, Woodbridge, Paxton, and Ninigret. (Please refer to the Appendix for a detailed list of soil types). Most of the upland soils located on the site offer the potential to provide habitat rated fair to good for wild herbaceous plants, hardwood trees, and coniferous plants. Similarly, most of the soils offer the potential for fair to good habitat for woodland wildlife. The "good" rating indicates that a specific habitat can be easily established, improved, or managed while the "fair" rating suggests a habitat can be established and maintained in most places. In contrast, the Hinckley and Hollis (including Rp - Rock Outcrop) are listed in the *Survey* as providing poor habitat potential for upland and wetland vegetation as well as offering poor habitat for woodland wildlife. Intensive management of habitats would be required to overcome the difficulties encountered on these soils. These soil types, as depicted in the *Survey*, are located in the northern half of the proposed greenway area in relatively close proximity to the cleared area for the proposed Route 11 highway and near Shingle Mill Pond.

The vast majority of the upland soils identified on the site have only slight limitations on the development of paths and trails, meaning that soil properties are generally favorable to development and any limitations are minor and easily overcome. Some of the Charlton, Hollis, Canton, and Hinckley soils are described to be moderately limited for trail development by severe slopes. Additional moderate limitations cited in the *Survey* include a moderate limitation due to wetness for the Woodbridge, Ninigret, and Sutton soil types. Moderate limitations can be relieved with planning, design, or special maintenance. It should be noted the majority of upland soils also have moderate to severe limitations on the development of picnic areas. Slope, depth to bedrock, large stones, wetness, ponding, small stones, and slow percolation are cited as factors to be considered. Only two soil types (AfB - Agawam, and MyB - Merrimac) contained on the property have slight limitations for picnic area development. Both of these soil types are found bordering the Route 82 portion of the property and are relatively small.

According to the *Survey* five hydric soil map units are contained in the proposed greenway area: Sf - Scarboro Mucky fine sandy loam; Aa - Adrian and Palms muck; Rn - Ridgebury, Leicester, and Whitman extremely stony fine sandy loams; Ln - Limerick variant silt loam; and Wd - Walpole fine sandy loam. It was estimated that the hydric soil map units identified above, considering State regulated wetlands, cover approximately ten (10%) percent of the proposed greenway area. The wetland areas, as depicted in the *Survey*, appear to be spread fairly evenly throughout the proposed project area. The majority of the wetland areas are located adjacent to watercourses within the proposed project area. These watercourses include Harris and Fraser Brooks, Mill Brook, and several unidentified streams. A large Aa - Adrian and Palms muck wetland exists near the central/south-central portion of the site.

Habitat for both wetland and woodland wildlife are identified as existing in the above mentioned hydric soils, according to the *Survey*, and provide habitat that can be potentially used for both wetland and woodland wildlife. The soil map units Ln -

Limerick, Wd - Walpole, and Rn Ridgebury, as described in the *Survey*, offer the most diverse opportunity for potential habitats. Each of the three provides a good setting for wetland plants and, in general, can be considered to present a fair environment for upland vegetation.

As might be expected, the development of any of the hydric soils located in the proposed greenway area for trails, paths, or picnic areas is severely limited by wetness and ponding. Essentially these soils should be considered unfavorable for development unless special design, intensive maintenance, land reclamation, or a combination of these measures are used. For a complete and detailed description of the suitability of all soils contained in the proposed greenway for habitat potential as well as for recreational development, please refer to the Appendix.

