Hartland Natural Resource Inventory

2025

Photo by: Michael Terry

Prepared by:

Housatonic Valley Association / Farmington River Watershed Association / North Woods Land Conservancy

For the Plan of Conservation and Development Ad Hoc Committee of the Town of Hartland, Connecticut

Acknowledgments:

We would like to acknowledge the following people and organizations that helped to make the Hartland 2025 Natural Resource Inventory (NRI) happen:

- The Plan of Conservation and Development Ad Hoc Committee of the Town of Hartland
- Farmington River Watershed Association (FRWA) and Heather Geist for updates to the 2007 NRI
- Stacy Deming, GIS Manager for the Housatonic Valley Association (HVA) for creating the maps
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The Plan of Conservation and Development Committee would like to extend a special acknowledgement to Fred Jones, POCD Committee member and former Hartland Land Trust President. In addition to overseeing the entire project, Fred's NRI efforts also included tirelessly researching, organizing and compiling the data entries for this inventory. We are extremely grateful.

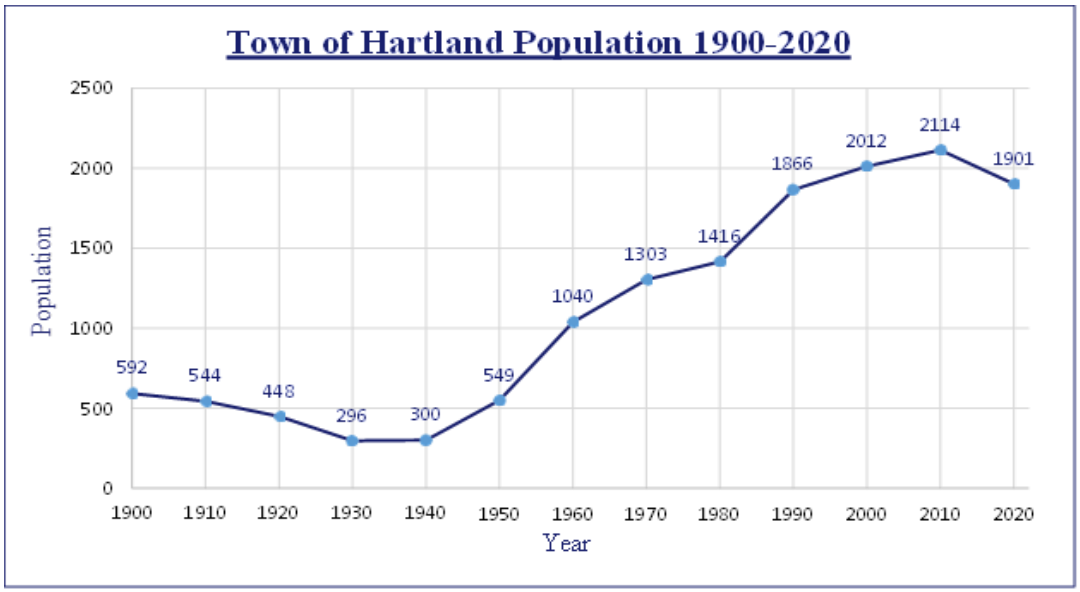
Mill District Nature Preserve **Photo: Fred Jones**

Table of Contents

Old Forge Road **Bethany Riley**

I. Introduction

Prior Plans of Conservation and Development for the Town of Hartland noted that the town is fortunate to enjoy extensive natural resource areas in an unspoiled and protected condition. In its 2019 Community Survey, access to natural resources was among the top four most important services or aspects of the town, preceded in importance only by "First responder services", "Fire department services", and "Municipal services provided by the Town." In the same survey 89.8% said that Hartland should maintain its rural character. Hartland is one of Connecticut's most rural communities, with a Year 2020 census population of 1,901, a 35-person increase from 1990. Though much of the region west of Hartford has experienced intense growth over the past few decades, Hartland still enjoys much of the same rural character it had in 1950.



What is a Natural Resource Inventory??

A "natural resource inventory" (NRI) is a comprehensive compilation of information about significant naturally occurring features within a specific area, like a municipality, watershed, or region, including details about its geology, soils, streams, wetlands, forests, wildlife, and sometimes even cultural resources like scenic views, which serves as a foundational tool for informed land-use planning and conservation decision-making.

Purpose:
To identify and document important natural resources in a given area, allowing for better understanding of their location, condition, and potential for conservation or development.

Components:
Typically includes maps, data tables, and descriptive reports detailing the various natural resources present, their distribution, and potential environmental sensitivities.

Applications:
NRIs are used to guide land-use planning, identify conservation priorities, inform zoning decisions, and support the development of open space plans or watershed management strategies.

Data sources:
Information for NRIs are gathered from existing data such as aerial imagery, topographic maps, soil surveys, wildlife surveys, and field observations.

Source: Cornell University, College of Agriculture and Life Sciences

II. Hartland Natural Resource Inventory - Project Overview

A difficult challenge facing rural communities today pertains to how best to direct growth and development in a way that is compatible with protecting a community's natural resources. The first step in addressing this challenge is to analyze the existing natural resources in the town and any existing plans to change land uses.

This Natural Resources Inventory[1] is a summary, in map form, of Hartland's natural resources and the current natural resource management structure. The maps express the existing state of a community's natural resource base, and help identify areas that are of critical concern for natural resource conservation, as well as areas that are most appropriate for development. The resource inventory maps are completed in a Geographic Information Systems (GIS) environment. GIS assembles, stores, and manipulates geographic (spatial) data and can analyze the data for conservation and planning purposes. Municipalities and natural resource conservation groups are increasingly turning to GIS as the tool for developing resource studies because of its flexibility and power in adding, manipulating and analyzing data. The State of Connecticut now has a GIS Office whose mission is to improve coordination of geospatial data throughout the state. Their aim is to ensure everyone has access to authoritative data sets. This includes executive agencies, research academics, regional planners, municipal governments, and more.

Brief narratives, diagrams and photographs accompany each map and there is a wealth of relevant data found in the appendices.

It is important to reiterate that the NRI can be used not only to identify appropriate areas for protection in a community, but also appropriate areas for development based on their natural resource features. The purpose of the process is to establish an information baseline that can empower local decision makers with the data they need to make informed decisions regarding development and natural resource management issues.

Note on Data Accuracy:
The GIS data used in this report comes from many different sources (notably the CT DEEP, HVA, FRWA and the Town of Hartland) and therefore has varying levels of accuracy. It should be considered appropriate for town-level planning exercises, but may not be adequate for parcel-level analysis. Some of the data are general in nature, and some provide significant detail. It will be important to field-verify any information used in an actual decision-making process. As the availability of GIS data grows and improves it will be a relatively simple process to update and improve this document.

Funding for this NRI has been provided by the Farmington River Coordinating Committee (FRCC). FRCC was formed when the Upper Farmington River was designated as a federal Wild and Scenic River in 1994. Five towns are represented on FRCC's Board – Barkhamsted, Canton, Colebrook, Hartland, and New Hartford. The Committee meets monthly to implement the Upper Farmington River Management Plan, and to bring major river stakeholders together on a regular basis to stimulate cooperation and coordination on river-related issues. In Hartland, the section of the river runs through the southwest corner of town. The FRCC website address is www.farmingtonriver.org.

[1] Methodology for the Natural Resources Inventory adapted from Manual of Mapping Techniques by C. James Gibbons of the College of Agriculture and Natural Resources, University of Connecticut, Storrs.

III. Maps and Descriptions

General map comment: Many of these maps have been updated from the 2007 Hartland NRI. Thanks to automated geographical storage and retrieval systems such as the CT DEEP GIS Open Data Website, GIS specialists are now able to rapidly integrate and analyze large amounts of spatial map and file data over selected geographic areas. This allows for improved data accuracy and ease of access to spatial data.

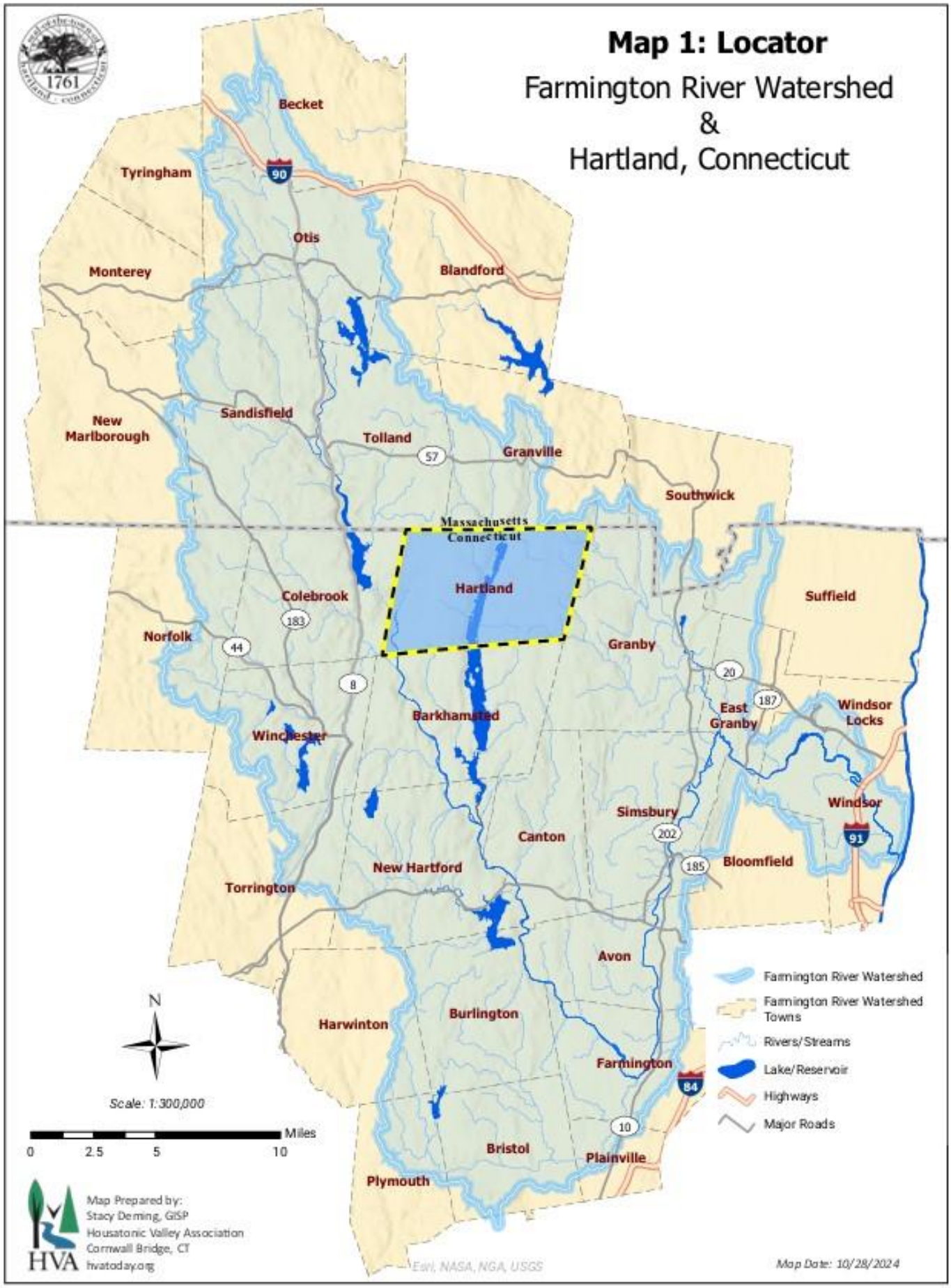
1) Geography: Farmington River Watershed Map

Local Geographic facts: "Where's Hartland?" by Fred Jones

Hartland is located in the very northwest corner of Hartford County. When incorporated in 1761, Hartland was in Litchfield County. Its shape is a nearly perfect parallelogram whose width is about one and a half times its height. The width of the town, from east to west is approximately 7.36 miles, and its height from north to south is approximately 4.7 miles, for a total land area of 34.6 square miles or 22,144 acres. The southwest part of Hartland is the centroid of the Farmington River Watershed area (see Map #1). The 42nd parallel (N) and the 73rd meridian (W) intersect at a point in West Hartland. This is one of only two such intersections in our State, with the 42nd and 72nd intersection occurring in Woodstock. Hartland's lowest elevation is 550' where Sawmill Brook enters the Barkhamsted Reservoir. Hartland has the highest elevation in Hartford County at 1,422 ft., located in West Hartland at a point called "South Johnson Hill" in the Tunxis State Forest close to Colebrook, CT and Tolland, MA. In 1927, the Metropolitan District Commission (MDC) began purchasing the land in the central valley of the town called "The Hartland Hollow", and by 1940 completed the Saville Dam in Barkhamsted, then flooded the valley for a public water supply reservoir, literally splitting the town in half. To Hartland's north is Massachusetts, to its West is Colebrook, to its East is Granby and to its South is Barkhamsted. Hartland is one of our States most forested towns. Core forest blocks within the town are: Tunxis, Peoples and American Legion State Forests. Those surrounding forests are: the Granville Forest to its north; the Enders Forest and preserved lands of North Granby to its east; the Algonquin Forest and the preserved lands of Colebrook to its west; and finally, the four State Forests in Barkhamsted to its south. Hartland's remote location offers little thru-traffic on its roads curtailing urban sprawl. Thus, Hartland is very much an "ecological island", in fact, it might be said that Hartland's very location within Connecticut, is its most important natural resource.

Hartland's slopes are such that it sheds water into both the West Branch of the upper Farmington River and the Barkhamsted Reservoir, which is the East Branch of the Farmington River where it originates in Connecticut. Also, the East Mountain range of Hartland sheds water to its west, eventually into the East Branch of the Farmington River and is the "headwaters" for the West Branch of the Salmon Brook as it sheds water to its southeast. Hartland is the only town in Connecticut having two National Wild & Scenic River Systems within its boundaries.

The Farmington River Watershed Map including Hartland in the center is shown on the next page. This map depicts the 33 towns within the 609 square-mile Farmington River Watershed. The Farmington River Watershed Association (FRWA) is a 501(c)(3) non-profit organization founded in 1953 whose mission is to preserve, protect, and restore the Farmington River and its watershed lands through research, water monitoring, habitat restoration projects, education and advocacy.


Map 1: Locator
Farmington River Watershed
&
Hartland, Connecticut
Becket
Tyringham
Otis
Monterey
Blandford
New Marlborough
Sandisfield
Tolland
Granville
Southwick
Massachusetts
Connecticut
Hartland
Colebrook
Suffield
Norfolk
Granby
Barkhamsted
East Granby
Windsor Locks
Winchester
Windsor
Simsbury
Canton
Bloomfield
New Hartford
Torrington
Avon
Harwinton
Burlington
Farmington
Bristol
Plainville
Plymouth
N
Scale: 1:300,000
Miles
0
2.5
5
10
Farmington River Watershed
Farmington River Watershed Towns
Rivers/Streams
Lake/Reservoir
Highways
Major Roads
Map Prepared by:
Stacy Deming, GISP
Housatonic Valley Association
Cornwall Bridge, CT
hvatoday.org
HVA
Esri, NASA, NGA, USGS
Map Date: 10/28/2024

The bigger picture: The Highlands Act
(a municipal opportunity for the funding of land acquisitions)

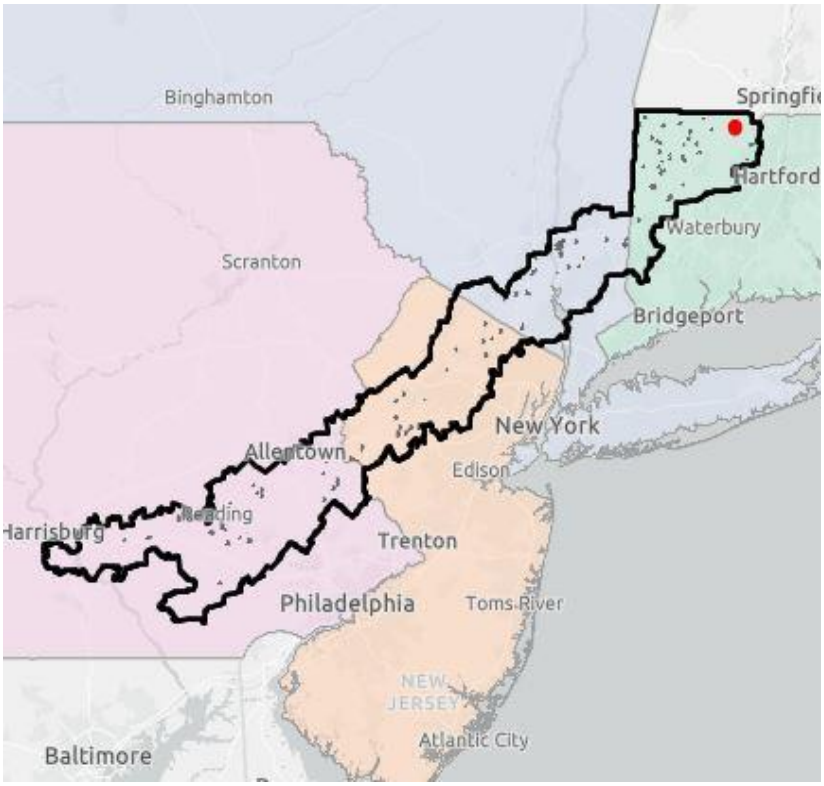
Hartland is located in the Northeastern Highlands Region that encompasses the Appalachian Mountain Range segment that extends across areas of Connecticut, New York, New Jersey, and Pennsylvania, as designated by the Federal Highlands Conservation Act of 2004 (P.L. 108-42, United States Statutes at Large). The resulting Highlands Block encompasses 3.4 million acres, 25 counties, and 319 municipalities and contains a wealth of natural resources and associated benefits: forests of oak, hickory, ash, pine, and hemlock; a rugged landscape of discontinuous, steep-sided ridges and plateaus; streams and lakes that provide drinking water for millions; ecosystems that shelter hundreds of rare and beautiful plants and animals; and open spaces that offer diverse recreational opportunities. Congress designated the Highlands Region because development threatens to erase, fragment, and degrade forests, streams, and plant and animal communities. Also threatened are the benefits that these natural resources provide for residents of the Highlands and the vast metropolitan area to the east, such as clean drinking water and unfragmented forests. Land conservation efforts in Hartland advances the protection of many of the natural values cited in the Highlands Conservation Act.

Source: Hartland Land Trust's Charles & Lois Beach Management Plan by Harry White

This map below depicts the land conservation projects completed under the Highlands Conservation Act Grant Program as of September 2024. The grant program supports land acquisition projects led by state agencies and conserve key resources outlined in the act including clean drinking water, healthy forests, thriving wildlife populations, productive agriculture, and abundant recreational opportunities. Since the passage of the act in 2004, $48 million in federal funds, matched by $74 million in non-federal funds, have been awarded to permanently protect 16,226 acres of land. More information about the act and the grant program is found here: https://www.fws.gov/program/highlands-conservation-act-grant

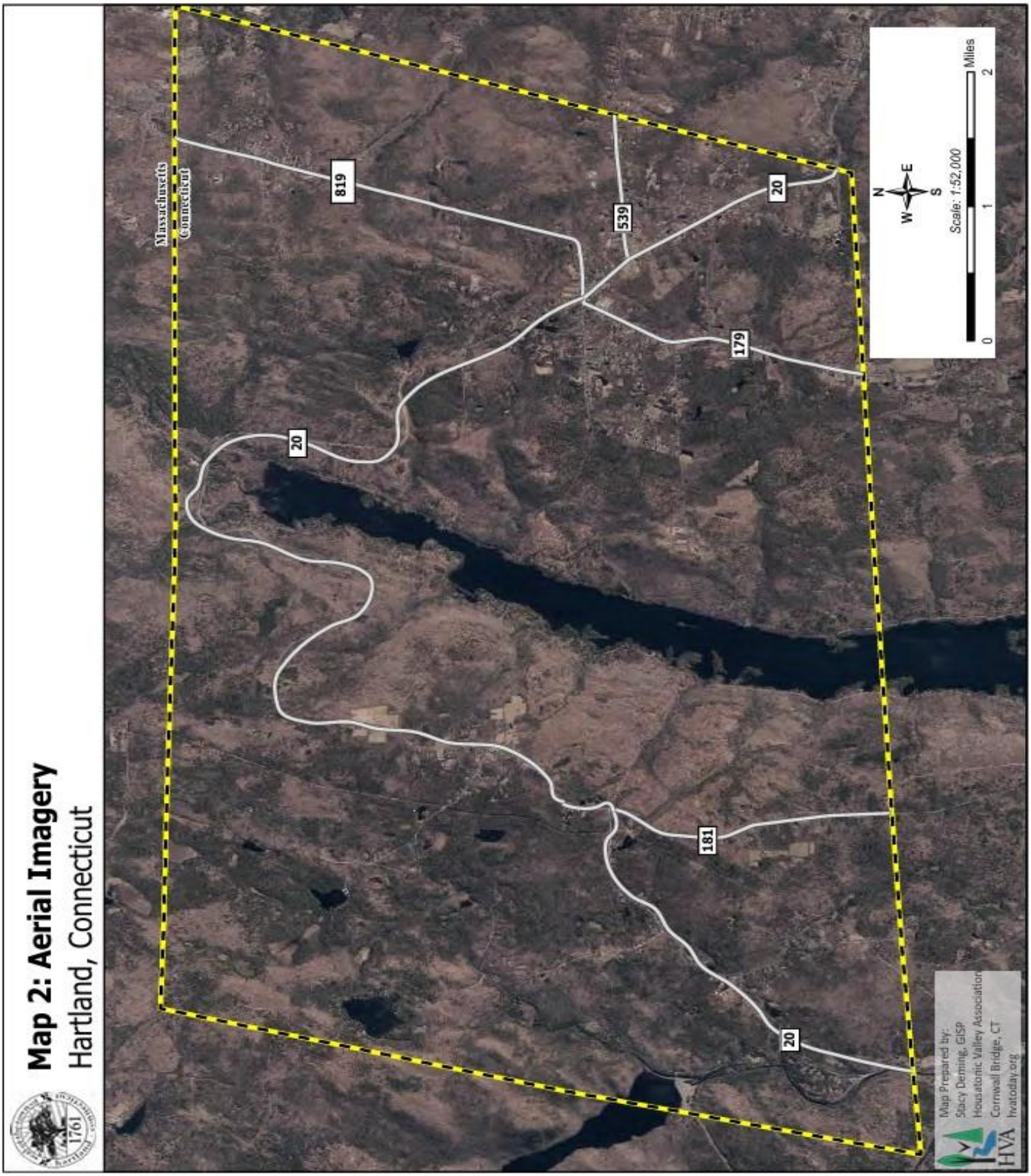
Source: This dataset comes from Office of Conservation Investment Program in the U.S. Fish and Wildlife Service, Northeast Region.

Highlands Region (Hartland is the red dot):



2) Aerial Imagery

This map depicts the heavily forested areas of our town as aforementioned. Large contiguous forests blocks with little fragmentation. Water resources of the Upper Farmington River, Hogback Reservoir, Ponds and the Barkhamsted Reservoir are displayed. The main highways in town, as well as the buildings in the West and East Villages can be seen. The rural element of our town is very evident in this map.



