

Town of Newtown
Natural Resource Inventory
October 2011



**Commissioned by the Newtown Conservation Commission,
Mary Gaudet-Wilson, Chairman**

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Mr. Dan Cruson, Town Historian

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Any additions or corrections should be directed to Mr. Rob Sibley at Newtown Town Hall who will assess their content and forward them to Mr. Root for inclusion.

INTRODUCTION

The Town of Newtown (the Town) has adopted a multifaceted approach to environmental and land use planning in its community. The Town retained Milone & MacBroom, Inc. (MMI) to develop a Natural Resource Inventory (NRI). The Newtown Conservation Commission requested this report in preparation for its upcoming revision to the town-wide Plan of Conservation and Development. The goal was to build upon past efforts (2004) and to focus this report upon certain aspects of natural resources including biodiversity of plants and animals, soil resources, watershed management, wetlands, and water quality, among others. MMI was given full access to Town lands and open space parcels and received the full cooperation of the Newtown Forest Association. The research and fieldwork took place beginning in summer 2009 and was completed in fall 2011. A watershed-based approach was deemed the best organizational framework, as described below.

A key component of the fieldwork was a day-long Bio-blitz focused on one town-selected land parcel situated on Pond Brook. The goal was to create a biological snapshot to be used to compare/contrast with other such parcels throughout Town. Secondly, as the studied parcel changes over time, as nature takes its course or management principles are applied, its habitat and biological utilization can be reviewed.

Purpose of Inventory

The NRI has been developed to provide an assessment of the valuable natural resources in Town to help guide development and preservation efforts, both now and into the future. The NRI includes the following information: wildlife inventories, plants and tree inventories, soil resources, landscape features, watersheds, wetlands and watercourses, important water resources, and other resources such as dark night sky and open space parcels. The following watersheds were evaluated as part of the NRI:

- Housatonic River Watershed (No. 6000)
- Pond Brook Watershed (No. 6018)
- Deep Brook Watershed (No. 6019)
- Pootatuck River Watershed (No. 6020)
- Halfway River Watershed (No. 6022)
- Limekiln Brook Watershed (No. 6606)
- Aspetuck River Watershed (No. 7202)

The Pequonnock River watershed was excluded from analysis because most of the watershed occurs outside of the Town.

Data Collection Resources

Numerous resources have been accessed to develop a database of information for the NRI. The following list provides the principal data resources:

- Selected geographic information system (GIS) mapping data sets for the Town of Newtown, available through the Town's GIS system and CT DEEP GIS website, including orthophoto coverage, topography, soil types, surficial materials, mapped aquifer recharge areas, vernal pools, and Natural Diversity Data Base (NDDB) sensitive areas, etc.
- Town of Newtown Plan of Preservation, Conservation and Development, dated March 1, 2004
- CT DEEP Electro fishing data for water resources within Newtown 1990 through 2008
- CT DEEP Natural Diversity Database Review Staff

- Water Quality data for Pootatuck River, available from the Town
- CT DEEP 2008 State of Connecticut Integrated Water Quality Report
- State archaeological database for sensitive areas within Newtown
- Natural Resource Conservation Service (NRCS) soils mapping
- National Wetland Inventory (NWI) resource mapping
- Federal Emergency Management Administration (FEMA) Flood Insurance Rate Mapping (FIRM)
- Newtown Forested Lands Health Assessment dated March 24, 2010, available from the Town

In addition to the above data, mapping, and reports, limited field data collection was undertaken to augment and ground truth data sets. The analysis in this document is based upon a combination of available data with the limited field efforts.

Organization of Report

The NRI has been organized as follows:

This section of the report describes the scope and purpose of the NRI; summarizes source information, data, reports, and resource mapping; and describes the overall organization of the document.

Section 1.0 presents the wildlife inventory including identification of important wildlife corridors, state-listed species, bird populations, and movements.

Section 2.0 presents the plants and tree inventory including state-listed species, invasive plant species both land based and aquatic, trees of significance, and threatened/special habitat types.

Section 3.0 presents a summary of the soil resources within Town as it relates to farmland soils, aquifer recharge areas, erodible soils and steep slopes, and extractable resources (sand and gravel).

Section 4.0 presents an overview of the watersheds within town including land use, water quality classification, flood hazards, special wetland types, and fishery resources.

Section 5.0 presents an overview of water production, aquifer mapping, and surface water quality.

Section 6.0 presents a discussion of important landscape features such as high places, designated vistas and ridgelines, and scenic natural resources.

Section 7.0 provides a summary of other important resources within Town such as preservation of the dark night sky.

Section 8.0 presents an overview of open space parcels and other large habitat blocks. They were mapped and evaluated for significance using Town maps, aerial photographs, soil maps, NDDDB data, interviews, and other ecological data.

Section 9.0 is a listing of appendices and references.

It is anticipated that over time and as funding becomes available, the Town will develop an interactive Geographic Information Database that will include all the data and information presented in this document that would be available to municipal staff, the Conservation Commission, and the community.

1.0 WILDLIFE INVENTORY

As part of the NRI, MMI developed a wildlife inventory for the Town. A healthy and diverse wildlife population is a positive indicator of overall environmental quality. Wildlife benefits the community in many ways that are not easily quantified but include educational, aesthetic, and scientific values. A winter's day view of our nation's symbol, the bald eagle, soaring loftily over the Housatonic River is an experience available to every Newtown resident and is not soon forgotten.

The inventory includes both upland and wetland dependent wildlife species. The wildlife inventory is an important component of the NRI because it identifies important wildlife habitat, significant corridors, documents the species/populations of state- and federally-listed wildlife, and includes wildlife survey data from field reconnaissance from sensitive areas within Town. The Connecticut Department of Environmental Protection (CT DEEP) Natural Diversity Database was reviewed as part of the inventory. Countywide wildlife specie lists for state- and federally-listed species were provided by the CT DEEP. Those lists were then reviewed to determine whether suitable habitat existed within the Town to support these listed species. Those that would not likely be found within the Town were noted in the edited countywide list.

Important additions to this database were provided by local naturalists (see acknowledgements). A review of other available bird inventory data such as Christmas Bird Counts and Summer Bird Surveys were also gathered and analyzed as part of this inventory. Examples of these surveys are appended and were used to develop important migratory corridors, nesting habitats, and/or wintering grounds.

Notable Wildlife Habitat, Occurrences, and Populations *

1. **Pond Brook** was the chosen site for the day-long Biological Inventory (Bio-blitz, July 2009). The site map and tabular data are appended to this section of the report.