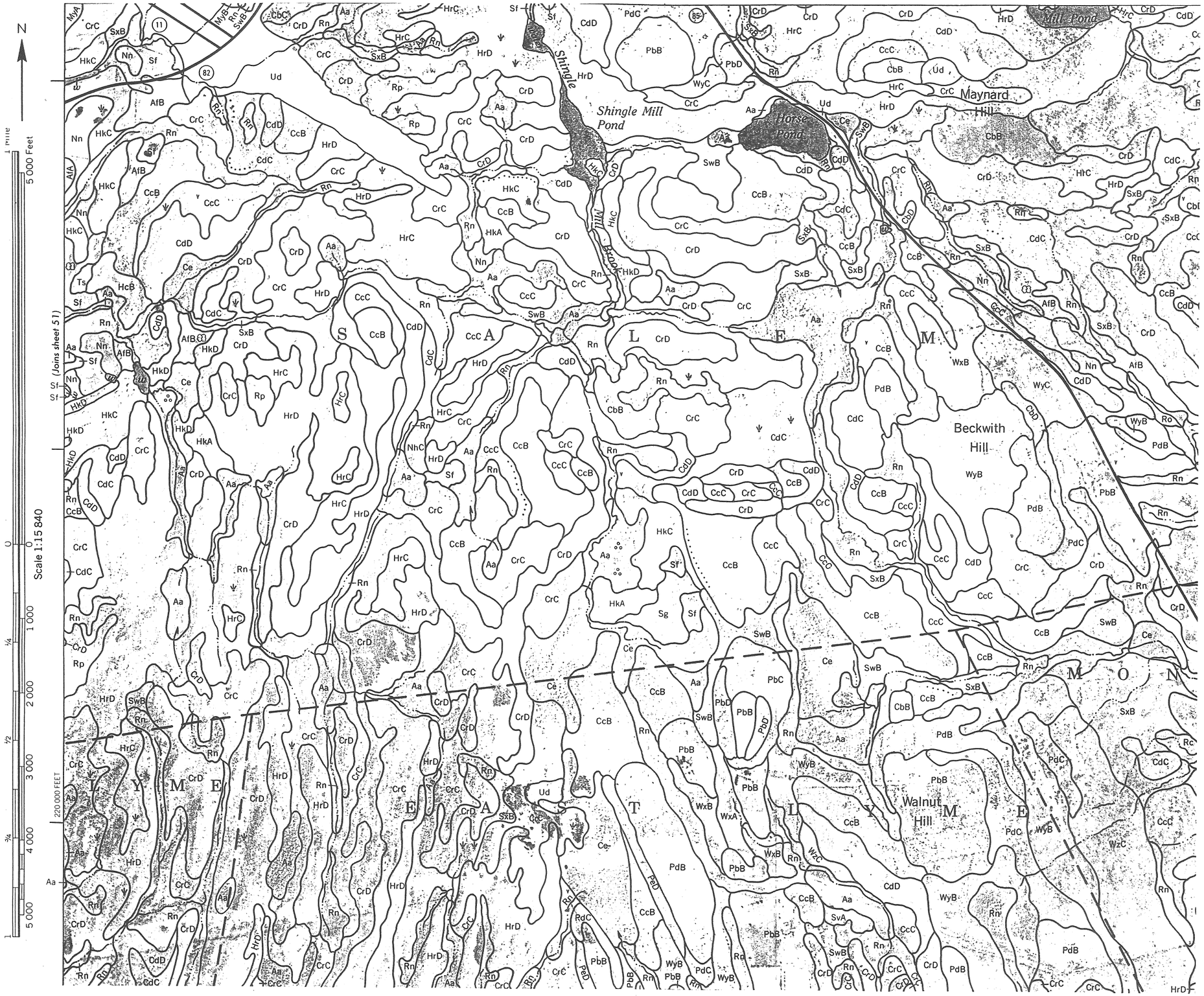


Figure 3

Soils Map

Vegetation

This section contains a description of the Eight (8) vegetation cover types identified within the proposed Route 11 corridor through the Town of Salem. No management recommendations were provided. These cover types were mapped from 1995 or later imagery taken by the Landsat satellite that is available via computer from the University of Connecticut (see Figures 4 & 5 Topographic View and Vegetation Cover Type Maps). This imagery was truthed by comparison with the State of Connecticut aerial photographs taken April 1995 and April 1996. The cover type descriptions are:

Mixed Hardwood Forest - The Mixed Hardwood Forest is one composed of 60% or more of hardwoods and not over 40% of softwoods. The hardwoods are the so-called transition hardwoods; red oak, ash, maple, basswood, birch and tulip and/or the Connecticut hardwoods; white, red, black, scarlet and chestnut oaks, hickory and/or small percentage of other species such as beech, birch and maple. The softwoods will be white pine and/or hemlock. In satellite imagery, some areas of hardwood swamp may also be included in the cover type.

Softwood Forest - The Softwood Forest is one composed of 60% or more of softwoods and not over 40% of hardwoods. The softwoods will be white pine and/or hemlock while the hardwoods are beech, birch, maple, ash, oak and basswood.

Field or Open - The Field or Open type is one not covered by tree growth. This type may be active agricultural lands such as cultivated fields, mowings or pastures, or open areas such as maintained yard space in low density residential areas. In satellite imagery, areas of old field are also included in this cover type. Old fields are abandoned farmland that is reverting to forest and are presently growing scattered small trees, largely grey birch and red cedar, and brush species such as junipers, hardhack and grey dogwood.

Water - The Water type is any area of water too deep to support the growth of tree or brush species.

Wetland - The Wetland type is composed of swamps with scattered trees primarily red maple with elm, black ash and black gum or open swamps not yet producing tree growth. These open swamps are usually a meadow of bunch grass with a scattering of alder or other shrub species.

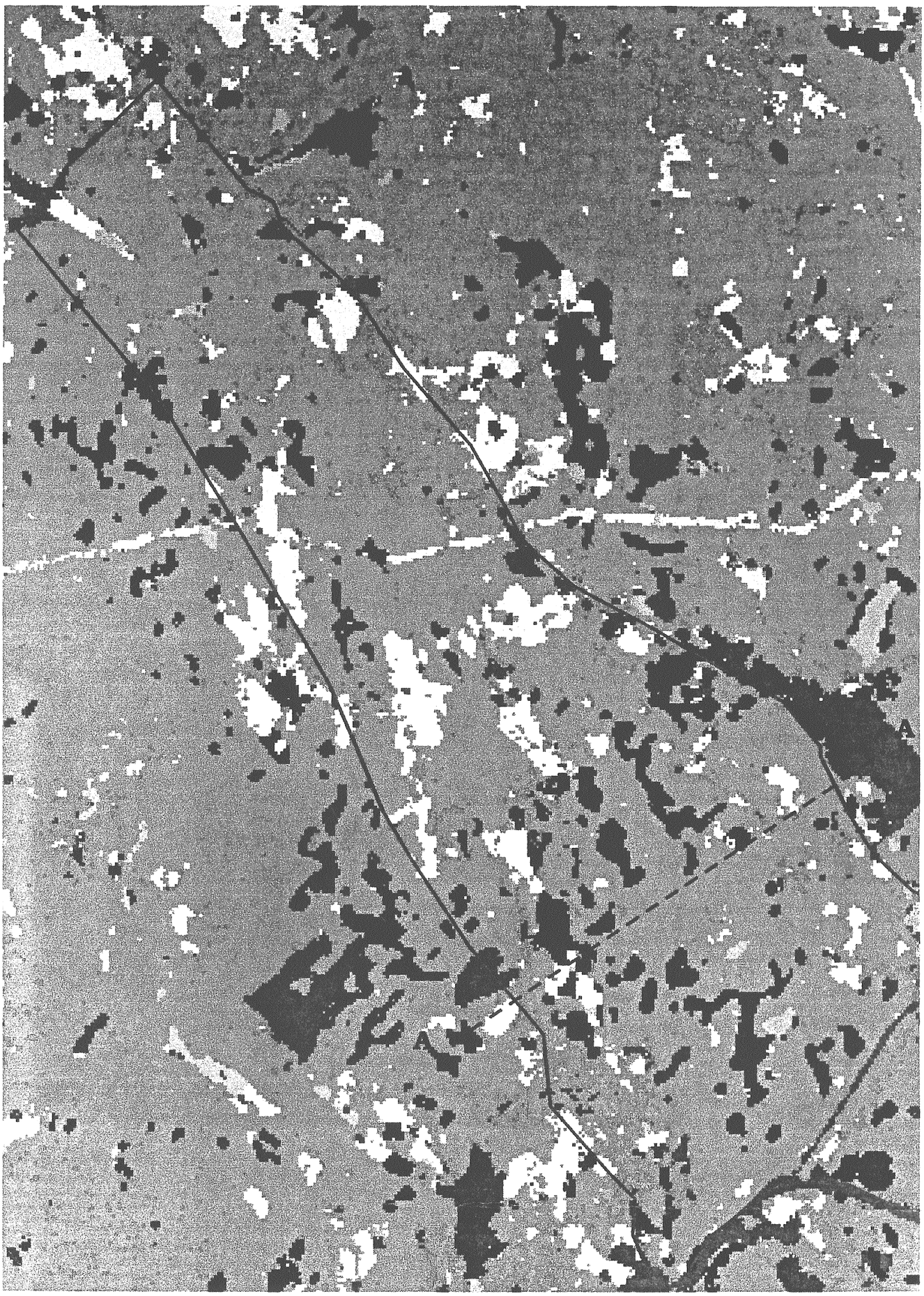
Residential - The Residential type consists of areas of low to moderate density housing with associated maintained yard space.

