

Chapter 4. Natural and Historic Resources

Introduction

At the series of visioning sessions the Planning Board held to lay the foundation for this plan, participants identified the clean quiet environment, beautiful landscape with its mix of forested and open lands and dark skies at night, and forested areas where wildlife and recreation coexist with logging as important characteristics of the community to maintain. The Ammonoosuc River was identified as a high priority at each meeting due to the multiple values provided to the community, including recreation, scenic and hydropower. Historic resources were also discussed, including the importance of the historic buildings in the village area that form the core of the community. The Historical Society, Conservation Commission and high level of student engagement were all noted as important resources as well.

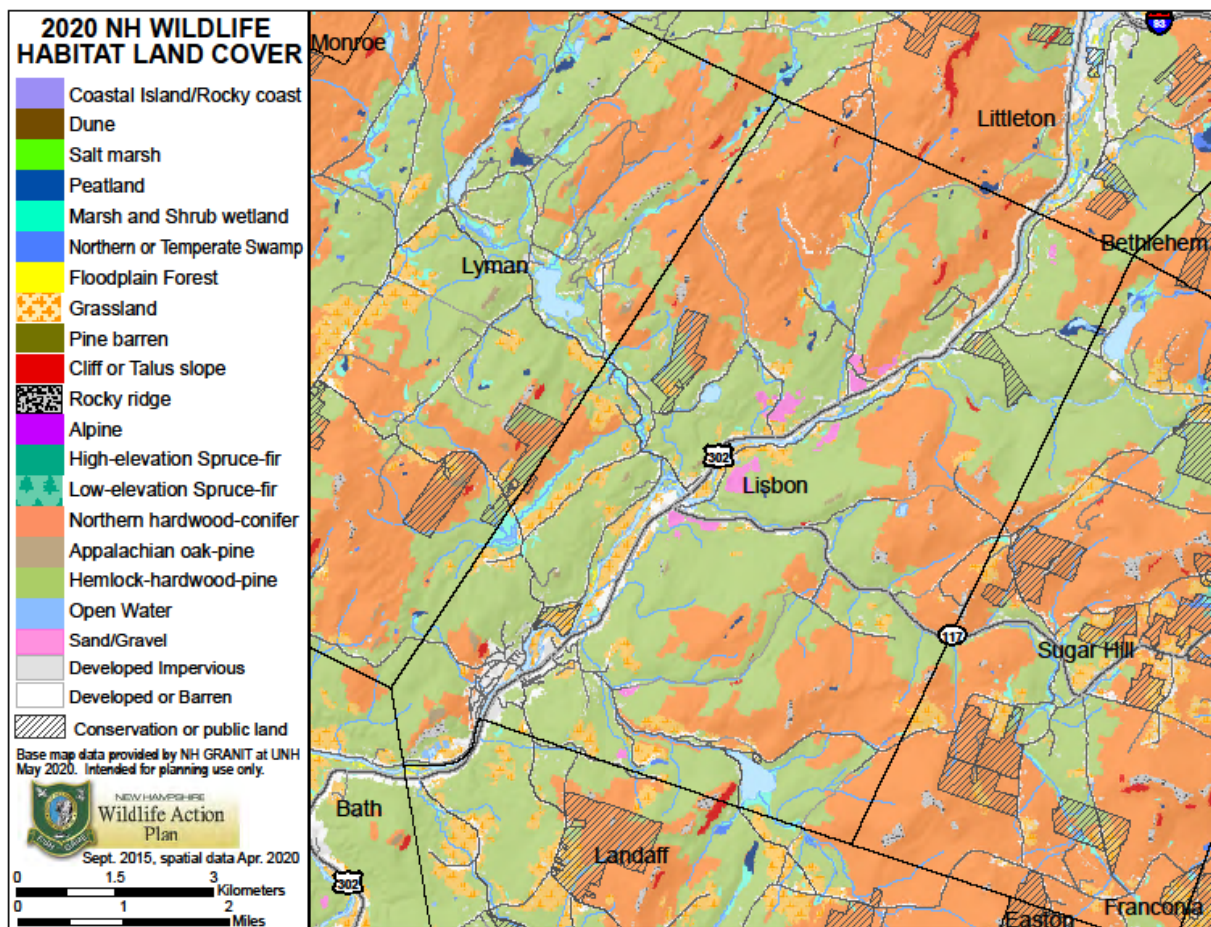
This chapter provides an overview of some of the resources and related issues important for the community to keep in its sights as growth and development continue and as opportunities for conservation arise. The Planning Board wishes to thank the Conservation Commission, Lisbon Area Historical Society and students of Lisbon Regional High School for their significant contributions to this chapter.

Forest and Agriculture

Forestland

As shown on the following map, Lisbon's land cover is mainly forested, and is comprised of two forest types: Northern hardwood-conifer and Hemlock-hardwood-pine. Forestland has many uses. Timber harvesting is the most obvious use and is a source of wood products and yield tax. Other uses and functions include recreation, wildlife habitat, water quality protection, open space and scenic

enhancement. These are all important uses for the people of Lisbon, both from a quality of life and economic standpoint. Forest resources provide habitat, erosion control, water filtering, improved air quality, and temperature regulation. These resources also pay their own way in terms of town services because of the little they demand. A properly managed forest can provide all of these benefits concurrently and sustainably.



Responsible harvesting of forest resources supports the local economy and provides access to local forest products. The working landscape is an important component of the character of the area for both residents and visitors.

Subdividing large woodland parcels into small lots for development can have long-term, nearly irreversible impacts. **NEW HAMPSHIRE'S VANISHING FORESTS** (SPNHF, 2001) documented the loss of forestland in large enough tracts for long-term forest management activities. SPNHF reported that most forest landowners no longer rank timber production as their main reason for owning the land. Only 10% of the landowners surveyed included timber production as a primary reason, with aesthetic enjoyment more than 50% of landowners' reason for owning the land.

With regard to the short-term impacts of logging, there are a couple of opportunities for the Conservation Commission to be made aware of upcoming cuts. One is the "Intent to Cut" filed with the town for tax purposes and the other is the Forestry Statutory Permit By Notification filed with NHDES when any stream crossings or wetlands are involved. These notifications can be found on NHDES's online OneStop tool. Forestry operations are bound by the latest version of Best Management Practices published by NHDES, **NEW HAMPSHIRE BEST MANAGEMENT PRACTICES FOR EROSION CONTROL ON TIMBER HARVESTING OPERATIONS** by UNH Extension and NH Division of Forests and Lands. Other resources helpful for the education of forestland owners and loggers on methods to protect the town's sensitive natural resources are available on-line as well, including **BEST MANAGEMENT PRACTICES FOR FORESTRY: PROTECTING NEW HAMPSHIRE'S WATER QUALITY** published by UNH Cooperative Extension. These notifications can also help to identify logging operations that are planned on areas used for recreation such as trails. Steps can be taken to work with landowners and foresters to temporarily close or re-route trails during the logging operations.

Invasive species are non-native species that have the potential to do economic or ecological harm due to their ability to outcompete local species. One concern in Lisbon is invasive plants and insects that affect forest health. According to John Gunn, Research Assistant Professor of Forest Management at UNH, non-native species such as burning bush, glossy buckthorn, multiflora rose, and Japanese barberry already make up at least 30 percent by species of all plants in New England (UNH SCIENTIST TAKES AIM AT INVASIVE, NON-NATIVE PLANTS THREATENING NH'S FORESTS, NH Agricultural Experiment Station, March 20, 2017). Gunn and other researchers are trying to learn more about what steps landowners and forest managers can take to make our forests more resistant to invasive species to protect forest health. Non-native insects such as the Emerald Ash Borer are also expected to be a growing concern as our climate continues to warm. The Lisbon Regional High School 2016-2017 Biology classes provided

the following discussion on the Emerald Ash Borer (*Agrilus planipennis*) in Lisbon in their *Natural Resource Inventory*:

In 2013, New Hampshire confirmed that the Emerald Ash Borer [Agrilus planipennis] officially invaded New Hampshire. As of 2017, it is limited to the Lakes Region; however other areas as still at risk, primarily due to the transport of nursery stock, cordwood, and firewood. As Lisbon is home to a KOA Campground, residents should be aware of the possibility of this pest.

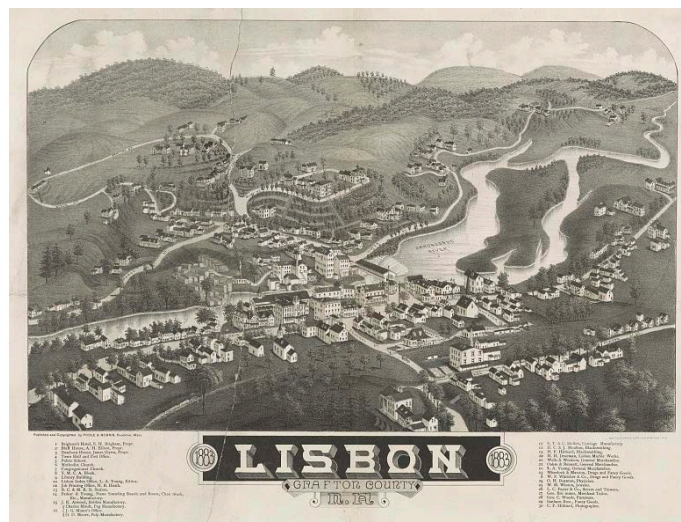


(Source: USDA)

Adult beetles are metallic green and X inch and leave D shaped holes in trees when exiting. If these are seen you should contact (800) 444-8978 or share a photo to www.nhbugs.org.

