MASTER PLAN:

NATURAL RESOURCES

ADOPTED: AUGUST 2022

The Natural Resources chapter of the Master Plan outlines the environmental resources present in the City and discusses the role these resources play in our community. Topics include a detailed summary of each natural resource, the conservation/protection efforts enacted to-date, and goals and actions relative to managing these resources in the future. The 2022 Natural Resource Inventory serves as the basis for this master plan and can be viewed at: https://www.laconianh.gov/DocumentCenter/View/8212/Natural-Resource-Inventory-2022-

Introduction & Vision

Laconia is situated in the unique geographical region of New Hampshire known as the Lake's Region. Communities in this region were shaped by the natural resources present and the services they offered. Laconia's dominant natural resource is water, with frontage on Lake Winnipesaukee, Winnisquam, Opechee, and Paugus Bay. These water resources, along with wetlands, forested areas, and agricultural land, are highly valuable and continue to attract residents and visitors year-round.

Natural resources provide ecosystem services and benefits to the community. Among those services and benefits are flood protection, water filtration, erosion control, drinking water, and recreational opportunities. Protecting the quality of these resources is essential in securing their long-lasting benefits, and replacing such natural services would be costly for the city.

While the relationship between the community and its environment has changed over the years, our community character and economy remain deeply rooted in the quality and quantity of the resources present. Therefore, it is incredibly important for the City to continue careful stewardship of these resources. Stewardship should consider the effects of development, the benefits of public education and outreach, and possible habitat restoration efforts. These considerations will go a long way in maintaining the quality of life in the city.

Source: livability.com

Vision Statement

The natural environment is an essential component to Laconia's character and economy and the city is committed to protecting the quality of its natural resources and ensuring their sustainable management for generations to come.

We envision a community in which our residents are well-educated about the value of their surrounding landscapes and are invested in its well-being. Cooperative efforts from surrounding municipalities, the State of New Hampshire, and local environmental partners will create an atmosphere where communication and innovation are key factors in the management of our natural resources.

Natural Resources

Glacial movements are largely responsible for the landscape and natural features in the Lake's Region today. As the glaciers began to melt and recede, the quartz diorite (primary rock of the Winnipesaukee basin) was decomposed in place and the power of the ice gouged out the loosened rock, leaving valleys and mountains in its wake (today's mountains and rolling hills). Our current landscape today is a result of these glacial deposits and millions of years of weathering and erosion.

Bedrock Geology

Laconia's bedrock originated from glacial deposits left behind over 12,000 years ago. There are six types of bedrock found in Laconia, with the two most common being the Kinsman Granodiorite (northern Laconia) and Upper Rangeley (southern Laconia) Formations. Others include the Concord Granite, Winnipesaukee Tonalite, Perry Mountain, and Lower Rangeley Formations[1].

Aquifers

Groundwater is a critical natural resource in New Hampshire with the potential to support a community's need for a clean water supply. Stratified-drift aquifers are made up of unconsolidated glacial deposits, like sand and gravel, and are susceptible to contamination from land use activities and surface waters.

Just under 10% of Laconia is underlain with stratified-drift aquifers, which are heavily located in in the southern end of the City. While Laconia does not currently tap into any aquifers for public water supply, it could be a valuable resource for the city and private residences in the future.

New Hampshire is known as "The Granite State", suggesting an abundance of granite bedrock. Laconia is no exception, and granite outcrops, like above, can be found across the City.

Topography

Laconia's landscape features gentle rolling hills, vast open waters, and dense forested areas. The hills and water features in the city generally run in a north-south orientation. The average elevation is 506-feet above sea level, with the highest point being a 960-foot hill west of Paugus Bay, near Parade Road.

Slopes contribute to the City's tourism and recreation industries and play a role in development standards. Steep slopes tend to have shallower soils, higher runoff volume and velocity, and greater erosion potential than flatter areas. Consequences of this erosion are loss of soil and productive capacity of the land. ***Some steep slopes are present across the City, with 8.4% of land classified as precautionary (15-24.99%) and less than 1% classified as prohibitive (25% +).*** Many of these precautionary steep slopes border bodies of water within the City.