Urban - The Urban type is composed of commercial buildings, paved parking lots and wide multiple lane roads. Also, included can be high density residential areas with little or no maintained yard space.

Powerline - The Powerline type are the maintained utility rights-of-way. These areas are usually covered with grasses and/or low shrub growth.

Figure 4

Proposed Route 11 Corridor Vegetation Cover Types



4000 0 4000 8000 12000 16000 Feet

N

W E

S

LEGEND:

mixed hardwood forest

softwood forest

field or open

water

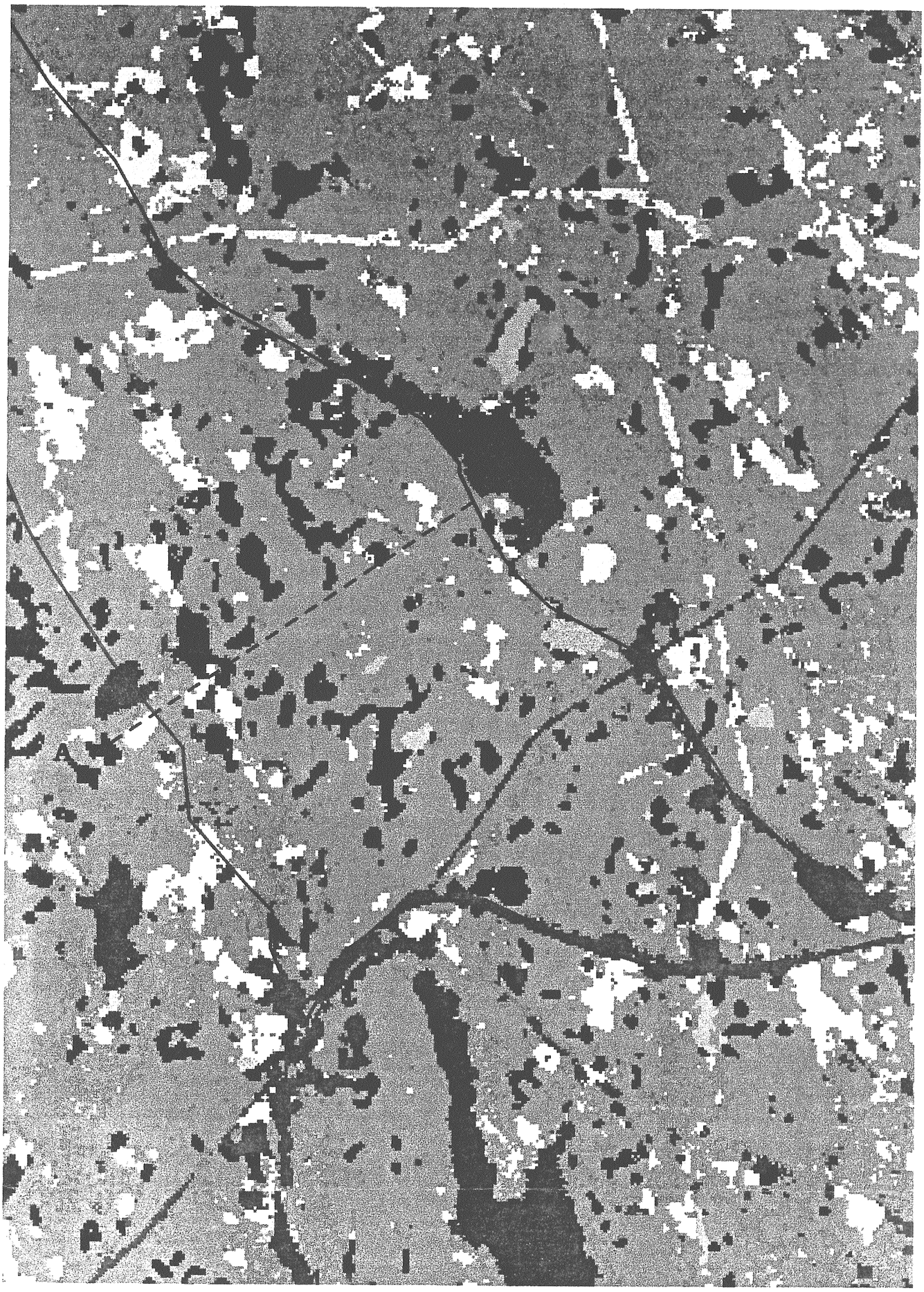
wetland

residential

urban

powerline

Proposed Route 11 Corridor
Vegetation Cover Types



4000 0 4000 8000 12000 16000 Feet

N

W E

S

LEGEND:

mixed hardwood forest

softwood forest

field or open

water

wetland

residential

urban

powerline

Figure 5

Proposed Route 11 Corridor
Topographic View

From the USGS Hamburg, Montville and Niantic Quadrangles.

Corridor location is estimated only.

Proposed Route 11 Corridor
Topographic View

From the USGS Hamburg, Montville and Niantic Quadrangles.

Corridor location is estimated only.

The Natural Diversity Data Base

The Natural Diversity Data Base maps and files regarding the Route 82/85/11 Corridor, Salem, Montville, East Lyme and Waterford have been reviewed. Three areas occur in the corridor that relate to state-listed species. These areas are indicated on Figure 6. Area #1 Horse Pond - *Xyris smalliana* (Small's yellow-eyed grass), a State Endangered Species grows along the shore of the pond. Area #2 Silver Falls - an historic report of *Schwalbea americana* (chaffseed) from a "dry gravelly bank 3 miles north of Flanders". This species is Federally Endangered and State Special Concern (historic). Area #3 Latimer Brook - this area supported a population of *Drosera filiformis* (Thread-leaf sundew) which is currently listed as State Endangered and proposed for reclassification as State Special Concern (historic).

Definitions

Endangered Species - means any native species documented by biological research and inventory to be in danger of extirpation throughout all or a significant portion of its range within the state and to have no more than five occurrences in the state, and any species determined to be an "endangered species" pursuant to the federal Endangered Species Act.

Threatened Species - means any native species documented by biological research and inventory to become an endangered species within the foreseeable future throughout all or a significant portion of its range within the state and to have no more than nine occurrences in the state, and any species determined to be a "threatened species" pursuant to the federal Endangered Species Act, except for such species determined to be endangered by the Commissioner in accordance with section 4 of this act.