2. The Audubon Society encourages local groups to conduct annual bird counts over the Christmas season. Attached are several years (2005-2009) of data from the Newtown section of the Oxford Count circle.
3. **Whippoorwill Hill** is a site with a broad vista to the north and was the site of the hawk watch for many years. Attached is a summary table for the years 1976 to 1998.
4. **Paugussett State Forest** along the rugged banks of the Housatonic River was the site for the migratory Bird Stopover Survey sponsored by the CT DEEP. Data for spring 2003-fall 2004 are attached.
5. **Governor's Field** is a large area of mixed habitat (fields, shrubland, forest, and river). It has been a popular area for wildlife observation. Attached are several survey notes from this area.
6. Newtown has excellent fishery habitat (both natural and stocked populations). Attached are CT DEEP fishery survey data from 1990 to 2008.

* See also Section 8.0 – Open Space and Other Parcels of Importance

2.0 PLANTS AND TREES INVENTORY

As part of the NRI, MMI developed a flora inventory for the Town. Trees, forests, and plants create the "green" skin of the Town just as the cliffs and ridges provide the boney frame of the Town. Individual trees often have historic or anecdotal importance to residents, and many of us view the passage of the seasons through the changing foliage of a particular tree. The plant and tree inventory includes analysis of species of special concern, threatened/special habitats and communities, trees of significance, and invasive plant species. The CT DEEP Natural Diversity Database was reviewed as part of this inventory. Countywide plant specie lists for state- and federally-listed species were provided by the CT DEEP. Those lists were then reviewed to determine whether suitable habitat existed within the Town to support these listed species. Those that would not likely be found within the Town were removed from the countywide list.

Nonnative invasive plant species are understood to threaten native plants and natural habitats in undesirable ways, reducing overall biodiversity. The state and other interested parties such as the Invasive Plant Atlas of New England (IPANE) have published lists of nonnative invasive plants, both terrestrial and aquatic, in an effort to slow their spread and prohibit their inadvertent use in landscaping design. Appended to the NRI are lists of these species and a map where examples of nonnative invasive plants have been identified within the Town. Examples of these invasive species are Eurasian milfoil (aquatic) and mile-a-minute vine (terrestrial).

One parcel of land along Pond Brook was chosen by the Town as the subject of a "Bio-blitz" inventory documenting the flora on the parcel. The land had been recently cleared and was surveyed early in its regeneration to help guide decisions regarding long-term maintenance of the parcel. The results are appended with a summary report. Additional input was provided by resident botanists, the Newtown Forest Association, and others (see Acknowledgements).

* See also Section 8.0 – Open Space and Other Parcels of Importance

The following table provides a list of invasive plant species that are commonly referred to as the "Dirty Dozen." These invasive plant species are the most commonly found within Connecticut and within the Town.

Nonnative Invasive Plant Species

Common Name	Latin Name
<i>Trees</i>	
Norway maple	<i>Acer platanoides</i>
Black locust	<i>Robinia pseudoacacia</i>
Tree-of-heaven	<i>Ailanthus altissima</i>
<i>Shrubs</i>	
Autumn Olive	<i>Elaeagnus umbellata</i>
Japanese barberry	<i>Berberis thunbergii</i>
Morrow honeysuckle	<i>Lonicera morrowii</i>
Multiflora Rose	<i>Rosa multiflora</i>
Winged euonymus	<i>Euonymus alatus</i>
<i>Herbs</i>	
Common reed	<i>Phragmites australis</i>
Purple loosestrife	<i>Lythrum salicaria</i>
Japanese knotweed	<i>Fallopia japonica</i>
Reed canary grass	<i>Phalaris arundinacea</i>
Garlic mustard	<i>Alliaria petiolata</i>
Japanese stilt grass	<i>Microstegium vimineum</i>
<i>Vines</i>	
Asiatic bittersweet	<i>Celastrus orbiculata</i>
Mile-a-minute vine	<i>Persicaria perfoliata</i>
<i>Submerged and Floating Aquatic</i>	
Variable leaf watermilfoil	<i>Myriophyllum heterophyllum</i>
Eurasian watermilfoil	<i>Myriophyllum spicatum</i>
Crispy leafed pondweed	<i>Potamogeton crispus</i>
Water chestnut	<i>Trapa natans</i>

3.0 SOIL RESOURCES

Although the geologic factors that led to soil development and differentiation occurred long before settlement, soil utilization plays a critical role in historical and economic growth of the Town. Prudent land use planning and future development patterns as well as land preservation and conservation must consider soil properties and extent during the process. As part of this NRI, several important soil characterizations were analyzed such as the occurrence of farmland soils, aquifer recharge areas, steep slopes, soil erodibility, and extractable resources (sand and gravel). This assessment is summarized below and on the appended tables and maps.

Farmland Soils

Agriculture was, and is today, an important component of life in Newtown. The Town has approximately 11,454 acres of prime farmland and statewide important farmland soils. Table 3-1 shows the acreage and percentage of farmland soils by watershed. Maintenance of local farms is an important state-wide goal. Open tracts of land increase regional biodiversity by providing special habitat for plants and animals that are uncommon in forested tracts of land. Often, farming use and farmlands can be supported through conservation easements and community supported farms (CSA's). In this way, farmland can be preserved through economic downturns, and soil resources are less likely to be squandered through development that could be sited elsewhere.

**TABLE 3-1
Farmland Soils Summary**

Subregional Watersheds	Prime Farmland Soils Acres	Statewide Important Farmland Soils Acres	Watershed Size within Town Acres	Percent Farmland Soil within Watershed
Housatonic River	296	570	7,932	11%
Pond Brook	1,107	722	7,677	24%
Deep Brook	1,149	610	3,420	51%
Pootatuck River	2,702	1,898	12,548	37%
Halfway River	863	502	6,901	20%
Limekiln Brook	401	216	1,674	37%
Aspetuck River	228	190	2,060	20%
Total	6,748	4,707	42,212	27%

Aquifer Recharge Areas

Aquifer recharge areas are primarily associated with land areas that are underlain by stratified drift materials (i.e., sand and gravel). Aquifer recharge areas are critically important to the Town for water production and are very sensitive to pollution from a variety of sources including accidental spills, improper storage and disposal of materials, stormwater runoff, erosion, and poor land use management. Careful planning through regulation of land use and rigorous permit monitoring are necessary tools to protect aquifer integrity. Aquifer recharge areas are also critical to preservation of wetlands and watercourses and the biota they support. The seasonal relationship between aquifer recharge and discharge is an important factor in aquatic ecology.

Within the Town are two Level A Aquifer Protection Areas (APAs). Both are located within the Pootatuck River watershed. Additional aquifer recharge areas occur within the Pootatuck River watershed as well. Aquifer recharge areas also occur but at a lesser degree within the other subregional watersheds. For more information of the aquifer protection areas see the watershed summaries and the appended maps.