Agricultural Land

Like many New Hampshire communities, Lisbon was once mainly open land outside of the village as shown in the 1883 Library of Congress lithograph to the right. Much of the land once used by small, non-mechanized farms has now reverted back to forest land or has been developed. Miles of stonewalls in mature forest stands are testimony to an agricultural heritage that has been lost over the past several decades. Today agriculture needs to

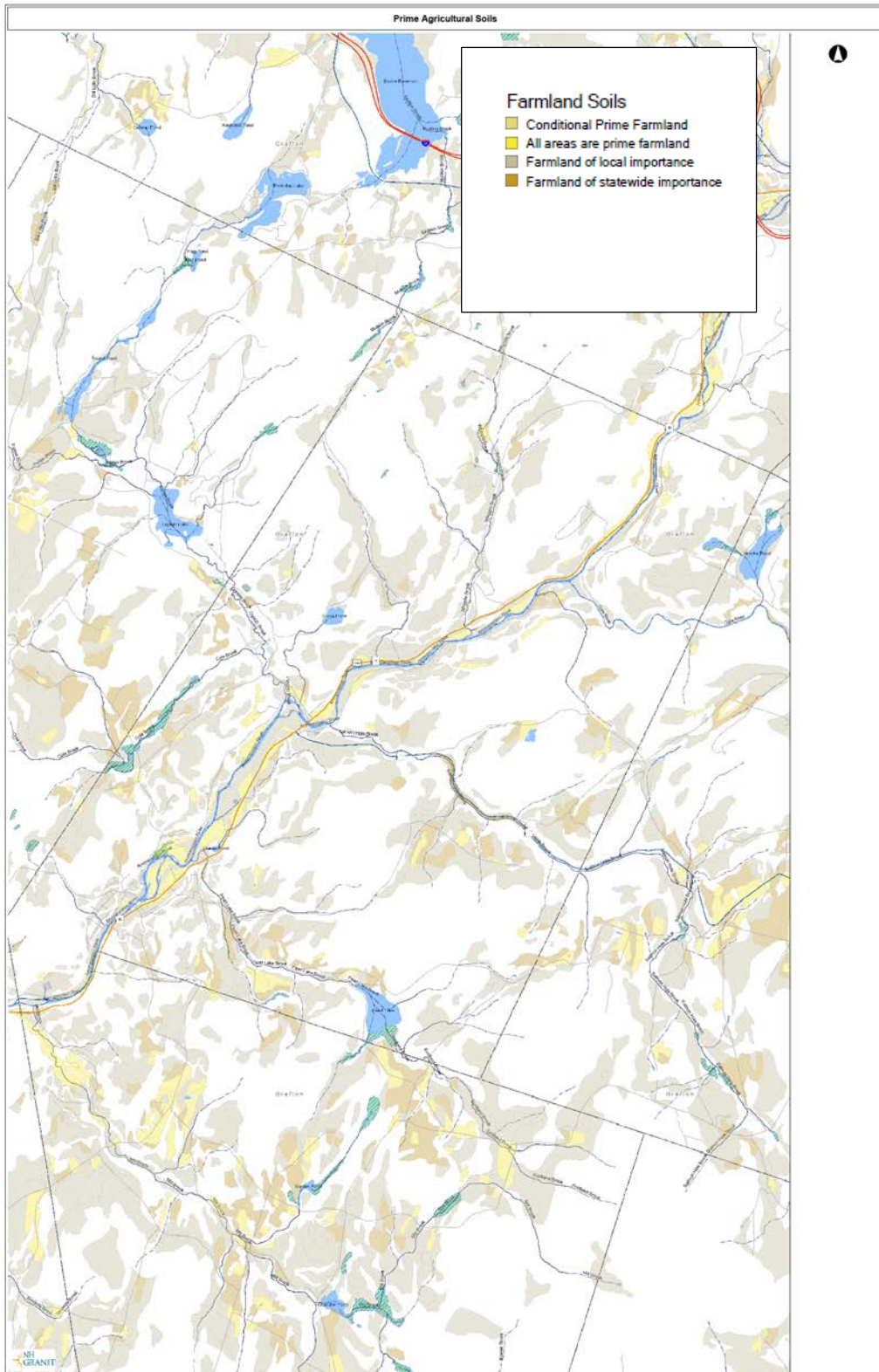


compete with development as level open areas are often the cheapest to develop. The state's current use program helps to offset this development pressure by allowing farms to be taxed at farmland values rather than development value. The land that does remain open and undeveloped adds a special rural, scenic character to the town while at the same time providing more diverse habitat for local wildlife. According to the NH Department of Agriculture, the face of agricultural operations in New Hampshire is changing quickly. Niche markets including specialty crops and herds, customized farm products, and small-scale operations are redefining agriculture.

Nonetheless, NH Department of Revenue annual current use reports indicate that Lisbon's farmland may be continuing to slowly decline. Between 2011 and 2019 the acreage in the Farmland current use category decreased from 1,086.6 acres to 1,042.16 acres.

Lisbon is fortunate to have large areas of its remaining open lands on undeveloped prime agricultural soils along the Ammonoosuc River. Much of this land has little development potential due to floodplains. As shown on the following map, many other large tracts of prime agricultural soil are found throughout town; however, only a few small areas away from the river corridor remain open. Most have reverted to forest.

There are several benefits to keeping some current or potential future agricultural land open. One is to retain the possibility of producing agricultural goods locally. The current global pandemic and associated disruption of the global food distribution system has reminded us of the importance of being able to produce and obtain food locally. There is also an economic benefit for the town when produce is generated locally, as the land does not require the high level of town services that development demands. Agricultural lands also add to the visual and habitat diversity of the landscape and contribute to the character of the community. As New England has reforested, species that depend on open meadows and edge habitat have been severely impacted.



Planning for Open Space

Lisbon's Zoning Ordinance puts the community in a good position relative to maintenance of forest tracts and agricultural land. Lisbon has not made the mistake of applying large lot zoning to the rural areas. These were believed by many communities to be a way to preserve the low density development found in rural areas but instead forced developers to carve large acreages out of the working landscape unnecessarily. In addition, Lisbon's Zoning Ordinance provides options for clustering homesites away from important resource lands. In addition to these land use tools, maps of open lands can be used together with the prime agricultural soils map as one tool for prioritizing land for conservation.