Species of Special Concern - means any native plant species or any native non harvested wildlife species documented by scientific research and inventory to have a

naturally restricted range or habitat in the state, to be at a low population level, to be in such high demand by man that its unregulated taking would be detrimental to the conservation of its population or has been extirpated from the state.

Natural Diversity Data Base information includes all information regarding critical biologic resources available to us at the time of the request. This information is a compilation of data collected over the years by the Natural Resources Center's Geological and Natural History Survey and cooperating units of DEP, private conservation groups and the scientific community. This information is not necessarily the result of comprehensive or site-specific field investigations. Consultations 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. Such new information is incorporated into the Data Base as it becomes available.

Also be advised that this is a preliminary review and not a final determination. A more detailed review may be conducted as part of any subsequent environmental permit applications submitted to DEP for the proposed site.

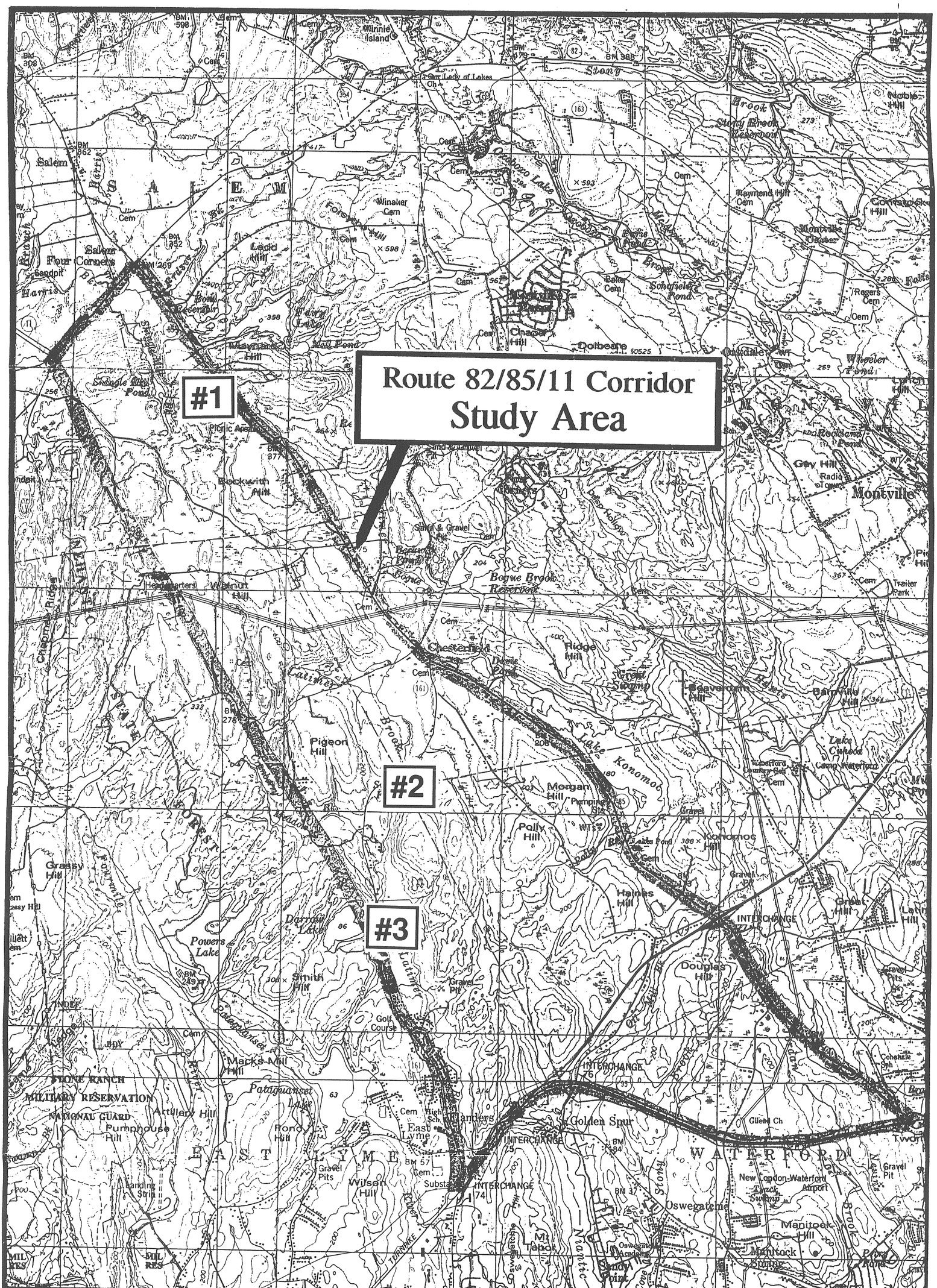


Figure 6

General Location of State Listed Species

USGS Topographic Quadrangle - New London County, Conn.

Scale = 1:50,000 (1"= 4,200±')

Wetland Comments

As stated in the ERT memorandum, the proposed greenway is to parallel the Route 11 extension, if and when this is to be undertaken. As such, the greenway alignment, configuration or components would be heavily tied to and most likely subordinate to a roadway which is not yet designed. This scenario limits the extent and detail of any discussion of wetland resource characterization and subsequent impact avoidance.

The wetlands and watercourses of the identified corridor have been described in two previous Environmental Impact Statements (1979, 1986) and will again be described within an Environmental Impact Statement currently being developed. Description of these resources will not be repeated as part of this report.

One item that does deserve mentioning however, which was not covered under the existing reports, was the existence of a vernal pool located 1000 feet southwest of the current terminus of Route 11. Vernal pools are small, shallow, circular depressions in the landscape which fill with water during periods of high spring melt water and storm-water run-off, becoming drier during the warm summer months. True vernal pools also support a large, diverse assemblage of wildlife. Much of this wildlife is solely dependent on these areas for one or more periods of their life cycle. Because of the absence of permanent water, fish do not live in these ephemeral pools, making these areas very attractive to certain animals which would normally fall prey to these carnivorous fish. Rare and endangered wildlife are commonly found in these pools. Activities in the vicinity of vernal pools should be heavily scrutinized in order to avoid impacts to these highly valuable yet fragile areas.

Wildlife Resources

The following information and guidance is based on the site walk conducted on May 7, 1998 and review of aerial photographs, topographic map and vegetation cover type map provided in the vegetation section of this ERT report.