Steep Slopes and Soil Erodibility

Both steep slopes and soil erodibility were analyzed within the Town. For this NRI, steep slopes were defined as those slopes that exhibit a slope of 15 percent or greater. This corresponds to typical land use constraints such as road grades or driveway grades. Prospective development on steep slopes requires careful planning and regulation to avoid threats of erosion, slope instability caused by clearing, grading, and/or other land management practices. Best Management Practices (BMPs) are needed to protect adjoining property owners, public lands and resources, wildlife, wetlands, and watercourses from the negative effects of uncontrolled runoff and erosion.

Similarly, careful planning is required for the safe development of soils that are particularly subject to erosion. Soil erodibility was assessed within the Town's watershed by reviewing the

NRCS universal soil loss equation along with the K-factors of the existing soil types. Determining the erodibility of a soil is important when evaluating future development projects, especially when dealing with the potential for adverse impacts to nearby wetlands and watercourses from soil erosion. Eroding soils can lead to property damage, water quality degradation, and sediment deposition followed by colonization by invasive plants.

Soils high in clay content have low K-values because they exhibit strong adhesion and are resistant to detachment. Coarse textured soils such as sandy soils also have a low K-value. Even though these soils are easily detached, they are not strongly susceptible to transport. Medium textured soils such as silt loams have moderate K-values because they are somewhat susceptible to detachment, and they produce moderate amounts of runoff. Soils having high amounts of silt content are the most erodible of the soils. They are easily detached and tend to produce the highest rates of runoff. K-values for these soils tend to be greater than 0.4. Organic matter reduces the erodibility of a soil because it reduces the susceptibility of a soil particle to become detached.

The representative K-value ranges for the soils mapped by the NRCS for the subregional watersheds within the Town were examined. Based on the soil types and surficial geology within the Town, the soil erodibility K-values can be classified as moderate to highly erodible. Most of the soils (65 percent) within Town have a K-value greater than 0.4, meaning that they are highly susceptible to erosion. Many of the very poorly drained wetland soils have a low K-value even though silt concentrations would be presumed to be higher in these soils; however, these very poorly drained soils typically do not occur in sloped areas, therefore, lowering their K-value.

Extractable Resources

Extractable resources are those materials that can be mined from the earth for monetary gain and profit. Examples within Newtown include sand and gravel quarries and bedrock quarries. Although many areas have been used in the past for both large-scale and small-scale extraction

operations, there are currently three active sand and gravel quarries within the Town. They are found within the Pootatuck River watershed. There are other sand and gravel resources that have yet to be extracted within the Town including large bands of Hinckley and Merrimac soils located along the Pootatuck River and Housatonic River. The appended map illustrates examples of the extent of these soil deposits (10-acre minimum). Some smaller sand and gravel resource areas occur within Deep Brook, Pond Brook, Limekiln Brook, Halfway River, and Aspetuck River watersheds.

Newtown was an historic mining location. Several sites are noteworthy including Rocky Glen State Park (gold, platinum, feldspar, etc.).

4.0 WATERSHEDS, WETLANDS, AND WATERCOURSES

As part of the NRI, MMI evaluated each watershed within the Town separately, including its physical aspects, water quality, fishery resources, recreational opportunities, wetland systems, impervious coverage, open space, and other aspects. Site visits were made as an aid to this analysis. The result is the appended watershed summary tables with management recommendations for land use and/or protection.

The following watersheds were evaluated as part of the NRI:

- Aspetuck River Watershed (No. 7202)
- Deep Brook Watershed (No. 6019)
- Halfway River Watershed (No. 6022)
- Housatonic River Watershed (No. 6000) (limited)
- Limekiln Brook Watershed (No. 6606)
- Pond Brook Watershed (No. 6018)
- Pootatuck River Watershed (No. 6020)

The Pequonnock River watershed was excluded from analysis because most of the watershed occurs outside of the Town.

Aspetuck River Watershed

The Aspetuck is a major river corridor in western Connecticut with its origins in Newtown. The overall watershed is large (approximately 14,754 acres), flowing through several towns. The Aspetuck is the source for the Easton Reservoir. In Newtown, the headwaters of the Aspetuck, the watershed is about 2,060 acres in size. The Town portion of the watershed is approximately 70 percent forested uplands with only eight percent of the watershed classified as developed (buildings, homes, roads, etc.). Remaining land uses consist of a combination of open areas (i.e., lawn), agriculture, forested and nonforested wetlands, and waterbodies. The highest elevation in the watershed within the Town occurs at Eden Hill elevation 782 feet (NGVD 29) and the lowest elevation occurring at 472 feet (NGVD 29) where the river discharges from the municipal boundary.

Reaches within the Aspetuck River are classified as Class B/AA and/or Class AA water resources, and they provide both coldwater and warmwater fishery resources. Wild brook trout populations are found within this river. Tributaries to the Aspetuck River are classified as Class A water resources. In Newtown, there are no named tributaries.

The Aspetuck River has FEMA designated 500-year flood zones and 100-year flood zones. The river does not have a designated floodway in Newtown. In addition, tributaries to the Aspetuck River have FEMA designated 500-year flood zones.

The Aspetuck River watershed does not support any APA areas, community wells, and/or non-community wells. The watershed is predominantly glacial till soils and is shallow to bedrock. Some stratified drift is present, and these areas are located along the floodplain of the river. The ground water classification for this watershed is GA. This watershed can support private wells.

There have been no reports of vernal pools within this watershed.

Important attributes of the Aspetuck River watershed:

Attributes of Tributaries

Tributary	WQ Classification	Stream Order
Eight Unnamed	A	1 st -2 nd

- Class A water quality throughout watershed
- Some stratified drift deposits present
- Water Quality data corroborates: Review
- Fishery and Benthic invertebrate data corroborate: Review
- Variety of recreational opportunities present
- FEMA flood zones present
- High percentage of wetland habitat (22%) with 12 large five-acre wetlands
- High percentage of undeveloped land and protected open space.
- Eight percent estimated impervious surface coverage is at the low end of desirable range
- High biodiversity areas present (see Wildlife and Plant Inventory Sections)

Recommendations

The following list provides the important features within this watershed that warrant protection through land acquisition, conservation easements, adaptive management, regulations, development restrictions, implementation of LID development practices, etc.