Water Resources

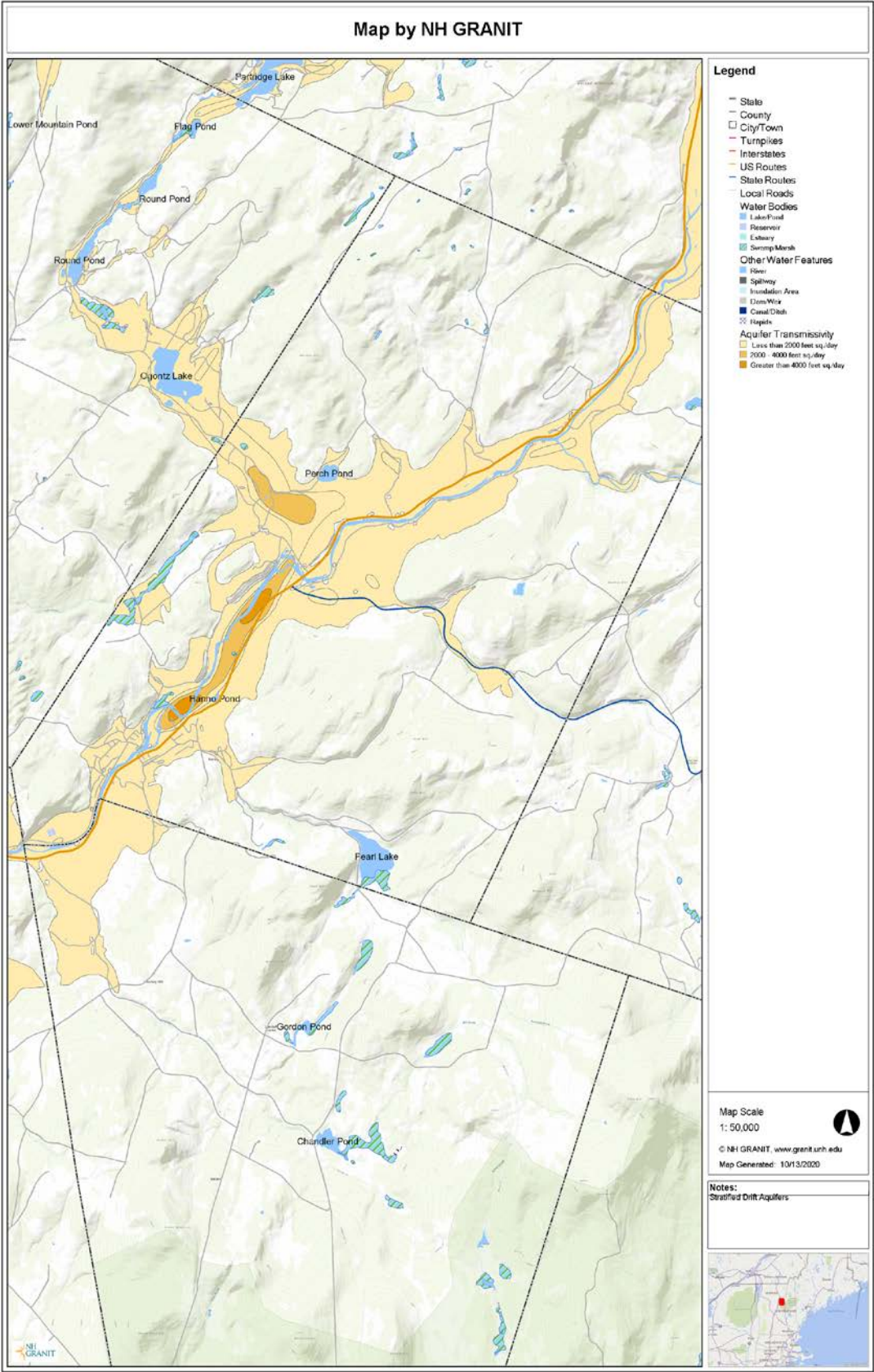
Groundwater

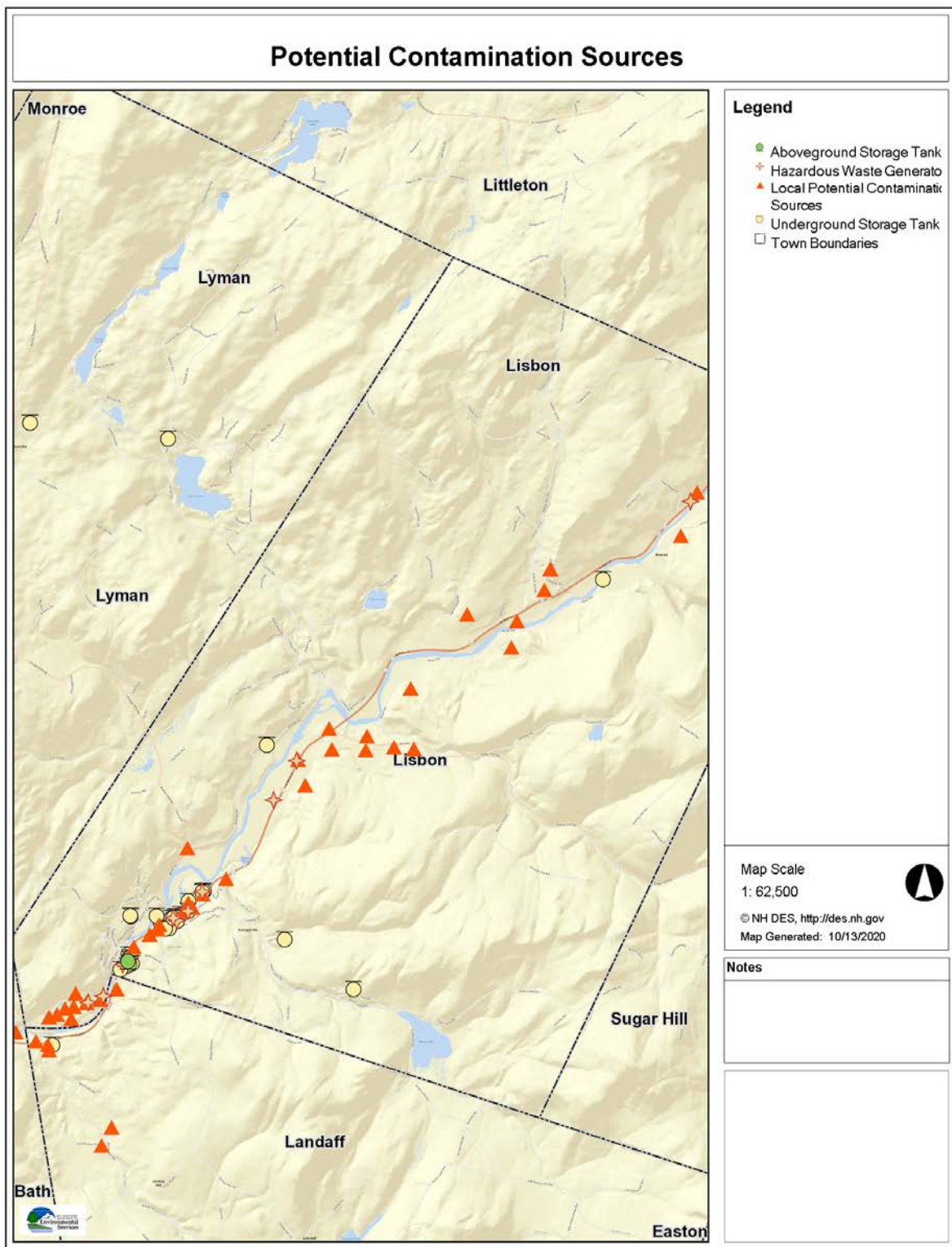
New Hampshire's important stratified drift aquifers have been mapped by N.H. Department of Environmental Services and U.S. Department of the Interior Geological Survey. As shown on the map on the next page, a major aquifer extends through town following the Ammonoosuc River corridor and into Lyman following Ogontz Brook. This aquifer serves the town wellfield and private wells for existing and future development, and provides a potential future wellsite for the town.

Like many northern New England communities, Lisbon's development and major transportation corridor has followed the town's major river. As shown on the next map, this has also meant a concentration of potential groundwater hazards over the town's major aquifer.

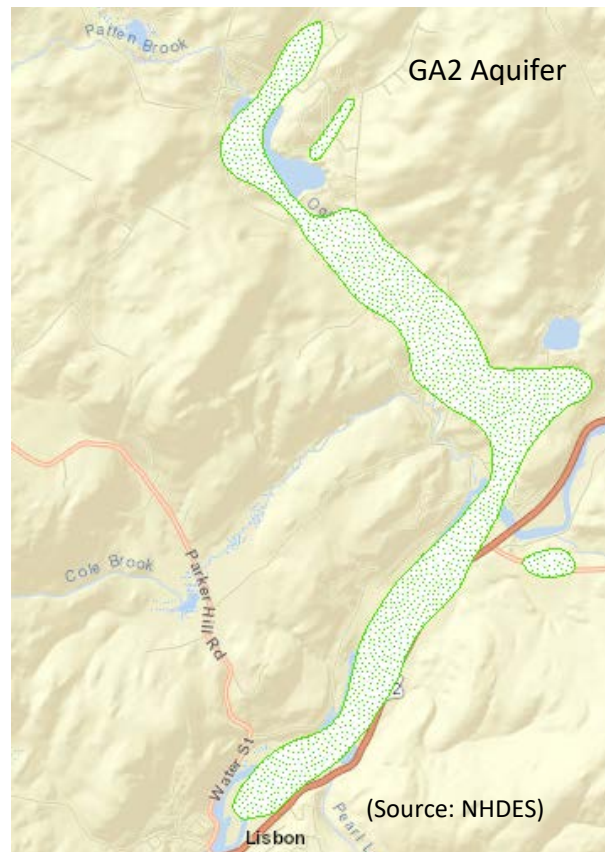
For uses that require a Special Exception from the Zoning Board of Adjustment, the Board must consider potential impacts to groundwater from the use of toxic or hazardous substances.

Incorporation of an aquifer protection overlay district in the Zoning Ordinance would enable similar oversight of all businesses using toxic or hazardous substances in greater quantities than a typical home, and would enable the incorporation of best management practices into conditions of approval.





Another option for the town to protect the public water supply aquifer is the state's groundwater classification process (RSA 485-C). Initially, NHDES has analyzed aquifer maps and other data and classified potential public water supplies as GA2. In Lisbon, NHDES has classified the aquifer GA2 northeast of Water Street and up Ogontz Brook into Lyman. The town has the option to work with NHDES to reclassify this aquifer to GA1 which would provide for periodic inspection of businesses that use toxic or hazardous substances in quantities higher than a typical household to ensure that best management practices for storage and handling are being followed. This could be done either on its own or in conjunction with an aquifer protection overlay district.



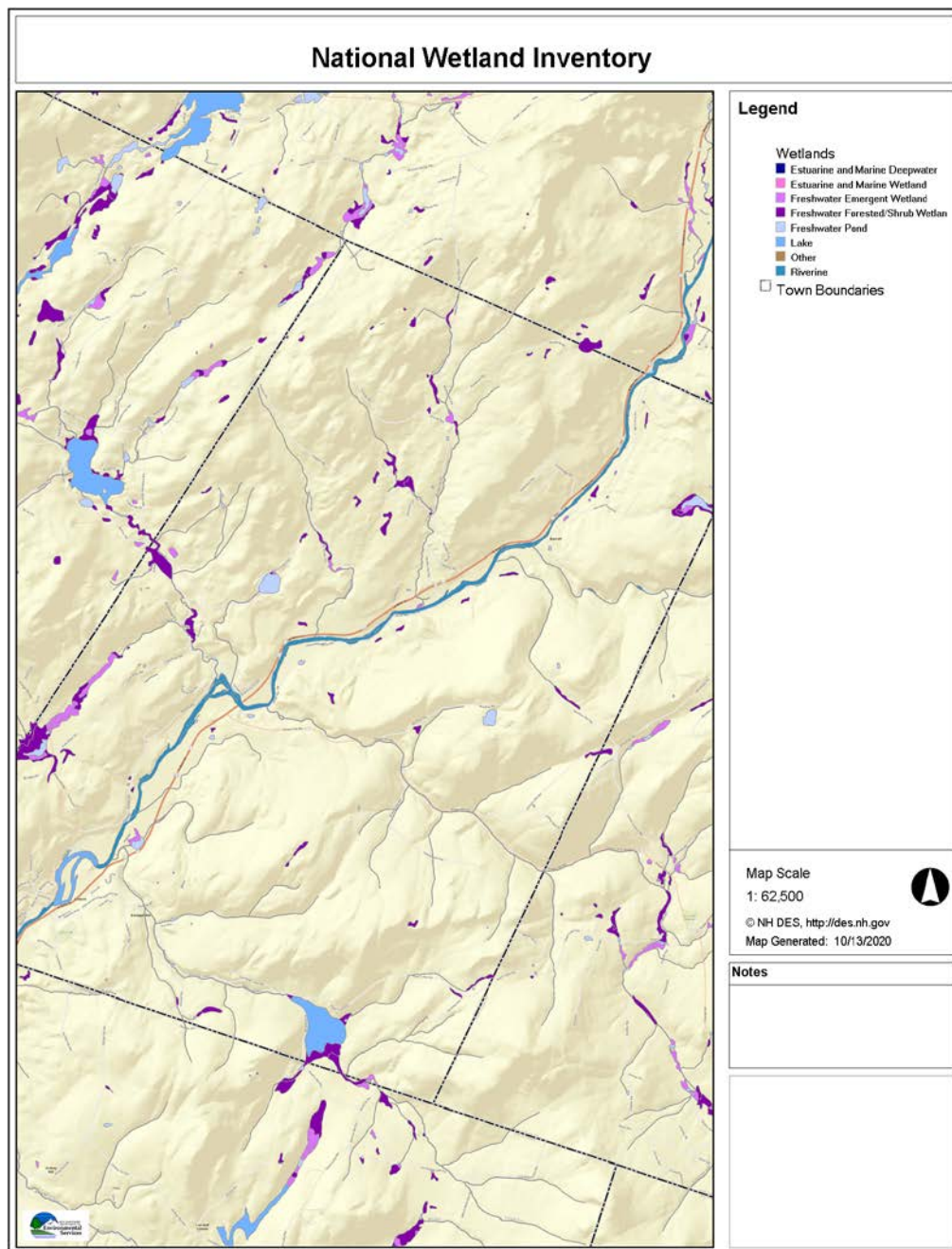
Wetlands

As shown on the map on the following page, wetlands make up only a small portion of Lisbon's land surface. Most are associated with ponds or brooks. Other small isolated wetlands can be found scattered around town.