3) Topography

Hartland's topography is depicted here with 10' contour lines. Topography is simply the elevation of the land above sea level. Close, dense contour lines indicate a steeper slope, and contour lines that are farther apart from each other indicate a more gradual slope. Hartland lies in the western highlands of Connecticut, an area that has the highest elevations in the state (the highest point being roughly 2,100 ft. at Bear Mtn. in Salisbury). Hartland has a mean elevation of 1029.67 feet with its highest at 1422 feet and lowest at 550 feet. The microclimate caused by elevation and atmospheric moisture produces hot, humid summers with sporadic thunderstorms (even tornadoes), and long, cold winters with heavy snowfall. The dynamic topography of this part of the state provides beautiful scenic views as well as various habitats that support a wide array of plant and animal life.
Source: USGS

Upper Barkhamsted Reservoir **Photo: Fred Jones**

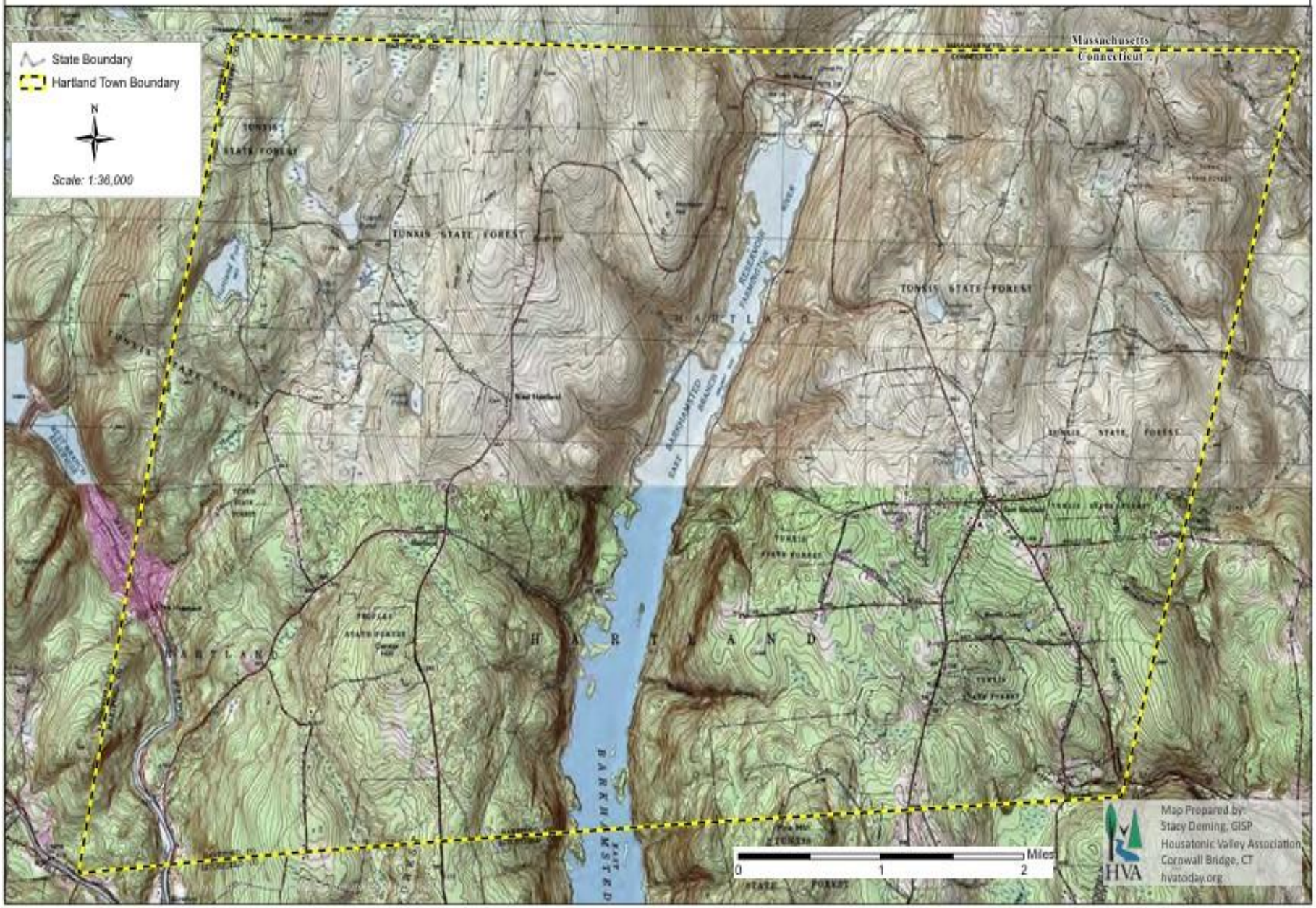
Perhaps the most iconic image of Hartland's landscape, illustrating its topography and slopes, is this photo of what was once called the "Hartland Hollow" as viewed from The Lookout on Route 20.

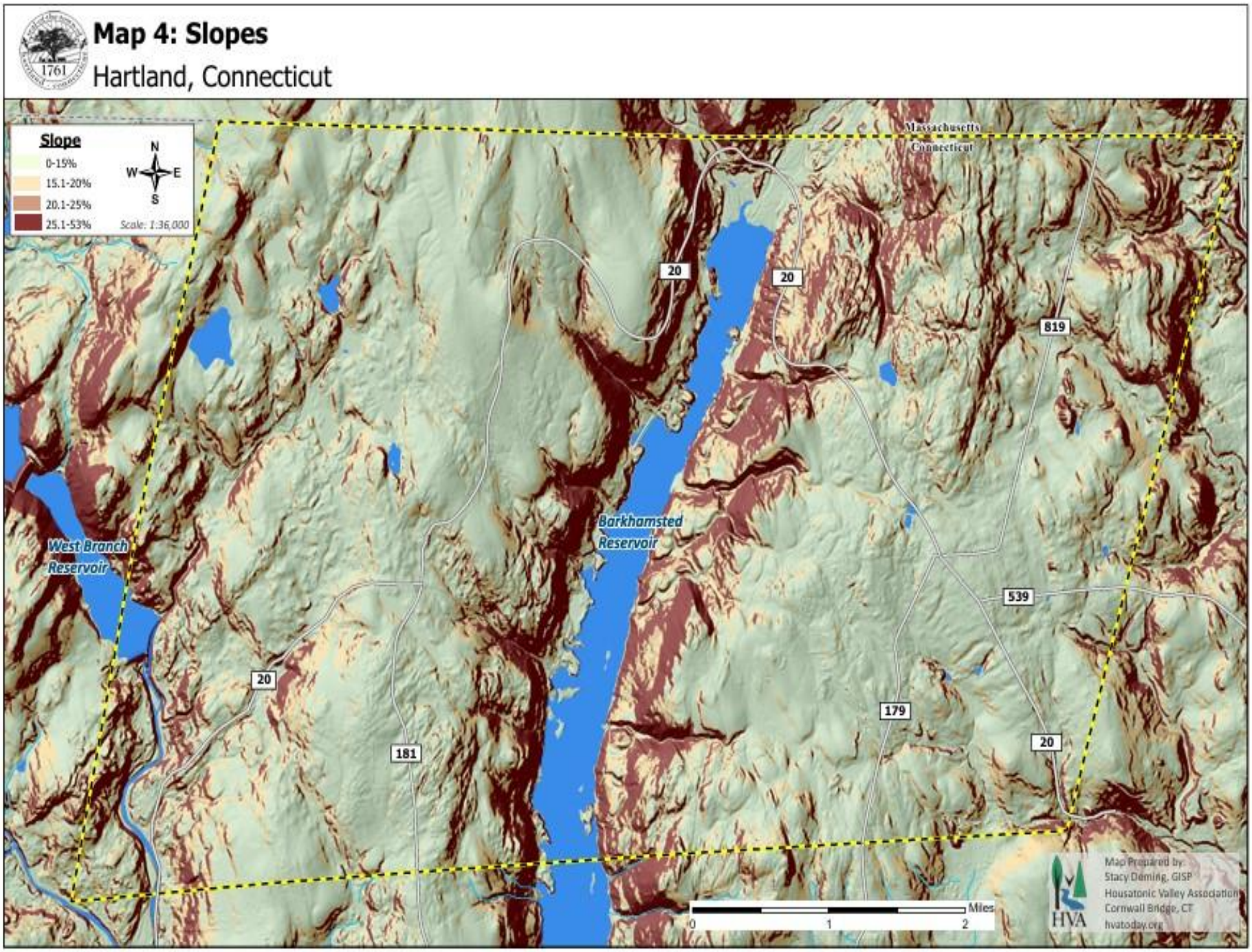
4) Slopes

While both are related to the shape of land, "topography" refers to the overall configuration of a land surface, including its hills, valleys, and plains, while "slope" specifically describes the steepness of a particular section of that land, measuring how much elevation changes over a given distance; essentially, topography is the big picture of the land features, and slope is a specific measurement of incline within that landscape.
Source: Google AI Assistant

Map 3 : USGS Topographic Map

Hartland, Connecticut




Map 4: Slopes
Hartland, Connecticut
Slope
0-15%
15.1-20%
20.1-25%
25.1-53%
N
W
E
S
Scale: 1:36,000
Massachusetts
Connecticut
20
20
819
Barkhamsted Reservoir
West Branch Reservoir
539
20
179
181
20
Miles
0
1
2
Map Prepared by:
Stacy Deming, GISP
Housatonic Valley Association
Cornwall Bridge, CT
hvatoday.org
HVA

5) Bedrock Geology

Here in Hartland, today, our bedrock dates from the Paleozoic Era but the strata represented here generally are devoid of fossils. The strata may have once contained abundant fossils but they could not have survived the high temperatures and pressures of metamorphism. The rocks which are represented today as schist and gneiss are recrystallized sediments laid down in lower Paleozoic time some 500 million years ago. Much of what we know about the age of the rocks in Hartland is based on inferences from fossils found elsewhere and/or from radiometric data obtained by isotope analysis.
Source: John Raabe, Ph.D. John's full report can be accessed by the link provided in Appendix #6

The Bedrock History:

We do not generally think of Connecticut as part of the Appalachians, but we share a similar tectonic history. A great trough extended from the Gaspe to the Gulf of Mexico through most of Paleozoic time. During that period sediments accumulated in the trough which slowly sank to accommodate their growing volume. The trough is known as the Eastern or Appalachian Geosyncline. The Appalachians proper are the result of a major mountain building event in the upper Paleozoic (Permian) which was the collimation of a series of earlier events associated with the geosyncline belt. Three major events altered the Eastern Geosyncline during the Paleozoic:

The Taconic event took place in the upper Ordovician about 360 million years ago. The sediments were folded, faulted and uplifted over about half of New England and some feel that the resulting mountains were truly majestic, rivaling the modern Rockies.

Subsequent to their development as a mountain range, the Appalachians have been reduced to a nearly flat plain at least twice having been renewed in the meantime by general uplift. The nearly flat mountain tops visible as a flat skyline over much of the terrain in eastern and western Connecticut are remnants of those once low, flat surfaces. Only one major event remains to complete the bedrock history of the State. About 160 million years ago, in the Triassic period, a final disturbance took place in the already closed geosyncline. Though not represented by rocks in Hartland, Triassic sediments and Mesozoic faulting set the stage for the topography underlying the low lands, which give us the spectacular view to the east from Mountain Road near the boundary with Granby. The disturbance is called the Pallisadian after the famous cliffs by that name and the distinctive red sediments associated with it are known as the Newark Series. Unlike the crystalline rocks of the Hartland highlands, the Triassic red beds are famous for dinosaur tracks, fish fossils and occasional turtles. The lava flows, sills and dikes generally referred to as trap rock yield easily accessible durable stone and aggregate for construction.

Source: John Raabe, Ph.D. John's full report can be accessed by the link provided in Appendix #6

The Hartland Formation: (area: East Hartland)

Named Hartland schist for development of Hartland, Hartford Co., CT. Unit is southern continuation of large areas of rock on the Hoosac Mountain Range, located at the western edge of the northwest Berkshire Plateau in western Massachusetts. Consists of mica schist of definable character, but exhibits great variation in texture, composition, and field appearance. Where least affected by intrusion it is highly fissile. Ranges in color from clear metallic muscovite to black biotite mixed with graphite. Sericite and chlorite often replace biotite. Age is considered Early Cambrian.
Source: GNU records (USGS DDS-6; Reston GNULEX)

Cameron's Line: (area: West Hartland)

Cameron's line, a well-known fault line, runs through the western portion of Hartland then south to New Hartford, west to Torrington then continues south through Ridgefield and then further south to the Bronx NYC where it terminates in New Jersey. This fault line runs through Hartland along the west edge of the Barkhamsted Reservoir dividing two distinct tectonic plates which are present in the town. This may explain why in April 2023, the 4.8 magnitude earthquake in Tewsbury, New Jersey was felt in Hartland.

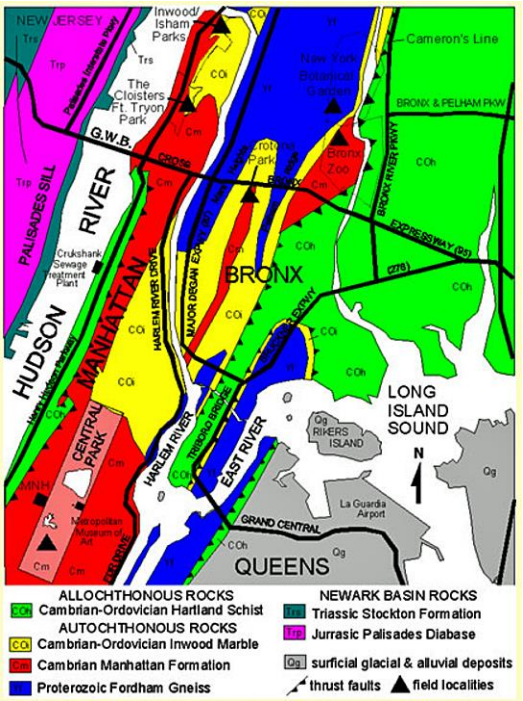
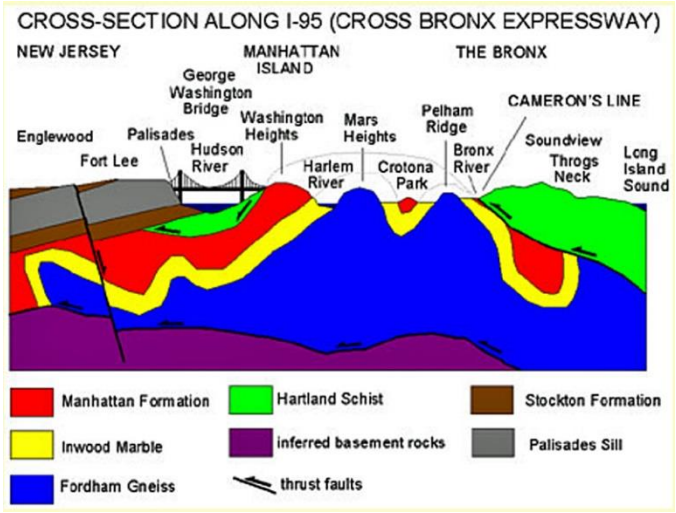


Figure 16. Geologic map of northern Manhattan and The Bronx (modified after Schuberth, 1967).



Source: GNU records (USGS DDS-6; Reston GNULEX).

Interesting fact: The "Hartland Formation" (named Hartland Schist) and Cameron's Line are found in New York City.

As one can see from the illustration below, the bedrock of West Hartland is quite different from the bedrock of East Hartland. Hoosac schist (the Hartland formation found in NYC) to the east and the Becket gneiss to the west of the valley.

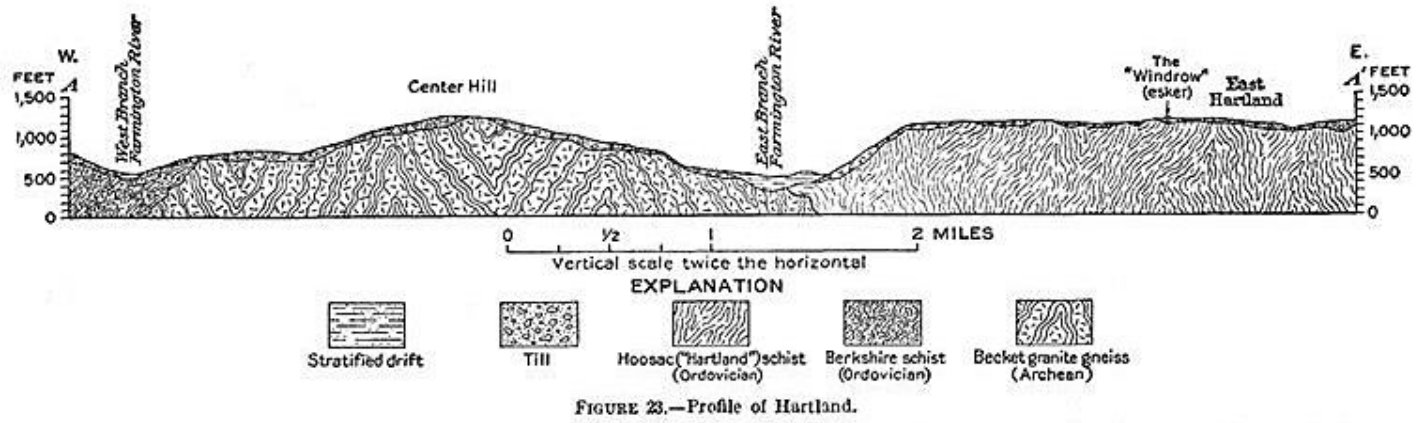


FIGURE 23.—Profile of Hartland.

Source: 1921 USGS Water Supply Paper 466 GROUND WATER IN THE SOUTHINGTON-GRANBY AREA, CONNECTICUT BY HAROLD S. PALMER

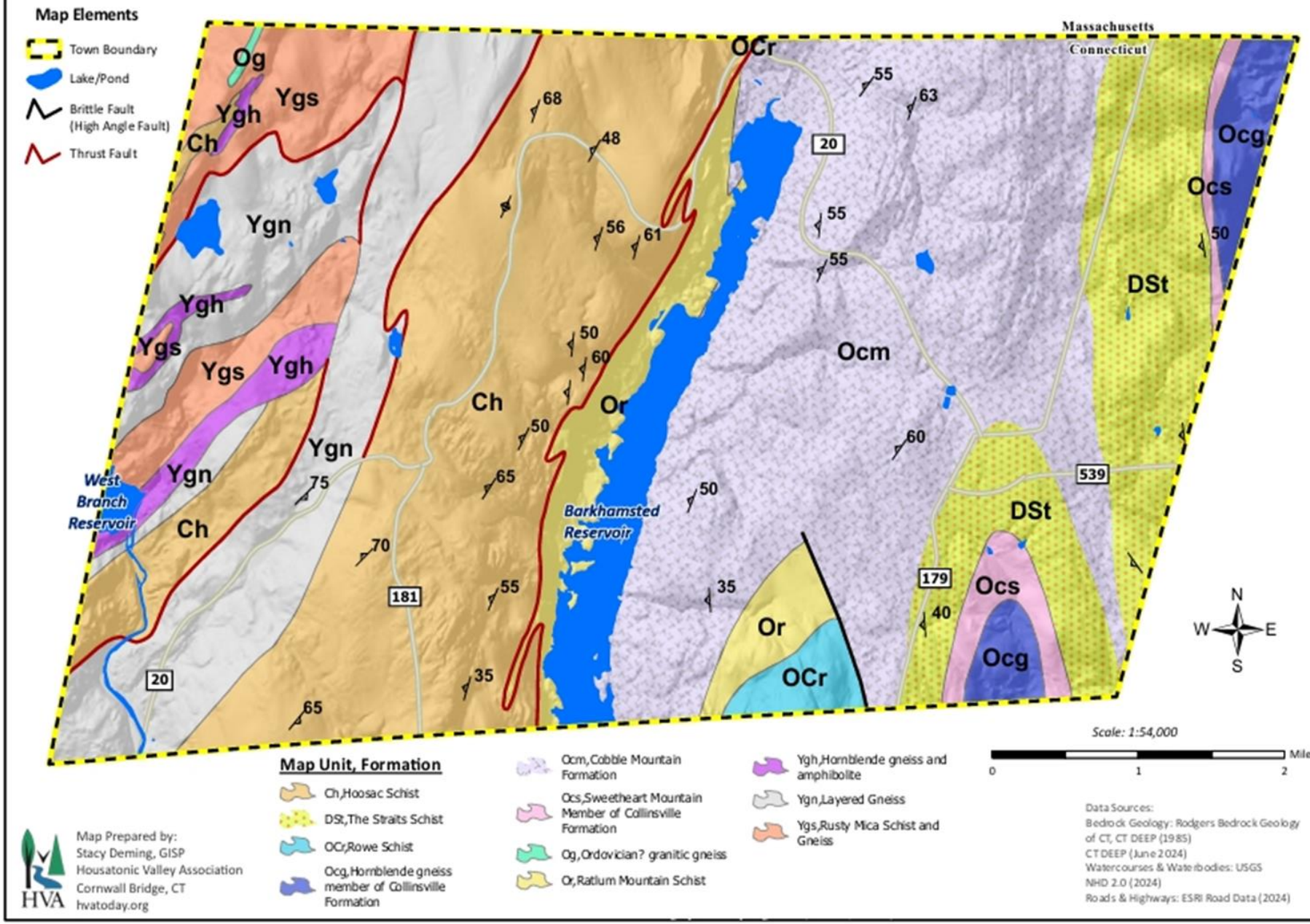
Importance of Bedrock Geology: Water holding capacity / Mining / Radon Gas / Drainage / Foundation Stabilization

Mining: A mica mine was operated for a number of years in East Hartland in the late 1800s. The strata ran out and the mine discontinued. No mining in town exists today. **Source: History of Hartland, Stanley A. Ransom 1961**

Radon Gas: Becomes present in the air and/or water as trace amounts of uranium in the bedrock decay.
A radon gas map with data for Hartland is found using this link:
https://portal.ct.gov/-/media/DEEP/geology/radon/RadonPotentialpdf.pdf

Map 5: Bedrock Geology

Hartland, Connecticut



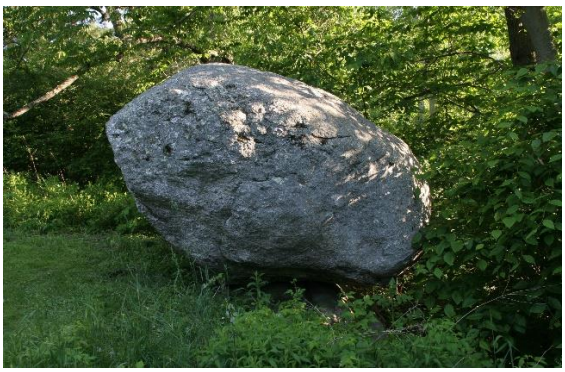
6) Surficial Materials

Surficial materials are those materials covering the lands surface above the bedrock formations. They take the form of boulders and rocks (till), gravel, sand, water, swamp, and alluvium or alluvial soils. Potential groundwater sources are areas within this surface layer with the ability to store and provide water.

Glacial Till:

Most of Hartland is till in various degrees. The last glacial period left Hartland with a large number of "glacial erratics" scattered over its landscape. These boulders of various sizes are of stone not indigenous to the area because they were transported from areas many miles away. As the ice melted, the boulders remained. Hartland's most famous glacial erratic in is "Balance Rock" in East Hartland, which stands about nine feet tall (see before and after photos). Another interesting feature of till is the esker. Eskers are formed from a void in the bottom of the ice sheet where smaller till material such as sand and gravel are collected as the ice block travels. The melted ice then deposits this material as an esker. There was a famous esker in East Hartland that was known as "The Windrow". This serpentine shaped mass of sand and gravel was approximately three-quarters of a mile long by 100 feet wide and 20 feet in height. Little remains of the esker today, since most of the gravel was excavated in the early 1960's for the construction of interstate 91 (see before and after photos).
Source: John Raabe, Ph.D. John's full report can be accessed by the link provided in Appendix #6

Balance Rock circa 1921 *



Balance Rock today, Photo F. Jones

The "Windrow" esker, circa 1921 *

Remains of the "Windrow" today, Photo F. Jones

*Source: 1921 USGS Water Supply Paper 466
GROUND WATER IN THE
SOUTHINGTON-GRANBY AREA,
CONNECTICUT BY HAROLD S. PALMER
Photographers unknown

Potential Groundwater:

Potential groundwater supply refers to areas of surficial materials (generally soils which overlay geological features) that show characteristics of supplying groundwater. These areas are deposits of "stratified drift" left by the last glacial period, which ended roughly 12,000 years ago. These deposits are of various sized clay, silt, sand and gravel, which allows for groundwater recharge through the increased pore space in the materials, and they also play an important role in providing surface water flow. In general, coarser material has a greater ability to store groundwater due to the increase in spaces between the grains. As the map depicts, the lowest yield areas are sand, while the highest yield areas are coarse gravel, which has larger pore space and can hold and transmit water at higher volumes. Hartland possesses only a few areas of surficial materials that have an established groundwater source potential, or a possible future groundwater source potential for public water supply needs. Such availability of groundwater for drinking water supply must be assessed in the context of the impacts to hydrologically connected and surface water areas. Any such proposed withdrawals of over 50,000 gallons per day are regulated under Connecticut General Statute Diversion Law.