[1] Further details about NH geology are available at www.des.nh.state.us/geology

Land Cover

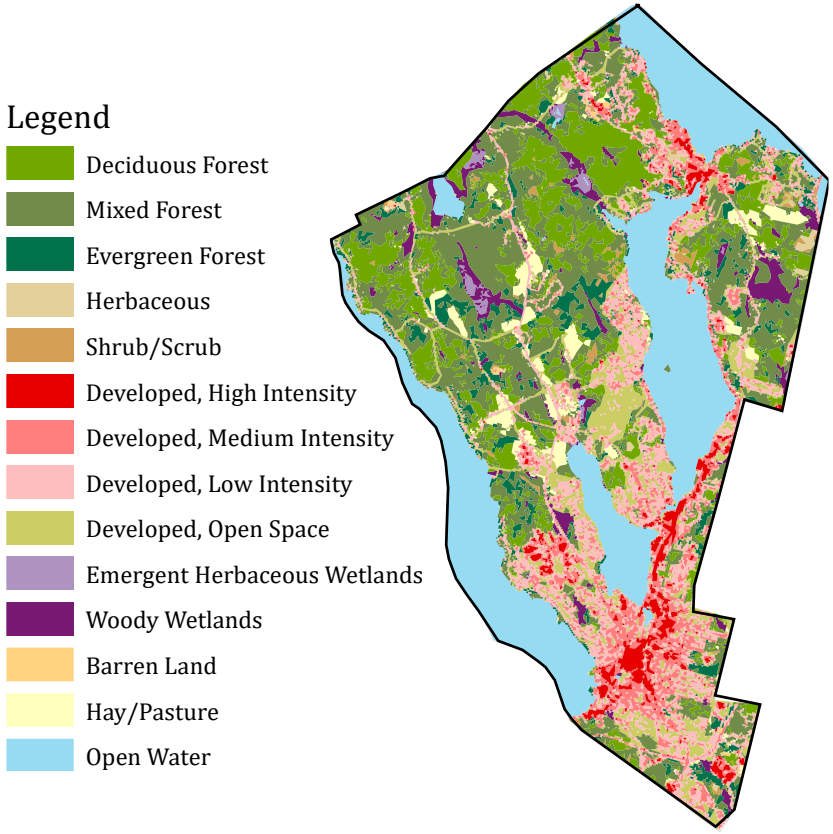
Land cover refers to the physical materials at the Earth's surface and considers vegetation, water, bare ground, impervious surfaces, and more. From 2008 to 2019, Belknap County has seen plenty of changes in land cover[2]. These changes may be indicative of land use policies in the region and should be examined to understand how the quantity and quality of our resources are changing:

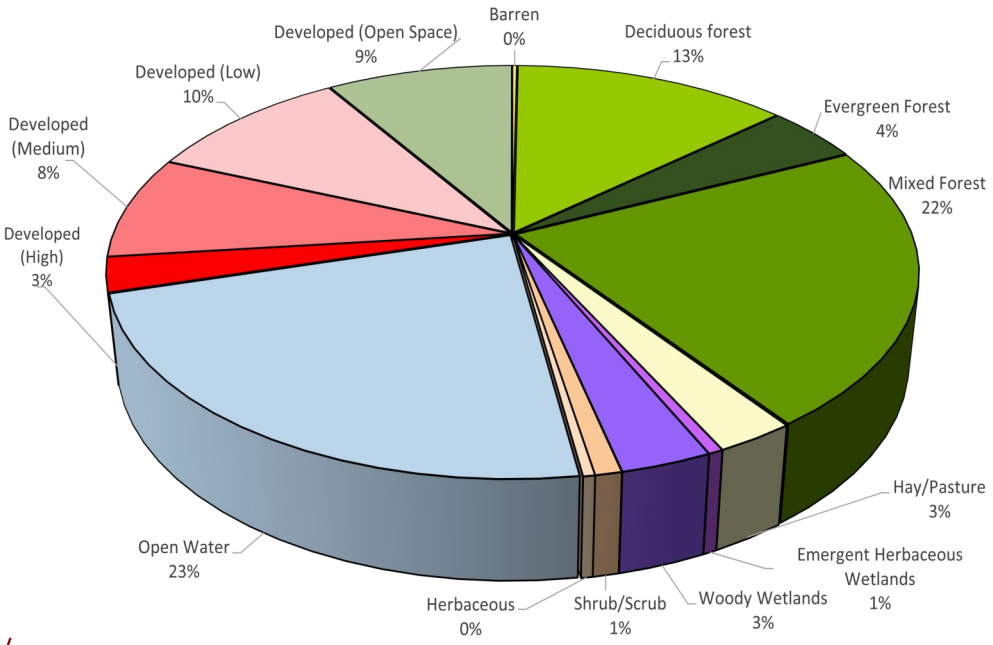
- High (+9.6%), Medium (+15.6%), and Low (+2.4%) Intensity Development have all increased.
- Scrub/shrub (+62.9%), Woody Wetlands (+1.3%), and Emergent Wetlands (+25.9%) increased.
- Developed Open Space (-1.8%), Grasslands (-8.8%), Pastures (-2.7%), and forests (-6.9%) decreased.