Wildlife Resources

A list of wildlife species that potentially inhabit the proposed Route 11 corridor in Salem is provided in Table 1 based on the cover types identified in the vegetation section of this ERT report. The probability of occurrence was determined based on a review of the literature describing species habitat requirements, distributions and relative abundance in Connecticut. Natural resource professionals consulted in the development of this list were Dr. Robert Askins, Professor of Zoology at Connecticut College (birds), Jenny Dickson and Howard Kilpatrick, Wildlife Biologists with the Connecticut Department of Environmental Protection (mammals) and Hank Gruner, Director of Education at the Science Center of Connecticut (reptiles and amphibians). *Note: Those birds that only winter or migrate through Connecticut were not considered in the development of the list.*

The Route l 1 corridor contains a diversity of habitats that exist in a relatively unfragmented state. A diverse assemblage of wildlife species can be expected to occupy the corridor, including many species of neotropical migrant birds that require large tracts of continuous forest for successful breeding, e.g., hermit thrush, yellow-throated vireo and scarlet tanager, and mammalian predators that have large home ranges, such as fishers and bobcats.

Impacts

The proposed highway has the potential to significantly impact wildlife within the corridor given the direct loss of wetlands, alteration of watercourses, disruption of wildlife migration/dispersal routes, upland habitat loss and forest fragmentation. One group of species that is greatly affected by wetland alteration and habitat fragmentation are the amphibians. Because amphibians have small home ranges, relatively limited dispersal capabilities and high site fidelity, they are highly sensitive to local environmental perturbations. The uplands surrounding vernal pools and other ephemeral wetlands are an integral part of the wetland systems amphibians require for survival (M.W. Klemens, Research Scientist, Land Use Planner, Author. Wildl. Conserv. Soc., pers. commun., 1988.) For example, studies have shown that salamanders will move an average distance of 500 feet (200 - 800 feet) from their breeding pools into adjoining upland forests to forage. Road systems can significantly impact amphibian populations through direct mortality, i.e.. road kills, particularly where roads intersect dispersal and migration routes. The presence of curbing, berms and drainage ditches cause amphibians to divert from their normal migration routes. In addition, forest canopy removal can have a detrimental effect on vernal pool ecology by altering soil and water temperature, evaporation rates and the import of organic material, e.g., leaves and branches, into the pools.

It has been documented that isolated patches of forest smaller than 100 acres are characterized by a low density and diversity of forest interior breeding birds. High rates of cowbird parasitism and nest predation by small mammals such as raccoons, skunks and domestic cats have been reported where small patches of forest are surrounded by open habitat. Similarly, mammalian predators that have large home ranges tend to avoid areas where large permanent openings exist.

Recommendations & Opportunities For Protection

Conservation efforts should focus on wetland protection and maintaining a diversity of habitat types in large, continuous blocks. To develop the most valuable greenway for wildlife, open corridors, e.g., powerlines, roads and residential development, should be consolidated. Clustered development should be encouraged to reduce the creation of reticulate road systems. Locating the highway adjacent to existing openings would not only retain as much continuous forest as possible to benefit forest interior breeding birds, but it also may increase the continuous acreage of early successional habitat for shrubland birds, species which are experiencing severe and consistent population declines in eastern North America.

Given that wetland impacts will occur with the development of the highway, a comprehensive survey should be conducted to identify where vernal pools exist within the corridor. The pools and wetlands should be surveyed for amphibians during the spring and fall migration periods to determine which ones are used and where the major migration/dispersal routes are located. This information would be important to locating the area of least impact for the proposed highway and trail system. Maintaining the connections between the pools, the surrounding uplands and the larger wetland complex is of critical importance. Slope, soils, forest cover, distance from other pools, proximity to roads and individual species home ranges will need to be considered to determine appropriate buffer locations and sizes to protect amphibian populations in the area. Where the highway must cross the wetlands and watercourses, the use of a cantilever bridge design rather than culverts would reduce wetland loss and alteration and provide travel corridors for amphibians and other wildlife.

A narrow, passive-use recreation trail, one that would require minimal vegetation removal, maintain forest canopy closure and prohibit the use of motorized vehicles, would least impact wildlife within the corridor. Traversing wetlands and steep slopes should be avoided whenever possible to minimize erosion and sedimentation problems. Where wetlands must be crossed, a boardwalk system should be used. If a

paved, multi-purpose trail is established and curbing is necessary, Cape Cod style curbing is recommended.

The utility company should be encouraged to use selective basal spraying of herbicides to remove trees and maintain shrubland and shrub-grass habitats along the powerline right-of-way rather than using traditional techniques, i.e., mowing or broadcast spraying. Studies in Connecticut, Pennsylvania and Maryland have shown that many of the shrubland species that are experiencing significant population declines, e.g., chestnut-sided warbler, prairie warbler and field sparrow, have responded positively to this practice.

The Route 11 Committee should incorporate the natural resource inventory information and protection strategies of the Eightmile River Watershed Project and Connecticut Greenway initiative into their planning.

Priority parcels for purchase and easement acquisition should be those which would protect substantial (500 foot) upland buffers around the wetlands and watercourses and that would connect existing protected open spaces, e.g., Nehantic State Forest and Shingle Mill Pond.

Initiating a community outreach program which would inform local residents about water quality protection, the effects of habitat fragmentation, and forest and wildlife stewardship would be beneficial. This effort could be coordinated through the University of Connecticut Cooperative Extension System's *Nonpoint Education for Municipal Officials* (NEMO) Project and Forest Stewardship Program. For more information, contact the Haddam Extension Office: (860) 345-4511.

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Table 1

Wildlife Species Potentially Inhabiting the Proposed Route 11 Greenway Salem, CT (1998)

	COVER TYPE								
COMMON NAME (Status[A])	**MH**	**SW**	**F/O**	**W**	**WL**	**R**	**U**	**P**	*
REPTILES									
Common snapping turtle				X	X				H
Painted turtle				X	X				H
Spotted turtle					X				M-H
Wood turtle (SC)	X		X		X			X	H
Eastern box turtle (SC)	X		X		X			X	M-H
Stinkpot				X					H
Eastern worm snake	X		X					X	H
Northern black racer	X		X					X	H
Northern ringneck snake	X							X	H
Black rat snake	X		X					X	M
Eastern hognose snake (SC)	X	X	X		X			X	M
Eastern milk snake	X	X	X		X			X	H
Northern water snake				X	X				H
Eastern smooth green snake			X		X			X	M
Northern brown snake	X		X			X	X	X	H
Northern redbelly snake	X	X			X				L
Eastern ribbon snake (SC)					X			X	M
Eastern garter snake	X		X		X	X		X	H
Northern copperhead	X				X			X	L
AMPHIBIANS									
Blue-spotted salamander (SC)	X				X				L
Spotted salamander	X				X				H
Marbled salamander	X				X			X	H
Northern dusky salamander	X				X				H
Northern two-lined salamander	X				X				H

(TABLE 1 CONT'D.)