Source: CT DEEP

Note: for detailed information on Hartland's soils refer to the following link:
USDA Web Soil Survey: https://www.hartlandct.org/images/Custom_Soil_Report_for_Hartland.pdf

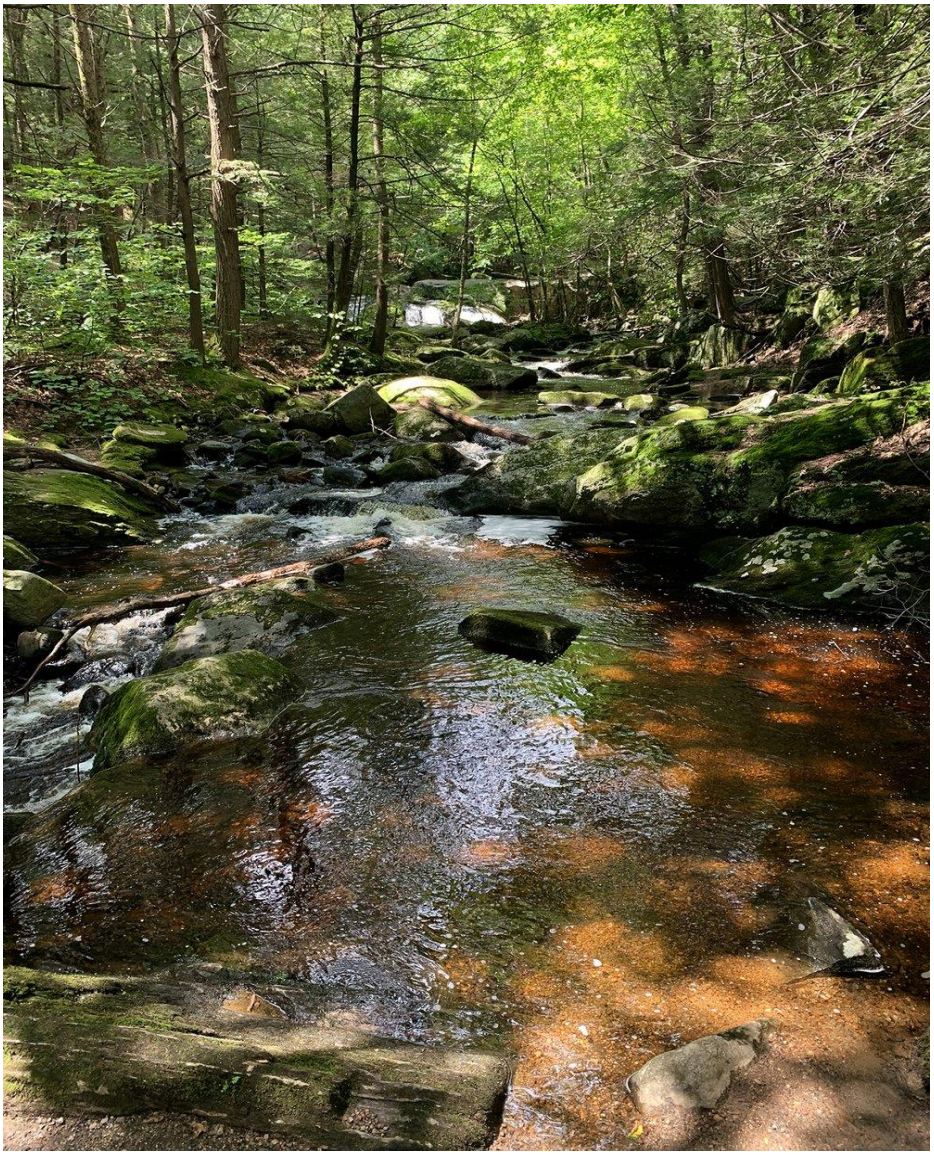
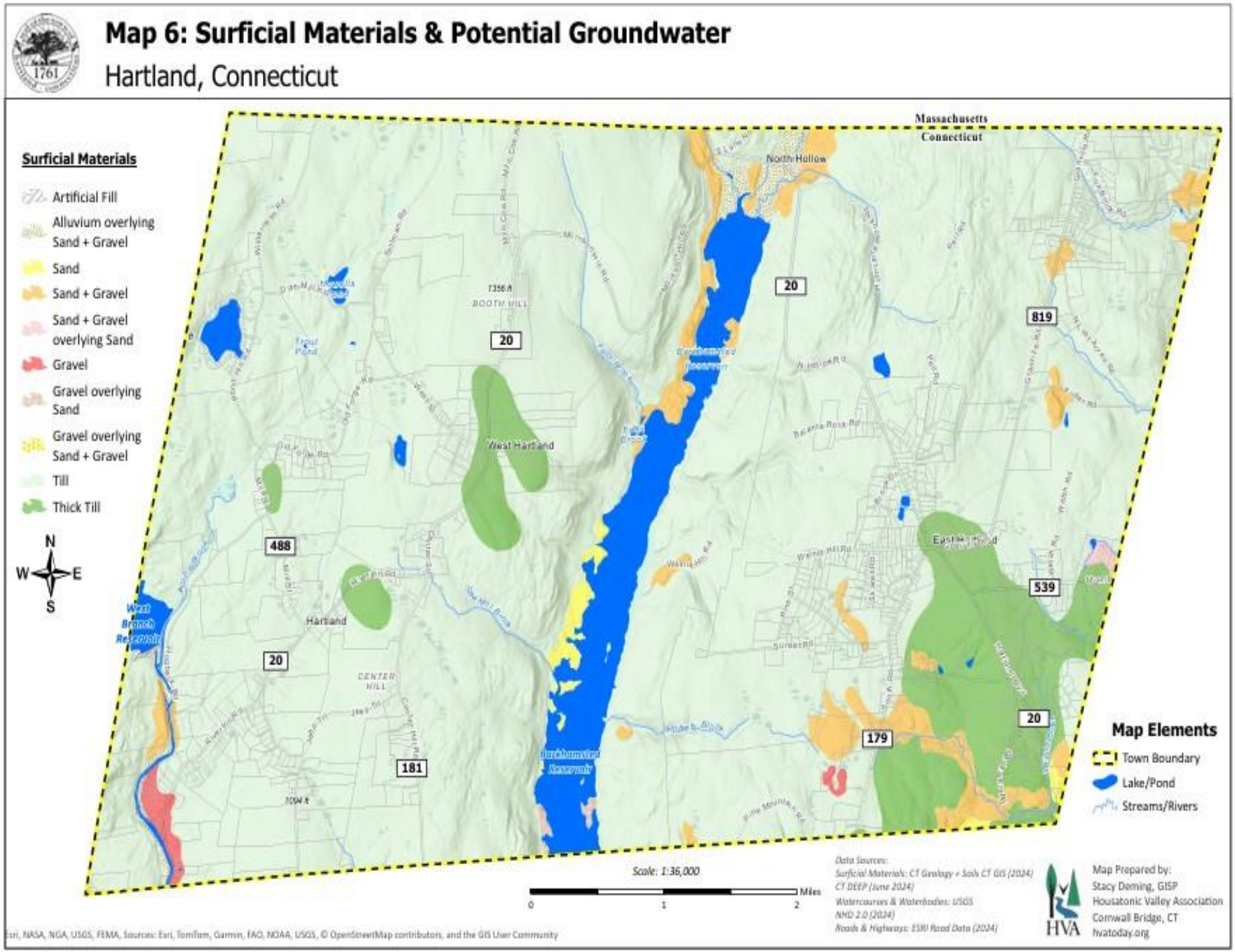


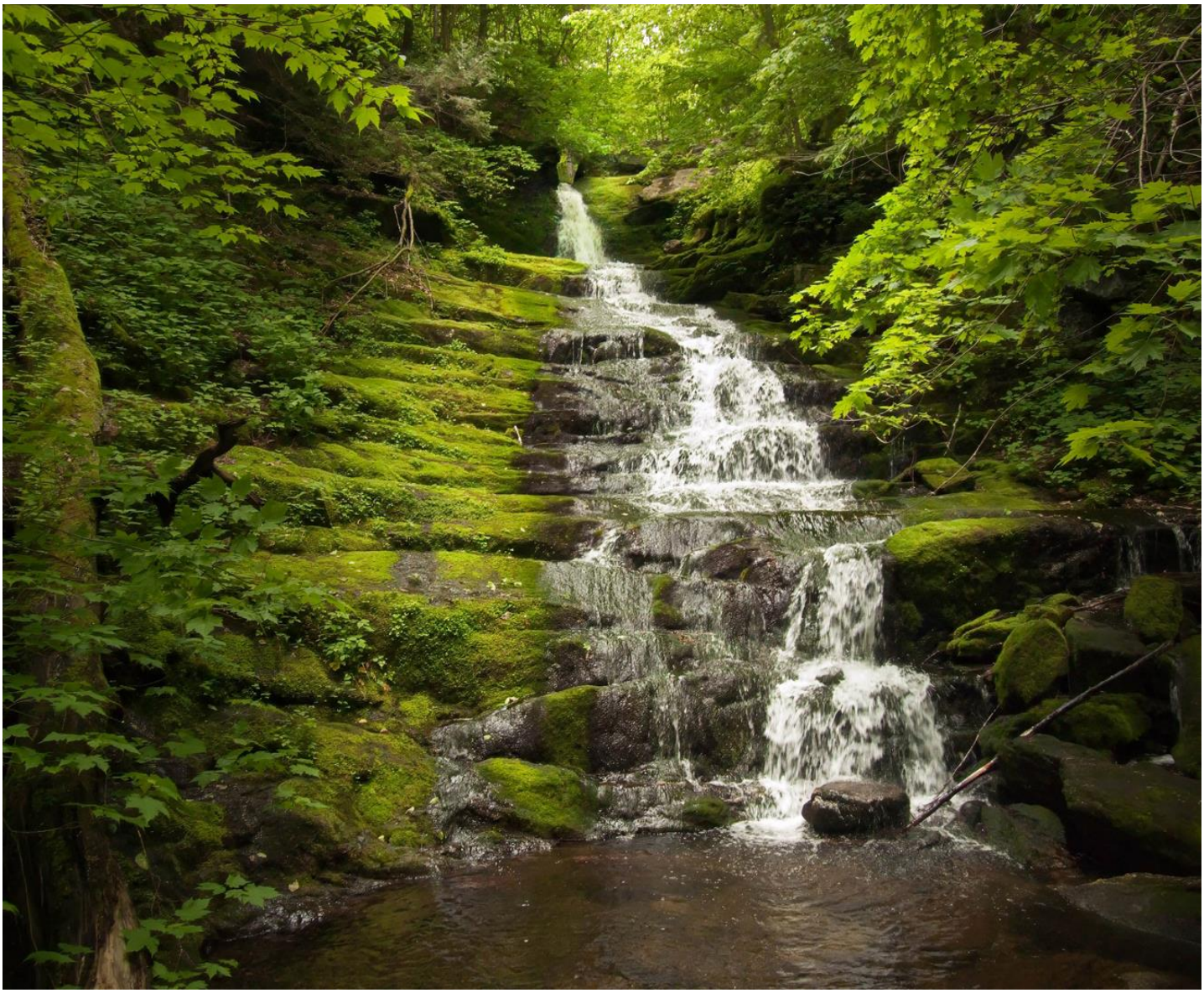
Photo: Traci Vincent


Map 6: Surficial Materials & Potential Groundwater
Hartland, Connecticut
Surficial Materials
Artificial Fill
Alluvium overlying Sand + Gravel
Sand
Sand + Gravel
Sand + Gravel overlying Sand
Gravel
Gravel overlying Sand
Gravel overlying Sand + Gravel
Till
Thick Till
N
W
E
S
Massachusetts
Connecticut
North Hollow
West Hartland
Hartland
East Hartland
Barkhamsted Reservoir
West Branch Reservoir
BOOTH HILL
CENTER HILL
20
819
488
539
179
181
Map Elements
Town Boundary
Lake/Pond
Streams/Rivers
Scale: 1:36,000
0
1
2
Miles
Data Sources:
Surficial Materials: CT Geology + Soils CT GIS (2024)
CT DEEP (June 2024)
Watercourses & Waterbodies: USGS NHD 2.0 (2024)
Roads & Highways: ESRI Road Data (2024)
HVA
Map Prepared by:
Stacy Deming, GISP
Housatonic Valley Association
Cornwall Bridge, CT
hvatoday.org
Esri, NASA, NGA, USGS, FEMA, Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

7) Subregional Drainage Basins, Watersheds, Streams & Waterbodies

The Town of Hartland is located within the Farmington River Watershed, and it contains a multitude of lentic (still bodies of water) and lotic (rivers or streams) waterbodies that comprise 1.6 square miles of the town's footprint. The Barkhamsted Reservoir is the largest water body in Hartland, and it serves as the boundary that separates West Hartland from East Hartland. Other notable waterbodies include the West Branch Reservoir, Hartland Pond, Howell's Pond, Foster's Pond, May Ponds, Emmons Pond, Camp Alice Merritt Pond, Valley Brook, Hurricane Brook, Falls Brook, Hubbard River, Sawmill Brook, and Roberts Brook.
Source: CT DEEP, NPS.

There are eight sub-watershed basins in Hartland: Farmington River; East Branch of the Farmington River; Hubbard Brook; Salmon Brook; West Branch Salmon Brook; Sandy Brook, Slocum Brook, and Valley Brook. Based on topography, the water from these sub-basins drains from springs, creeks, ponds, and wetlands into the larger tributaries. The entirety of the Town of Hartland is located within the regional drainage basin of the Farmington River, which is located in the major drainage basin of the Connecticut River. Notably, Hartland contains sections of both the Upper and Lower National Wild and Scenic waterways (Farmington River and Salmon Brook).
Source: CT DEEP, NPS.



Falls Brook **Photo: Raymond Clark**

Major Brooks:

Brooks in Hartland which drain into the East Branch of the Farmington River (Upper Barkhamsted Reservoir) basin include: Hubbard Brook, Valley Brook, Hurricane Brook, Sawmill Brook, Falls Brook and Roberts Brook. There is at least another dozen unnamed small brooks and streams feeding this basin.

Brooks which drain into the Salmon Brook (National Wild &Scenic) basin include:
Fox Brook, Belden Brook and Ring Brook. There is another dozen unnamed small brooks and streams feeding this basin.

Brooks which drain into the West Branch Salmon Brook (National Wild &Scenic) basin include:
Wright Brook, and Moosehorn Brook with about a dozen unnamed small brooks and streams feeding this basin.

Brooks in Hartland which drain into the West Branch of the Farmington River (National Wild & Scenic) basin include: Howell's Brook, Thorn Brook, and three other fairly large unnamed brooks which are fed by several small streams and wetland seeps originating in the West Hartland uplands.

Slocum Brook, Hubbard Brook and Valley Brook basins mostly lie in Massachusetts with their southern edges on the northern border of Hartland. There are no major brooks in Hartland which drain into these basins.

In Hartland, the Sandy Brook Basin barley clips a small portion of the southwest corner of the town.
There are no major brooks in Hartland which drain into this basin.

Major Water Bodies in Town (largest to smallest):

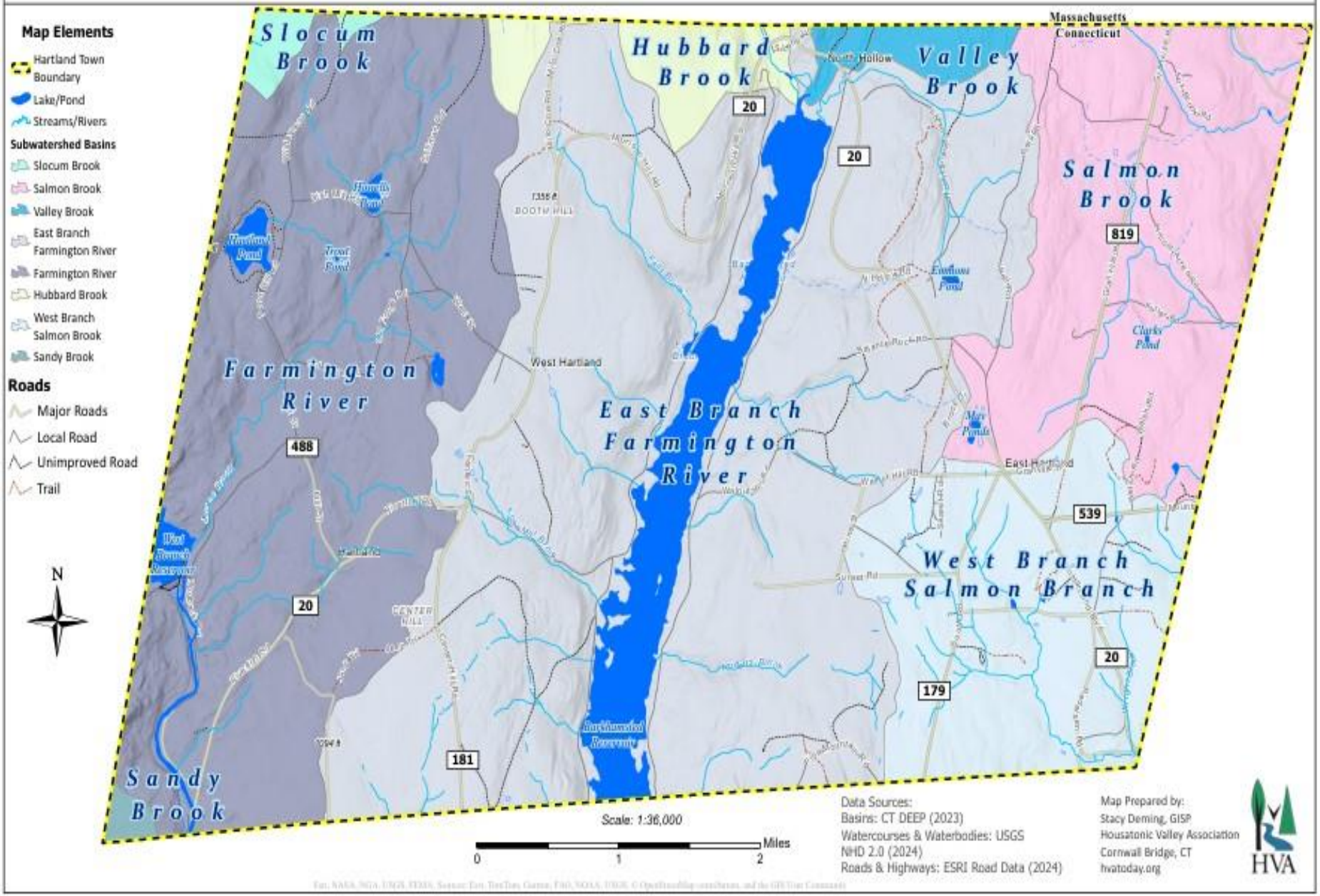
Barkhamsted Reservoir (no recreation)
Hogback Reservoir (boating, fishing / boat launch)
Hartland Pond (Private w/Town Access Area / no motorized watercraft)
Howell's Pond (boating, fishing / boat launch)
Foster's Pond (Tunxis State Forest / no boat launch)
Emmons Pond (Tunxis State Forest / no boat launch)
Guy Pond (Private / Avon Fish and Game Club)
Trout Pond (Tunxis State Forest)
Camp Alice Merrit Pond (Town Recreation Area)
May Ponds (Tunxis State Forest)
Hi View Pond (Private)

Hogback Reservoir **Bethany Riley**

Fosters Pond **Jane Jones**

Map 7: Subregional Drainage Basins

Hartland, Connecticut



8) Wetland Soils & Areas of Special Flood Hazard

The State of Connecticut defines inland wetlands based on soils. The Connecticut Inland Wetlands and Watercourses Act defines wetland soils to include any of the soil types designated as poorly drained, very poorly drained, alluvial, or floodplain by the National Cooperative Soil Survey, as may be periodically amended, of the Natural Resources Conservation Service (NRCS) of the United States Department of Agriculture. The wetlands map shows wetland locations as established through this service. The NRCS notes "The soil data set is not designed for use as a primary regulatory tool in permitting or citing decisions, but may be used as a reference source. This is public information and may be interpreted by organizations, agencies, units of government, or others based on needs; however, they are responsible for the appropriate application." In addition, it is noted "The depicted soil boundaries, interpretations, and analysis derived from them do not eliminate the need for onsite sampling, testing, and detailed study of specific sites for intensive uses. Thus, these data and their interpretations are intended for planning purposes only." This data indicates that 9% of the town has wetland soils as defined by the town's wetland definition and that 4.8 % of the town is water.

Source: U.S. Dept. of Agriculture, Natural Resource Conservation Service Soils SSURGO database

USDA Web / NRCS Custom Soil Survey for Hartland:
https://www.hartlandct.org/images/Custom_Soil_Report_for_Hartland.pdf

Wetland in East Hartland **Photo: Janet Carlisle**

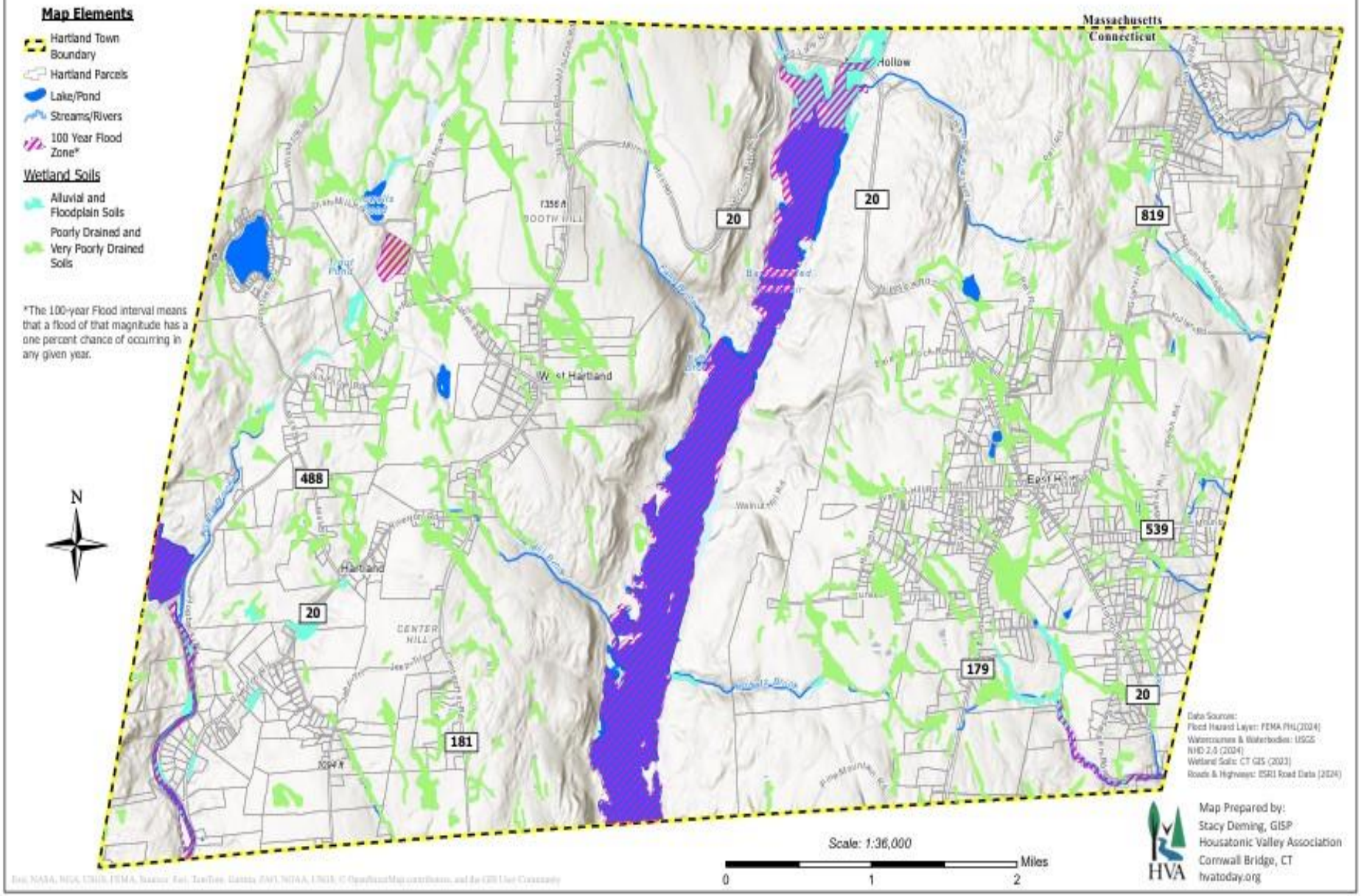
FEMA Flood Zones

The National Flood Hazard Layer (NFHL) is a geospatial database that contains current effective flood hazard data. FEMA provides flood hazard data to support the National Flood Insurance Program. People and organizations can use the information to better understand the of flood risk and type of flooding. These areas of town are those that would be inundated by a 100-year flood, or a large flood with the probability of occurring one time in every one hundred years.

Source: National Flood Hazard Layer

Map 8: Wetland Soils FEMA Flood Zones

Hartland, Connecticut



9) Water Quality, Dams, Leachate & Wastewater Discharge

This map reflects a host of information related to the quality of Hartland's surface and groundwater features.