- Protect high water quality within Aspetuck River and major tributaries to maintain fishery resources and downstream public water supply reservoirs
- Limit development and disturbance within the FEMA floodway and 100-year flood zone
- Establish protective buffers around large wetlands that contribute significant hydrologic support in the watershed
- Establish protective buffers around special wetland types

Deep Brook Watershed

The Deep Brook watershed is approximately 3,420 acres in size and is entirely contained within the Town. The watershed includes much of the "developed" areas of the town including busy roadways (Routes 25 and 302), municipal buildings, higher-density residential areas, pasture, and farmland. The watershed is approximately 40 percent forested uplands with 24 percent of the watershed classified as developed (buildings, homes, roads, etc.). Remaining land uses consist of a combination of open areas (i.e., lawn), agriculture, forested and non-forested wetlands, and waterbodies. The highest elevation in the watershed occurs south of Scudder Road elevation 768 feet (NGVD 29) and the lowest elevation occurring at 242 feet (NGVD 29) at the confluence of Deep Brook and the Pootatuck River.

The upper reaches of Deep Brook are classified as Class A with lower sections classified as B/A. Impairment is reportedly due to impacts from a closed landfill facility. Fishery resources include both coldwater and warmwater areas. Wild brook and brown trout populations are found within this brook. Deep Brook is designated as a Class I Wild Trout Management Area and is stocked by the CT DEEP. Tributaries to Deep Brook are classified as Class A water resources.

Deep Brook has FEMA designated 500-year flood zones and 100-year flood zones. The brook does not have designated floodway. In addition, tributaries to the Deep Brook have FEMA designated 500-year flood zones.

The Deep Brook watershed does not support any APA areas and/or noncommunity wells. Two community wells exist within this watershed and support the Meadowbrook Terrace Mobile Home Park. The watershed is predominantly glacial till soils and is shallow to bedrock. A large band of stratified drift is present along the floodplain of Deep Brook. The ground water classification for this watershed is GA and GAA. This watershed can support private wells. The Town's Water Pollution Control Facility is located within this watershed as well.

Deep Brook is listed on the 2008 Impaired Waters list for the following designated impaired use: contact recreation due to high levels of the bacteria E. coli. Total Maximum Daily Load (TMDL) priority is high for this impairment.

As yet, there are no mapped vernal pools within this watershed. However, there are several other special wetland types.

Important attributes of the Deep Brook watershed:

Attributes of Tributaries

Tributary	WQ Classification	Stream Order
11 Unnamed	A	1st
Two Unnamed	A	2nd
Country Club Brook	A	1st

- Some stratified drift deposits support GA/GAA ground water designations (see Aquifer Mapping)
- Water Quality impairment due to landfill
- Water Quality data corroborates: Review
- Fishery and Benthic invertebrate data corroborate: Review
- Variety of recreational opportunities present
- FEMA flood zones present
- High percentage of wetland habitat (19%) with five large five-acre wetlands
- Several large flat wetlands provide good flood control and hydrologic support
- Good percentage of undeveloped land and protected open space
- 25% estimated impervious surface coverage is at mid-range of desirable
- High biodiversity areas present (see Wildlife and Plant Inventory Sections)

Recommendations

The following list provides the important features within this watershed that warrant protection through land acquisition, conservation easements, adaptive management, regulations, development restrictions, implementation of LID development practices, etc.

- Protect stratified drift areas through use of sound engineering, LID techniques, BMPs (see map)
- Protect water quality within Deep Brook and major tributaries to maintain fishery resources
- Limit development and disturbance within the FEMA floodway and 100-year flood zone
- Establish protective buffers around large wetlands that contribute significant hydrologic support in the watershed
- Establish protective buffers around special wetland types
- Strive to upgrade Class B water quality areas to meet Class A guidelines

Halfway River Watershed

The Halfway River watershed is approximately 6,901 acres in size, with approximately 52 percent or 3,565 acres occurring within the Town. In Newtown, the watershed is approximately 71 percent forested uplands with only 14 percent of the watershed classified as developed (buildings, homes, roads, etc.). Remaining land uses consist of a combination of open areas (i.e., lawn), agriculture, forested and nonforested wetlands, and waterbodies. The highest elevation in the watershed occurs at elevation 831 feet (NGVD 29) and the lowest elevation occurring at 120 feet (NGVD 29) at the confluence of the Halfway River and the Housatonic River.

The Halfway River is classified as Class A throughout the watershed providing both coldwater and warmwater fishery resources. Wild brook trout and brown trout populations are found within the river, and the CT DEEP stocks brook trout, brown trout, and rainbow trout within other sections of this river. Tributaries to the Halfway River are classified as Class A water resources.

The Halfway River has FEMA designated 500-year flood zones and 100-year flood zones. The river does not have designated floodway. Tributaries to the Halfway River have FEMA designated 100-year flood zones.

The Halfway River watershed does not support any APA areas, community wells, and/or noncommunity wells. The watershed is predominantly glacial till soils and is shallow to bedrock. Some stratified drift is present, and these areas are located along wetlands and waterbodies. The ground water classification for this watershed is GA. This watershed can support private wells.

The Halfway River watershed does support several special wetland types including vernal pools and forested floodplains. Vernal pools (four confirmed in watershed) are an important wetland type because they support vernal pool obligate amphibians. Vernal pools are sensitive to development, especially changes to uplands, pool fragmentation, and water quality. Forested

floodplains are an important wetland system for function and values such as floodflow attenuation, biodiversity, nutrient retention, sediment retention, production export, and shoreline stabilization.

Important attributes of the Halfway River watershed:

Attributes of Tributaries

Tributary	WQ Classification	Stream Order
11 Unnamed	A	1st-3rd
Sand Hill Brook	A	4th
Sammis Brook	A	3rd
Copp Brook	A	3rd
Whitlock Brook		1st

- Class A water quality throughout watershed
- Some stratified drift deposits present
- Water Quality data corroborates: Review
- Fishery and Benthic invertebrate data corroborate: Review
- Variety of recreational opportunities present
- FEMA flood zones present
- Moderate percentage of wetland habitat (16%) with six large five-acre wetlands
- Good percentage of undeveloped land and protected open space
- 14% estimated impervious surface coverage is at the low end of desirable range
- High biodiversity areas present (see Wildlife and Plant Inventory Sections)

Recommendations

The following list provides the important features within this watershed that warrant protection through land acquisition, conservation easements, adaptive management, regulations, development restrictions, implementation of LID development practices, etc.

- Protect high water quality within Halfway River and major tributaries to maintain fishery resources
- Coordinate with Monroe regarding water quality protection
- Limit development and disturbance within the FEMA floodway and 100-year flood zone
- Establish protective buffers around large wetlands that contribute significant hydrologic support in the watershed
- Establish protective buffers around special wetland types

Housatonic River Watershed Overview

The Housatonic River watershed is approximately 399,066 acres in size, with approximately two percent or 7,932 acres occurring within the Town. The watershed within the Town is approximately 66 percent forested uplands with 14 percent of the watershed classified as developed (buildings, homes, roads, etc.). Remaining land uses consist of a combination of open areas (i.e., lawn), agriculture, forested and nonforested wetlands, and waterbodies. The highest elevation in the watershed occurs at Osborn Hill elevation 671 feet NGVD 29 and the lowest elevation occurring at 110 feet NGVD 29 at Lake Zoar.