Wetlands provide numerous benefits for the community, including the storage and filtering of flood waters, pollution filtration, groundwater recharge, and stream flow augmentation during low water periods. Wetlands also provide critical habitat for numerous species.

In March 2020, Town Meeting voted to amend the town's Zoning Ordinance to incorporate a Wetlands Conservation Overlay District. The new regulations apply to wetlands contiguous with perennial streams as well as 25-foot wide buffer around these wetlands. In the new Wetlands Conservation Overlay District, activities compatible with protection of the wetland functions are permitted. A few activities that would pose a significant threat to the wetland functions due to their nature are

prohibited. For certain other uses that could be sited and managed in a manner that would minimize any negative impacts on the wetland, landowners can apply to the Planning Board for a Conditional Use Permit.



Lakes and Ponds

The Lisbon Regional High School 2016-2017 Biology classes provided the following narrative on Lisbon's ponds their *Natural Resource Inventory*:

Perch Pond

Perch Pond is a natural lake that doesn't have any man made barrier restrictions at the outlet. Perch Pond is a 16 acre body of water with only roadside access and is surrounded almost entirely by forest cover. Perch Pond Road, which is unpaved, follows closely along the western edge of the pond. The road's proximity to the water presents potential issues of road drainage and wildlife migration barriers, but these are relatively minor because the road does not carry much traffic. Perch Pond is located 3.2 miles outside of the center of Lisbon. This lake has many different varieties of fish and is great for fly fishing, spinning, or baitcasting. It has an average depth of 10 feet with the maximum at 17 feet.

The Conservation Commission reports that Perch Pond provides important habitat for eagle, loon, great blue heron, multiple ducks, and turtles that nest along the road.

Hanno Pond

Hanno Pond is a natural pond. It is also a favorite local spot for fishing and is home to many animals including ducks, fish, beavers, frogs, insects, and more aquatic plants and animals. The average elevation is 571 feet, and the pond is area is about 3 acres. Hanno Pond got its name from the Hanno family who used to live next to the pond. Hanno Pond is bordered on the west [sic - east] by US Route 302, which carries very heavy traffic. The impact of Route 302's proximity to Hanno Pond should be looked at more closely.

Pearl Lake

Pearl Lake, in the southeastern corner of Lisbon, comprises about 100 acres of open water nestled amid surrounding forest, wetland, and palustrine areas. On the western side, Scotland Road, a paved road which lies very close to the shoreline, may impinge on environmental quality by creating drainage issues and also by being a barrier to some animal species that utilize both the lake and the surrounding woodlands. On the north is Pearl Lake Road, which is unpaved and for the most part lies further back from the water.

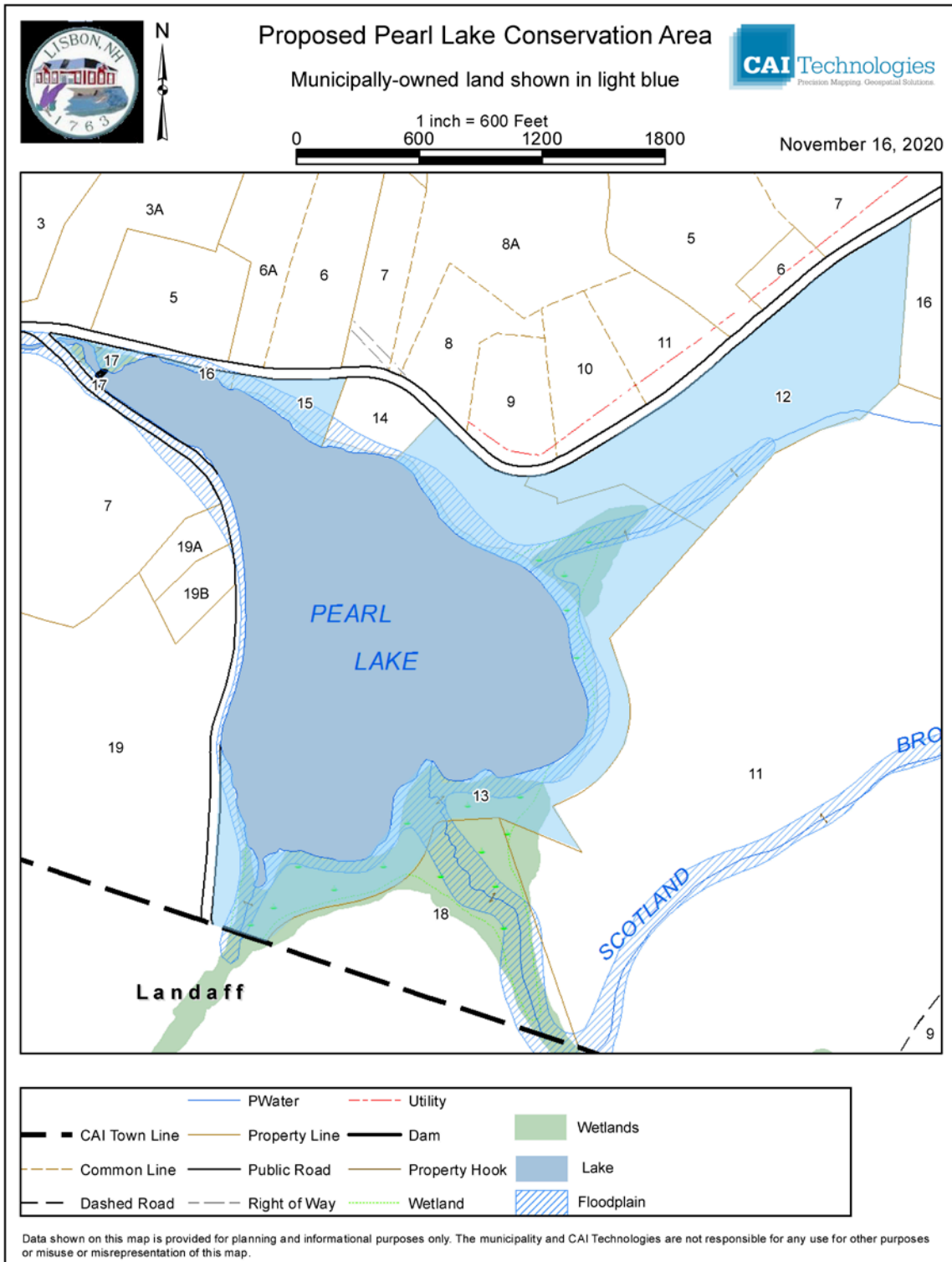
Pearl Lake is a great bird watching area; there are many people who live near it, however it doesn't bother the birds in the area. The lake is undeveloped but is

managed for conservation by the Lisbon Conservation Committee. Pearl Lake was expanded by damming. Pearl Lake Dam is 14 feet in length and 21 feet in width . Pearl Lake is nestled to the west of the Cannon-Kinsman Range. Activities like flatwater paddling, kayaking, or canoeing is great for this 1.5 mile circumference lake, that is only quietwater skill level. It only takes an hour to go around the whole pond's exterior. The elevation loss is very minimal and the gradient is a loop. You can visit this lake, depending on the weather, in any season.

The water quality of Pearl Lake has been of concern to the town for more than a century; as early as 1906 the Lisbon Board of Health was in contact with the State Board of Health to seek assistance with protecting the water quality of Pearl Lake - which was at the time the town's source of drinking water - resulting in a set of regulations being established (Clarke, 1906) which are apparently still applicable, and which include a prohibition against swimming...

The Pearl Lake Conservation District section of the Zoning Ordinance provides some protection for the Lake by requiring the Zoning Board of Adjustment to take a closer look at uses that require a Special Exception. Applications are reviewed to ensure that "the proposed use will not be detrimental to the health and welfare of the general public." Also, for proposals in the watershed in wetlands or on slopes in excess of 25%, water pollution, erosion and sedimentation and stormwater have to be examined.

As shown on the map on the following page there are several municipally-owned parcels on the shore of Pearl Lake and a tributary stream. Public ownership of the shoreland parcels with their intact vegetated buffer and associated wetlands and floodplain has helped protect the water quality of this former public water supply. The Lake has been home to nesting loons and provides an important food source for eagles and ospreys. The Conservation Commission has recommended that the Town permanently protect its Pearl Lake properties with a conservation easement in order to continue to protect water quality and habitat. Other benefits would include public recreation such as fishing, boating, hiking, cross country skiing and snowmobile use on the trail maintained by the Lisbon Stumpjumpers. The remaining privately-owned shoreline parcel is already under a permanent conservation easement.



Rivers and Brooks

Except for a bit of land in the northwest corner of town that drains via Mullikin Brook to the Moore Reservoir on the Connecticut River, Lisbon is all within the Ammonoosuc River watershed. This means that rain and snow that falls on the ground in Lisbon either recharges the groundwater or flows to the Ammonoosuc River, much of it via Whipple Brook, Ogontz Brook, Pearl Lake Brook (aka Mink Brook), Salmon Hole Brook, the Gale River or other smaller brooks.