Data includes:

a. Water Quality Classification - Section 303 of the Federal Clean Water Act requires states to adopt water quality standards and classifications for both surface and groundwater. Each classification is based on certain standards and the ability of the waterbody to support certain uses such as drinking, boating and swimming. Water Quality Standards set an overall policy for the Department of Environmental Protection in accordance with Section 22a 426 of the General Statutes. The pertinent parts of the water quality standards and criteria are be found in the narrative and data with Map 10 which follows.
Source: CT DEEP

b. Dams - Dams can be beneficial for flood control and hydropower production; however, they can also limit longitudinal fish and energy passage through river and stream systems. The CT DEEP lists 11 dams present in the town of Hartland. Further study should be done to assess the impact and utility of the dams to determine if opportunities exist to improve aquatic habitat. Appendix 2 provides a list of the dams located within the Town of Hartland.
Source: CT DEEP

c. Leachate, Wastewater Discharge, and Sewage Treatment – Leachate is formed when rain water filters through buried waste and draws out contaminants. There are five points of known water quality contamination in town. Appendix 2 provides a list and location of these sites.

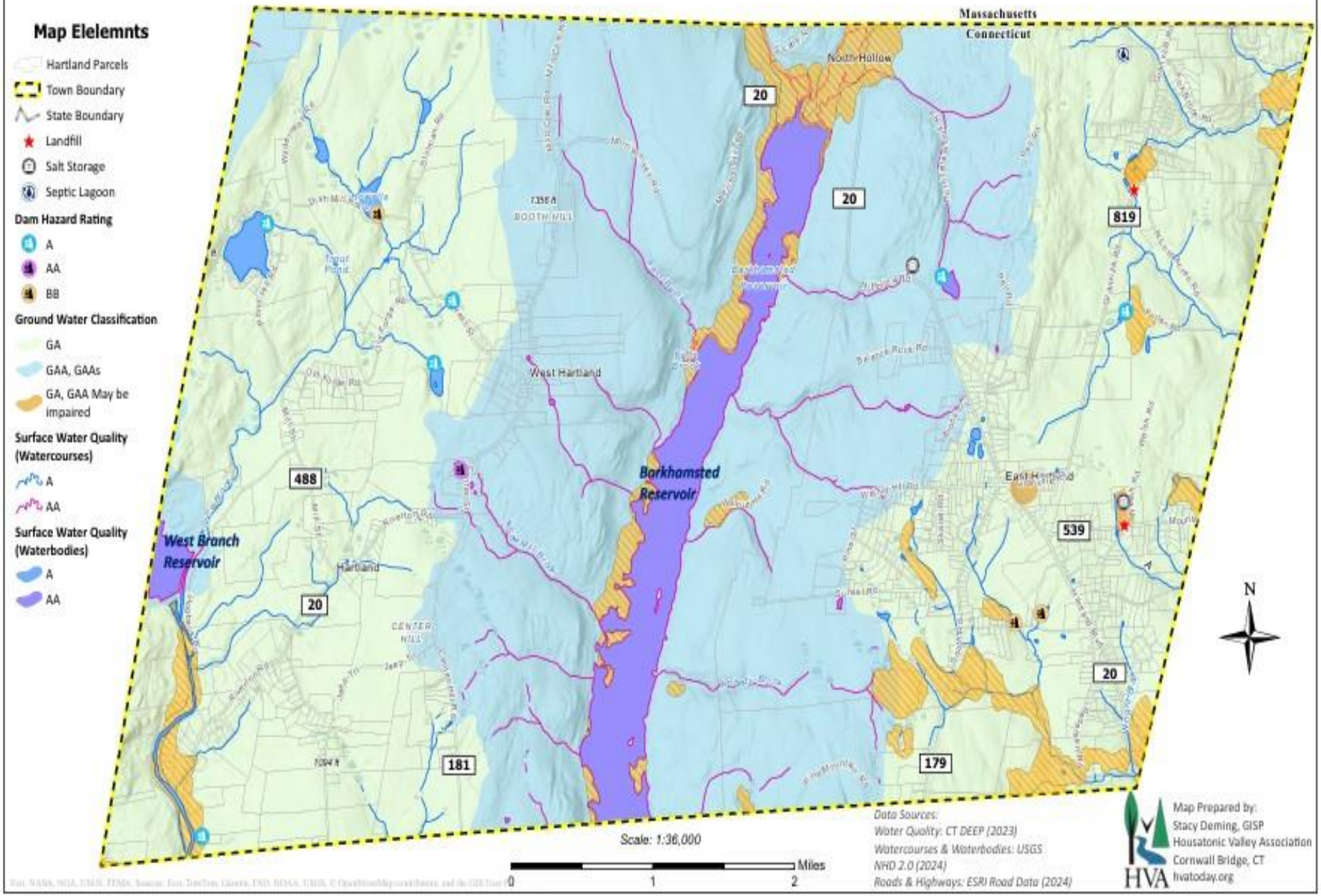
Source: CT DEEP with additions by FRWA.

Wetland / Beaver Pond in West Hartland **Photo: Diane Barone**

Beaver Dams: Hartland has many beaver dams creating "beaver wetlands" which store groundwater and control water velocity thus preventing soil loss through erosion. Another benefit of these wetlands is carbon and nitrogen cycling and nutrient exchange acting as "mini water treatment facilities".

Map 9: Water Quality, Dams & Wastewater Leachate Discharge

Hartland, Connecticut



10) Water Resources / ground water recharge areas / ground water quality / surface water quality.

Water Quality Standards (WQS) and Classifications Fact Sheet

The WQS have several purposes:

- provide guidance and policy about water quality in the state and DEEP's goals for maintaining or improving that quality
- establish designated uses of surface and ground water
- indicate the general types of discharges allowed
- ensure the segregation of drinking water supplies from waters used for waste assimilation
- provide a framework for the establishment of priorities for pollution abatement, dispensation of State funding, remediation goals; and
- provide guidance for location decisions for business and industry as well as other economic developments

The WQS do not stand alone as a regulatory means of protecting public health and the environment.

These standards are integrally related to, and applied by DEEP simultaneously with, other statutory and regulatory requirements governing water and waste management. As an example of how these pieces fit together, the following may be of assistance.

- The WQS set forth the types of wastewaters that can be discharged in various classifications to meet statutory goals. In addition, the WQS provide the guiding principles concerning waste assimilation, aquatic toxicity and the goals for receiving waters.
- Section 22a-430 of the General Statutes allows and sets procedures for the permitting of discharges of treated wastewater to the waters of the State.
- If the type of discharge is allowed, then the details of application procedures and requirements for treatment, monitoring and reporting of the specific discharge are provided by Sections 22a-430-1 through 4 of the Regulations of Connecticut State Agencies.

Water Quality Classifications:

The water quality classifications established by Connecticut's Water Quality Standards are summarized below with a brief listing of the designated uses and allowable discharges for each classification.

Inland Surface Water Classifications

Class AA
Designated uses: existing or proposed drinking water supply, fish and wildlife habitat, recreational use (may be restricted,) agricultural and industrial supply.
Discharges restricted to: discharges from public or private drinking water treatment systems, dredging and dewatering, emergency and clean water discharges.

Class A
Designated uses: potential drinking water supply; fish and wildlife habitat; recreational use; agricultural and industrial supply and other legitimate uses including navigation.
Discharges restricted to: same as allowed in AA

Class B
Designated uses: recreational use: fish and wildlife habitat; agricultural and industrial supply and other legitimate uses including navigation.

Discharges restricted to: same as allowed in A and cooling waters, discharges from industrial and municipal wastewater treatment facilities (providing Best Available Treatment and Best Management Practices are applied), and other discharges subject to the provisions of section 22a- 430 CGS.

Groundwater Classifications:

Class GAA

Designated uses: existing or potential public supply of water suitable for drinking **without treatment;** baseflow for hydraulically connected surface water bodies. Discharges limited to: treated domestic sewage, certain agricultural wastes, certain water treatment wastewaters.

Class GA

Designated uses: existing private and potential public or private supplies of water suitable for drinking without treatment; baseflow for hydraulically connected surface water bodies. Discharges restricted to: as for GAA and discharge from septage treatment facilities subject to stringent treatment and discharge requirements, and other wastes of natural origin that easily biodegrade and present no threat to groundwater.

Class GB

Designated uses: industrial process water and cooling waters; baseflow for hydraulically connected surface water bodies; presumed not suitable for human consumption without treatment. Discharges restricted to: same as for A (Note; same treatment standards apply), certain other biodegradable wastewaters subject to soil attenuation.

Class GC

Designated uses: assimilation of discharge authorized by the Commissioner pursuant to Section 22a-430 of the General Statutes. As an example, a lined landfill for disposal of ash residue from a resource recovery facility. The GC hydrogeology and hydrologic setting provides the best safeguard to adjacent resources. Discharges restricted to: potential discharges from certain waste facilities subject to specific permitting requirements.

Standards Adoption and Public Participation:

Section 22a-426 of the General Statutes provides specific procedures for the adoption of all portions of the WQS. The Statute provides that any revision of the standards or classification map be subject to public notice requirements and a public hearing. Notice is printed in the Connecticut Law Journal and in newspapers of general circulation in the affected areas.
Classification maps are reproduced through DEEP's Geographic Information System (GIS) and are available to the public in the DEEP store.
For further information, contact staff at the DEEP Bureau of Water Protection and Land Reuse:
(860) 424-3020.
Source: CT DEEP. Content last updated on May 17, 2021

"The number one water quality issue facing the Farmington River and its tributaries is polluted stormwater runoff. With increased development contributing to an increase in impervious surfaces, such as roads, walkways, rooftops, parking lots, and driveways; water quality decreases and temperatures increase. The headwaters of the Farmington River are located in MA, where approximately 85% of the land in the watershed is forested. This is the main reason we see very high - quality waterbodies and cold temperatures in this part of the watershed. As we progress down the river towards development, we see a decrease in water quality as bacteria, temperature, and chloride levels climb."

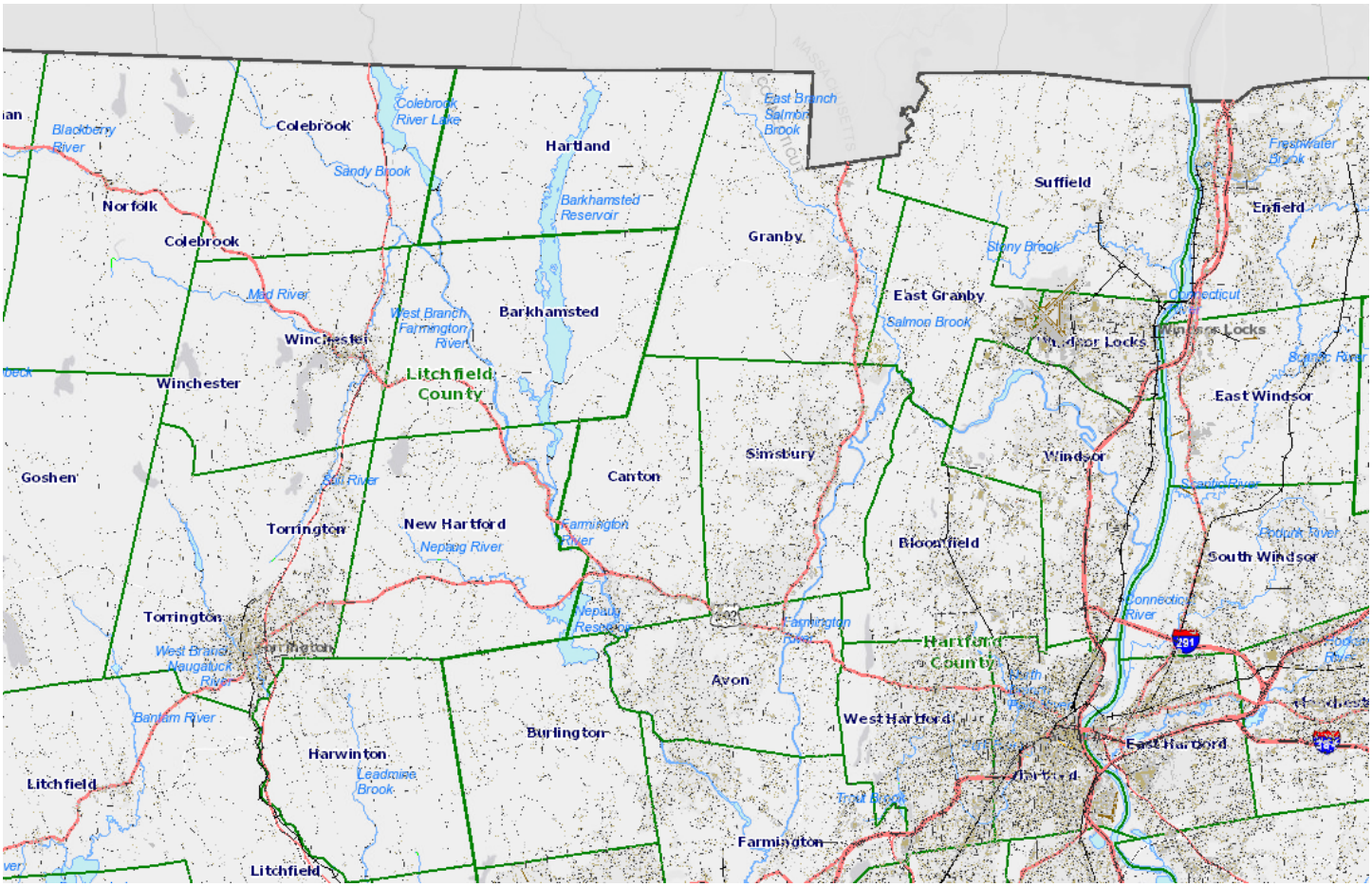
Source: P.D. Vichiola, C.B. Kilkenny, and L.L. Hart. 2023. Farmington River Watershed Water Quality Report 2023, Farmington River Watershed Association, Inc. page 5.

Impervious Land Cover:

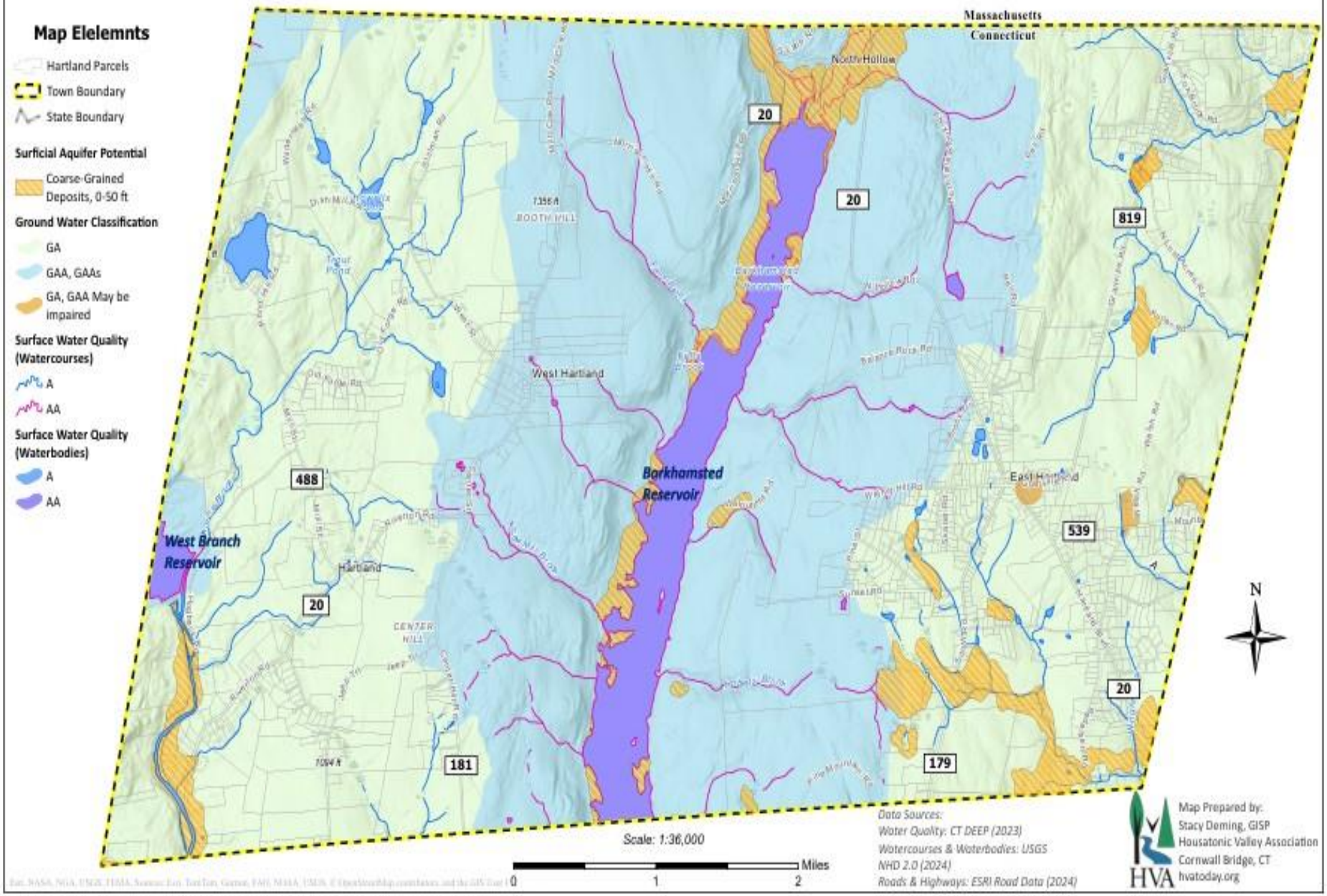
Impervious cover is any surface in the landscape that cannot effectively absorb or infiltrate rainfall. This includes surfaces such as paved roads, driveways and parking lots in addition to the roofs of all buildings and structures, sidewalks and patios. Hartland has approximately 48 miles of paved roads with CT Route 20 being the longest and most used road in town. Paved parking lots are limited to the churches, Town buildings, fire departments and one local restaurant. There are no retail, commercial, or industrial buildings or large apartment complexes where large roofs and parking lots would significantly impact the amount of impervious land cover in Hartland. Roughly, 7.5% of state land has impervious cover. At best estimates, Hartland has just over 1% of its area as impervious land cover*, one of the lowest percentages in the state. The degree of impervious cover, particularly near water bodies, has been shown to be associated with degradation of water quality in rivers and streams. Impervious surfaces account for runoff which can cause erosion and prevent recharging of the aquifer in those areas.

***Impervious data:** approximately 48 miles of paved roads = 168.4 +/- acres (Source: State of CT DOT)
Estimates on private paved driveways and paved parking lots = 25.7 +/- acres (Source: Town of Hartland)
Estimates on roof surfaces of buildings = 29.6 +/- acres (Based on 860 homes / 2023-2028 Town of Hartland Affordable Housing Study)
Total Impervious Cover = approximately 223.7 +/- acres
Percentage of Town Area = approximately 1.02% (Based on Town area of 22,144 acres / Source: Town of Hartland)

The map below is a clip from the Connecticut Environmental Conditions On-Line (CTECO) site showing impervious land cover throughout the State. Black dots represent paved roads, gold dots represent buildings and grey dots represent other impervious cover such as parking lots, sidewalks and driveways. At this given scale, detail is difficult to discern, however the overall picture illustrates Hartland's low percentage of impervious land cover compared to other towns in the State.
Use the link below to further view this data:
Advanced Viewer v2 Click on Built Environment under Layer List



Map 10: Water Resources
Hartland, Connecticut



11) Farmland Soils

This map shows farmland soils in many areas located in the State Forest or on MDC property, serving as working farms years ago. Today, there are only a couple of working farms in Hartland with a few cottage businesses involving some form of agriculture. “Most of the soils in Hartland are extremely stony and not considered prime or statewide important farmland. This suggests how difficult farming would have been in this area and explains the numerous stonewalls (and some incomplete walls) and short duration of farming here. Land clearing and farming practices of the early American settlers likely depleted the nutrients and soil biota, resulting in soil loss, even if the duration of farming was relatively short.” [2]

Land Classifications (Town of Hartland, Connecticut)

Land Classifications are specified land use and management groupings that are assigned to soil areas because combinations of soil have similar behavior for specified practices. Most are based on soil properties and other factors that directly influence the specific use of the soil. Example classifications include ecological site classification, farmland classification, irrigated and non - irrigated land capability classification, and hydric rating.

Farmland Soils Classification

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. It identifies the location and extent of the soils that are best suited to food, feed, fiber, forage, and oilseed crops. NRCS policy and procedures on prime and unique farmlands are published in the "Federal Register," Vol. 43, No. 21, January 31, 1978.

Wetland Soils Classification

The State of Connecticut defines inland wetlands based on soils. The Connecticut Inland Wetlands and Watercourses Act defines wetland soils to include any of the soil types designated as poorly drained, very poorly drained, alluvial, or floodplain by the National Cooperative Soil Survey, as may be periodically amended, of the Natural Resources Conservation Service (NRCS) of the United States Department of Agriculture. There are two classifications of wetland soils: CT wetland or CT non wetland.

Summary of the USDA / NRCS Custom Soil Report for Hartland

This 170--page report identifies 25 soil types present in Hartland with slopes ranging from 0% - 60% and in various conditions such as: gravely, sandy loam, rocky, stony and extremely stony.

Summary of Farmland Soils (in percentage of town area)	
Not prime farmland soil	72.8%
Farmland soil of Statewide Importance	24.0%
All areas of prime farmland soil	3.2%

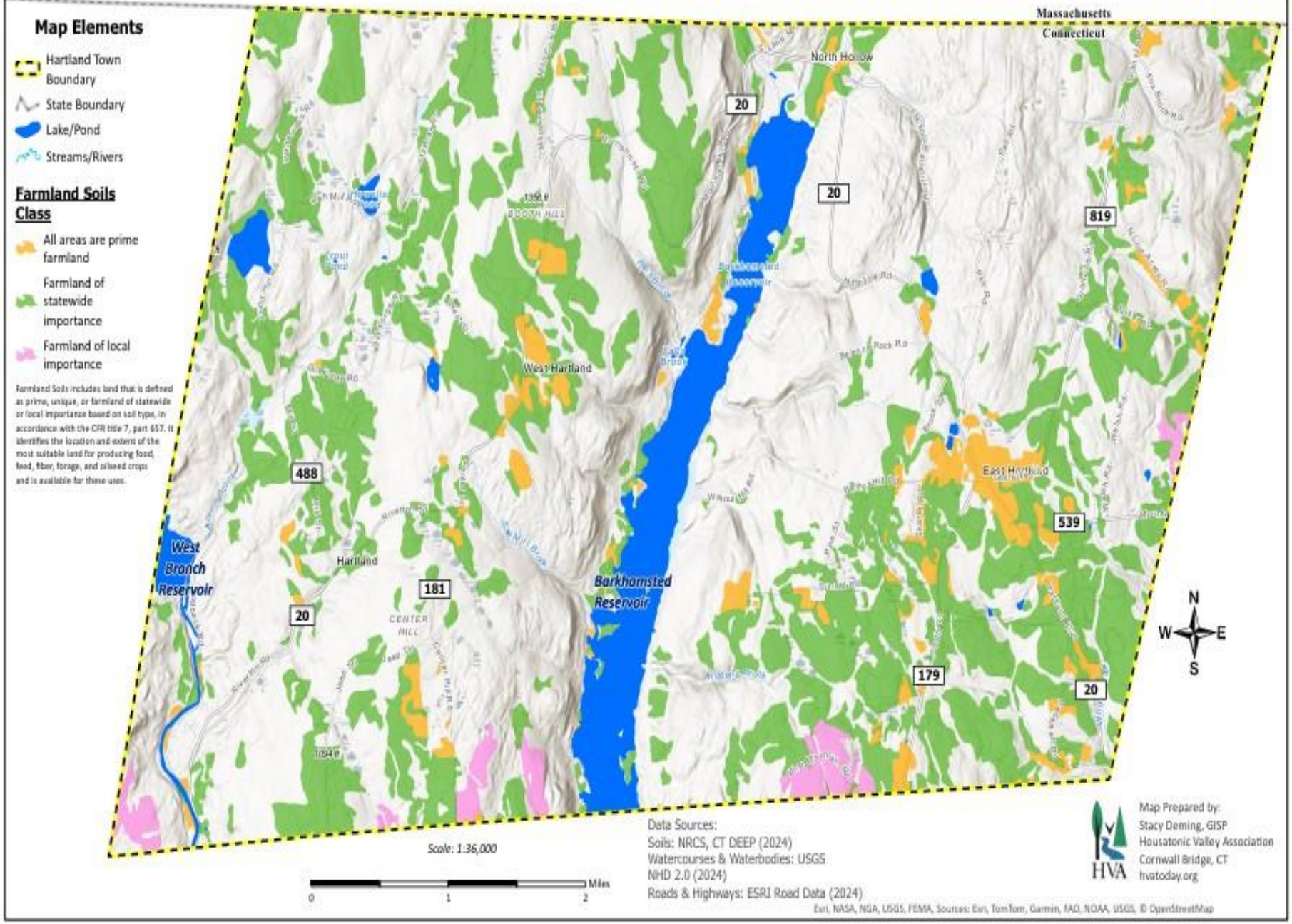
Summary of Wetland Soils (in percentage of town area)	
CT non wetland soils	86.4%
CT wetland soils	13.6%

Find the full custom report on Hartland soils here:
https://www.hartlandct.org/images/Custom_Soil_Report_for_Hartland.pdf

[2] John Anderson, Mill District Nature Sanctuary Management Plan
https://drive.google.com/file/d/19J7w6jjBtGZKQig31hNR3kRogZUfbCQp/view

Map 11: Farmland Soils

Hartland, Connecticut



12) Natural Diversity Database Areas, Vernal Pools and Critical Habitats

The Natural Diversity Database is a list of endangered and threatened species, as well as species of special concern, that is maintained by the CT DEEP. Specific information about species location and type is not distributed by DEEP with this layer, but such information can be received by special request from the DEEP. For this reason, locations with sensitive species are depicted vaguely on the Natural Diversity Database map. This map does, however, include more specific information for "potential vernal pools." In general, vernal pools are wetlands that are typically wet during the spring and dry during the summer. Vernal pools are critical habitats for species such as wood frogs and mole salamanders. The purple blobs on the map are called "potential vernal pools" because they are the result of aerial survey analysis completed by a wetlands scientist.