The Housatonic River is classified as a Class D/B watercourse, and it provides both coldwater and warmwater fishery resources. Wild brook trout and brown trout populations are found within this river. Tributaries to the Housatonic River within the Town are classified as Class B/A and Class A water resources.

The Housatonic River has FEMA designated 500-year flood zones and 100-year flood zones. The river does not have designated floodway. In addition, tributaries to the Housatonic River have FEMA designated 500-year flood zones and 100-year flood zones.

The Housatonic River watershed does not support any APA areas and/or non-community wells. Nine community wells exist within this watershed; seven support the Olmstead Water Supply Company and the other two supports the Cornerstone of Eagle Hill. The mid to upper areas of the watershed are predominantly glacial till soils and shallow to bedrock. Bands of stratified drift are present along the floodplains of the Housatonic River and contributing tributaries. The ground water classification for this watershed is GA and GAA. This watershed can support private wells.

The Housatonic River is listed on the 2008 Impaired Waters List, specifically Lake Zoar and Lake Lillinonah. Lake Zoar has the following impaired designated uses: recreation due to high levels of E. coli and fish consumption due to high levels of Polychlorinated Biphenyls (PCBs).

Lake Lillinonah has the following impaired designated uses: recreation due to high levels of Chlorophyll-a, excess algae growth, nutrient/eutrophication biological indicators, debris/floatables/trash, and taste and odor as well as fish consumption due to high levels of PCBs. Total Maximum Daily Loading priority is listed as high for most of these impairments. Sections of the river have been colonized by the invasive zebra mussel.

The Housatonic River watershed does support several special wetland types including vernal pools and forested floodplains. Vernal pools are an important wetland type because they support vernal pool obligate amphibians. Vernal pools are sensitive to development, especially changes to uplands, pool fragmentation, and water quality. Forested floodplains are an important wetland system for function and values such as floodflow attenuation, biodiversity, nutrient retention, sediment retention, production export, and shoreline stabilization.

Limekiln Brook Watershed

The Limekiln Brook watershed is approximately 5,611 acres in size, with approximately 30 percent or 1,674 acres occurring within the Town. The town portion of the watershed is approximately 54 percent forested uplands with 17 percent of the watershed classified as developed (buildings, homes, roads, etc.). Remaining land uses consist of a combination of open areas (i.e., lawn), agriculture, forested and nonforested wetlands, and waterbodies. The highest elevation in the watershed within the Town occurs at Taunton Hill elevation 831 feet (NGVD 29) and the lowest elevation occurring at 442 feet (NGVD 29) where the brook discharges outside the municipal boundary.

Reaches within the Limekiln Brook are classified as Class A water resources, and they provide both coldwater and warmwater fishery resources. Wild brook trout populations are found within this brook. Tributaries to the Limekiln Brook are classified as Class A water resources.

Limekiln Brook has FEMA designated 500-year flood zones and 100-year flood zones. The brook does not have designated floodway. In addition, tributaries to the Limekiln Brook have FEMA designated 500-year flood zones.

The Limekiln Brook watershed does not support any APA areas and/or community wells. One noncommunity well exists within this watershed and is located at Newtown Montessori School. The watershed is predominantly glacial till soils and is shallow to bedrock. A large band of stratified drift is present along the floodplain of the Limekiln Brook. The ground water classification for this watershed is GA. This watershed can support private wells. There are no impaired watercourses and/or waterbodies within the watershed.

Important attributes of the Limekiln Brook watershed:

Attributes of Tributaries

Tributary	WQ Classification	Stream Order
Two Unnamed	A	1st
East Fork	A	3rd

- Class A water quality throughout watershed
- Some stratified drift deposits present
- Water Quality data corroborates: Review
- Fishery and Benthic invertebrate data corroborate: Review
- Variety of recreational opportunities present
- FEMA flood zones present
- High percentage of wetland habitat (23%) with four large five-acre wetlands
- Good percentage of undeveloped land and protected open space
- 17% estimated impervious surface coverage is at mid-range of desirable range
- High biodiversity areas present (see Wildlife and Plant Inventory Sections)

Recommendations

The following list provides the important features within this watershed that warrant protection through land acquisition, conservation easements, adaptive management, regulations, development restrictions, implementation of LID development practices, etc.

- Protect high water quality within Limekiln Brook and major tributaries to maintain fishery resources
- Limit development and disturbance with the FEMA floodway and 100-year flood zone
- Establish protective buffers around large wetlands that contribute significant hydrologic support in the watershed
- Establish protective buffers around special wetland types

Pond Brook Watershed

The Pond Brook watershed is approximately 8,898 acres in size, with approximately 86 percent or 7,677 acres occurring within the Town. The watershed is approximately 62 percent forested uplands with 19 percent of the watershed classified as developed (buildings, homes, roads, etc.). Remaining land uses consist of a combination of open areas (i.e., lawn), agriculture, forested and nonforested wetlands, and waterbodies. The highest elevation in the watershed occurs at Taunton Hill elevation 831 feet (NGVD 29) and the lowest elevation occurring at 200 feet (NGVD 29) at the confluence of Pond Brook and the Housatonic River (Lake Lillinonah). The corridor is bisected by Routes 84 and 6.

Taunton Lake is the primary source for Pond Brook. Water quality in the pond is classified as B/A. The invasive aquatic plant (Eurasian milfoil) has been identified in Taunton Lake. There are six first-order streams feeding the lake including the stream from Carp Pond. Downstream of Taunton Lake, another 13 tributaries join to form Pond Brook. Pond Brook is classified as a Class A water resource, and it provides both coldwater and warmwater fishery resources. Wild brook trout and brown trout populations are found within Pond Brook. Tributaries to Pond Brook are also classified as Class A water resources.

Pond Brook has FEMA designated 500-year flood zones and 100-year flood zones. The brook does not have designated floodway. In addition, tributaries to the Pond Brook have FEMA designated 500-year flood zones and 100-year flood zones.

The Pond Brook watershed does not support any APA areas. There is a noncommunity well that supports the Newtown Professional Building. Four other community wells exist within this watershed. Three support the Midway Mobile Home Park and one supports the Greenridge Taxing District.