The Ammonoosuc River is part of the state's River's Management and Protection Program (RSA 483). Through most of town the River is designated Rural-Community; the segment through the village area is designated as Community. Each of these categories is associated with certain specific protections under state law (RSA 483:9). In addition, the law enables Lisbon to have representation on a Local Advisory Committee (LAC) along with the other communities along the mainstem of the River. The LAC is charged with advising the NHDES Commissioner and watershed municipalities "...on matters pertaining to the management of the river or segment, tributary drainage areas, and disposal of state-owned lands." The LAC also has a duty to "...comment on any federal, state or local governmental plans to approve, license, fund, or construct facilities or applications for permits, certificates, or licenses..." that may affect the river. In addition, the LAC is tasked with developing a corridor management plan for the river under RSA 483:10. The Ammonoosuc River LAC adopted the current **CORRIDOR MANAGEMENT PLAN** for the Ammonoosuc River in June 2013. This Plan is a very useful resource for the town as it contains background information and recommendations on numerous river-related subjects.

Although many of Lisbon's surface waters have not been tested as part of the state's periodic state-wide assessments, available data indicate that water quality in Lisbon's rivers and brooks is high. Like many of the state's waters, NHDES reports concerns in the watershed regarding aluminum and pH levels, and atmospheric mercury which is accumulated in fish. The cause of the pH and aluminum is unknown (NHDES 2018 303(d) list). The Ammonoosuc River LAC tests the water in several locations along the River several times a year as part of the state's VRAP (Volunteer River Assessment Program). The data provides a baseline and enables any problems to be found and addressed early. The last several years of data have found no concerns among the parameters tested.

Riparian Buffers and Stormwater Management

The importance of riparian buffers and proper stormwater management for maintenance of water quality and healthy aquatic systems was discussed in CHAPTER 3 LAND USE.

The state's Shoreland Protection Act provides some setbacks and limits on impervious surfaces and removal of shoreline vegetation along 4th order or greater waterways and lakes and ponds over 10 acres. In Lisbon the Act covers the Ammonoosuc River, the Gale River, Ogontz Brook from the juncture of Cole Brook Pond, Pearl Lake and Perch Pond. In addition, Town Meeting in March 2020 voted to add a Shoreland Protection Overlay District to the town's Zoning Ordinance. The Overlay District includes all lands within 25 feet of all perennial streams in town and prohibits most structures and removal of vegetation.

Lisbon's Subdivision Regulations and Site Plan Review Regulations were both updated by the Planning Board in recent years to incorporate the **NEW HAMPSHIRE STORMWATER MANUAL** by reference as well as a requirement that stormwater not leave the site in greater quantity, velocity or pollutant loading post-development than was found pre-development. Consideration should also be given to a steep slopes ordinance to ensure that runoff from development on shallow highly erodible soils does not cause sedimentation of downstream surface waters.

Invasives

The Lisbon Regional High School 2016-2017 Biology classes provided the following discussion on invasive aquatic plants in Lisbon in their *Natural Resource Inventory*:

*At this time, no invasive aquatic plants have been noted in Lisbon's bodies of water, but both Variable Milfoil (*Myriophyllum heterophyllum*) and Eurasian Milfoil (*M. spicatum*) have been reported in a variety of New Hampshire lakes and ponds as well as in the Connecticut River. Both species are presumed to be transported primarily on boats, boat motors, and boat trailers. The relatively small size of Lisbon's only water bodies has probably been an advantage in avoiding the import of these plants.*

Fish and Wildlife

Lisbon's Important Species

For each community in the state, NH Fish and Game has identified the important species most likely to be found there. Those identified as likely to be found in Lisbon are listed in the following tables along with their status and habitat requirements. In addition to listing whether species are on the state endangered (SE) or threatened (ST) list or federal endangered (FE) or threatened (FT) list, the list also includes species of Special Concern (SC) and Species of Greatest Conservation Need (SGCN). Species of Special Concern in New Hampshire are those that are nearly threatened or that have recently recovered from being threatened or endangered. SGCN are those that are declining in numbers, squeezed into smaller patches of habitat, and threatened by other issues. The lists highlight the importance of protecting Lisbon's few wetlands and water bodies and remaining open lands.

| REPTILES AND AMPHIBIANS | | |
|-----------------------------------|----------------|--|
| COMMON NAME | SPECIES STATUS | Habitats |
| Blue-Spotted/Jefferson Salamander | SC, SGCN | Appalachian Oak-Pine Forest, Floodplain Habitats, Hemlock Hardwood Pine Forest, Marsh and Shrub Wetlands, Northern Hardwood-Conifer Forest, Northern Swamps, Peatlands, Temperate Swamps, Vernal Pools |
| Eastern Ribbon Snake | SGCN | Floodplain Habitats, Marsh and Shrub Wetlands, Peatlands, Vernal Pools |
| Mink Frog | SGCN | Lakes and Ponds with Coldwater Habitats, Marsh and Shrub Wetlands, Northern Swamps, Peatlands |
| Northern Leopard Frog | SC, SGCN | Coldwater Rivers and Streams, Floodplain Habitats, Grasslands, Lakes and Ponds with Coldwater Habitats, Large Warmwater Rivers, Marsh and Shrub Wetlands, Shrublands, Warmwater Rivers and Streams |
| Smooth Green Snake | SC, SGCN | Grasslands, Marsh and Shrub Wetlands, Peatlands, Rocky Ridge, Cliff, and Talus, Rocky Ridge, Cliff, and Talus, Shrublands |
| Wood Turtle | SC, SGCN | Coldwater Rivers and Streams, Floodplain Habitats, Grasslands, Shrublands, Warmwater Rivers and Streams |

| BIRDS | | |
|---------------------|----------------|--|
| COMMON NAME | SPECIES STATUS | Habitats |
| Golden Eagle | SE, SGCN | Appalachian Oak-Pine Forest, Hemlock Hardwood Pine Forest, High Elevation Spruce-Fir Forest, Lowland Spruce-Fir Forest, Northern Hardwood-Conifer Forest, Rocky Ridge, Cliff, and Talus |
| American Black Duck | SGCN | Lakes and Ponds, Rivers and Streams, Marsh and Shrub Wetlands, Northern Swamps, Peatlands, Temperate Swamps |
| American Kestrel | SC, SGCN | Developed Habitats, Grasslands, Shrublands |
| American Woodcock | SGCN | Appalachian Oak-Pine Forest, Hemlock Hardwood Pine Forest, Marsh and Shrub Wetlands, Northern Swamps, Shrublands, Temperate Swamps |
| Bald Eagle | SC, SGCN | Appalachian Oak-Pine Forest, Floodplain Habitats, Hemlock Hardwood Pine Forest, High Elevation Spruce-Fir Forest, Lakes and Ponds, Rivers and Streams, Lowland Spruce-Fir Forest, Marsh and Shrub Wetlands, Northern Hardwood-Conifer Forest |
| Bank Swallow | SC, SGCN | Coldwater Rivers and Streams, Grasslands, Lakes and Ponds with Coldwater Habitats, Large Warmwater Rivers, Marsh and Shrub Wetlands, Warmwater Rivers and Streams |
| Black-billed Cuckoo | SGCN | Appalachian Oak-Pine Forest, Hemlock Hardwood Pine Forest, Pine Barrens, Shrublands |
| Bobolink | SGCN | Grasslands |
| Brown Thrasher | SGCN | Pine Barrens, Shrublands |
| Canada Warbler | SGCN | Hemlock Hardwood Pine Forest, Lowland Spruce-Fir Forest, Northern Hardwood-Conifer Forest, Northern Swamps, Temperate Swamps |
| Chimney Swift | SGCN | Appalachian Oak-Pine Forest, Developed Habitats, Hemlock Hardwood Pine Forest, Lowland Spruce-Fir Forest, Northern Hardwood-Conifer Forest |
| Eastern Towhee | SGCN | Appalachian Oak-Pine Forest, Peatlands, Pine Barrens, Rocky Ridge, Cliff, and Talus, Rocky Ridge, Cliff, and Talus, Shrublands |
| Field Sparrow | SGCN | Pine Barrens, Shrublands |
| Purple Finch | SGCN | Appalachian Oak-Pine Forest, Floodplain Habitats, Hemlock Hardwood Pine Forest, High Elevation Spruce-Fir Forest, Lowland Spruce-Fir Forest, Northern Hardwood-Conifer Forest, Northern Swamps |
| Ruffed Grouse | SGCN | Appalachian Oak-Pine Forest, Grasslands, Hemlock Hardwood Pine Forest, Lowland Spruce-Fir Forest, Marsh and Shrub Wetlands, Northern Hardwood-Conifer Forest, Shrublands |
| Scarlet Tanager | SGCN | Appalachian Oak-Pine Forest, Hemlock Hardwood Pine Forest, Northern Hardwood-Conifer Forest |
| Veery | SGCN | Appalachian Oak-Pine Forest, Floodplain Habitats, Hemlock Hardwood Pine Forest, Northern Hardwood-Conifer Forest, Northern Swamps, Temperate Swamps |
| Wood Thrush | SGCN | Appalachian Oak-Pine Forest, Floodplain Habitats, Hemlock Hardwood Pine Forest, Northern Hardwood-Conifer Forest |
| Marsh Wren | SGCN | Marsh and Shrub Wetlands, Salt Marsh |
| Northern Goshawk | SGCN | Appalachian Oak-Pine Forest, Hemlock Hardwood Pine Forest, Lowland Spruce-Fir Forest, Northern Hardwood-Conifer Forest |

| | | |
|------------------------|----------|---|
| Olive-sided Flycatcher | SC, SGCN | Lowland Spruce-Fir Forest, Marsh and Shrub Wetlands, Northern Hardwood-Conifer Forest, Northern Swamps, Peatlands, Temperate Swamps |
| Common Loon | ST, SGCN | Lakes and Ponds with Coldwater Habitats, Large Warmwater Rivers, Warmwater Lakes and Ponds, Warmwater Rivers and Streams |