Source: CT DEEP, CT Ecosystems, Inc., FRWA

Northern Spring Salamander

One of several vernal pools in Hartland

CT DEEP Natural Diversity Database Determination Letter No. 201909215 dated August 21, 2019 that detailed the existence of two listed species in West Hartland:

1. Northern spring salamander (*Gyrinophilus porphyriticus*). This State Threatened Species requires cold, clean, well-oxygenated springs, brooks or seepage areas. Their favored habitat is heavily forested steep rocky ravines. Any activities that decreased the forest canopy could increase the water temperature and impact suitable habitat for this species. To protect these species, protect waterways and native vegetation in upland buffers on the property. A detailed reference is Mitchel et al. 2006. Habitat Management for Amphibians and Reptiles of the Northeastern United States. PARC, Technical Publication HMG-3, Montgomery, Alabama.

2. Broad-winged hawk (*Buteo platypterus*). This Species of Special Concern is a neotropical migrant hawk that nests in deciduous or mixed forest. Its breeding season extends between April 15 and the end of July. Nests are often located adjacent to wetlands or other interior forest openings. Pairs may reuse nests or renovate old crow or squirrel nests. They forage on amphibians, small mammals, and insects. Active nests benefit from a 660ft (200m) setback from new activities.

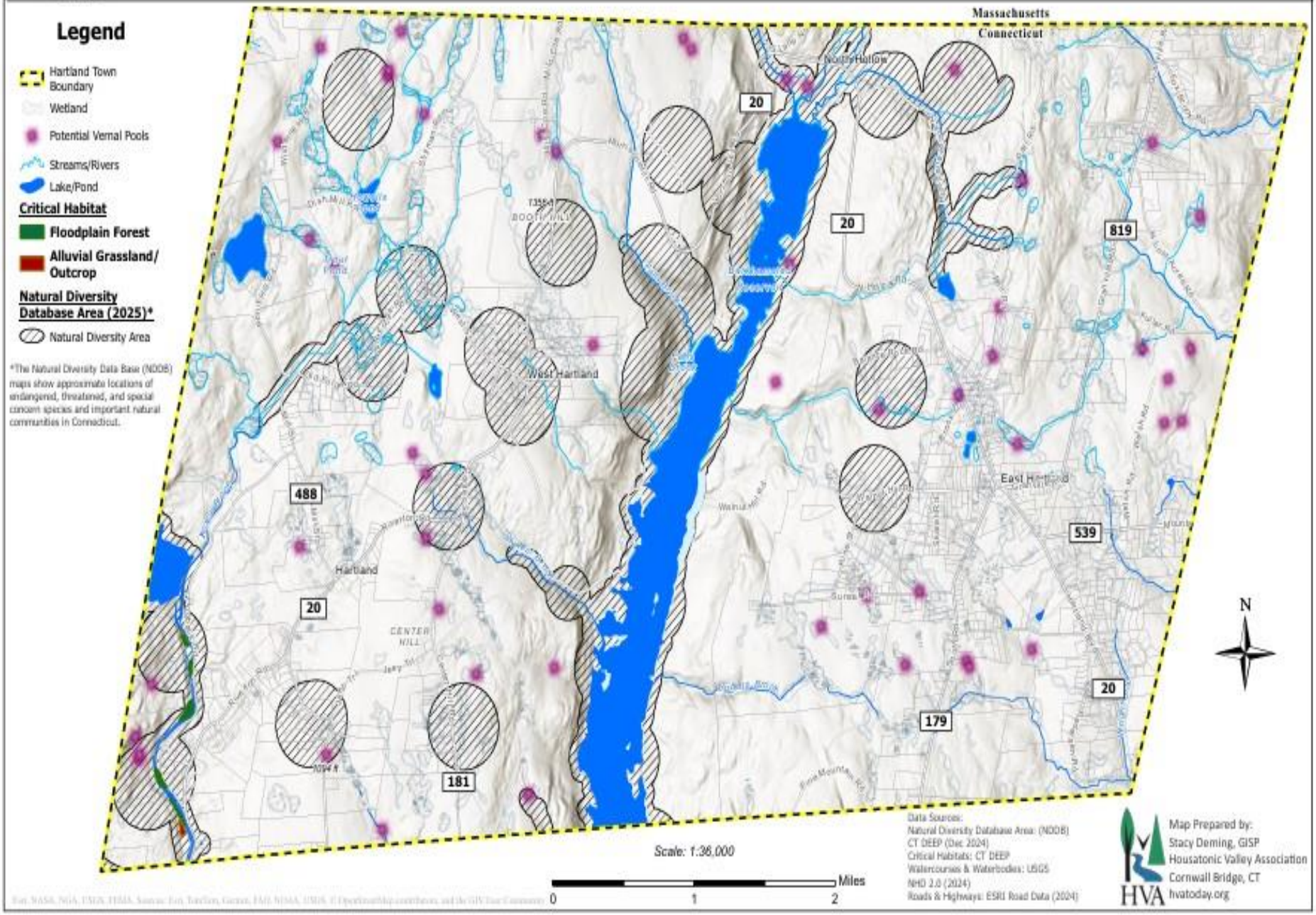
Source: 2019 Harry White

List of vulnerabilities and recommendations for critical habitat.

1. Vulnerability: **Cold water streams** in close proximity to the State Highways and Town Roads.
   Recommendation: Limit the amounts of salts and chemicals on the roads and the use of roundup /weed killers at the road edges.
2. Vulnerability: **Cold water streams** within the forested areas.
   Recommendations: Monitor permitted and unpermitted cutting of vegetation that reduces shade and encourages erosion.
3. Vulnerability: **Wildlife** crossing our roads and highways.
   Recommendation: Identifying areas where easier passage is obtained (see Follow the Forest guidelines). Also: for larger animals such as bear or moose; recommend "Caution Wildlife Crossing" signs at appropriate spots on route 20 around the reservoir.
4. Vulnerability: **Vernal pools** or potential vernal pools in close proximity to trails may be exposed to threats from dirt bike activity and possibly other trail users.
   Recommendation: Closely monitor these areas. Post appropriate signage where needed. Relocate trail to a safe distance from the VP.
5. Vulnerability: **Native plants** being "crowded out" by non-native invasive plants.
   Recommendations: Replant native species in areas that have been cleared or excavated.

Map 12: Natural Diversity Database Areas, Vernal Pools and Critical Habitats

Hartland, Connecticut



13) Forest and Core Forest Habitat (protected forests / habitat linkages / Follow the Forest (FTF)

Overview:

Hartland contains parts of three Connecticut State Forests: Tunxis State Forest, People's State Forest, and American Legion State Forest. Approximately 10 miles of blue-blazed trails run throughout these forest habitats. Hartland is almost 80% forested and the canopies along the waterways are critical in providing high water quality and support a diversity of wildlife.
Source: CT DEEP

The Forests of Hartland, an extract by David S. Irvin

The Town of Hartland is fortunate to have an abundance of forest cover in a small state of 3-1/2 million citizens. While the statewide forest cover is approximately 55-57%, Hartland boasts an estimated 80% of area in forest. This includes parts of several state forests, MDC watershed property, Nature Preserves, town parks, and land trust property. These open spaces total more than 15,500 acres within the town boundary.

Included is a "Core Forest" map layer showing the abundance of large Core Forests in the Town of Hartland. This is a rare and remarkable map for a town in the State of Connecticut. Core Forests are areas of contiguous forest that are unfragmented by other land uses, and are more than 300 feet from forest-non forest boundaries. These areas of unbroken forest provide a more stable home for many plant and animal species, thereby protecting biodiversity. They are priority forest stewardship areas in Connecticut. Large Core Forests are areas 500 acres in size and larger, and the town of Hartland is most dominated by these large Core Forest zones. Medium Core Forests are between 250-500 acres, and Small Core Forests are under 250 acres size. Forests (ct.gov)

These forests are critical to the state for their wildlife, the less common ecosystems and listed species they support, for the growing of timber and other forest products as renewable natural resources, for recreational opportunities, and for climate change mitigation (Southern New England forests offset 14% of our annual carbon emissions). The need for both protection of these areas from development, and the promotion of proper stewardship of the forests, is essential for all these roles. While trees store carbon long-term and sequester carbon from the atmosphere, the most crucial connection of our forests to climate change is that forests must be healthy and resilient to withstand the increasing stressors that are brought by climate change. Forests that are not healthy or resilient, will not store or sequester as much carbon and will face increasing detrimental impacts. Management of the forests of Hartland with clear long-term objectives outlined in management planning are more important than ever, as society places increasing demands and expectations on forest land that has decreased in recent years.

The forests of Hartland further provide the state with a relatively unique character in a number of ways in these large core areas. The town is in a transition zone for forest types and also has a higher percentage of ledge and wetland than many communities in the state. Due to the rugged topography, the population of Hartland had already begun to decline in the early 19th Century. Therefore, it is not unusual to find forests more than 120 years old, and even in excess of 150 years-old in a number of locations within Tunxis State Forest. Promotion of this older forest character is being recognized increasingly as a management objective in this area, and interest in old growth by the public has dramatically increased across the country. Conversely, it is also becoming more apparent that a lack of young forest/early successional habitat is a major issue for wildlife habitat diversity and for forest resiliency (due to a lack of advance regeneration establishment for future forests). This is a direct result of the lack of active forest management, deer browse, and invasive plant competition. The need to diversify the forest for these rare habitats and disappearing wildlife species cannot be ignored and needs to be planned and balanced with older forest areas, in landscape level planning that goes beyond ownership boundaries.

Hartland is a microcosm of what conservationists would love to see in so many more communities of southern New England, with the protected forest cover and the potential to provide so many environmental services with them. The next century of Hartland's forests has begun. Keep its forests beautiful, healthy, diverse, and resilient for the 21st Century and beyond.

David S. Irvin
Central District Service Forester
Bureau of Natural Resources | Forestry Division
Connecticut Department of Energy & Environmental Protection
Eastern District Headquarters

Aerial photo of the Mill District Nature Preserve and the Tunxis State Forest by Harry White

Forest Connectivity and Wildlife Corridors in Hartland and Follow the Forest

By Julia Rogers, Senior Land Protection Manager for HVA

Hartland is home to extensive unfragmented forests that provide critical habitat for a diverse array of plant and animal species. Located within the Follow the Forest corridor, Hartland plays a key role in this wildlife corridor stretching from the southern Hudson Valley through western Connecticut and Hartland, continuing north into western Massachusetts, southern Vermont, and ultimately Canada. This network of connected core forests is essential for maintaining biodiversity and ecosystem function as the climate changes.

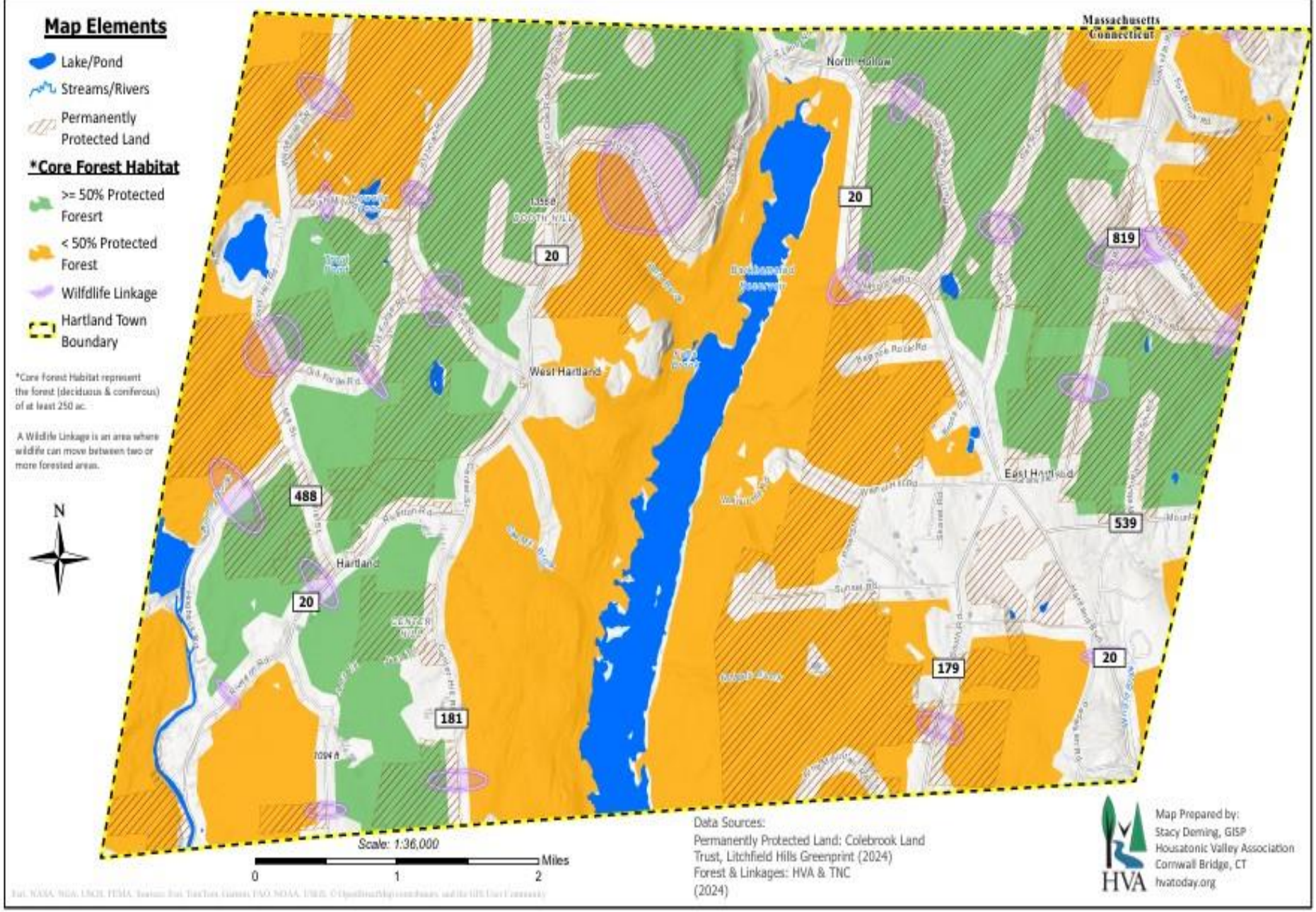
The Follow the Forest Initiative is led by the Housatonic Valley Association, in collaboration with local and regional partners, seeks to protect and connect this significant landscape. By emphasizing the regional importance of Hartland's forests, the initiative highlights their significance locally and regionally in sustaining healthy ecosystems for supporting biodiversity and wildlife movement.

The Follow the Forest initiative focuses on core forests and the connections in between. Core forests are defined as blocks of contiguous, interior (more than 300 feet from any fragmenting feature) forests, larger than 250 acres in size. The larger and more intact the forest, the greater its value as habitat, particularly for species sensitive to human disturbance. However, core forests are threatened by the installation of roads, power lines, and development, which break up forested landscapes into smaller patches – a process known as fragmentation. Fragmentation not only reduces forest size, and creates more perforations in forest, but also creates more forest edges. Although edge habitat can be valuable for some species, it creates opportunities for invasive plants and brood parasites like brown headed cowbirds to penetrate the forest interior and displace species that rely on the deep woods. Additionally, smaller, fragmented forests are less resilient to extreme weather events. Maintaining large, connected forest tracts is essential for ensuring habitat quality, clean water, and climate resilience.

Disconnected forest cores are still at risk of losing their habitat value, contributing to isolated species populations and, in some cases, local extinctions. Establishing secure wildlife corridors is critical to maintaining species movement and genetic diversity. Many species, including amphibians and reptiles, struggle to navigate fragmented landscapes, while mammals like bobcats, foxes, and fisher have their own unique considerations. Wind ranging species such as moose and black bear, as well as climate-sensitive species like the northern flying squirrel, rely on connected forests to adapt to changing condition. Hartland is strategically located within this corridor, serving as a critical link between the Litchfield Hills, the Berkshires, and the Green Mountains to the north. The town contains part or all of 21 core forests, totaling 14,241 acres, providing essential habitat for species such as black bear, bobcat, moose, ovenbirds, fishers, and amphibians. While Hartland's extensive forest cover generally supports diffuse wildlife movement, connectivity assessments by local community scientists indicate that fencing in certain areas funnels and restricts movement, reducing connectivity. Maintaining intact core forests and wildlife corridors can help sustain biodiversity, support climate adaptation, and ensure long-term ecosystem health.

Map 13: Core Forest Habitat

Hartland, Connecticut



14) Parcels and Zoning Input

Hartland's 2007 base parcel map digitized by the Metropolitan District Commission (MDC) was updated with data from the CT DEEP (2024), USGS NHD 2.0 (2024) and ESRI Road Data (2024) by Stacey Deming HVA's GISP. This data was generously supplied for the use of this study. Hartland's zones were calculated and digitized from the Town's zoning regulations. There are only two zones in the Hartland: Business and Residential, with residential making up the majority of the Town's area (over 99%).

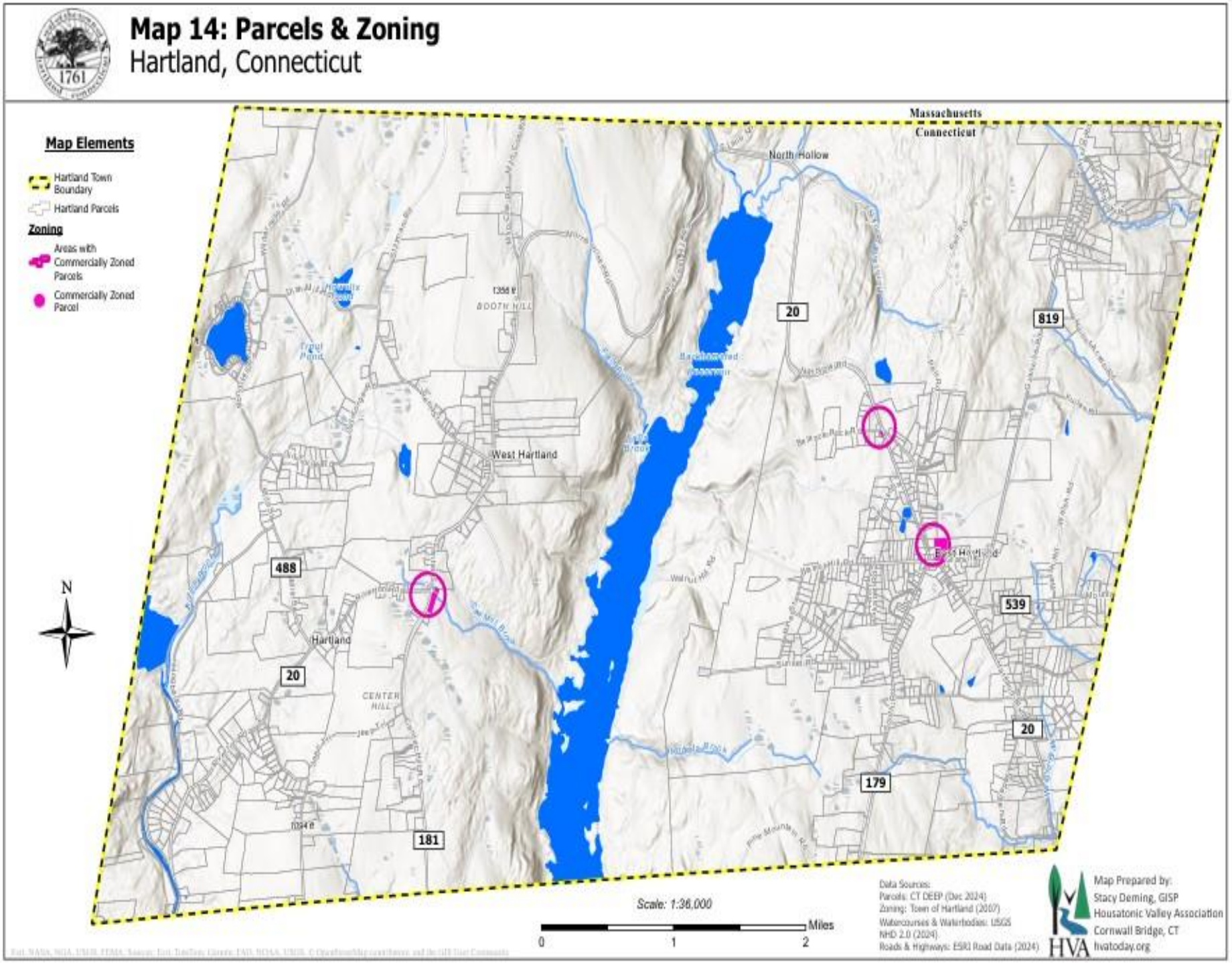
Source: Town of Hartland

One of Hartland's Business Zones

River Overlay Zone Protection (from FRCC):

A carefully defined narrow corridor of land along the West Branch of the Farmington River in Hartland is now protected under the Farmington River Overlay Zone regulations adopted as part of the Town Zoning Regulations. This regulation and similar regulations in adjoining river towns in Connecticut are critical elements of the long-term river protection program. The Overlay Zone requirements protect the environmental, scenic, recreational, fish, and other resource assets in a corridor consisting of the river, its ordinary high-water mark, and an additional 100-foot setback buffer.

Mink **Cheryl Anderson**


Map 14: Parcels & Zoning
Hartland, Connecticut
Map Elements
Hartland Town Boundary
Hartland Parcels
Zoning
Areas with Commercially Zoned Parcels
Commercially Zoned Parcel
Massachusetts
Connecticut
North Hollow
West Hartland
Hartland
BOOTH HILL
CENTER HILL
20
819
488
539
179
181
N
Scale: 1:36,000
Miles
0
1
2
Data Sources:
Parcels: CT DEEP (Dec 2024)
Zoning: Town of Hartland (2007)
Waterbodies & Waterbodies: USGS
NHD 2.0 (2024)
Roads & Highways: ESRI Road Data (2024)
Map Prepared by:
Stacy Deming, GISP
Housatonic Valley Association
Cornwall Bridge, CT
hvatoday.org
HVA

15) Open Space - Committed and Uncommitted

Open space is land that remains in its natural state or is used for farming or forestry, or a body of water or watercourse that remains in its natural state. It is not developed for residential, commercial or government use. Open space lands make up approximately 76% of Hartland. The two primary owners of Hartland open space are the Metropolitan District Commission and the Connecticut Department of Energy and Environmental Protection. Almost all of this land is considered to be committed open space (permanently protected), with only a portion considered to be uncommitted (open, but not protected) as Class III MDC property (see Appendix 1 for a description of water company land classifications), or as open space as classified for tax purposes by the Town of Hartland.

Most municipal parcels and nonprofit--owned parcels are considered to be "committed open space" and consist of land owned by the Town of Hartland, churches and cemeteries, New England Forestry Foundation, Audubon and North Woods Land Conservancy. The bulk of the uncommitted open space in Hartland is owned by the Hartland Pond Corp, is contained in right-of ways owned by electric utilities such as Eversource, or is private land assessed as open space for tax purposes (Public Act PA490 land).

Source: Town of Hartland 2021 Grand List, FRWA.

More about PA 490

Public Act 490 (PA 490) is part of the Connecticut General Statutes and was passed in 1963 to replace "10 mil" as a land assessment usage tax rather than a best or highest use tax. Property owners can have their land assessed to determine if it qualifies for a PA 490 classification as forest, farm or open space. The 2024 DEEP PA 490 Report (update) determined that there are 88 parcels for a total of 2529.62 acres in Hartland that are classified as PA 490. Of that total acreage, 125.61acres are farmland, 2,404.01 acres are forest, and no acres in open space.