The City of Laconia is approximately 16,640 acres with various land covers, ranging from high intensity development to forested areas. Understanding the land cover situation in Laconia is a good start for making future land use decisions, as changes may impact the health of our natural ecosystems. A land cover analysis may also indicate which areas of the city are better suited for certain uses (for example, residential development or managed forestry projects).

The data shows that from 2008-2019, Laconia has experienced:

- A net increase in developed lands.
- A slight net decrease in forested lands.
- A net decrease in agricultural lands.
- Minimal changes to the quantity of wetlands.





[2] County land cover change data may be viewed at: https://www.mrlc.gov/eva/

Soils

Soils are influenced by the parent material (bedrock) beneath the surface in a given area. Characteristics like acidity, texture, and permeability will dictate the vegetation and wildlife composition of the area. The Natural Resources Conservation Service (NRCS) evaluates soils according to their capacity for agriculture, woodland, community development, recreation, and wildlife habitat[3].

Two common soil series found in Laconia are the Marlow and Henniker soils. Marlow soils are fairly deep, well-drained, and fertile, making them good for high quality hardwood forests or prime farmland (depending on their slope). Henniker soils are also well-drained, loamy soils typically found in forested areas. These soils support a variety of tree species, like sugar maple, red oak, and white pine. When cleared of trees and stones, Henniker soils make for good hay/pasture fields.

AGRICULTURAL SOILS

One component that soils are evaluated for is their agricultural value. There are three unique categories for agricultural use: prime farmland, state farmlands, and local farmlands. Characteristics like moisture, slope, and rockiness are considered in these classifications.

Within Laconia, there are 602.3 acres (3.7%) of prime farmland, 236.4 acres (1.4%) of state farmland, and 7,336.8 acres (44.6%) of local farmlands. Additionally, 12% of these soils are protected on state and local conservation lands.

While much of Laconia's land is classified as farmland soil, this does not imply that they are actively farmed. Rather, it suggests that they *could* be suitable for agricultural use.

FORESTED SOILS

Forested soils are grouped based on their potential for commercial forest products, suitability for native tree growth, and their use/management. Considerations for grouping include depth to bedrock, texture, water capacity, drainage class, slope, and many other characteristics[4].

Many of the soils in Laconia (27.6%) fall into "Group IA", which are described as deep, loamy soils that are moderately-well-drained to well-drained. This soil group is very fertile and has a favorable soil-moisture relationship that is best suited for shade-tolerant, variable hardwood stands.