INSECTS

| COMMON NAME | SPECIES STATUS | Habitats |
|--------------------------|----------------|--|
| American Bumble Bee | SGCN | Developed Habitats, Grasslands, Shrublands |
| Rusty-patched Bumble Bee | FE, SE, SGCN | Developed Habitats, Grasslands |
| Yellow-banded Bumble Bee | SGCN | Developed Habitats, Grasslands, Shrublands |
| Yellow Bumble Bee | SGCN | Developed Habitats, Grasslands |
| Monarch Butterfly | SC | Developed Habitats, Grasslands |

FISH AND SHELLFISH

| COMMON NAME | SPECIES STATUS | Habitats |
|---------------------------|----------------|--|
| Eastern Brook Trout | SGCN | Coldwater Rivers and Streams, Lakes and Ponds with Coldwater Habitats |
| Finescale Dace | SC, SGCN | Coldwater Rivers and Streams, Lakes and Ponds with Coldwater Habitats, Warmwater Lakes and Ponds |
| Longnose Sucker | SGCN | Coldwater Rivers and Streams, Lakes and Ponds with Coldwater Habitats |
| Northern Redbelly Dace | SC, SGCN | Coldwater Rivers and Streams, Lakes and Ponds with Coldwater Habitats |
| Rainbow Smelt | SC, SGCN | Coldwater Rivers and Streams, Estuarine, Lakes and Ponds with Coldwater Habitats, Marine, Warmwater Rivers and Streams |
| Slimy Sculpin | SGCN | Coldwater Rivers and Streams, Lakes and Ponds with Coldwater Habitats |
| Creepers (Mussel) | SGCN | Coldwater Rivers and Streams, Lakes and Ponds with Coldwater Habitats, Large Warmwater Rivers, Warmwater Lakes and Ponds, Warmwater Rivers and Streams |
| Triangle Floater (Mussel) | SGCN | Large Warmwater Rivers, Warmwater Lakes and Ponds, Warmwater Rivers and Streams |

MAMMALS

| COMMON NAME | SPECIES STATUS | Habitats |
|--------------------------------|----------------|---|
| Canada Lynx | FT, SE, SGCN | High Elevation Spruce-Fir Forest, Lowland Spruce-Fir Forest |
| Northern Bog Lemming | SC, SGCN | High Elevation Spruce-Fir Forest, Lowland Spruce-Fir Forest, Northern Hardwood-Conifer Forest |
| American Water Shrew (Eastern) | SGCN | Northern Swamps |

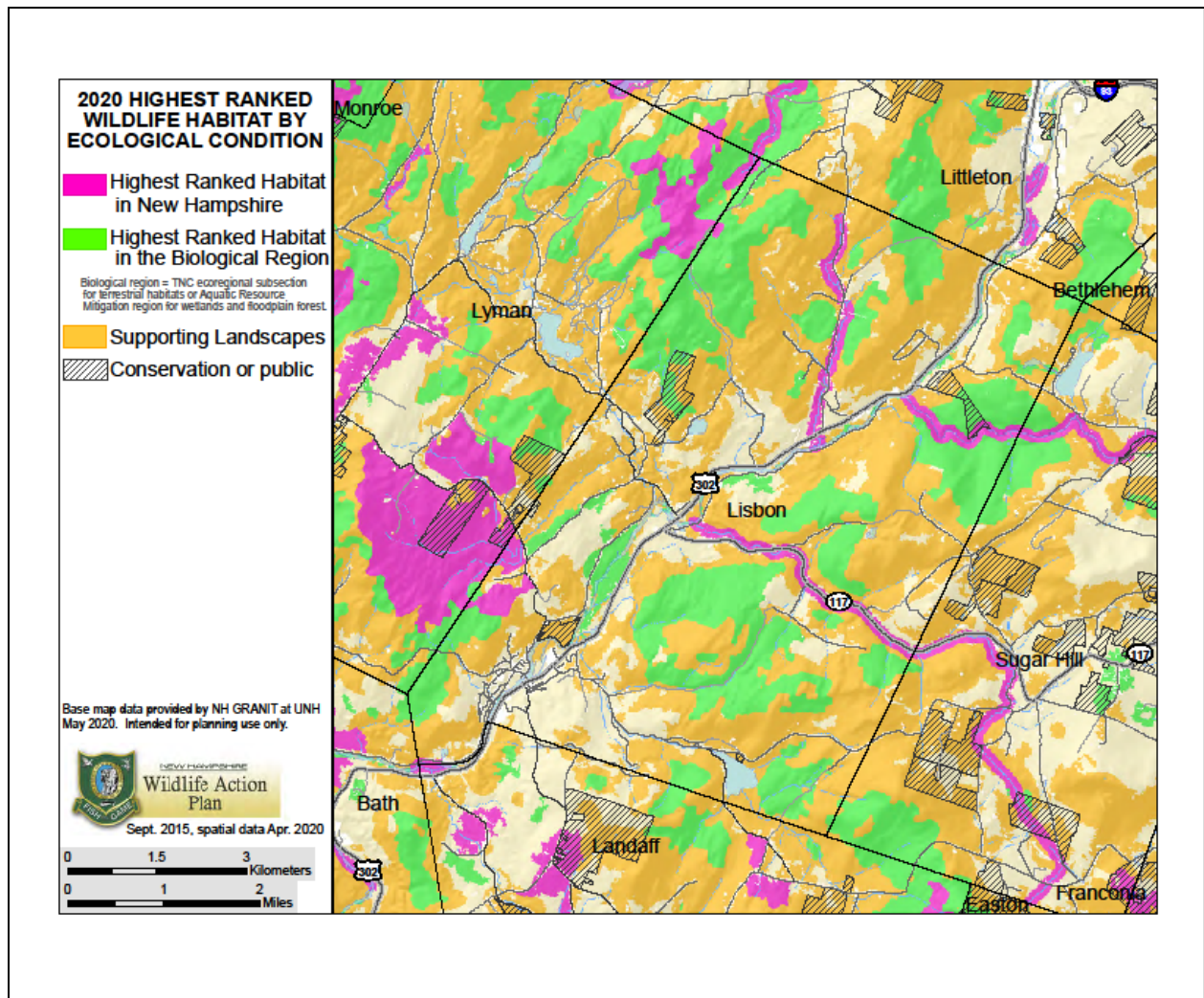
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|-------------------------|--------------|--|
| Big Brown Bat | SC, SGCN | Appalachian Oak-Pine Forest, Caves and Mines, Floodplain Habitats, Hemlock Hardwood Pine Forest, Lowland Spruce-Fir Forest, Northern Hardwood-Conifer Forest, Northern Swamps, Temperate Swamps |
| Eastern Red Bat | SC, SGCN | Appalachian Oak-Pine Forest, Floodplain Habitats, Hemlock Hardwood Pine Forest, Lowland Spruce-Fir Forest, Northern Hardwood-Conifer Forest, Northern Swamps, Temperate Swamps |
| Hoary Bat | SC, SGCN | Appalachian Oak-Pine Forest, Floodplain Habitats, Hemlock Hardwood Pine Forest, Lowland Spruce-Fir Forest, Northern Hardwood-Conifer Forest, Northern Swamps, Temperate Swamps |
| Little Brown Myotis | SE, SGCN | Appalachian Oak-Pine Forest, Caves and Mines, Hemlock Hardwood Pine Forest, Lowland Spruce-Fir Forest, Northern Hardwood-Conifer Forest, Northern Swamps, Pine Barrens, Temperate Swamps |
| Long-tailed Shrew | SC, SGCN | High Elevation Spruce-Fir Forest, Northern Hardwood-Conifer Forest |
| Moose | SGCN | Appalachian Oak-Pine Forest, Floodplain Habitats, Hemlock Hardwood Pine Forest, High Elevation Spruce-Fir Forest, Lowland Spruce-Fir Forest, Marsh and Shrub Wetlands, Northern Hardwood-Conifer Forest, Swamps, Shrublands, Lakes and Ponds |
| Northern Long-eared Bat | FT, SE, SGCN | Appalachian Oak-Pine Forest, Caves and Mines, Hemlock Hardwood Pine Forest, Lowland Spruce-Fir Forest, Northern Hardwood-Conifer Forest |
| Rock Vole | SGCN | High Elevation Spruce-Fir Forest, Northern Hardwood-Conifer Forest |
| Silver-haired Bat | SC, SGCN | Appalachian Oak-Pine Forest, Floodplain Habitats, Hemlock Hardwood Pine Forest, Lowland Spruce-Fir Forest, Northern Hardwood-Conifer Forest, Northern Swamps, Temperate Swamps |
| Southern Bog Lemming | SGCN | Northern Hardwood-Conifer Forest |
| Tricolored Bat | SE, SGCN | Appalachian Oak-Pine Forest, Caves and Mines, Floodplain Habitats, Hemlock Hardwood Pine Forest, Lowland Spruce-Fir Forest, Northern Hardwood-Conifer Forest, Northern Swamps, Temperate Swamps |
| American Marten | SC, SGCN | High Elevation Spruce-Fir Forest, Northern Hardwood-Conifer Forest |

(Source: NH Fish and Game)

Lisbon's Important Habitat

As shown in the following map developed as part of NH Fish and Game's **WILDLIFE ACTION PLAN**, three of Lisbon's stream corridors (in pink) are considered by Fish and Game to be among the Highest Ranked Habitat in the state. These are Salmon Hole Brook, the Gale River and Whipple Brook. Two tracts of

land west of Parker Hill Road are also part of a large area of Highest Ranked Habitat in neighboring Lyman. Areas that rank highest in the biological region are shown in green on the map. As shown, this category covers much of the community, and roughly corresponds with the areas of Hemlock-hardwood-pine forest cover (map on page 4-2). Most of the remainder of town is considered to be supporting landscape.