A new law makes the following prima facie evidence of land being classified as "farm land" or "open space land" for the state's PA 490 program and qualifying for the program's reduced property tax rate:

1. an advisory opinion from the Department of Agriculture (VoAg) commissioner stating that land is "farm land" or "open space land" or

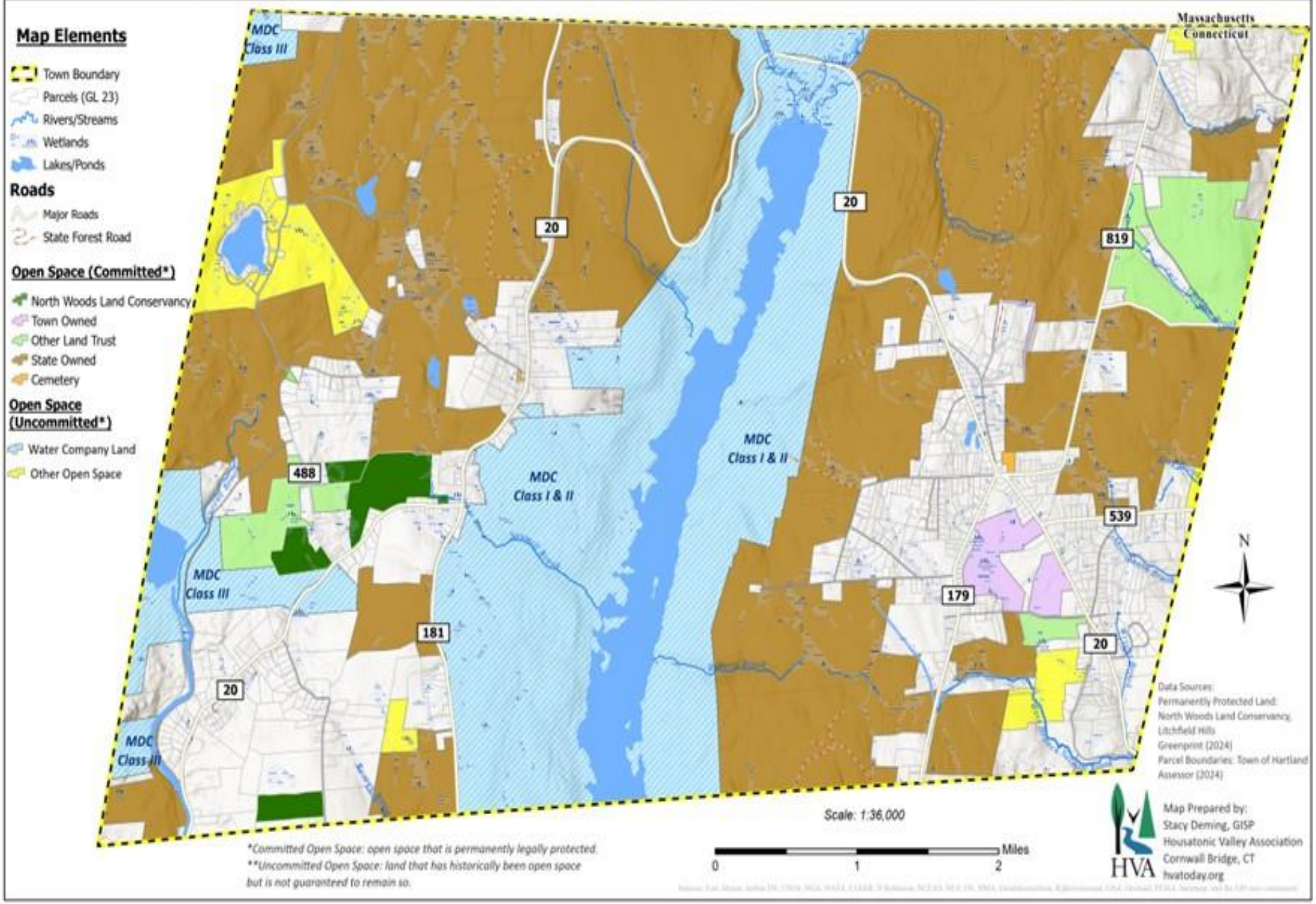
2. inspection and approval by the DoAg commissioner or his designee of an agricultural or farming operation, place, establishment, or facility (PA 24-70, §§ 2 & 3, effective July 1, 2024.

Source: 2024-R-0089 June 28, 2024 Page 10 of 11

Fox in the Field **Jeff Demeglio**

Map 15: Committed & Uncommitted Open Space

Hartland, Connecticut



*Committed Open Space: open space that is permanently legally protected.
**Uncommitted Open Space: land that has historically been open space but is not guaranteed to remain so.

16) Land Use

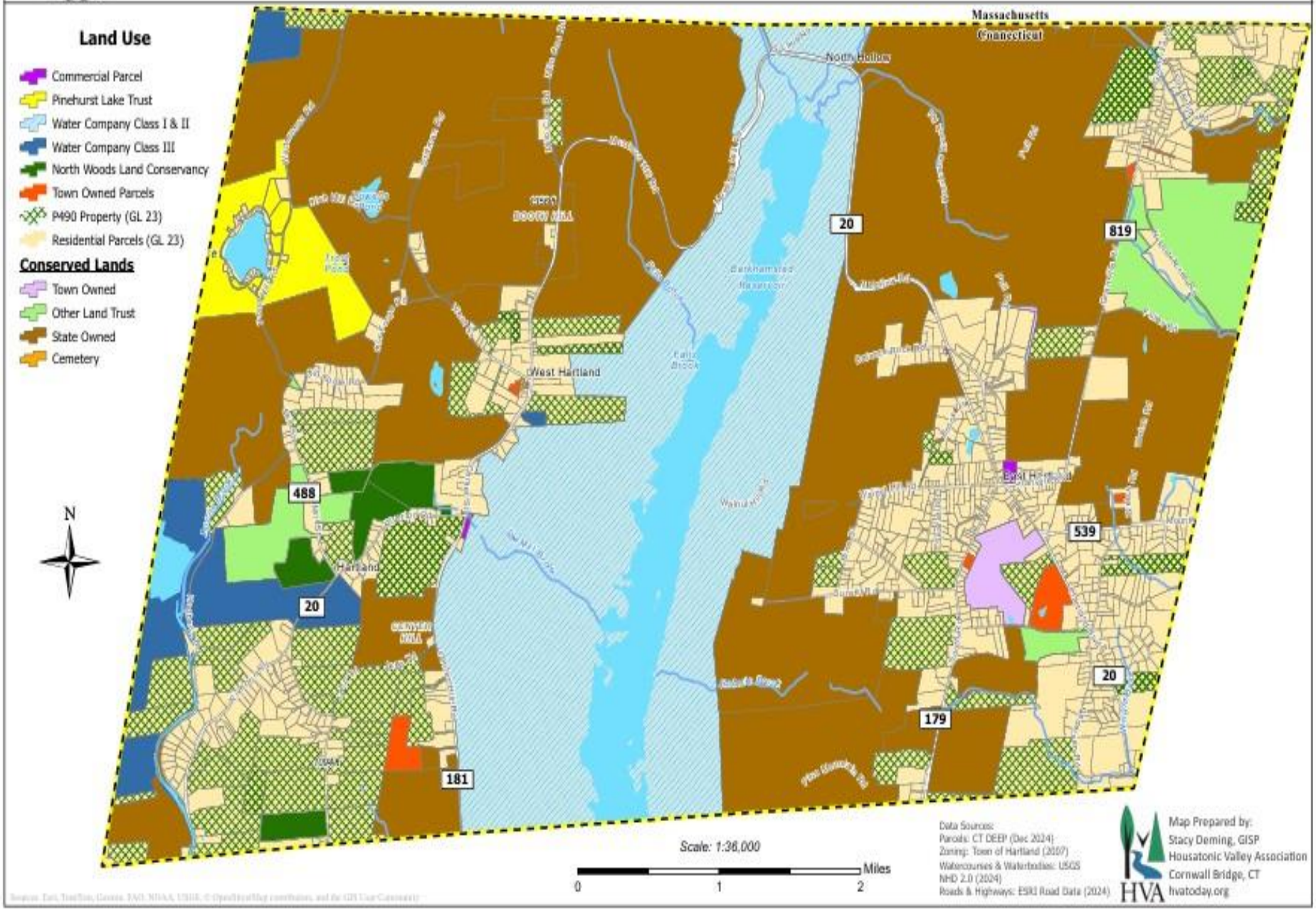
Land use represents the economic and cultural activities that are practiced at a given location.[3] The land use information used for this map is from the 2021 valuation of location and unique identifying number, and then tagged with its current land use.
Source: 2021 Hartland Grand List.

Hartland Land Use Acreage (source: CTECO ArcGIS and Town of Hartland Assessor's Office)

Hartland: 34.6 sq. mi. / approximately 22,144 acres (note: ArcGIS claims 34.3 sq. mi. 21,935.2 acres)	
Tunxis State Forest	8,687.39
Peoples State Forest	288.46
American Legion State Forest	107.88
State of CT (other)	23.18
New England Forestry Foundation (NEFF)	434.13
Loomis School	101.65
Hartland Pond Association	300.52 (less 55.28-acre pond)
Town of Hartland	274.75
Gun Clubs (2)	55.37
Hartford Electric Light	62.56
North Woods Land Conservancy	239.05
National Audubon	202.53
CT Valley Girl Scouts (Old Camp Vreeland)	7.75
Churches (3)	5.91
Cemeteries	6.76
Fire Departments	2.68
Historical Society	2.97
Colebrook Land Conservancy	1.98
Restaurant	0.56
TGP (Gas Company)	0.66
Metropolitan District Commission (MDC):	5,022.21
(Class I&II = 4,741.38; Class III = 280.83)	
Total:	15,822.73 (71.5% of land mass)
Remainder of land mass approx.	6,321.27
Other Data:	
Water Acreage	1,024.00
Water Access (Howells Pond/Hogback Res)	5.20
Roads / Highways Acreage (estimates)	168.40
Property Held in Public Act 490	2,529.62 (88 properties)
Remaining Acreage (estimates)	2,594.05

[3] US Environmental Protection Agency, Land Use, 2021

Map 16: Land Use
Hartland, Connecticut



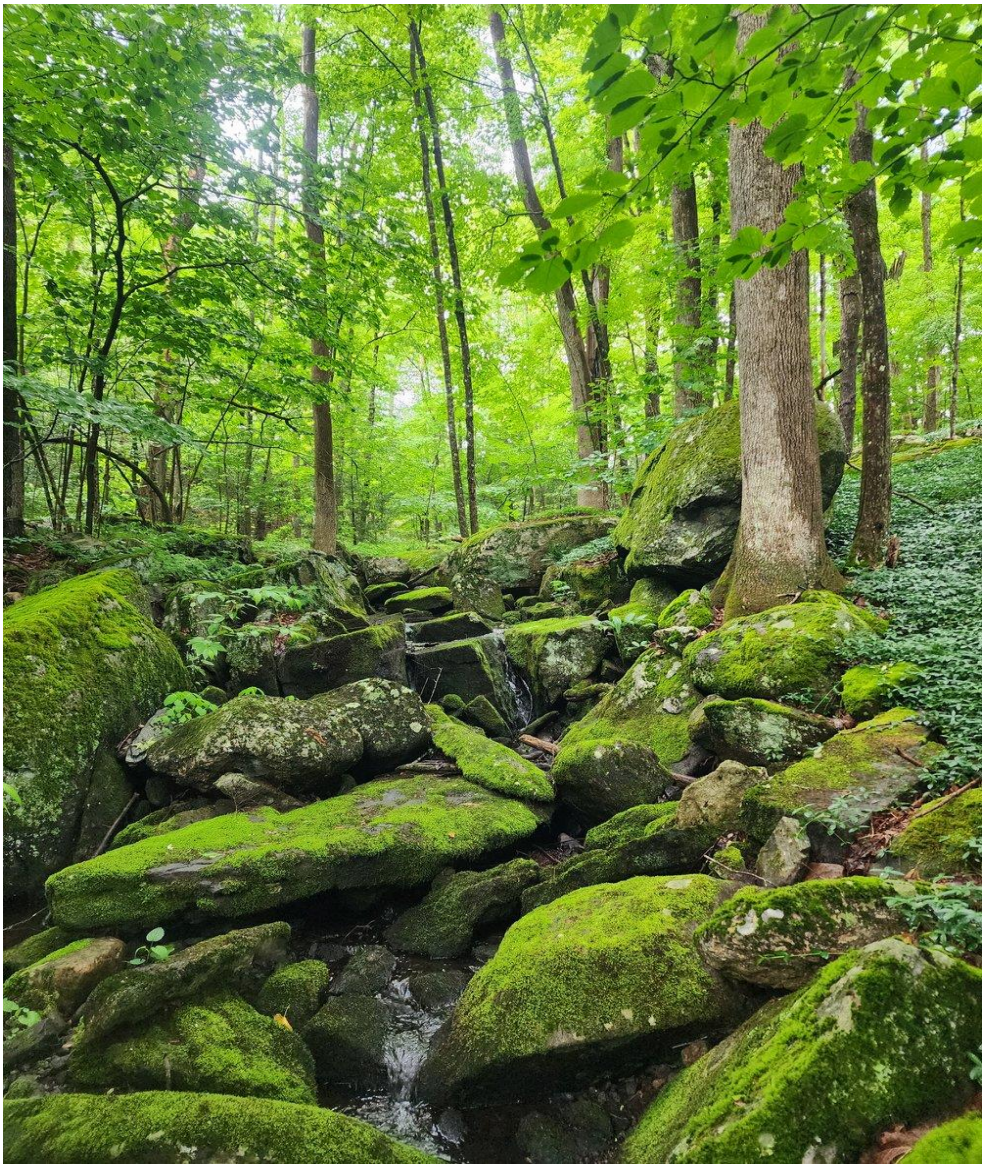
17) Development Constraints

Development constraints are defined by areas that include at least one of the following qualities:
- The area is already committed open space;
- The area includes wetlands;
- The area includes slopes over 25%; and/or
- The land is already developed.

Because of the topography, water resources, and ownership patterns in Hartland, development is constrained on more than 70% of Hartland's total town area.

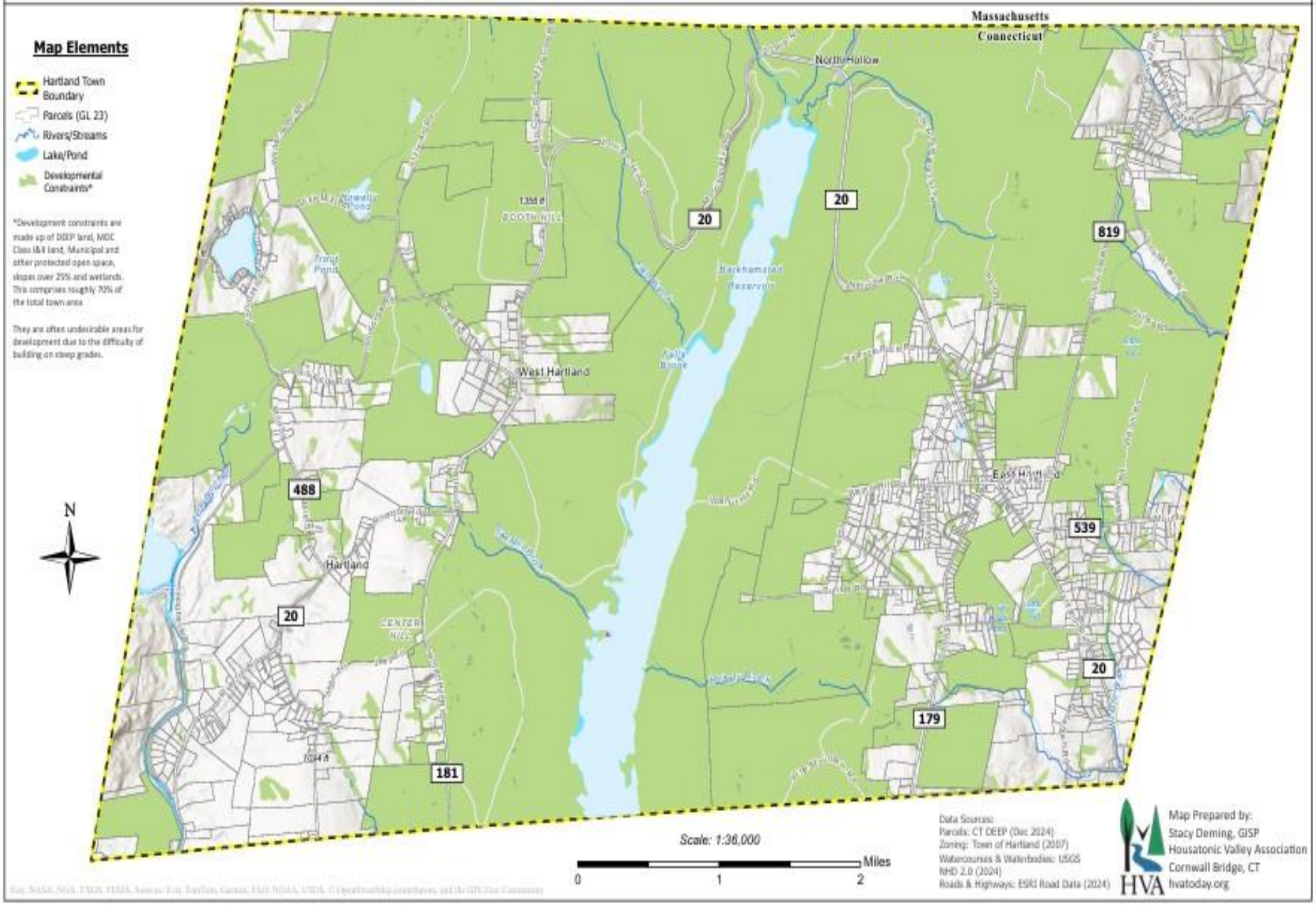
Source: FRWA

"Look no further than your backyard to discover Hartland's natural beauty"
Fred Jones



Backyard Serinity **Joanne Groth**

Map 17: Developmental Constraints
Hartland, Connecticut



Data Sources:
Parcels: CT DEEP (Dec 2024)
Zoning: Town of Hartland (2007)
Watercourses & Waterbodies: USGS NHD 2.0 (2024)
Roads & Highways: ESRI Road Data (2024)

Map Prepared by:
Stacy Deming, GISP
Housatonic Valley Association
Cornwall Bridge, CT
hvatoday.org

IV) Appendices

A word about the appendices. It is not the intent of this inventory to list every plant and animal species found in Hartland. Appendices 3 and 4 list most species present in Hartland at the time of this writing. It is hoped that this NRI will serve as a foundation of resources intended to be a "living document" that is revised or amended over time as new information becomes available and/or as conditions change.

Appendix #1- Watershed Land Classifications

(For the location of these classes of lands refer to Map 16)

Class I land includes all land owned by a water company or acquired from a water company through foreclosure or other involuntary transfer of ownership or control which is either: (1) Within two hundred and fifty feet of high water of a reservoir or one hundred feet of all watercourses as defined in agency regulations adopted pursuant to this section; (2) within the areas along watercourses which are covered by any of the critical components of a stream belt; (3) land with slopes fifteen per cent or greater without significant interception by wetlands, swales and natural depressions between the slopes and the watercourses; (4) within two hundred feet of groundwater wells; (5) an identified direct recharge area or outcrop of aquifer now in use or available for future use, or (6) an area with shallow depth to bedrock, twenty inches or less, or poorly drained or very poorly drained soils as defined by the United States Soil Conservation Service that are contiguous to land described in subdivision (3) or (4) of this subsection and that extend to the top of the slope above the receiving watercourse.

Class II land includes all land owned by a water company or acquired from a water company through foreclosure or other involuntary transfer of ownership or control which is either (1) on a public drinking supply watershed one hundred and fifty feet of a distribution reservoir or a first-order stream tributary to a distribution reservoir.

Class III land includes all land owned by a water company or acquired from a water company through foreclosure or other involuntary transfer of ownership or control which is unimproved land off public drinking supply watersheds and beyond one hundred and fifty feet from a distribution reservoir or first-order stream tributary to a distribution reservoir.

Source: Cga.ct.gov Conn. Gen. Stat. 25-37c.Watershed Land Classifications

Hogback Reservoir **Bethany Riley**

Appendix #2- Dams, Leachate, & Wastewater Discharge Sites

Note: **Culverts** are addressed in Appendix #8 where a map is included

Dams In Hartland:

Stillman Road Pond Dam
Howell's Pond Dam
Hartland Pond Dam
Emmons Pond Dam
Tunxis State Forest Pond Dam
Foster's Pond Dam
Goodwin Hydropower Dam
Camp Alice Merritt Dam
Hayes Road Pond Dam
Miller Pond Dam
Nielsen Pond Dam
Dalene Pond Dam
White Rock Pond Dam
Gower Pond Dam
Shew Pond Dam
Cole Pond Dam
Boulder Pond Dam
Cypress Pond Dam
Yanchak Pond Dam
Babbitt Pond Dam
Guy Pond Dam (Avon Fish and Game Club)

Some known beaver dams:
Foster's Pond Old Forge Road
Riverton Road South Road
Hogback Road

Goodwin Spillway **Fred Jones**

Howell's Pond Dam **Jane Jones**

Leachate and Wastewater Discharge Sites:

Leachate is commonly associated with landfills, as it is one of the concerns landfill managers have to deal with. Precipitation such as rain can result in water percolating through the landfill waste and becoming contaminated with chemicals from the waste. It's important to account for that liquid and prevent it from escaping into the surrounding environment.

Area / Site:	Location:
SEPTAGE LEACH FIELD	Granville Road (Route 819)
SALT STORAGE (Hartland)	Town Garage Site Welsh Road
SALT STORAGE (State of CT)	North Hollow Road (Route 20)
LANDFILL (Obsolete)	Town Transfer Station Welsh Road
LANDFILL (Active)	Granville Road (Route 819)

Source: CT DEEP

Appendix #3 - Hartland's Plantscape: Lists of trees, notable trees, native shrubs, ferns, wildflowers, fungi, invasive (non-native) plants, etc.

Hartland is approximately 80% forested with a wide variety and mix of both coniferous and deciduous trees. Below is a listing of the trees found in Hartland.