HYDRIC SOILS

Hydric soils are those that experience saturation, flooding, or ponding, for enough of the growing season that they develop anaerobic conditions. All hydric soils are classified as poorly drained or very-poorly drained and are often associated with wetlands. ***Laconia contains 709.3 acres (4.3%) of poorly drained and 477.1 acres (2.9%) of very poorly drained soils.***

[3] For information about soils and their delineations, please visit: https://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/survey/

[4] Information on forested soil groups can be found at: www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs144p2_015050.pdf

WATERSHEDS

Laconia is a part of the Winnipesaukee River Watershed, which encompasses over 480 square miles of the Lake's Region. The watershed is bordered to the north by the Ossipee Mountains, to the southeast by floodplains, and to the south by the Belknap Mountains. The value of a regional approach to watershed management cannot be understated, as all things downstream are affected by decisions upstream. Laconia has a significant interest in upstream activities due to the fact that the entire watershed drains through Paugus Bay (Laconia's public water supply).

There are also four subwatersheds present in Laconia: the Lake Winnisquam, Paugus Bay, Meredith Bay, and Saunders Bay subwatersheds. The largest of these is Lake Winnisquam, at just under 9,000 acres. Each of these four catchments are addressed in regional watershed management plans, organized by the Lake Winnipesaukee Association (LWA) and the Winnisquam Watershed Network (WWN).

Lake Winnipesaukee, Plan 1: Meredith, Paugus, and Saunders Bays: The goals of this plan are focused on long-term water quality protection, economic vitality, and natural beauty preservation. The objectives identified for completing these goals include setting a phosphorus goal, stabilizing/reducing nutrient inputs to the bays, documenting progress and achievements, and informing and involving the public[5]

Lake Winnisquam Watershed: The WWN has received an EPA & NHDES grant for funding a watershed-based management plan for Lake Winnisquam. The plan (a draft is scheduled to be completed in 2022) will address sources of pollution, water quality goals, and best management practices for achieving pollution reductions within the Lake Winnisquam Watershed (which includes Opechee Bay in Laconia)[6].

[5] To review the "Lake Winnipesaukee Plan 1" please visit: https://winnipesaukeegateway.org/

[6] To review the "Lake Winnisquam Watershed Plan" information, please visit: https://www.winnisquamwatershed.org/

LAKES & PONDS

Surface waters in Laconia are among the most valuable resources to the City's character, health, and economy. They are also some of the most at-risk resources, in terms of quality. Efforts to protect our lakes and ponds must be well thought-out in order to minimize the impacts from development and allow for sustainable use of the lakes.

Laconia is fortunate to have over 3,700 acres of lakes and ponds and just under 32 miles of shoreline. The largest bodies of water (listed in order of drainage downstream) are Meredith Bay/Weirs Beach (756 acres), Paugus Bay (1,234 acres), Lake Opechee (449 acres), and Lake Winnisquam (1,299 acres). Each of these waterbodies are considered oligotrophic by NHDES, meaning they have low nutrient content, and therefore have very clear waters. This makes for high-quality drinking water, as evident by Laconia's use of Paugus Bay as the city's drinking water. These waterbodies also contribute to property values and set a foundation for recreation and tourism industries.

Some smaller ponds, like Pickerel (72 acres), Foote's (3.6 acres), and Perley (0.6 acres) Ponds are surrounded by diverse, forested habitats of high ecological value. The land surrounding Pickerel Pond is largely untouched by human development, leaving excellent opportunities to conserve the natural resources present.

Did You Know? Lake Winnipesaukee is valued at over $17 billion USD. This valuation includes over $284 million in tourism, $109 million in boating and fishing, and $42 million in summer camp revenues (Chandra, et al., 2021). The Winnipesaukee valuation study also attributed $1.5 million in water supply revenues and $42 million to the Lakeport Dam into its final figure.[7]

Laconia's lakes and ponds draw visitors year-round for their recreational value. Residents and visitors enjoy the numerous public beaches available; Bartlett, Ahern, Opechee, Bond, and Weirs Beaches. Fishing and boating are popular activities in the summer as the lakes are well-stocked with lake trout, rainbow trout, whitefish, largemouth bass, and yellow and white perch. Common winter recreation includes ice-fishing, skating, pond hockey, and cross-country skiing.