Our understanding of the importance of wildlife corridors has grown in recent years. Corridors such as those highlighted in Lisbon along the three waterways connect wildlife to the different areas where their

various needs are met, e.g., for water, food in different seasons, shelter in different seasons, and cover to move from one place to the other. The same trees and shrubs that provide this cover provide shade for aquatic species and help keep pollutants and sediment from reaching the water.

Both NH Fish and Game's **WILDLIFE ACTION PLAN** and **INNOVATIVE LAND USE PLANNING TECHNIQUES – A HANDBOOK FOR SUSTAINABLE DEVELOPMENT** (NHDES, NHARPC, NHOEP, NHMA, October 2008) provide guidance for communities, developers and homeowners for incorporating consideration of wildlife into the siting and design of development. The Innovative Planning Handbook provides the following simple checklist:

- Direct development away from rare and critical habitats.
- Maintain buffers between human activities and important habitats.
- Preserve wildlife corridors.
- Maintain the structure and function of aquatic systems.
- Minimize clearing, grading, and compaction of soil during construction.
- Protect of stands of mature trees.
- Provide native plantings.
- Manage activities to minimize human-wildlife conflicts.

Invasive Species

A growing threat to habitat is Invasive plant species that outcompete and replace important native food species. The Lisbon Regional High School 2016-2017 Biology classes provided the following discussion on invasive plants in Lisbon in their *Natural Resource Inventory*:

Invasive plants disrupt ecosystems by displacing native plants, which in turn impact native animal species as well. There are many invasive plants which are known to be an issue in New Hampshire. The New Hampshire Fish and Game Department and N.H. Natural Heritage Bureau completed a joint project termed "Picking our Battles", which developed maps showing invasive plant hot spots in each New Hampshire town. Lisbon's highest priority spot for invasive plant control is the land between US Route 302 and the Ammonoosuc River beginning at a point just north of the bridge in the center of town and running north to Salmon Hole.

Among the invasive species that are problematic in New Hampshire, several are currently an issue in Lisbon, including:

Purple Loosestrife (Lythrum sa/icaria)
Japanese Knotweed (Fallopia japonica)
Garlic Mustard (Alliaria petiolata)
Multiflora rose/ Rambler rose (Rosa multiflora Thunb.)
Autumn olive (Elaeagnus umbellata)
Japanese barberry (Berberis thunbergii)
Norway maple (Acer platanoides)

Conservation Land

Six Lisbon properties have been conserved. One is the 76-acre Gordon Memorial Forest owned and managed by the New England Forestry Foundation for forest products, biological diversity, wildlife habitat, and educational opportunities. There is also a 6-acre town-owned forested parcel.

Four Lisbon properties have been conserved with the assistance of the Ammonoosuc Conservation Trust (ACT). One of these is owned by ACT. This property is along the banks of the Ammonoosuc River and also surrounding Hanno Pond. It was acquired by ACT to help with water quality management and river bank stabilization. Public access is also allowed on this ACT property. In addition, ACT holds a conservation easement on a small parcel on Pearl Lake that is surrounded by Town-owned land, to also protect the water quality for both people and wildlife. One other easement covers a working sheep farm on Walker Hill Road, allowing the property to remain in farming, while the last easement covers land that is maintained by the landowner for wildlife and habitat diversity.

Scenic Resources

THE LANDSCAPE

Lisbon's most valuable scenic resource is its development pattern. The historic settlement pattern with a picturesque village center hugging the Ammonoosuc River and surrounded by the rural landscape has been maintained with the Zoning Ordinance and village infrastructure. To some extent the River's floodplain has helped keep the US 302/NH 10 corridor open to provide the highly valued scenic landscape of forested hills across open fields. March 2020 Town Meeting adopted a stronger Floodplain Ordinance to protect public safety and to protect the floodplain for flood storage purposes. The strengthened floodplain controls, coupled with the clustering provisions of the Zoning Ordinance,

may make it possible to site development in a manner that leaves much of this land open. Where coupled with agricultural land protection and river corridor habitat protection, these lands can offer multiple conservation benefits.

SCENIC ROADS

RSA 231:157 allows towns, by a vote at Town Meeting, to designate any road other than a Class I or II highway as a Scenic Road. The effect of this designation is that, except in emergency situations, there shall be no tree cutting or alteration of stone walls within the right-of-way without approval of the Planning Board, after a duly-noticed public hearing. The law does not affect the rights of individual property owners, nor does it affect the land uses as permitted by local zoning. The town has not yet designated any roads as scenic roads.

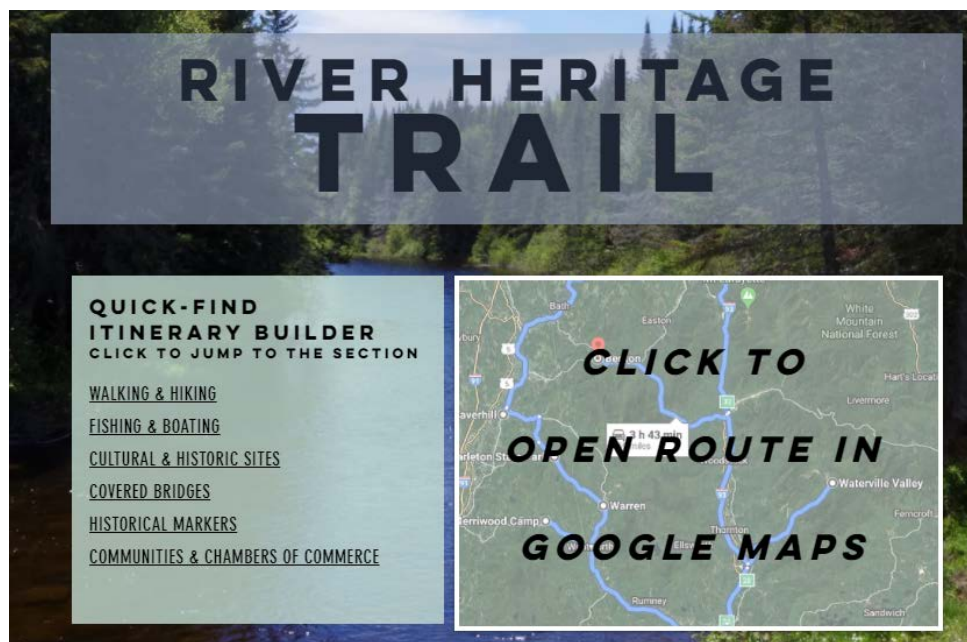
SCENIC BYWAYS

US 302/NH 10
coming into
Lisbon from the
Landaff
direction up to
the junction
with NH 117,
and then NH 117
to Sugar Hill, is
part of the River
Heritage Trail.

The River

Heritage Trail is

part of the NH Scenic and Cultural Byways Program. Being part of the state byways program means that the route appears on maps for tourists and has associated with it a responsible party who must maintain an up-to-date corridor management plan. In this case the corridor plan is maintained by the North Country Scenic Byway Council, a committee of North



(northcountrybyways.org)

Country Council. The Council has recently launched a website, northcountrybyways.org, with a trip planner for the River Heritage Trail. In addition, NHDOT regulations prohibit the Department from issuing sign permits for off-premises signs on state byways.

Climate Change

Regardless of disagreements on how much various factors such as fossil fuels, deforestation and modern agriculture have contributed to climate change, the data show that our climate has been warming, and researchers agree that this trend will continue. Adapting to climate change will include staying abreast of current research focused on the Northeast, and ensuring our forest ecosystem is diverse enough to be resilient to insects and disease which may gain a competitive edge in our warmer environment. Warmer temperatures are also likely to mean a decrease in our region's traditional winter sports economy. Modeling specific to northern New Hampshire indicates increased precipitation, particularly in winter and spring, and an increase in extreme weather events. This will mean attention to stormwater management will become even more important to prevent erosion and protect our water quality and roads.

Conservation Commission

Lisbon has an active Conservation Commission that works on ongoing programs and land conservation projects. The Commission also conducts permit reviews as provided by NHDES rules and, when requested, in an advisory capacity to other town boards. Some of the Commission's current and future projects include:

- Exploring the potential of a future Town Forest.
- Working with regional partners in maintaining and expanding walking, hiking, biking, ATV, and snowmobile trail systems.
- Keeping signage up-to-date for all conservation lands and aquatic resources.
- Creating some public education/awareness programs on current use, dark sky, and best practices for respecting wildlife.
- Increasing awareness of Milfoil and the danger of bringing in invasive aquatic plants at all waterways in Lisbon, including public education and signage.

- Continuing to promote programs relative to the logo, “Nature for the Future,” e.g., Lisbon town clean-up month, blue bags, and an anti-littering campaign for trails, rivers, lakes and all recreational areas.

The Commission coordinates with the Ammonoosuc River Local Advisory Committee, Ammonoosuc Conservation Trust, and neighboring town conservation commissions on projects and initiatives.

Lisbon has a conservation fund, which is a nonlapsing fund enabling the Conservation Commission to receive and use funds from a variety of sources for conservation projects. Ten percent of the land use change tax paid when land is taken out of current use is transferred to the conservation fund.

Historic Resources

*The pre-Revolutionary War settlement of isolated cabins and necessary outbuildings expanded after independence and peace, especially with the utilization of early water-powered grist, saw, carding, shingle, and starch mills at the end of the 1700s and early 1800s. Churches, schools, stores, and businesses sprung up early to provide fellowship, education, and necessities. The first train came through Lisbon on July 4, 1853 after which more businesses and immigrant merchants and mill workers arrived. (Andrea Fitzgerald, **CELEBRATING 250 YEARS, A PICTORIAL HISTORY OF LISBON, LYMAN, AND LANDAFF, NEW HAMPSHIRE**, 2013)*

Historian Andrea Fitzgerald tells us that "a little over 100 years ago, Lisbon had over 100 businessmen who were movers and shakers, so to speak." Much has changed since those days. With the automobile and good roads, residents could now more easily do business and work in other communities, meaning fewer businesses and professionals in Lisbon. Farming also declined as the midwest opened up for more productive farming on an industrial rather than subsistence model. Much of Lisbon's landscape reverted to forestland fragmented by roads with scattered residences. Yet much evidence of the town's rich past remains. This section, written with the invaluable assistance of historian Andrea Fitzgerald, will highlight some of the high priority historic resources of the town.