COMMON NAME (Status[A])	MH	SW	F/O	W	WL	R	U	P	*
Northern spring salamander (T)	X				X				L
Four-toed salamander	X				X				H
Redback salamander	X	X			X	X			H
Red-spotted newt	X			X	X				H
Eastern american toad	X		X	X	X	X		X	H
Fowler's toad	X	X	X		X	X		X	M
Northern spring peeper	X		X	X	X	X		X	H
Gray treefrog	X			X	X				H
Bullfrog				X	X				H
Green frog				X	X				H
Pickerel frog	X		X	X	X			X	H
Northern leopard frog (SC)					X				L
Wood frog	X	X			X				H
Eastern spadefoot (E)	X				X				L
MAMMALS									
Opposum	X				X	X			H
Masked shrew	X	X			X				M
Water shrew		X			X				L
Smoky shrew	X	X			X				L
Short-tailed shrew	X				X				H
Hairy-tailed mole	X		X						L
Eastern mole			X			X			H
Star-nosed mole	X				X				H
Little brown myotis	X				X	X	X	X	H
Northern long-eared bat	X					X		X	M
Silver-haired bat (SC)	X					X		X	L
Eastern pipistrelle	X				X	X		X	L-M

(TABLE 1 CONT'D.)

COMMON NAME (Status[A])	MH	SW	F/O	W	WL	R	U	P	*
Big brown bat	X					X	X	X	H
Red bat (SC)	X			X		X	X	X	L
Hoary bat (SC)	X	X				X		X	L
Eastern cottontail			X		X	X			H
New England cottontail		X	X						L
Snowshoe hare	X	X			X				L
European hare			X						L
Eastern chipmunk	X					X			H
Woodchuck			X			X			H
Gray squirrel	X					X	X		H
Red squirrel	X	X				X			H
Southern flying squirrel	X								H
Northern flying squirrel	X								L
Beaver	X			X	X				H
Deer mouse	X					X			L
White-footed mouse	X	X	X		X	X			H
Southern red-backed vole	X	X			X				L
Meadow vole			X	X	X				H
Woodland vole	X		X		X				H
Muskrat				X	X				H
Southern bog lemming (SC)	X		X		X				L
Norway rat						X	X		M
House mouse			X			X			L
Meadow jumping mouse	X				X				H
Woodland jumping mouse	X	X		X	X				L
Porcupine	X	X							L
Coyote	X		X			X			H

(TABLE 1 CONT'D.)

COMMON NAME (Status[A])	MH	SW	F/O	W	WL	R	U	P	*
Red fox	X		X			X			H
Gray fox	X		X		X				M
Black bear	X	X			X				T
Raccoon	X				X	X			H
Fisher	X	X			X				L-M
Short-tailed weasel	X		X		X				H
Long-tailed weasel	X		X		X				M
Mink					X				H
Striped skunk	X		X			X			H
River otter	X			X	X				H
Bobcat	X	X	X						M
White-tailed deer	X	X	X		X	X			H
BIRDS (BREEDING)									
Pied-billed grebe **(E)**				X					L
American bittern **(E)**					X				L
Least bittern **(T)**					X				L
Great blue heron				X	X				H
Green-backed heron				X	X				M
Canada goose			X	X		X	X		M
Wood duck	X				X				H
American black duck			X		X				M
Mallard			X	X	X	X	X		H
Ring-necked duck				X					L
Hooded merganser				X	X				L
Turkey vulture			X			X		X	H
Sharp-shinned hawk **(E)**	X	X	X					X	L-M
Cooper's hawk **(T)**	X	X	X					X	M-H

(TABLE 1 CONT'D.)

COMMON NAME (Status[A])	MH	SW	F/O	W	WL	R	U	P	*
Northern goshawk	X	X			X				M
Red-shouldered hawk (SC)	X	X			X				M-H
Broad-winged hawk	X				X				H
Red-tailed hawk	X	X	X					X	H
American kestrel (SC)			X			X		X	L
Ring-necked pheasant			X			X		X	L-M
Ruffed grouse	X	X	X						H
Eastern wild turkey	X	X	X		X	X		X	H
Northern bobwhite			X					X	L-M
Killdeer			X			X			L-M
Spotted sandpiper			X	X					L
American woodcock	X		X		X	X			H
Rock dove			X			X	X		L-M
Mourning dove			X			X	X		H
Black-billed cuckoo			X						L-M
Yellow-billed cuckoo			X						L-M
Common barn owl (E)			X		X				L
Eastern screech owl	X		X			X	X		L
Great horned owl	X	X	X			X		X	H
Barred owl	X	X			X				H
Long-eared owl (E)		X	X		X				L
Northern saw-whet owl (SC)	X	X			X				L
Common nighthawk (T)			X				X		L
Whip-poor-will (SC)			X				X		L
Chimney swift			X			X			L
Ruby-throated hummingbird	X	X	X			X			H
Belted kingfisher				X	X				H

(TABLE 1 CONT'D.)

COMMON NAME (Status[A])	MH	SW	F/O	W	WL	R	U	P	*
Red-headed woodpecker (E)			X		X				L
Red-bellied woodpecker	X					X			H
Downy woodpecker	X		X		X	X			H
Hairy woodpecker	X		X		X	X			H
Northern flicker	X		X			X	X		H
Pileated woodpecker	X					X			H
Olive-sided flycatcher (SC)		X							L
Eastern wood-pewee	X					X			H
Acadian flycatcher	X				X				M
Alder flycatcher (SC)					X				L
Willow flycatcher					X				M
Least flycatcher			X	X	X				M
Eastern phoebe	X				X	X			H
Great-crested flycatcher	X	X				X			H
Eastern kingbird			X	X	X	X			H
Horned lark (T)			X						L
Purple martin (SC)			X	X		X			L
Tree swallow			X	X	X				M
Northern rough-winged swallow				X		X			L
Bank swallow			X			X			M
Cliff swallow			X			X			L
Barn swallow			X	X		X			H
Blue jay			X			X	X		H
American crow	X	X	X			X			H
Fish crow	X	X							L
Common raven (SC)	X	X							L
Black-capped chickadee	X	X				X			H

(TABLE 1 CONT'D.)