The Pond Brook watershed is predominantly glacial till soils and is shallow to bedrock. A large band of stratified drift is present along the floodplain of Pond Brook. The ground water

classification for this watershed is GA and GAA. There are no impaired watercourses and/or waterbodies identified within the watershed.

Important attributes of the Pond Brook watershed:

Attributes of Tributaries

Tributary	WQ Classification	Stream Order
Six Unnamed (feed Taunton Pond)	A	1st
10 Unnamed	A	1st and 2nd
Pogond Brook	A	2nd
Pierson's Brook	A	2nd
Dingle Brook	A	2nd

- Taunton Lake is a significant town resource to be monitored and protected
- Some stratified drift deposits support GA/GAA ground water designations (see aquifer mapping)
- Water Quality data corroborates: Review
- Fishery and Benthic invertebrate data corroborate: Review
- Variety of recreational opportunities present
- FEMA flood zones present
- Moderate percentage of wetland habitat (15%) with six large five-acre wetlands
- Good percentage of undeveloped land and protected open space
- 19% estimated impervious surface coverage is at mid-range of desirable
- High biodiversity areas present (see Wildlife and Plant Inventory Sections)

Recommendations

The following list provides the important features within this watershed that warrant protection through land acquisition, conservation easements, adaptive management, regulations, development restrictions, implementation of LID development practices, etc.

- Strive to upgrade Taunton Lake from Class B to Class A
- Protect water quality within Pond Brook and major tributaries to maintain fishery resources
- Protect stratified drift areas through use of sound engineering, LID techniques, BMPs (see soils map)
- Limit development and disturbance within the FEMA floodway and 100-year flood zone
- Establish protective buffers around large wetlands that contribute significant hydrologic support in the watershed
- Establish protective buffers around special wetland types

Pootatuck River Watershed

The Pootatuck River watershed is the largest contributing watershed in Newtown (12,548 acres). The watershed is approximately 56 percent forested uplands with 20 percent of the watershed classified as developed (buildings, homes, roads, etc.). Remaining land uses consist of a combination of open areas (i.e., lawn), agriculture, forested and nonforested wetlands, and waterbodies. The highest elevation in the watershed occurs at Eden Hill elevation 784 feet NGVD 29 and the lowest elevation occurring at 100 feet NGVD 29 at the confluence of the Pootatuck River and the Housatonic River.

The Pootatuck River watershed has two significant water production areas within its watershed including the Aquifer Protection Areas (APA) known as Fairfield Hills and South Main Street - United Water Company wellfields. The EPA has designated the aquifer in the Pootatuck River Watershed as the "Pootatuck Aquifer," which means that the Pootatuck Aquifer is the sole source of drinking water for the residents of that area; there are no viable alternative sources of sufficient supply; the boundaries of the designated area and project review area have been reviewed and approved by EPA; and, if contamination were to occur, it would pose a significant public health hazard and a serious financial burden to the area's residents.

According to the CT DEEP Groundwater Classification data, the Pootatuck River Watershed is classified as supporting both GA and important GAA ground water classifications.

The Pootatuck River is classified as a Class B/A water resource and provides both coldwater and warmwater fishery resources. Approximately one mile of this river (centered near the Interstate 84 cross culvert) is designated as a Class 1 Wild Trout Management Area. Wild brook trout and brown trout populations are found within this section of the river. The CT DEEP stocks brook trout, brown trout, and rainbow trout within other sections of this river. In addition, the Local Fish & Game Club also stocks trout within this river.

The Pootatuck River has FEMA designated 500-year flood zones, 100-year flood zones, and a floodway. Tributaries to the Pootatuck River have FEMA designated 500-year and 100-year flood zones.

The Pootatuck River watershed does support several special wetland types including vernal pools and forested floodplains. Vernal pools are an important wetland type because they support vernal pool obligate amphibians. Vernal pools are sensitive to development, especially changes to uplands, pool fragmentation, and water quality. Forested floodplains are an important wetland system for function and values such as floodflow attenuation, biodiversity, nutrient retention, sediment retention, production export, and shoreline stabilization.

Important attributes of the Pootatuck River watershed:

Attributes of Named Tributaries

Tributary	WQ Classification	Stream Order
North Branch Pootatuck	A	3
Deep Brook	B/A	2
Cold Spring Brook	A	1
Farrell's Pond Brook	B/A	2
Keating Pond Brook	A	1
Curtis Pond Brook	A	3
Tom Brook	A	2
Sandy Hook Brook	A	2
Lewis Brook	B/A	2
Morgan Brook	A	2
Corbett Brook	A	2
Eagan Brook	A	1

- GA/GAA ground water supplies public supply wells – see Aquifer Mapping
- Several impaired waterbodies contribute to public water supply areas
- Water Quality data corroborates: Review
- Fishery and Benthic invertebrate data corroborate: Review
- Variety of recreational opportunities present
- FEMA flood zones present

- Good percentage of wetland habitat (16%), 19 large five-acre wetlands
Special Wetland Types (Vernal Pool, Forested Floodplain)
- Good mix of large headwater wetlands and lowland wetland types
- Good percentage of undeveloped land and protected open space
- 20% estimated impervious surface coverage is at mid-range of desirable
- High biodiversity areas present (see Wildlife and Plant Inventory Sections)

Recommendations

The following list provides the important features within this watershed that warrant protection through land acquisition, conservation easements, adaptive management, regulations, development restrictions, implementation of LID development practices, etc.

- Protect APA areas through use of sound engineering, LID techniques, BMPs (see map)
- Public water supply watershed lands to protect (acquire, regulate, restrict)
- Protect water quality within Pootatuck River and major tributaries to maintain fishery resources
- Limit development and disturbance with the FEMA floodway and 100-year flood zone
- Establish protective buffers around large wetlands that contribute significant hydrologic support in the watershed
- Establish protective buffers around special wetland types

5.0 WATER PRODUCTION AND SURFACE WATER QUALITY

In Newtown, the Pootatuck River has two significant water production areas within its watershed. They are the APAs known as Fairfield Hills and South Main Street, both United Water Company wellfields. According to the CT DEEP Groundwater Classification data, the Pootatuck River Watershed is classified as exhibiting both GA and GAA ground water classifications.

The Fairfield Hills and South Main Street wellfields are located within stratified drift deposits consisting of alluvial floodplains with both hydric and nonhydric soil designations. The South Main Street APA has a protection area of approximately 336 acres and the Fairfield Hills APA of approximately 370 acres. It will be important that the town regulate development within these APAs for long-term protection of ground water quality and production. Any proposed development within these zones should be designed using Low Impact Development (LID) practices. Appended to this section are background reports on the Pootatuck River aquifer public water supplies, mapping, and assessment reports.