Conifers

Cedars:
Atlantic white cedar (*Chamaecyparis thyoides*)
Eastern red cedar (*Juniperus virginiana*)
Northern white cedar (*Thuja occidentalis*)

Pines:
Red pine (*Pinus resinosa*)
Pitch pine (*Pinus rigida*)
Eastern white pine (*Pinus strobus*)

Spruces:
Black spruce (*Picea mariana*)
Red spruce (*Picea rubens*)
Eastern hemlock (*Tsuga canadensis*)

Deciduous Trees

Ashes:
White ash (*Fraxinus americana*)
Black ash (*Fraxinus nigra*)
Green ash (*Fraxinus pensylvanica*)

Birches:
Black birch (*Betula lenta*)
Sweet birch (*Betula lenta*)
Paper birch (*Betula papyrifera*)
Gray birch (*Betula populifolia*)
Yellow Birch (*Betula alleghaniensis*)

Cherries/Plums:
American plum (*Prunus americana*)
Pin cherry (*Prunus pensylvanica*)
Black cherry (*Prunus serotina*)
Choke cherry (*Prunus virginiana*)

Chestnuts:
American chestnut (*Castanea dentata*)

Cottonwoods/Aspens:
Eastern cottonwood (*Populus deltoides*)
Bigtooth aspen (*Populus grandidentata*)
Swamp cottonwood *(Populus heterophylla*)
Quaking aspen (*Populus tremuloides*)

Hawthornes:
Round-leaved hawthorne (*Crataegus chrysocarpa*)
Cockspur hawthorne (*Crataegus crus-galli*)
Frosted hawthorne (*Crataegus pruinosa*)
Dotted hawthorne (*Crataegus punctata*)
Fleshy hawthorne (*Crataegus succulenta*)

Hickories:
Bitternut hickory (*Carya cordiformis*)
Pignut hickory (*Carya glabra*)
Shagbark hickory (*Carya ovata*)

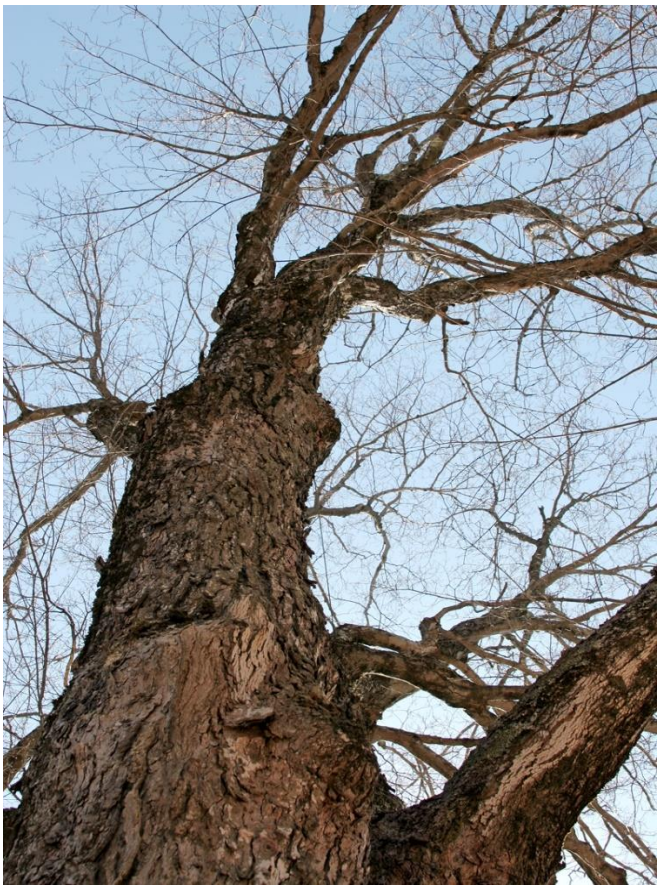
Maples:
Boxelder (*Acer negundo*)
Black maple (*Acer nigrum*)
Red maple (*Acer rubrum*)
Silver maple (*Acer saccharinum*)
Sugar maple (*Acer saccharum*)
Mountain maple (*Acer spicatum*)
Striped maple (*Acer pensylvanicus*)
American hornbeam (*Carpinus caroliniana*)
Hackberry (*Celtis occidentalis*)
Redbud (*Cercis canadensis*)
Alternate-leaf dogwood (*Cornus alternifolia*)
Flowering dogwood (*Cornus florida*)

American Oaks:
White oak (*Quercus alba*)
Swamp white oak (*Quercus bicolor*)
Scarlet oak (*Quercus*)
Northern red oak (*Quercus rubra*)
Chestnut oak (*Quercus prinus*)
Post oak (*Quercus stellata*)
Black oak (*Quercus velutina*)

Serviceberries:
Downy serviceberry (*Amelanchier arborea*)
Shadbush/serviceberry (*Amelanchier canadensis*)
Allegheny serviceberry (*Amelanchier laevis*)

Walnuts:
Butternut walnut (*Juglans cinera*)
Black walnut (*Juglans nigra*)
Beech (*Fagus grandifolia*)
American holly (*Ilex opaca*)
American sycamore (*Platanus occidentalis*)
Black willow (*Salix nigra*)
Eastern hophornbeam (*Ostrya virginiana*)
Sassafras (*Sassafras albidum*)
Black gum (*tupelo*) (*Nyssa sylvatica*)
American mountain-ash (*Sorbus americana*)
American basswood (*Tilia americana*)
Tulip tree (yellow poplar) (*Liriodendron tulipifera*)
Sweetgum (*Liquidambar styraciflua*)

Source: Hartland Tree Warden



Eastern White Pine **Susan Pearson**

Notable Trees:
Connecticut College and the Connecticut Botanical Association (CBA) have an initiative called Notable Trees of Connecticut. These are recordings of significant trees identified by citizen scientists and assigned a point value based on three criteria: circumference at breast height, overall height and overall spread. Typically, these are "old growth" trees. Hartland's most famous notable tree was the Tiffany Elm that succumbed from the Dutch Elm disease years ago. Hartland has two trees currently listed as notable trees of Connecticut. A white pine, in the Tunxis State Forest and a Red Pine designated as the "State Champion" at an undisclosed location.
The Charles and Lois Beach Preserve has an American Tulip Tree with a 15.5ft circumference and a height of 135 ft. This data has been presented to the Notable Trees of CT initiative for evaluation. Other local notable trees may exist within our State Forests and MDC property but have yet to be identified and documented.

Native Shrubs: Common lowbush blueberry (SGCN), Highbush blueberry (SGCN), Mountain-laurel, Witch-hazel, Maple-leaved viburnum, Winterberry, Highbush blueberry, Spicebush, Burningbush, Partridgeberry

Ferns: (common name): Northern lady fern, Fragile fern, Mountain wood fern, Evergreen wood fern, Wood fern, Hay scented fern, Sensitive fern, Royal fern, Cinnamon fern, New York fern, Rock polypody fern, Christmas fern, Bracken fern

Rare Plants and Wildflowers: *Podophyllum peltatum* - May-apple; Red Trillium, white flowered type; *Caulophyllum thalictroides* - Blue cohosh; *Lobelia cardinalis* - Cardinal flower.

Mosses (common name): sphagnum moss, powderhorn moss, running clubmoss, haircap moss, fern moss

Sedges and Grasses (common name): Bladder sedge, Sedge, Long-awned wood grass, Northeastern manna grass

Fungi:

Benefits of fungi

Fungi are important contributors to the soil carbon stock. They play a major part in the carbon cycle through the soil food web. Decomposers cycle carbon from litter and dead plant material, while other species living in mutual symbiotic association with plant roots (i.e., mycorrhizal fungi), provide more stable stocks of carbon.

Fungi are heterotrophic organisms; therefore, they rely on photosynthetic carbon to produce energy, and some species get this carbon from plant root exudates. Together, plants and fungi perform a process **called soil carbon sequestration**, capturing carbon from the atmosphere and storing it into the soil for decades if not hundreds of years. This important process not only improves soil fertility as it can also help reduce the excess carbon human activities have put into the atmosphere. In fact, a study showed that biodiverse soils are able to capture up to 10 tons of CO2 per hectare per year.[3]

In 2023, the Farmington River Coordinating Committee sponsored a fungi study on the overlay district of the Upper Farmington River conducted by mycologist, DeWei Li Ph.D. This covered approximately 200 acres in West Hartland and additional areas within the Tunxis State Forest. Dr. Li's full report may be accessed through the link found in Appendix 6, section VI. In total, 648 species of macro-fungi (mushrooms and wood decay fungi, etc.) are collected and categorized in the upper Farmington River areas.

"While plants and animals in the area have been extensively studied, fungi, despite their ubiquitous nature, remain largely unexplored. Fungi, being heterotrophs, differ from plants in their inability to utilize solar energy for carbohydrate synthesis. Instead, they play a crucial role as major bio-degraders, breaking down organic compounds and contributing to nutrient cycling in ecosystems. Fungi (including mushrooms) exhibit various nutritional mechanisms, including saprobic, symbiotic, and parasitic, each playing a unique role in maintaining ecological balance. They are essential in decomposing organic matter, forming symbiotic relationships with plants, and even providing medicinal resources." [4]

3 The UN Decade on Ecosystem Restoration

4 Final report of Fungal Diversity Study in the Upper Farmington River Watershed

DeWei Li Ph.D. Mycologist, Department Head/Chief Scientist The Connecticut Agricultural Experiment Station (CAES)

Valley Laboratory March 7, 2024

Chaga (*Inonotus obliquus*)

Photo: Joanne Groth

Photo: Traci Vincent

Non- Native Invasive Plants

Non-native invasives are aggressive exotic plants introduced intentionally for their ornamental value, or accidentally by hitchhiking with people or products. They thrive in our growing conditions, and with no natural enemies have nothing to check their rapid spread.

Source: Invasive Plants in Your Backyard! A Guide to Their Identification and Control 2020 Expanded Edition

List of Non-Native Invasive Plants found in Hartland:
MULTIFLORA ROSE *Rosa multiflora* AUTUMN OLIVE *Elaeagnus umbellate*
MILE-A-MINUTE WEED *Persicaria perfoliata*
ORIENTAL BITTERSWEET *Celastrus orbiculatus*
JAPANESE KNOTWEED *Reynoutria japonica, aka Polygonum cuspidatum*
BURNING BUSH *Euonymus alatus* (winged variety)
JAPANESE BARBERRY *Berberis thunbergia*
GLOSSY BUCKTHORN *Frangula alnus*
PORCELAINBERRY *Ampelopsis glandulosa var. brevipedunculata*
MUGWORT Artemisia vulgaris
GARLIC MUSTARD *Alliaria petiolate*
JAPANESE STILTGRASS *Microstegium vimineum*
COMMON REED Phragmites australis

"Some non-native species exhibit an aggressive growth habit and can out-compete and displace native species," DEEP wrote on its website.

Note: Invasive Plants
A new law adds seven plants to the list of invasive or potentially invasive plants that are generally banned in the state, **regardless of any municipal ordinance**: Porcelainberry, Mugwort, Quackgrass, Japanese angelica tree, Japanese wisteria, Chinese wisteria, and Callery pear.
(PA 24-11, effective October 1, 2024).

Aquatic Invasive Plants:
Although there is little, if any, evidence of aquatic invasive plants in Hartland, water users should be watchful for them. Didymo or Rock Snot was found in the West Branch of the Farmington River not far from West Hartland. Many of these invasives can spread by fragmentation and also transported to new locations by humans. For more information on these invasives visit the following site: https://portal.ct.gov/deep/invasive-species/examples-of-aquatic-invasive-species-in-connecticut#didymo

Rock Snot (*Didymosphenia geminata*, *Didymosphenia hullii*, *Cymbella janischii*) invasive algae
Curly leaf pond weed, Milfoils, Hydrilla, Fanwort and Water chestnut

Invasive Insects

Affecting Hemlocks: (see photos on next page)
Hemlock woolly adelgid (*Adelges tsugae* -HWA)
Elongate hemlock scale (*Fiorinia externa*; EHS)
Hemlock borer (*Melanophila fulvoguttata*

Affecting Beech: (see photos on next page)
Beech leaf disease (BLD) - A microscopic roundworm called a nematode, *Litylenchus crenatae mccannii*, that feeds on beech leaves and buds. The leaf develops green lumps and brown spots, then shrinks and eventually dies.
Beech blight aphid - A blue aphid that punctures the bark of beech trees.
Brown wood borer - A black-headed beetle that makes galleries in the wood and holes in the bark.

Other pests:
Asian longhorned beetle, Spotted lanternfly, Invasive ticks, Hammerhead worm, Jumping worm

Affecting Ash Trees
The emerald ash borer (EAB), an invasive wood-boring beetle from Asia, is responsible for the death and decline of tens of millions of ash trees in North America. EAB lays its eggs in the bark crevices of ash trees. The eggs hatch and the larvae burrow into the tree where they feed.


Dying Ash from the Emerald Ash Borer

Additional Information on Hemlock Diseases

Hemlock Woolly Adelgid (HWA): HWA is an invasive aphid-like insect that attacks and kills hemlock trees by feeding on nutrients and water storage cells at the base of needles. This leads to premature needle loss, dieback of twigs and branches, and eventually death within 4 to 15 years (depending on factors such as age, climate, and stress). Eastern hemlock is the primary host of HWA in northwest Connecticut. Hemlocks are an important foundation species that impact communities and increase biodiversity in an ecosystem. For instance, many animal species rely heavily on hemlock stands for resources like food and shelter (e.g., nesting and roosting sites). They also provide valuable thermal cover for animals, such as deer and birds, during cold, harsh winters. Hemlock trees also provide important shade in riparian areas, which regulates and maintains water temperatures.

Source: The Invasive Species Centre, 1219 Queen Street E., Sault Ste. Marie, Ontario, P6A 2E5, CA,

Photo below left: The brown clump represents a mass of dead new hemlock shoots killed this spring by a fungus, *Sirococcus tsugae*, native to the Pacific Northwest! It does not appear to cause serious damage to our eastern hemlocks in the long run. The white cotton like balls is the HWA. The brown spots on the underside of the needles are the EHS.

Source: Dr. Carole Cheah CAES Windsor

Photo: F. Jones

Beech Leaf Disease (BLD)

Litylenchus crenatae mccannii is a newly recognized nematode subspecies believed to be the cause of beech leaf disease.

BLD Photos: Amanda Lukingbeal

Beech Bark Disease (BBD) has been killing American beech trees in eastern North America since the late 1890s (Ehrlich, 1934). The disease is initiated by feeding of the beech scale insect, *Cryptococcus fagisuga*, which leads to the development of small fissures in the bark. Over time, as the population of scale insects builds on the bark, the small wounds provide entryway for fungal infection by one of the species of *Neonectria*. As the fungus invades, it kills the inner bark tissue and, may completely girdle the tree, leading to death. Cankers may form as the tree attempts to stop the infection from spreading, resulting in wood defects.

Citation: Koch, Jennifer L. 2010. Beech bark disease: the oldest "new" threat to American beech in the United States.

Outlooks on Pest Management.
April 2010: 64-68.

Appendix #4 - Hartland's Wildlife and Aquatic Resources: Lists of mammals, birds, insects, amphibians, reptiles and fish

Hartland enjoys an abundance of wildlife provided by our large connected forest blocks, ridgeline protection, and clean cold-water sources. Many refer to Hartland as the "Moose Capitol" of Hartford County, perhaps Connecticut. The list of mammals is provided by CT DEEP's "SWAP" (State Wildlife Action Plan) where species have been recorded by citizen scientists, land conservation organizations, hunters, trappers as well as CT DEEP field biologists.

Mammals:

Fisher
Beaver
North American River Otter
North American Porcupine
Black Bear
Moose
Bobcat
Red Fox
Grey Fox
Eastern Coyote
Eastern Gray Squirrel
American Red Squirrel
Southern Flying Squirrel
Eastern Chipmunk
Woodchuck
Eastern Cottontail
Virginia Opossum
Raccoon
White Tailed Deer
Striped Skunk
Mink
Meadow Vole
Mole
Long-Tailed Weasel
Grey Field Mouse
Brown Field Mouse
Little Brown Bat
White Nosed Bat
Grey Bat
Muskrat

Red Fox **Cheryl Anderson**

Bull Moose **Cheryl Anderson**

Bobcat **Harald Bordewieck**

Black Bear **Cheryl Anderson**

Birds:

This list includes over 140 bird species recorded in Hartland from 2000 to 2025 by local bird expert Nick Hall.

Ducks, Geese, Swans
Canada Goose
Wood Duck
Mallard
American Black Duck
Hooded Merganser
Common Merganser

New World Quail
Northern Bobwhite (EX) 10/5/2008

Partridges, Grouse, Turkeys
Wild Turkey
Ruffed Grouse

Pigeons, Doves
Rock Pigeon (I)
Mourning Dove

Cuckoos
Yellow-billed Cuckoo
Black-billed Cuckoo

Goatsuckers
Common Nighthawk

Swifts
Chimney Swift

Hummingbirds
Ruby-throated Hummingbird

Sandpipers, Phalaropes
American Woodcock
Spotted Sandpiper

Gulls, Terns, Skimmers
Black-legged Kittiwake*5/7/2023
Ring-billed Gull
Common Tern

Cormorants
Double-crested Cormorant

Bald Eagle **Cheryl Anderson**

Bitterns, Herons
American Bittern
Cattle Egret
Great Blue Heron

New World Vultures
Black Vulture
Turkey Vulture

Ospreys
Osprey

Hawks, Kites, Eagles
Northern Harrier
Sharp-shinned Hawk
Cooper's Hawk
Bald Eagle
Red-shouldered Hawk
Broad-winged Hawk
Red-tailed Hawk

Typical Owls
Great Horned Owl
Barred Owl
Great Gray Owl*
Long-eared Owl

Kingfishers
Belted Kingfisher

Woodpeckers
Red-headed Woodpecker
Red-bellied Woodpecker
Yellow-bellied Sapsucker
Downy Woodpecker
Hairy Woodpecker
Northern Flicker
Pileated Woodpecker

Caracaras, Falcons
American Kestrel 3/31/2003
Merlin
Peregrine Falcon

Tyrant Flycatchers
Great Crested Flycatcher
Eastern Kingbird
Eastern Wood-Pewee
Acadian Flycatcher
Alder Flycatcher
Willow Flycatcher
Least Flycatcher
Eastern Phoebe

Vireos
Yellow-throated Vireo
Blue-headed Vireo
Warbling Vireo
Red-eyed Vireo

Shrikes
Northern Shrike

Crows, Jays
Blue Jay
American Crow
Fish Crow
Common Raven

Chickadees and Titmice
Black-capped Chickadee
Tufted Titmouse

Swallows
Tree Swallow
Northern Rough-winged Swallow
Barn Swallow

Kinglets
Golden-crowned Kinglet
Ruby-crowned Kinglet

Waxwings
Cedar Waxwing

Nuthatches
Red-breasted Nuthatch
White-breasted Nuthatch

Creepers
Brown Creeper

Gnatcatchers
Blue-gray Gnatcatcher

Wrens
Carolina Wren
Northern House Wren
Winter Wren

Mockingbirds, Thrashers
Gray Catbird
Northern Mockingbird

Starlings
European Starling (I)

Thrushes
Eastern Bluebird
Veery
Swainson's Thrush
Hermit Thrush
Wood Thrush
American Robin

Old World Sparrows
House Sparrow (I)

Finches and Allies
Evening Grosbeak
Pine Grosbeak*
House Finch
Purple Finch
Redpoll
Pine Siskin
American Goldfinch

Towhees, Sparrows
Chipping Sparrow
Field Sparrow
Fox Sparrow
American Tree Sparrow
Dark-eyed Junco
White-crowned Sparrow
White-throated Sparrow
Savannah Sparrow
Song Sparrow
Swamp Sparrow
Eastern Towhee

Blackbirds, Orioles
Bobolink
Orchard Oriole
Baltimore Oriole
Red-winged Blackbird
Brown-headed Cowbird
Common Grackle

Indigo Bunting **Cheryl Anderson**

Wood-Warblers
Ovenbird
Worm-eating Warbler
Louisiana Waterthrush
Northern Waterthrush
Black-and-white Warbler
Tennessee Warbler 5/28/2018
Nashville Warbler
Common Yellowthroat
American Redstart
Northern Parula
Magnolia Warbler
Bay-breasted Warbler
Blackburnian Warbler
Yellow Warbler
Chestnut-sided Warbler
Blackpoll Warbler
Black-throated Blue Warbler
Palm Warbler
Pine Warbler
Yellow-rumped Warbler
Prairie Warbler
Black-throated Green Warbler
Canada Warbler

Cardinals, Tanagers
Scarlet Tanager
Northern Cardinal
Rose-breasted Grosbeak
Indigo Bunting

Legend:
(*) Rare in CT
(S) Sight Record Only
(I) Introduced
(E) Extinct
(X) Extirpated

Wood Duck **Cheryl Anderson**

Species of Greatest Conservation Need (SGCN) – Defined by each state fish or wildlife agency in its Wildlife Action Plan, typically a native species with declining populations, or vulnerabilities expected to benefit from strategic conservation attention. State Assessment Priority Species (SAPS) – Species for which more information is needed to fully understand status and trends to determine the level of conservation concern or SGCN status. These species, separate from SGCN, are a priority for additional assessment or survey to address data deficiency. Importance Level: Guidance vote for Importance Level: MOST IMPORTANT: species with extant occurrences in Connecticut, Taxa which are rare throughout much of their restricted geographic range. VERY IMPORTANT: species with extant occurrences in Connecticut. IMPORTANT: species without known extant occurrences in Connecticut, species with or without known occurrences in Connecticut, species which have experienced documented declines in Connecticut.
From the DRAFT Connecticut 2025 Species of Greatest Conservation Need

Insects:

Bees Data from **iNaturalist** and verified by Dan Watkins of Beeworks, East Hartland, CT

Nomad Bee (*Genius nomada*)
Virginia Carpenter Bee (*Xylocopa virginica*)
Flat- Tailed Leafcutter (*Megachile mendica*)
Ligated Furrow Bee (*Halictus ligatus*)
Northern Amber Bumblebee (*Bombus borealis*)
Common Eastern Bumblebee (*Bombus impatiens*)
Perplexing (Confusing) Bumblebee (*Bombus perplexus*)

Butterflies (current data not yet available) Historic butterfly records from CT Butterfly Atlas Project, Courtesy of Mike Thomas, Connecticut Entomological Society.

Common Names:	Taxon:	Location:
Arctic Skipper	*Carterocephalus Palaemon*	Valley Brook
Common Ringlet	*Coenonympha tullia*	Rt 181 s Rt 20
Orange Sulphur	*Colias eurytheme*	Walnut Hill Road
Monarch	*Danaus plexippus*	Tunxis St. Forest
Silver-spotted Skipper	*Epargyreus clarus*	Tunxis St. Forest
Black Dash	*Euphyes conspicua*	Legeyt Road
Viceroy	*Limenitis archippus*	Walnut Hill Road
Red-spotted Purple	*Limenitis arthemis*	Fuller Road east of Rt.179
American Copper	*Lycaena phlaeas*	Walnut Hill Rd
Little Wood Satyr	*Megisto cymela*	Fuller Rd., East of Rt.179
Mourning Cloak	*Nymphalis antiopa*	Fuller Rd., East of Rt.179
Canadian Tiger Swallowtail	*Papilio* canadensis	Hogback Reservoir - below Dam
Eastern Tiger Swallowtail	*Papilio* glaucus	Valley Brook Tunxis State Forest
Spicebush Swallowtail	*Papilio troilus Linnaeus*	Camp Alice Merritt
Pearl Crescent	*Phyciodes tharos*	Mile Coe Rd, north of Rt 20
Cabbage White (invasive)	*Pieris rapae*	Tunxis St. Forest
Hobomok Skipper	*Poanes hobomok*	Hogback Road (dam entrance)
Long Dash	*Polites mystic*	Legeyt Road at Enders Road
Peck's Skipper	*Polites peckius*	Hogback Reservoir - below Dam
Great Spangled Fritillary	*Speyeria cybele*	State Forest, end of Balance Rock Rd
Red Admiral	*Vanessa atalanta*	Fuller Rd., East of Rt.179

A spicebush swallowtail (*Papilio troilus Linnaeus*) feeds on flowers at Camp Alice Merritt.
Heather Geist, July 2022

Polyphemus Moth Ray Konokowski

Dragonflies and Damselflies Current data for Hartland not yet available

Boyeria vinosa (Fawn Darner) 8/26/2002 W. Branch Farmington River from Hogback Road access (M. Thomas)
Calopteryx amata (Superb Jewelwing) 7/13/2003 W. Branch Farmington River from Hogback Rd. (M. Thomas)
Calopteryx amata (Superb Jewelwing) 7/20/2003 W. Branch Farmington River from East River Rd., 1 north of Peoples State Forest. (F. Zygmont)
Calopteryx maculata (Ebony Jewelwing) 8/26/2002 West Branch from Hogback Rd. (M. Thomas)
Epitheca princeps (Prince Baskettail) north end of Barkhamsted Reservoir. (Jay Kaplan, et al)

iNaturalist records show that one hundred sixty-two species of insects (including bees, butterflies, moths, & Odes) have been observed in Hartland. Many of the observations were submitted by citizen scientist, Jim Dugan.
Use the link below to access these findings:
https://www.inaturalist.org/observations?nelat=42.03878510000001&nelng=-72.86364&subview=table&swlat=41.966606&swlng=-73.02953699999999&taxon_id=47158&view=species

Amphibians and Reptiles: **Data Courtesy of Herpetologist, Hank Gruner**

1. State of Connecticut Endangered Species List (2016): CT-SC= Special Concern species, CT-T= Threatened species, CT-E= Endangered species
2. CT Wildlife Action Plan Greatest Conservation Need Species list (2015): GCN/I= Important, GCN/VI= Very Important, GCN/MI= Most Important
3. Northeast Partners for Amphibian and Reptile Conservation (NEPARC) Species of Regional Responsibility and Concern list (2010): REG/LC= Low Concern, REG/MC= Moderate Concern, REG/HC= High Concern, REG/SC= Severe Concern
4. Federal Endangered Species list: FED-T= Threatened species
5. International Union for Conservation of Nature: IUCN/V= vulnerable, IUCN/E= endangered, IUCN/CE= critically endangered
6. Convention on International Trade in Endangered Species: CITES App. I = species threatened with extinction protected from trade, App. II = species that may become threatened with extinction without trade control, App. III= species identified as in need of trade control

Amphibians:

Salamanders

*Jefferson salamander complex *Ambystoma jeffersonianum x laterale* complex CT-SC, GCN/VI, REG/SC
Spotted salamander *Ambystoma maculatum* CT, GCN/I, REG/MC
Northern dusky salamander *Desmognathus fuscus* CT GCN/I, REG/LC
Northern two-lined salamander *Eurycea bislineata* REG/LC
Northern spring salamander *Gyrinophilus p. porphyriticus* CT-T, GCN/VI, REG/MC
Four-toed salamander *Hemidactylium scutatum* REG/MC
Eastern red-backed salamander *Plethodon c. cinereus*
Red-spotted newt *Notophthalmus v. viridescens* CT GCN/I

Frogs and Toads

Eastern American toad *Anaxyrus a. americanus*
Fowler's toad *Anaxyrus fowleri* CT-SC (proposed),
GCN/I, REG/HC
Gray treefrog *Dryophytes versicolor* CT GCN/I
Spring peeper *Pseudacris crucifer*
American bullfrog *Lithobates catesbeianus*
Green Frog *Lithobates clamitans*
Pickerel frog *Lithobates palustris*
Wood frog *Lithobates sylvaticus* CT GCN/I

Reptiles:

Snakes

Northern black racer *Coluber c. constrictor* CT GCN/I, REG/HC
Northern ring-necked snake *Diadophis punctatus edwardsii* REG/LC
Eastern hog-nosed snake *Heterodon platirhinos* CT-SC, GCN/VI, REG/SC
Eastern milk snake *Lampropeltis t. triangulum*
Northern water snake *Nerodia s. sipedon*
* Smooth green snake *Opheodrys vernalis* CT-SC, GCN/I, REG/HC
Eastern rat snake *Pantherophis alleganiensis* REG/MC
Northern brown snake *Storeria dekayi* REG/LC
Northern red-bellied snake *Storeria o. occipitomaculata*
*Ribbon snake *Thamnophis s. sauritus* CT-SC, GCN/VI, REG/SC
Eastern garter snake *Thamnophis s. sirtalis*

Turtles

Snapping turtle *Chelydra serpentina*
Eastern painted turtle *Chrysemys p. picta* REG/LC, CITES App. III
Spotted turtle *Clemmys guttata* CT-SC, GCN/VI, REG/SC, IUCN/E, CITES App. II
Wood turtle *Glyptemys insculpta* CT-SC, GCN/VI, REG/SC, IUCN/E, CITES App. II
Under review by the USFWS for listing under the ESA
Eastern box turtle *Terrapene c. carolina* CT-SC, GCN/VI, REG/SC, IUCN/V, CITES App. II

***Species of conservation concern that, although not documented, could well occur based on occurrences that have been documented in surrounding towns.**

Spotted Turtle **Cheryl Anderson**

Fish:

The CT DEEP monitors 13 sites in Hartland for fish counts.
Monitoring Sites:
Belden Brook (2), Falls Brook, Hartland Pond Tributary, Howell's Brook, Howell's Pond Tributary, Hubbard Brook, Hurricane Brook, Sawmill Brook, Valley Brook (2), West Branch Farmington River and West Branch Salmon Brook.