KNOWLEDGE

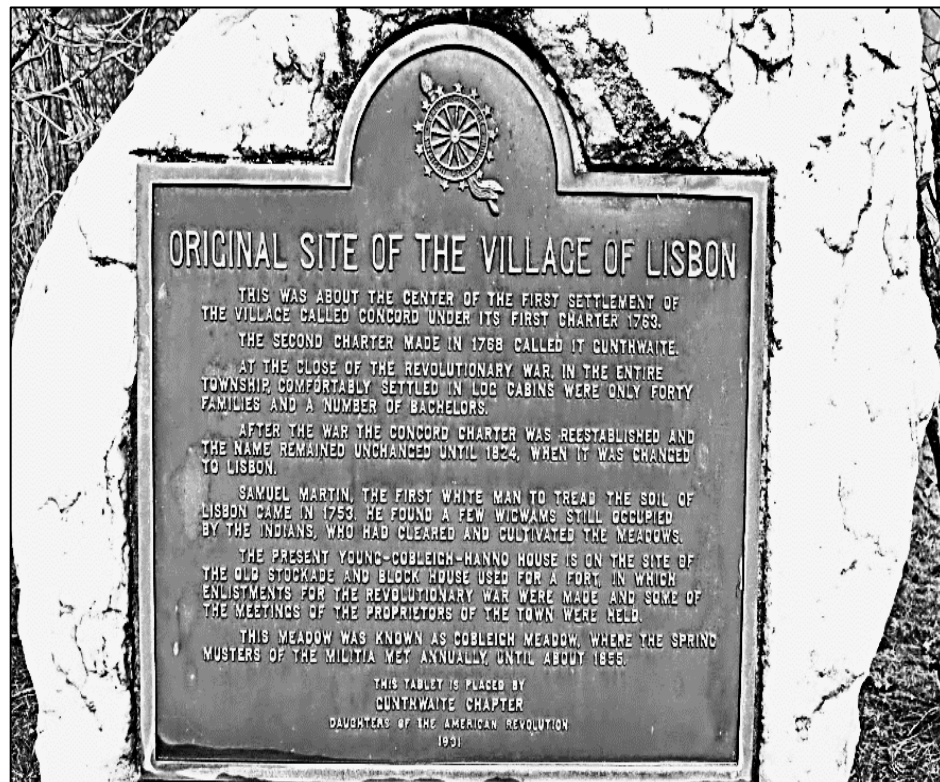
Some of Lisbon's most valuable historic resources are not buildings or sites, but knowledge. The Lisbon Area Historical Society has been instrumental in collecting and preserving photographs, inventories,

letters and articles on the town's rich history. Much of this information is now available on-line at lisbonareahistory.org and whitemountainhistory.org.

The Historical Society has a museum in rented space in the Parker Block in the center of the village. Many railroad-related artifacts can also be seen in the Lisbon Railroad Station. The Historical Society would like to build a new museum near the Railroad Station and have that area become a history campus. The current museum is not large enough and lacks the security of a single purpose building.

ORIGINAL SETTLEMENT

Hanno Pond,
originally named
Henry Pond for the
family that lived by
it in the beginning
of the settlement,
was the site of the
first church and
school in town.



Erected in 1931 by Lisbon's Gunthwaite Chapter of the Daughters of the American Revolution, this monument is next to Henry Pond (more recently known as Hanno Pond) just north of Lisbon Village along U.S. Route 302. The monument marks the site of the early settlement of Lisbon. The quartz boulder came from a back pasture of the abutting Young-Cobleigh-Hanno property, part of the original plot granted to Major John Young on which, according to family lore, some of his sons settled one month after fighting in the Battle of Bunker Hill.

*(Andrea Fitzgerald, **CELEBRATING 250 YEARS, A PICTORIAL HISTORY OF LISBON, LYMAN, AND LANDAFF, NEW HAMPSHIRE**, 2013)*

Just north of the pond stands the oldest surviving building in town, the privately-owned Young/Cobleigh Tavern. The Tavern sits on the original site of a Revolutionary War stockade and blockhouse built around 1775. Musters were held on the fields. After the war, the stockade was taken down, and Sam Young lived in the blockhouse and used it as Young's Tavern. In 1824, Levi Cobleigh bought the Tavern, split it in half and enlarged it, lifting the blockhouse to the third story to become part of the structure. The wings of the present structure were once Young's whole tavern building. The large barns across the street that once served as a livery stable for the tavern blew down in the 1930's.

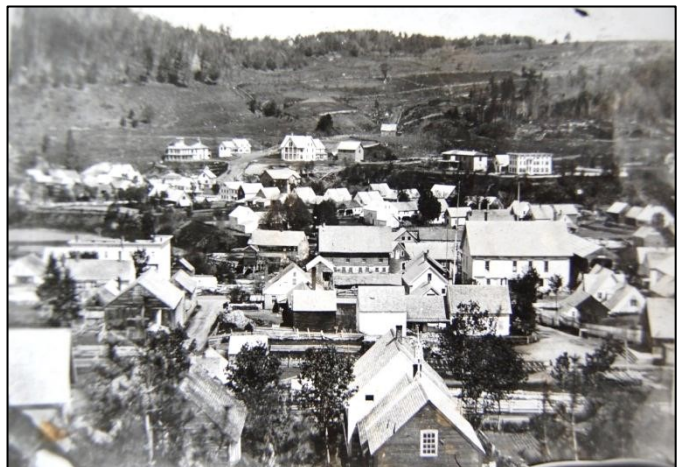


(1930 photos from OLD HOUSES, LISBON, SUGAR HILL & LANDAFF, Mary C. Brummer, Lisbon Area Historical Society files on whitemountainhistory.org)

THE VILLAGE AREA

With the growing importance of water power for local industry, the center of activity moved to the current town center around the falls on the Ammonoosuc River.

(Lisbon Village c. 1865 from the collection of the Lisbon Area Historical Society)



The beautifully restored Lisbon Railroad Station is a reminder of the era when the railroad was one of the town's main ways of transportation of people and supplies. The Station, built by the Boston, Concord, and Montreal Railroad in the late 1860s and later used by the Boston & Maine Railroad, now houses a small collection of railroad artifacts, the Lisbon Main Street office, and a lovely meeting room for town boards. It is believed to be the only BC&M/B&M railroad station of its design in existence. (NATURAL RESOURCE INVENTORY, Lisbon Regional High School 2016-2017 Biology classes) The Station is the only building in town on the State Register of Historic Places.



(from a 1912 postcard,
<https://commons.wikimedia.org/w/index.php?curid=20252251>)



Lisbon's village area has four churches that are over one hundred years old. "The White Church," originally the Lisbon United Methodist Church, was built in 1842 as a single-story building and enlarged in 1887. The familiar steeple includes the original cast bell and beautiful four-sided clock tower built to accommodate townspeople and those traveling by train. "The Brick Church," originally the Lisbon Congregational Church, was built in 1914 by Lisbon-born architect Chase Roy Witcher. The Episcopal Church, Lisbon Church of the Epiphany, was built around 1911. The Roman Catholic Church, St. Catherine of Siena, was completed in 1909.

The Town Hall was built in 1902 following the fire of 1901 that devastated the business section of the west side of South Main Street. The opera house provided a venue for the two dramatic companies in town. (Lisbon Area Historical Society website and files on whitemountainhistory.org) The Town Hall continues to be used today for gatherings and town offices.

AHEAD's Lisbon Inn is the only structure in Lisbon on the National Register of Historic Places.

The Lisbon Inn is a key architectural component in Lisbon's central business district. The rectangular clapboard block with traditional two-tiered piazza employs both Queen Anne and Colonial Revival details. The resulting transitional style is an outstanding example of turn-of-the-century vernacular architecture, and exemplifies the generally eclectic architectural fabric of the surrounding village. Because of its grand scale and prominent corner towers, the Inn provides an emphatic visual terminus to downtown Lisbon's commercial streetscape.

(From nomination for NHRP)

The Lisbon Inn is the third generation of hotels on the site. The Abram Hall Hotel was built in 1849 and razed in 1882. Brigham's Hotel was built in 1883 and burned in 1901. The Moulton was built in 1902 and rebuilt in 1925 after a fire.

The town's two largest employers are also both important parts of the town's history. New England Wire Technologies dates back to 1898 when it was called New England Electrical Works. (New England Wire Technologies and Lisbon Area Historical Society websites). DCI Furniture began in 1883 as the Parker-Young Company, one of the biggest lumber companies in the state, and at one time the largest manufacturer of piano sounding boards in the world. (NATURAL RESOURCE INVENTORY, Lisbon Regional High School 2016-2017 Biology classes)



(Parker Young Mill and Logging Sled c. 1910 from the collection of the Lisbon Area Historic Society)

OTHER UNIQUE SITES IN LISBON

Lisbon was the site of New Hampshire's first rope ski tow. It was built in 1935 and operated for two winters on US 302 before being moved over to Cheney Road off of Pearl Lake Road.



(Lisbon Outing Club Ski Tow, c. 1935, from the collection of Lisbon Area Historical Society)

The remnants of the coal kiln memorialized by this New Hampshire Historical Highway Marker mark one of the last remaining coal kilns in the state (Lisbon Area Historic Society). Unfortunately over the years stones have been removed and it has become overgrown. The site is on private property.