As part of the NRI, MMI reviewed CT DEEP data bases, by watershed, to obtain registered water diversions and impaired waterbodies. These tables are attached.

Pootatuck Aquifer and Public Water Supplies

The presence of the stratified drift deposits along the Pootatuck River and the reliance on the aquifer for water supply is a significant matter to the Town, and aquifer protection has become a priority for the Town. United Water Company maintains a public water supply wellfield off South Main Street, and another public water supply wellfield is located near the Fairfield Hills Hospital campus, which is currently owned by the Town of Newtown.

Connecticut Aquifer Protection Program

Connecticut's Aquifer Protection Program is designed to protect active public water supply wells that serve more than 1,000 people and that are developed in sand and gravel aquifers. "Aquifer protection areas" will be delineated for these wellfields, comprised of the ground water recharge and contribution areas. Land use controls are imposed in the aquifer protection areas to minimize the potential for contamination of the drinking water supply. These controls must be based on the state's Aquifer Protection Land Use Regulations.

The United Water Company and Fairfield Hills wellfields were mapped to Level B standards in the late 1980s or early 1990s under the Connecticut Aquifer Protection Program. Level B maps are not based on detailed hydrogeologic analysis, and they depict the *preliminary* aquifer recharge and contribution areas to public water supplies. Level A Aquifer Mapping is required and due for both stratified drift wellfields. In most mapping projects thus far submitted to the DEEP in the State of Connecticut, Level A areas have been smaller than the Level B areas. This is likely to be the case in Newtown as well.

Parallel to the Level A mapping program, the Town will be required to implement any elements of Connecticut's Aquifer Protection Land Use Regulations that are not already included in the zoning regulations.

Connecticut Source Water Assessment Program

As required by the Safe Drinking Water Act Amendments of 1996, DPH and DEEP have completed source water assessments for all public water supplies in the State of Connecticut. Assessments were completed for the United Water Company and Fairfield Hills wellfields in the past few years, and *Source Water Assessment Reports* were published in 2004. As stated in the reports, the assessments can be used to target and implement enhanced source water protection

measures such as inspections, land use regulations, land acquisitions, septic system maintenance, and education.

The United Water Company wellfield has a "low" rating for environmental sensitivity (indicating that the source water area is not sensitive) based on proper well construction and the absence of contaminants; a "moderate" rating for potential risk factors (indicating that the source water area has low risk) based on the amount of developable land in the source area and the presence of potential contaminant sources; and a "high" rating for source protection needs based on the fact that the 200-foot sanitary radius around each well is not fully controlled, although local aquifer protection regulations are in place. The overall susceptibility is "moderate."

The main listed strength is that local aquifer protection regulations are in place.

Recommendations of the source water assessment report include completing the Level A mapping, monitoring commercial and industrial activities, working with local officials to ensure that only low-risk development occurs in the source water area, and acquisition of open space in the source water area.

The Fairfield Hills wellfield has a "low" rating for environmental sensitivity (indicating that the source water area is not sensitive) based on proper well construction and the absence of contaminants; a "low" rating for potential risk factors (indicating that the source water area has low risk) based on the amount of developable land in the source area and the presence of potential contaminant sources; and a "moderate" rating for source protection needs based on the fact that less than 10% of the land in the source area is preserved open space, although local aquifer protection regulations are in place. The overall susceptibility is "low."

The main listed strengths are that local aquifer protection regulations are in place and that commercial and industrial land uses comprise less than 10% of the source area.

Recommendations of the source water assessment report include completing the Level A mapping, monitoring commercial and industrial activities, working with local officials to ensure

that only low-risk development occurs in the source water area, and acquisition of open space in the source water area.

Sole Source Aquifer Designation

Although very similar to other public water supply aquifers in numerous other communities, the U.S. Environmental Protection Agency (EPA) has determined that the "Pootatuck Aquifer" satisfies all determination criteria for designation as a sole source aquifer, pursuant to section 1424(e) of the Safe Drinking Water Act. The designation was granted in the late 1980s or early 1990s in response to a petition from State Representative Mae Schmidle of the 106th District of Connecticut. The designation means that the Pootatuck Aquifer is the sole source of drinking water for the residents of that area; there are no viable alternative sources of sufficient supply; the boundaries of the designated area and project review area have been reviewed and approved by EPA; and, if contamination were to occur, it would pose a significant public health hazard and a serious financial burden to the area's residents.

As a result of this designation, all federal financially assisted projects proposed for construction or modification within the Pootatuck River Watershed will be subject to EPA review to reduce the risk of ground water contamination from these projects. Because most projects in the Town will not be federally financed, state and local land use controls (such as the existing zoning regulations and the recently passed Connecticut Aquifer Protection Land Use Regulations) will continue to be applied as needed.

6.0 VIEWSHED FEATURES

As part of the NRI, MMI performed a topographic analysis of the town identifying steep slopes (>15%) and potentially scenic ridgelines. MMI solicited comment from the Conservation Commission regarding prominent vista points and favored viewsheds. The December 1998 Planning and Zoning Commission publication *The Views of Newtown* (17 vistas) was also used as a resource. MMI then toured these high points looking at the current character of these resources. For many people, the essence of a town and the memories it recalls are linked to far views of the landscape; whether river, forest, field, steeple, or town green. How these resources are protected for future generations is a complicated task of conservation, preservation, regulation, good planning and often, simple good will.

Appended to this section is a map of the steep ridges, ridgelines, and high points of the town. Listed below are some of the noteworthy sites visited.

A. *The Views of Newtown* (Dec. 1998)
List 1-17

B. High Places, Pleasing Vistas & Other Scenic Spots

B1 Queen Street
Robin Hill and Sugar Hill off Route 302
Yogananda Street

B2 Other Scenic Spots

Hanover Road
Albert's Hill Road
Parmalee and Butterfield Roads
George's Hill Road
Obtuse Road
Susan Lane
Birch Hill and Great Hill Roads (Holcomb Hill, NFA)
Irvin Lane – Taunton Lake
Old Castle Drive – Nettleton Preserve, NFA
Walnut Tree Hill Road
Glen Road
Sweet Briar Lane

Hopewell Road ridges
Old Morris Road
Route 84 and Housatonic River Bridge
Lower Paugussett State Forest and Housatonic River

7.0 OTHER RESOURCES

As part of the NRI, MMI was asked to research the topic of nighttime lighting and consider its effects upon the natural resources of the Town. Appended is information on this topic including articles, associations, regulations, specifications, and websites for the town's consideration. As Newtown continues to grow and develop infrastructure including interstate highways with broad interchange zones and connector roads, large-scale commercial projects, lighted recreational facilities, and public venues, it becomes increasingly important to consider potential impacts to the public's access and enjoyment of the night sky - its constellations, passing satellites, meteor showers, and comets as well as the inadvertent (but significant) effects upon resident and migratory wildlife.