COMMON NAME (Status[A])	MH	SW	F/O	W	WL	R	U	P	*
Tufted titmouse	X					X			H
Red-breasted nuthatch		X							H
White-breasted nuthatch	X	X				X			H
Brown creeper	X	X							M
Carolina wren			X		X	X		X	M
House wren	X	X				X			H
Winter wren		X							M
Gray catbird	X	X	X		X	X			H
Northern mockingbird			X			X	X		H
Brown thrasher (SC)			X			X		X	L
Eastern bluebird			X			X		X	M
Veery	X				X				H
Hermit thrush	X	X							M
Wood thrush	X				X				H
American robin	X	X	X			X	X		H
Blue-gray gnatcatcher	X		X	X	X				M
Cedar waxwing			X						M
European starling			X			X	X		H
White-eyed vireo			X		X			X	H
Solitary vireo	X	X							L
Yellow-throated vireo	X								M
Warbling vireo	X				X				L
Red-eyed vireo	X								H
Blue-winged warbler			X		X			X	H
Golden-winged warbler			X					X	L
Yellow warbler	X				X	X			H
Chestnut-sided warbler			X						H

(TABLE 1 CONT'D.)

COMMON NAME (Status[A])	MH	SW	F/O	W	WL	R	U	P	*
Yellow-rumped warbler		X							L
Black-throated green warbler	X	X							H
Blackburnian warbler		X							L
Pine warbler		X							H
Prairie warbler			X					X	M
Cerulean warbler	X				X				M
Black-and-white warbler	X	X							H
American redstart	X		X						H
Worm-eating warbler	X								M
Ovenbird	X	X							H
Northern waterthrush		X			X				L
Louisiana waterthrush					X				M
Kentucky warbler	X		X		X				L
Common yellowthroat			X			X			H
Hooded warbler	X				X				M
Canada warbler	X				X				M
Yellow-breasted chat **(E)**			X						L
Scarlet tanager	X	X							H
Northern cardinal			X			X		X	H
Rose-breasted grosbeak	X		X						M
Indigo bunting			X			X		X	M
Rufous-sided towhee	X		X		X				H
Chipping sparrow		X	X			X			H
Field sparrow			X					X	M
Vesper sparrow **(E)**			X						L
Savannah sparrow **(SC)**			X						L
Grasshopper sparrow			X						L

(TABLE 1 CONT'D.)

COMMON NAME (Status[A])	MH	SW	F/O	W	WL	R	U	P	*
Song sparrow			X	X		X		X	H
Swamp sparrow					X				M
Bobolink			X						L
Red-winged blackbird			X		X				H
Eastern meadowlark (SC)			X						L
Common grackle		X	X	X	X	X			H
Brown-headed cowbird	X		X			X			H
Orchard oriole			X						L
Northern oriole			X			X			H
Purple finch		X							L
House finch			X			X	X		H
American goldfinch			X		X	X			H
House sparrow						X	X		H

Key:

[A] E = Endangered, T = Threatened, SC = Special Concern

Covertypes
MH = Mixed hardwood
SW = Softwood
F/O = Field or Open
W = Water
WL = Wetland[B]
R = Residential
U = Urban
P = Powerline

* Probability of Occurence
H = High
M = Medium
L = Low
T = Transient

[B] Watercourses and associated riparian zones are included in the Wetland (WL) cover type.

Fisheries Resources

Fisheries

The proposed greenway would cross two watercourses in the Town of Salem, Shingle Mill Brook and an unnamed tributary to Latimers Brook. Shingle Mill Brook is expected to support a warmwater fish community due to the lack of an overhead canopy and the presence of Shingle Mill Pond, a warmwater impoundment. Typical assemblage is expected to be bluegill sunfish, pumpkinseed sunfish, chain pickerel, white sucker and brown bullhead. The specific fish community of the unnamed tributary to Latimers Brook is unknown and cannot be determined without conducting a thorough stream sampling survey. It is expected that some of the tributaries to Latimers Brook may support fish populations on a seasonal basis, even if sections of the streams dry-up in the summer. For example, native brook trout can utilize these types of streams for spawning and egg incubation requirements during the fall and winter. After hatching in the early spring, juvenile trout then disperse to downstream areas which maintain perennial flows and more suitable fish habitat.

Impacts

The proposed highway will result in the loss and alteration of wetlands which play an important role in maintaining the hydrological regime of impacted watercourses. Of particular concern is Latimers Brook, a stream that will be impacted throughout its entire basin. Surface waters are already diverted from this stream for public water supply purposes resulting in a net loss of instream habitat. Further instream flow reduction may occur since the highway will trasverse through headwater wetlands of Latimers Brook and numerous wetland complexes that are tributary to Latimers Brook which are responsible for low flow augmentation.

The proposed greenway-trail system could potentially increase the footprint width of the proposed highway and hence add to wetland and aquatic resource impacts along the corridor. This would especially be the case if a wide, paved greenway was constructed such as the system which has been constructed adjacent to Interstates, I-84 and I-384. This type of multi-use greenway would require extensive land cuts and fills and would have to be engineered to accommodate stormwater drainage. As with any construction project, there is a potential for erosion and sedimentation of stream and wetland habitats. In addition, the creation of a paved greenway would also increase the amount of impervious surfaces in the corridor. Conversely, the development of a narrow and limited use hiking trail that followed the topography and incorporated a boardwalk system through wetlands would result only in the clearing of a minimal amount of vegetation and hence minimally impact wetlands and stream habitats.

Recommendations

1. The Route 11 Greenway Committee should assess the need and justification for the greenway and conduct a thorough alternatives analysis of this project especially if a full-build paved greenway is sought.

2. To avoid direct and secondary impacts, any greenway system should be designed such that it avoids traversing through wetland and stream habitats as much as possible. Any direct stream crossing will have to consider fish passage requirements in the area of the crossing. Crossing stream habitat with the use of culverts will result in the direct loss of instream habitat and may impede fish passage if not properly installed. The greenway should "clear span" watercourses with the installation of bridges and not culverts to avoid habitat loss and fish passage problems.