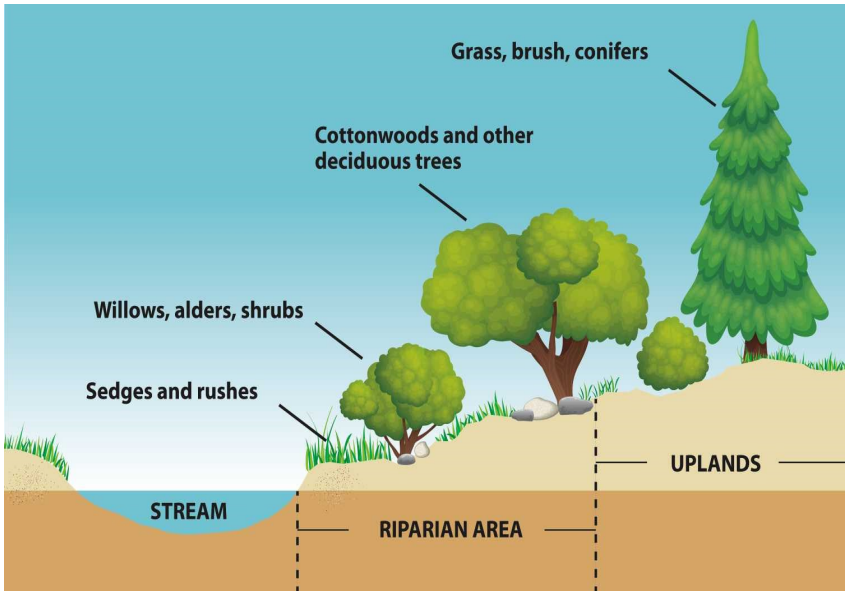
[7] https://rockefeller.dartmouth.edu/report/valuation-lake-winnipesaukee

RIVERS & STREAMS

The 10.5-mile-long Winnipesaukee River runs through the heart of Laconia, connecting Lake Winnipesaukee to the Pemigewasset River and ultimately joining the Merrimack River. This river has been incorporated into Paugus Bay through the construction of dams.

Other prominent streams include Durkee Brook, Jewett Brook, and Black Brook. There have been a number of environmental and habitat concerns regarding these streams and smaller, unnamed ones across the city; increased runoff volume from impervious surfaces and diminishing quality of vegetated buffers from wetland violations contribute to increased erosion and sedimentation of riverbanks as well as increased flooding. Both Jewett and Durkee Brook have undergone geomorphic assessments that identified projects that could increase the ecological value of these habitats and return them to a more natural state[8]

Eager Island, located downstream from the Avery Dam on the Winnipesaukee River, is a unique floodplain environment that supports scrub-shrub and herbaceous species as well as wildlife like beavers, ducks, and songbirds.



Source: projectwatershed.ca

Related Habitats

Riparian zones are the interface between land and streams. These zones can be found in grasslands, woodlands, wetlands, and floodplains. They serve an important role in aquatic ecosystems by providing important birthing, mating, feeding, and nesting sites for many species, and are often used as travel corridors for wildlife.

Floodplains are a type of riparian zone that are flat (or nearly-level) land adjacent to a stream or river and experiences occasional, seasonal, or periodic flooding.

These habitats work to protect water quality by allowing infiltration and reducing the effects of flooding. Natural vegetation along these zones protect water temperatures and provide shade for wildlife. The vegetation is also important for erosion control and bank stabilization. Laconia has limited riparian/floodplain habitat, so preserving the existing areas in their natural state is essential to maintaining the ecosystem services they provide.

[8] https://www.laconianh.gov/documentcenter/view/2382 and https://www.laconianh.gov/ArchiveCenter/ViewFile/Item/368

Water Quality

Water quality is a major concern for Laconia. Residents, businesses, and visitors all rely on clean, safe water – whether that be for personal or business consumption. Some of the parameters that factor into water quality are: temperature, acidity, dissolved oxygen, turbidity, specific conductance, hardness, and suspended solids. While Laconia's water quality is currently "good-to-excellent", there are a number of things that could speed up degradation:

Invasive Species are plant and wildlife species that are not native to an area but take up residency and outcompete native species; they are particularly common in wet areas, like wetlands, riparian habitats, and lakes. Invasives change the nutrient cycling in a water system by limiting other species ability to utilize those nutrients. They may also increase the quantity and timing of runoff, erosion, sedimentation, and water availability.