8.0 OPEN SPACE AND OTHER PARCELS OF IMPORTANCE

As part of the NRI, MMI was asked to visit and assess several open space parcels chosen by the Town. This task was in addition to the Bio-blitz inventory of the Pond Brook parcel. The Town selected these parcels for evaluation:

1. Chestnut Knoll
2. 300 Berkshire Road
3. Concord Ridge Drive

Site maps and summary reports of the field visits are appended to this section of the NRI.

MMI also reviewed a Forest Health Assessment report of four open space parcels conducted by scientists from the Connecticut Agricultural Experiment Station. These reports are also appended herein.

MMI conducted many brief visits to areas of ecological interest during "windshield surveys" of the Town. Appended is a list of such visits and some associated notes, which contributed to other tasks such as selection of vista points, identification of wildlife corridors, high biodiversity sites, fishery resources, etc.

Evaluation of Three Selected Open Space Parcels

A. Chestnut Knoll

This open space parcel was visited on June 17, 2010. It is a deciduous woodland and wetland parcel located at the terminus of several residential cul-de-sacs including Chestnut Knoll. It is part of a network of contiguous undeveloped parcels extending eastward to the state forest along the Housatonic River. It is in the Halfway River watershed. The woodland is mature with many large oaks, maples, tulip poplars, and American beech trees. There are interesting areas of stony soils and ledge outcrops as well. Understory shrubs are somewhat sparse in the uplands, as is tree regeneration, likely due to shading and deer browse. Invasive species are low in the interior. The wetlands are poorly drained and very poorly drained including sections with braided channels and pools. The shrub layer is thick and includes high-bush blueberry, sweet pepper bush, and winterberry. Herbaceous species include Jack-in-the-pulpit, skunk cabbage, and various sedges, mosses, and ferns. Wildlife habitat is very good due to the mix of woodland types, soil types, topography, mature trees, coarse woody debris, ledge, snags, and cavities. Connectivity to other undeveloped areas is sufficient, even though mostly through large lot residential areas. The woodland is large enough to support forest interior bird species such as wood thrush, Eastern wood peewee, veery, scarlet tanager, and higher trophic species such as red-tailed hawk. Trail linkage to nearby open space parcels is desirable.

B. 300 Berkshire Road

This open space parcel was visited on September 22, 2010. It is located along the south side of Route 34 near the Shelton–Newtown border. There is a small pull-off area suitable for parking several cars on an adjoining parcel (perhaps CTDOT land). The land is forested, having hardwood stands mixed with conifers (primarily Eastern hemlock) and has a well-developed shrub layer as well. The primary resource is the presence of the Halfway River. It is in a scenic ravine with rocky outcrops. The water is clean, well oxygenated, and shaded. It has very good fishery potential. The banks are relatively flat and have the potential for trail development.

There are echoes of earlier land uses here with an old stone abutment and narrow gauge "road beds." Invasive species within the forest are low. Upriver from Route 34, there is a cleared right-of-way. The sunny setting promotes an entirely different suite of plants with cedars, witch hazel, sweet pepper bush, and many ferns, sedges, and rushes.

C. Concord Ridge Drive

This open space parcel was visited on June 18, 2010. It is a narrow, mixed woodland that includes a powerline cut and an old rail bed plus closely bordering homes. It is in the Housatonic River watershed and is located on the east-facing slopes above the river. In fact, views of the river and across to Southbury are very good from exposed areas. The cleared areas diversify the parcel for plants, small mammals, and insects but fragment the woodland. Still, this parcel links other open space and water resources like Cavanaugh Pond to the river corridor. The forested slope is dry with several rills carrying runoff from the developed areas along Winter Ridge Road. The trees are mostly small, but there are a few old maples and hickories greater than 30-inch dbh. Dominant species are yellow birch, black birch, tulip poplar, sugar maple, mixed hickories and oaks, and Eastern hemlock. The understory is sparse with low forest regeneration. Invasive species such as Japanese barberry, Oriental bittersweet, and winged euonymus are common. There are stone walls and "wolf" trees indicative of prior agricultural use. There are few snags and cavities for perching birds and hole-nesters. Coarse woody debris is low. Mostly suburban species such as tufted titmouse, Northern cardinal, and American robin were present. However, a few species demonstrating a link to broader, undeveloped parcels were present including scarlet tanager and ovenbird. The cleared powerline cut was thick with sun-loving, shrubby undergrowth including raspberries, goldenrod, and ferns. Here, American goldfinch and gray catbird were found.

Other Areas Visited

1. Lake, Hanover, and Newbury Roads, Dinglebrook Lane Area
2. Pond Brook Road, Obtuse Road
3. Parmalee Road, Butterfield Road
4. Currituck Road, Farrell Road
5. Hanover, Echo, and Tamarack Roads area
6. Echo Valley Road, Cavanaugh Pond
7. Albert's Hill Road, McLaughlin's Vineyard
8. Treadwell Park
9. Concord Ridge Road
10. Rocky Glen State Park
11. Stone Bridge Trail to Lower Paugussett State Forest
12. Rowledge Pond
13. NFA at Avalon Way
14. Swamp Road
15. Button Shop Road
16. Town Park at Deep Brook/Newtown CC
17. Sugar Lane
18. Scudder Road, Birch Hill Road, Castle Hill Road
19. Holcombe Hill Preserve (NFA), Great Hill Road
20. Taunton Pond
21. Nettleton Preserve (NFA), Castle Hill Road
22. NFA at Boggs Hill and Palestine Road
23. NFA at Boggs Hill and Willow Brook Lane
24. Cullen's Preserve (NFA)
25. Sweet Meadow Subdivision Open Space
26. Hattertown Pond Preserve (NFA)
27. Orchard Hill Nature Center
28. Hattertown Road at Easton town line

29. Hi Barlow Road
30. Hi Barlow and Eden Hill Roads
31. Eden Hill, Oak Ridge, and Vona Roads
32. Poverty Hollow, Flat Swamp, and Greenleaf Area (NFA)
33. Hopewell Road
34. Farm Meadow Subdivision
35. Old Hattertown Road to Town's End Road
36. Morris Road at Centennial Watershed State Forest
37. Sugar Hill Ridge at Sweet Meadow Road
38. Robin Hill Road
39. Eagle Rock Road to State Park
40. Housatonic River along River Road (Southbury) to the dam
41. Governor's Field
42. Whipoorwill Hill Road
43. Resurrection Cemetery
44. Plumtrees Road fields (NFA)

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