The CT DEEP Fish Community Data - Inland Waters data can be found by going to:
https://cteco.uconn.edu/projects/fish/viewer/index.html
Information on this site includes: Site Detail / Freshwater Fish Counts / Macroinvertebrates

Most recent data show the following fish present in Hartland waters:
American Eel, Atlantic Salmon (stocked), Blacknose Dace, Bluegill Sunfish, Brook Trout (stocked), Brook Trout (wild), Brown Bullhead, Chain Pickerel, Creek Chub, Golden Shiner, Largemouth Bass, Longnose Dace, Pumpkin Seed, Slimy Sculpin, Tessellated Darter, White Sucker
Source: CT DEEP

Appendix #5) Areas of Ecological Importance

Andrew Pasquariello Audubon Sanctuary (Audubon Sharon)
Edith Leopold Audubon Sanctuary (Audubon Sharon)
Loomis Chaffee "Darwin Club" Property
Mill District Nature Sanctuary (North Woods Land Conservancy)
Tunxis Wildlife Management Area (CTDEEP)
* Horace B. Clark Woods (New England Forestry Foundation)
West Branch of the Salmon Brook corridor (W&S)
** West Branch of the Upper Farmington River corridor (W&S)

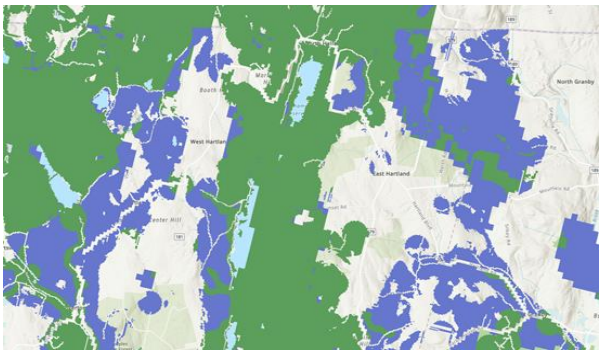
* Horace B. Clark Woods

This abandoned farmland in Hartland was donated in 1984 by Mrs. Elinor W. Toop in memory of her uncle, Horace B. Clark. The 431-acre parcel, which is adjacent to the Tunxis State Forest, **became NEFF's first Community Forest in Connecticut.** The diverse forest of large white pine and mixed hardwood has been thinned carefully several times. The resulting growth of lush understory vegetation has created superb wildlife habitat.

** **The Farmington River Protection Overlay District** shall consist of the West Branch of the Farmington River through the Town of Hartland and a contiguous and parallel Buffer Strip, defined as an area extending one hundred feet (100') measured landward and horizontally from both edges of the river bed as outlined on the map entitled, "Farmington River Protection Overlay District."

The Nature Conservancy's Resilient and Connected Landscapes project is the first study to comprehensively map resilient lands and significant climate corridors across Eastern North America. Resilient lands are defined as places that are expected to retain high quality habitat that will continue to support a diverse array of plant and animal species. Portions of West Hartland are within the swath of resilient and connected network that passes through Northwest CT and is a critical link in connecting the central and northern Appalachians. The proposed conservation network is representative of climate-resilient sites that will sustain biodiversity and ecological functions into the future under a changing climate.
Source: The Nature Conservancy (TNC) Resilient Land Mapping Tool & Resilient and Connected Network data set.

This map below depicts Hartland's location within TNC's "Resilient and Connected Landscape area.



Hartland's Ridgelines:

Hartland enjoys miles of undeveloped ridgelines which provide safe corridors for wildlife, keep erosion in check and offer pleasing scenic views. Highly developed ridgelines have a negative impact on the aforementioned.
One summary statement of the report on Ridgeline Protection prepared for the State by David K. Leff in 1994 is:

"Control of ridgeline development can also moderate erosion and sedimentation, reduce the public safety hazards of overly steep roads and poor fire flows, protect unique landforms and wildlife, and foster economic development by leaving an area attractive to tourists and potential residents and businesses". David K. Leff
Read the full report here: https://www.cga.ct.gov/PS94/rpt/olr/htm/94-R-0328.htm

Appendix #6) Roads and Culverts in Hartland

A culvert is a metal, concrete, or plastic structure that conveys runoff surface water underneath a road, railroad, driveway, or any other obstruction to the natural flow of water rather than a storm drain system. Common types of culverts include round pipes, pipe arches, and box culverts, which may include multiple culverts or a combination of different sizes, types, and elevations at the same location.

Culverts, while essential for infrastructure, can negatively impact the environment, particularly aquatic ecosystems, if not designed and maintained properly. They can disrupt fish passage, fragment habitats, and change stream flow patterns, potentially leading to erosion and reduced water quality. However, well-designed culverts can also enhance wildlife connectivity and prevent flooding.

Negative Environmental Impacts:
Disrupted Fish Passage:
Culverts can act as barriers to fish migration, especially if they are undersized, have large drops, or lack suitable depth and substrate. This limits fish access to breeding grounds, food sources, and other essential resources.
Habitat Fragmentation:
Culverts can divide stream systems, reducing connectivity between habitats and hindering the movement of fish and other aquatic organisms. This can negatively impact populations, reduce genetic diversity, and increase the risk of extinction for certain species.
Changes in Stream Flow:
Culverts can alter natural stream flow patterns, creating turbulence, increasing water velocity, and potentially causing erosion. This can damage stream bottoms, banks, and surrounding vegetation.
Sedimentation and Water Quality Issues:
Undersized culverts can trap sediment and debris, reducing water flow and impacting water quality. This can also damage downstream areas.
Invasive Species:
Culverts can facilitate the spread of invasive species by providing pathways for them to move into and out of areas.

Positive Environmental Impacts:
Wildlife Connectivity:
Well-designed culverts can be large enough to allow larger animals, such as deer, to cross roads or railways safely, reducing the risk of wildlife-vehicle collisions and promoting connectivity between habitats.
Flood Control:
Culverts help to manage water flow and prevent flooding, protecting infrastructure and communities from damage.
Improved Water Quality:
Properly designed culverts can allow for the passage of sediment and debris, preventing the buildup of these materials and improving water quality.
Mitigation and Best Practices:
Proper Design and Sizing:
Culverts should be designed to accommodate expected peak flows and to allow for the passage of fish and other aquatic organisms.
Stream Restoration:
Consider incorporating stream restoration techniques, such as adding baffles or creating pools within the culvert, to improve habitat connectivity and water flow.
Regular Maintenance:
Culverts should be regularly inspected and maintained to ensure they are free from debris and blockages.
Consider Climate Change:
Future climate change may require larger culverts to handle increased rainfall and flood risks.
Community Awareness:
Educating communities about the importance of culverts and their role in maintaining healthy ecosystems is crucial.

Citation: Above is AI-generated

List of Town Roads in Hartland

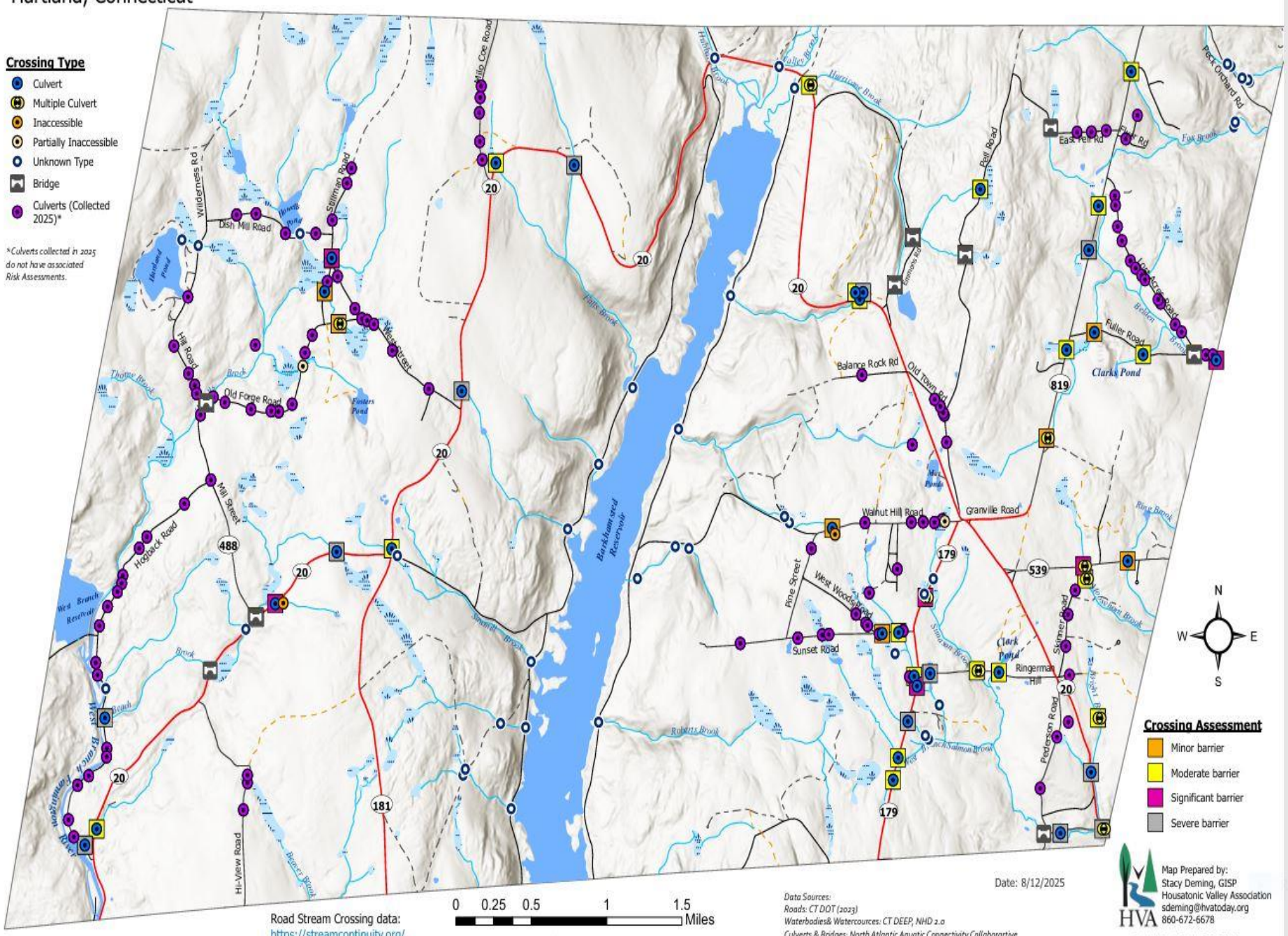
East Hartland: (23)	No. of Culverts: (65)
Anderson Road	1
Balance Rock Road	1
Brook Drive	2
Dalene Drive	0
East Pell Road	3
Eastwood Drive	2
Fuller Road	2
Fyler Road	2
Jennifer Drive	0
Kensington Acres	0
Lost Acres Road	14
Moosehorn Road	0
Old Town Road	4
Peck Orchard Road	4
Pederson Road	5
Pell Road	1
Pine Street	1
Rengermann Hill Road	3
Skaret Road	0
Skinner Road	5
Sunset Road	6
Walnut Hill Road	6
Westwoods Road	3

West Hartland: (11)	No. of Culverts (54)
Dish Mill Road	4
Feather Lane	0
Hi-View Road	3
Hogback Road	16
Milo Coe Road	5
Old Forge Road	7
Pond Hill Road	6
Stillman Road	3
West Street	8
Wilderness Road	0
Whisker Hollow	2

Map of roads in Hartland: CTDOT https://portal.ct.gov/-/media/dot/documents/dpolicy/policymaps/tru/pdf/064_tru.pdf

Road Stream Crossings (Bridges & Culverts)

Hartland, Connecticut

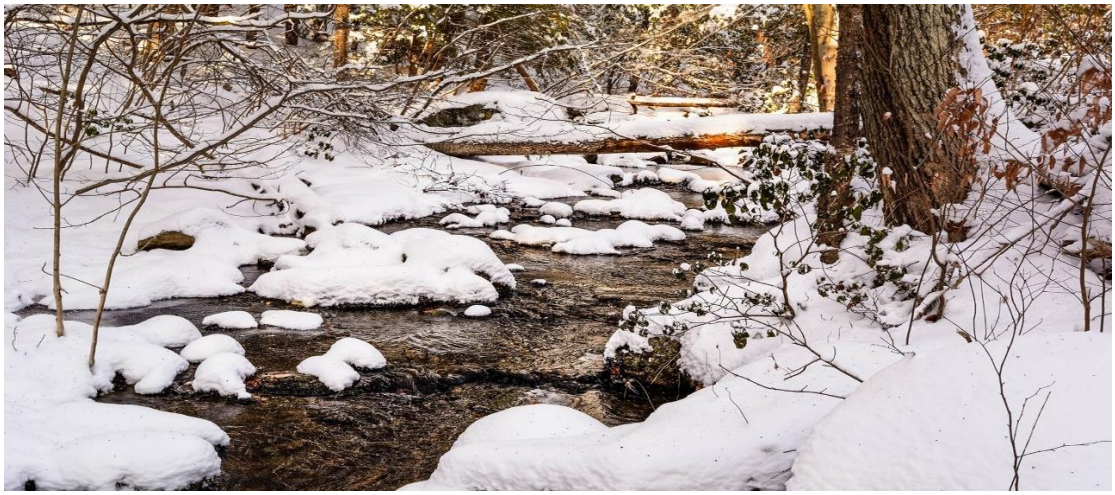


Appendix #7) Hartland Land Statistics

Size: 34.6 square miles (22,144 acres*) 34.3 sq. mi. (21,935.2 acres**)
33 square miles (21,120 acres) land
1.6 square miles (1,024 acres) open water
Open Space in acres: >15,500 (>70%)
Owned by State of Connecticut: 10,558.3 acres
Tunxis State Forest: 8,935 acres
American Legion State Forest: 105.21 acres
People's State Forest: 288.46 acres
Water Access: 5.2 acres (Howell's Pond, Hogback Reservoir, Town Beach)
Owned by North Woods Land Conservancy: 238 acres
Owned by Colebrook Land Conservancy: 2 acres
Mean elevation: 1029.67 ft miles
Highest Elevation: 1422 ft. (South Johnson Hill in West Hartland is the highest elevation in Hartford County)
Lowest Elevation: 550 ft. (Hartland Hollow)
Miles of Paved Roads: 47.81 miles
Percentage of impervious area: Approximately 1.02% (State coverage: 7.5%)
Resilience, Flow and Recognized Biodiversity: 7,910.8 acres
Percent Forested: 80% +
Percent Core Forest: 64% + (21 core forests totaling 14,241 acres) **Source: HVA**

Trails: (approximately 17.8 miles of trails)
Falls Brook Trail: 1.7 mi. CT Forest & Park Association (CFPA)
Camp Alice Merritt Trail: .5 mi. Town of Hartland
Berg Field Trail: .1 mi. Town of Hartland
Tunxis Trail (from Pine Mountain, Barkhamsted town line to the MA state line): 8.2 mi. CFPA
Tunxis Wildlife Management Area (Tunxis State Forest): 1 mi. State of Connecticut
Horace B. Clark Woods Trail: Approximately 2 mi. New England Forestry Foundation (the 2 trails are not clearly marked)
Mill District Nature Preserve (Blue and Orange Loop): 2 mi. North Woods Land Conservancy
Bassett - Kell Nature Preserve (Red Loop): .7 mi. North Woods Land Conservancy
Charles and Lois Beach Nature Preserve: 1.3 mi. North Woods Land Conservancy
Davis K. Leff "Hidden in Plain Sight" Trail: .3 mi. FALPS / American Legion State Forest

*** Town of Hartland Assessor's Office**
**** CT ECO ArcGIS**



Fox Brook **Ray Clark**

Appendix #8) Links to further studies, reports and organizations

I. **Geology**

Statewide Geologic Maps: https://portal.ct.gov/deep/geology/statewide-geologic-maps
National Geologic Map Database: https://ngmdb.usgs.gov/Geolex/UnitRefs/HartlandRefs_1994.html
Radon Gas in CT / Map: https://portal.ct.gov/-/media/DEEP/geology/radon/RadonPotentialpdf.pdf
The Geologic History of Hartland by John A. Raabe, PhD:
https://www.hartlandct.org/images/The_Geologic_History_of_Hartland_by_John_A._Raabe_PhD._full_presentation.pdf
Wilderlist (a good site to find topographic detail): https://www.wilderlist.app/
1921 USGS Water Supply Paper 466:
https://www.hartlandct.org/images/1921_USGS_Water_Supply_Paper_466.pdf

II. **Water Resources**

CT DEEP report on Hartland's Water Quality: https://portal.ct.gov/-/media/deep/water/ic/hartlandms4factsheetpdf.pdf?rev=067f337aa7b84e9f889e29a4b04643e7&hash=526217D52121720BA43CB63CA021A420
Farmington River Watershed Association: https://www.frwa.org/
Farmington River Coordinating Committee: http://www.farmingtonriver.org/
Farmington River Management Plan: http://www.farmingtonriver.org/index.php/resources/upper-farmington-management-plan
PA 24-13 https://www.cga.ct.gov/2024/act/pa/pdf/2024PA-00013-R00HB-05355-PA.pdf
National Wetlands Inventory: https://fwsprimary.wim.usgs.gov/wetlands/apps/wetlands-mapper/
Impervious Land Cover: Advanced Viewer v2 Click on Built Environment under Layer List

III. **North Woods Land Conservancy / Affiliates**

Local: North Woods Land Conservancy: https://www.northwoodslc.org/
Area - Housatonic Valley Association / Green Print: https://litchfieldgreenprint.org/
Area - North West Connecticut Land Conservancy: https://ctland.org/about-us/
State – Connecticut Land Conservation Council: https://ctconservation.org/
National – Land Trust Alliance: https://landtrustalliance.org/

IV. **Mammals, Birds, Herps, Amphibians, Fish and Insects**

The State of the Bears: https://portal.ct.gov/-/media/deep/wildlife/pdf_files/the-state-of-the-bears.pdf
CT Wildlife Action Plan: https://portal.ct.gov/deep/wildlife/ct-wildlife-action-plan/ct-2015-wildlife-action-plan
Sharon Audubon Center: https://sharon.audubon.org/
Audubon Connecticut – National Audubon Society: https://ct.audubon.org/
Cornell Lab of Ornithology: https://www.birds.cornell.edu
CT Natural Diversity Data Base: https://portal.ct.gov/deep/nddb/natural-diversity-data-base-maps
National Wildlife Federation: https://www.nwf.org/
Herpetology: https://peabody.yale.edu/explore/collections/herpetology/guide-amphibians-reptiles-connecticut
CT DEEP Fish Community Data-Inland Waters: https://cteco.uconn.edu/projects/fish/viewer/index.html
CT DEEP Fishing Information: https://portal.ct.gov/deep/fishing
iNaturalist for Hartland: https://www.inaturalist.org/observations?nelat=42.03878510000001&nelng=-72.86364&subview=table&swlat=41.966606&swlng=-73.02953699999999&taxon_id=47158&view=species
CAES Bees: https://portal.ct.gov/-/media/caes/documents/publications/pollinators/ctbombusguidepdf.pdf

V. **Forestry**

USDA Forest Service: https://www.fs.usda.gov/
Connecticut Forest & Park Association: https://ctwoodlands.org/
New England Forestry Foundation (NEFF): https://newenglandforestry.org/
CTDEEP- Forestry Div. - Connecticut Forest Action Plan: https://portal.ct.gov/deep/forestry/ct-forest-action-plan
Connecticut Forest Plan Story Map: https://storymaps.arcgis.com/stories/b448641810a848de9d5d378c3c5b1c5d
CTDEEP- Forest Management Plans:https://portal.ct.gov/deep/forestry/management-on-state-lands/forest-management-on-state-lands

VI. **Trees / Native Plants / Invasive Non- Native Plants / Fungi**

Connecticut's Notable Trees – Connecticut College: Connecticut's Notable Trees Select "for a Town"

Invasive Species: https://portal.ct.gov/DEEP/Invasive-Species/Invasive-Species
Invasives Plant Guide 2020:
https://www.conservect.org/wp-content/uploads/2020/10/Invasives_guide_2020_web.pdf
A Landowner's Guide to Invasive Plant Management:
http://www.farmingtonriver.org/application/files/7314/7707/0765/Land_Owners_GuideLL71714.pdf
NWLC's Tree Data: https://www.northwoodslc.org/information-on-local-tree-diseases-pests
Connecticut Invasive Plant Working Group: https://cipwg.uconn.edu/
FRCC Fungi Study:
http://farmingtonriver.org/application/files/9517/1224/1743/Final_report_of_Fungal_Diversity_Study_in_the_Upper_Farmington_River_Watershed.2023.pdf
Connecticut Botanical Society: https://www.ct-botanical-society.org/
Aquatic Invasive Species: https://portal.c t.gov/deep/invasive-species/examples-of-aquatic-invasive-species-in-Connecticut

VII. **General Conservation**

CT Maps and GIS Data: https://portal.ct.gov/deep/gis-and-maps/maps/maps-and-gis-data
Connecticut Agricultural Experiment Station: https://portal.ct.gov/caes
Connecticut Environmental Conditions Online (CTECO): https://maps.cteco.uconn.edu/
CTECO Impervious Cover: Advanced Viewer v2 Click on Built Environment under Layer List
TNC's Climate Resilience Interactive Map: https://www.maps.tnc.org/resilientland/#/explore
UConn- College of Agriculture, Health and Natural Resources: https://cahnr.uconn.edu/
UConn - Department of Natural Resources and the Environment: https://nre.uconn.edu/outreach/
State of CT Ridgeline Protection: https://www.cga.ct.gov/PS94/rpt/olr/htm/94-R-0328.htm

VIII. **Government Resources**

Town of Hartland: https://www.hartlandct.org/
Roads in Hartland: CTDOT https://portal.ct.gov/-/media/dot/documents/dpolicy/policymaps/tru/pdf/064_tru.pdf
Farmington Valley Health District: https://fvhd.org/
Northwest Conservation District (NCD): https://www.conservect.org/northwest-conservation-district/
Northwest Hills Council of Governments (NHCOG): Northwest Hills Council of Governments | Northwest Hills Planning Region | Litchfield, CT
National Park Service: https://www.nps.gov/index.htm
USDA – National Resource Conservation Service (NRCS): https://www.nrcs.usda.gov/
PA- 490 Explained:
https://www.hartlandct.org/images/Public_Act_490_Explained.pdf
U.S. Fish & Wildlife Service: https://www.fws.gov/
Highlands Conservation Act: https://www.fws.gov/program/highlands-conservation-act-grant
USDA Web / NRCS Custom Soil Survey for Hartland:
https://www.hartlandct.org/images/Custom_Soil_Report_for_Hartland.pdf