Archaeological Resources

The Connecticut Historical Commission (CHC) had recommended an archaeological survey for the entire Route 11 corridor. The Connecticut Department of Environmental Protection conducted that survey summer 1998. Archaeologists from the Public Archaeology Survey Team worked in the corridor testing the area for Native American as well as Colonial sites. Upon completion of that survey the Office of State Archaeology (OSA) and the CHC will have an excellent review of the project area and could advise the Salem Greenway Committee as to what areas should be avoided or where there is no concern. Right now their data base is relatively incomplete but by the end of summer/early fall they will know very well where archaeological and historic resources are located. Some of those resources will have to be mitigated because of the impact of the highway. Others might be avoided and as a result the Corridor Committee might want to consider those sites in its Greenway plans.

The Office of State Archaeology and the Connecticut Historical Commission will be reviewing the Route 11 corridor as it proceeds this year, and would be happy to notify the Greenway Committee as to those findings.

DEP Greenways Assistance Center Comments

1. The Greenway seems to be a two-pronged project; one part nature/hiking trail and resource protection corridor, one part bike way. The two functions seem to require very different approaches. In each case, it is necessary to know the proposed width and surfacing materials for the path. Bikeways tend to become "grayways" needing asphalt or stone dust surface and site preparation similar to a small road. Even a footpath will require several wetlands crossings.

2. In the event that a hiking trail is developed, it should be clearly marked and cut. As the Team discovered, it is easy to get turned around in the woods without a clearly marked trail.

3. A strong educational component should be built into the greenway. The rock cuts at the beginning of the trail offer an excellent opportunity to point out some interesting geological features, and there are all kinds of plants and animals for people to look for. The Greenways Assistance Center is in the process of developing a prototype guide on the Airline Trail, and would be happy to share their thoughts with the Route 11 Committee.

4. It is suggested that the group work with DOT to utilize the part of the trail that has already been developed (the first mile or so). Invite the community to get interested and involved in the project. Hold a "Greenway Day" with talks and activities; encourage local groups to help clean up the trash in the area. With or without the highway, the project must have strong local support if it is going to become a reality.

5. The committee should continue to work with the landowners in the corridor regardless of the status of the road. They do not have to buy entire parcels. Easements can be bought or donated, even if the land is developed. The Land Trust Service Bureau

at The Nature Conservancy may be able to give some assistance with that. In addition, the CT Forest and Parks Association may have information on woodland trail design and management. The town of Salem (and all others) are strongly encouraged to prepare their local plans of conservation and development, especially the greenways portions of those plans. With grant monies in the pipeline this year, towns that have good plans for local land acquisition will probably stand a better chance at funding.

The Greenways Assistance Center Team member whole-heartedly supports the concept of this project, although there are a lot of questions to be answered. In addition, the group may want to consider unhooking the greenway from the road. It is believed that enough local support could be generated that a corridor can be preserved regardless of the status of Route 11. The DEP Land Acquisition Division will be contacted about this project to see if it fits in with their goals. The greenway could easily be linked with Nehantic State Forest to enhance regional land protection efforts. Please feel free to contact Leslie Lewis at (860) 424-3578, if you need any further information.

Land Use and Zoning

The proposed general corridor for Route 11 in Salem extends southeast from its current terminus at Route 82 through south-central Salem to the Montville town line. Approximately two-thirds of a mile of the corridor immediately south of Route 82 has had road preparation work performed consisting of such items as blasting-rock removal, subbase installation, and installation of storm drainage facilities. The corridor consists of undeveloped, forested land in Salem. On the westerly side of the corridor, a portion of Nehantic State forest is located west of Old New London Road, and two smaller parcels of State land are located on the easterly side of the corridor in the vicinity of Shingle Mill Pond and Horse Pond. Low density residential uses are located along Old New London Road and Fawn Run on the westerly side of the corridor and along Beckwith Hill Drive on the easterly side of the corridor. Older, moderate density residential uses are located on the easterly side of the corridor along Skyline Drive, immediately north of the Montville town line.

The Salem Plan of Development recommends the corridor area for rural residential and open space uses. This open space category shows a connection across the Route 11 corridor from the Nehantic State Forest area on the west to the Shingle Mill Pond area on the east. The integrity of this connection for open space, recreation, and wildlife purposes could be maintained in future road construction activities by use of a bridge, rather than culvert, over the stream wetland area that drains northeasterly to Shingle Mill Pond.

The proposed corridor is zoned Rural Zone B, Salem's lowest density residential zone with three acre lot sizes. Surrounding lands are also zoned Rural Zone B or Rural Zone A, Salem's second lowest density residential zone with lot sizes of two acres. Both of these zones provide for parks, playgrounds, commercial recreation facilities, membership clubs, and private preserves-camps either as a permitted use or special exception.

The regional Conservation and Development Policy Guide recommends this area of Salem for low density uses at residential densities of less than one unit per one and one-half acres. In addition to scattered residential uses, agricultural and open space-recreation uses can be found within or near this land use category.

On a land use basis, a Route 11 greenway would be compatible with the Salem Plan of Development, Salem Zoning Regulations, and with the Regional Conservation and Development Policy Guide.

Appendix

For Appendix Information please contact
the ERT Office at 860-345-3977

ABOUT THE TEAM

The Eastern Connecticut Environmental Review Team (ERT) is a group of professionals in environmental fields drawn together from a varety of federal, state and regional agencies. Specialists on the Team include geologists, biologists, foresters, soil specialists, engineers and planners. The ERT operates with state funding under the supervision of the Eastern Connecticut Resource Conservation and Development (RC&D) Area — an 86 town region.

The services of the Team are available as a public service at no cost to Connecticut towns.

PURPOSE OF THE TEAM

The Environmental Review Team is available to help towns and developers in the review of sites proposed for major land use activities. To date, the ERT has been involved in reviewing a wide range of projects including subdivisions, landfills, commercial and industrial developments, sand and gravel excavations, elderly housing, recreation/open space projects, watershed studies and resource inventories.

Reviews are conducted in the interest of providing information and analysis that will assist towns and developers in environmentally sound decision-making. This is done through identifying the natural resource base of the project site and highlighting opportunities and limitations for the proposed land use.

REQUESTING A REVIEW

Environmental reviews may be requested by the chief elected official of a municipality or the chairman of town commissions such as planning and zoning, conservation, inland wetlands, parks and recreation or economic development. Requests should be directed to the chairman of your local Soil and Water Conservation District and the ERT Coordinator. A request form should be completely filled out and should include the required materials. When this request is approved by the local Soil and Water Conservation District and the Eastern Connecticut RC&D Executive Council, the Team will undertake the review on a priority basis.

For additional information and request forms regarding the Environmental Review Team please contact the ERT Coordinator: 860-345-3977, Eastern Connecticut RC&D Area, P.O. Box 70, Haddam, Connecticut 06438.