Runoff refers to the flow of water over land; it could be natural or human-induced. Impervious surfaces, like buildings and pavement, decrease the amount of water absorbed by the ground, increasing runoff. This eliminates the natural filtration water goes through when absorbed by soil. The increased runoff might hold sediments, pesticides, oils, road salts, or other toxins that could travel into waterbodies.

Development that causes ground disturbance can impact water quality by increasing erosion, sedimentation, and impervious surfaces

Point vs. Nonpoint Source Pollution: A source of pollution is referred to as either point or nonpoint. Point source pollution is when the specific location of a pollutant is known—often times this is a discharge pipe or drainage ditch. Nonpoint source pollution, however, has no known source. This includes runoff from urban, residential, and agricultural areas. Nonpoint source pollution tends to be more troublesome than point source.

WATER QUALITY MONITORING

Laconia monitors water quality at three levels:

NHDES Volunteer River Assessment Program (VRAP): Monitors major tributaries to Paugus Bay and Lake Winnisquam for water quality parameters like turbidity, specific conductance, and pH, among other variables. VRAP Annual Reports can be found at: www.des.nh.gov/resource-center/publications

Lakes Lay Monitoring Program (LLMP): Conducts deep-water sampling to analyze water quality parameters like phosphorus, chlorophyll, and dissolved oxygen. Monitoring reports are available at: ceinfo.unh.edu/resources/index.cfm?e=app.llmp

The City's Water Department monitors drinking water quality for EPA standards. They check for things like turbidity and other potential contaminants (lead, copper, nitrate, etc.). Annual "Consumer Confidence Reports" are shared on the Water Department's page at: www.laconianh.gov/216/Consumer-Confidence-Report

Wetlands

New Hampshire state law requires three parameters be met to classify an area as a jurisdictional wetland: the presence of hydric soils, sufficient hydrology, and hydrophytic vegetation (plants that are adapted to the conditions of wet habitats). The poorly drained soils and hydrophytic vegetation present in wetlands store significant amounts of floodwater and runoff, minimizing potential damages in times of high water. Wetlands also contribute to groundwater recharge as well as filter and absorb excess nutrients, toxicants, pollutants, and contaminants from the water. These ecosystem services derived from wetlands makes them especially important in maintaining the health of both upland habitat and aquatic ecosystems.

Wetlands are an essential habitat for most plant and animal species found in New Hampshire and serve as a transitional zone between land and water. A number of state-endangered species, like Blanding's turtles (pictured below) and New England cottontails, use wetlands for feeding and nesting, along with more common species, such as red-winged blackbirds and beavers. Wetlands are threatened by development practices that may fragment them or change the flow of water in and around them.

Laconia's wetlands are defined as "palustrine" meaning there are inland, non-tidal wetlands. This designation includes marshes, swamps, bogs, and fens. We are fortunate to have some larger wetland complexes, such as those of Hamel State Forest and Pickerel Pond, that offer numerous functional values to the city. ***Laconia has just over 670 acres of wetlands (4%) within its boundaries and less than 10% of these wetlands located on protected conservation lands.***

Vernal Pools

Vernal pools are a unique and isolated type of wetland. The hydrology of these pools change throughout the seasons—filling in spring and fall and drying up in the summer months. This change makes them uninhabitable to many species, but essential breeding habitat for a number of amphibians and invertebrates, such as wood frogs and spotted salamanders (pictured left). ***Laconia has 23 documented vernal pools across the city.*** UNH Extension has a number of resources dedicated to learning about vernal pools at: extension.unh.edu/resource/vernal-pools

WILDLIFE & HABITATS

Laconia has a variety of habitats including forested lands, steep slopes, open water, wetlands and riparian zones, and permanent wildlife openings. This variety meets the needs of many plant and animal species in the city/region.

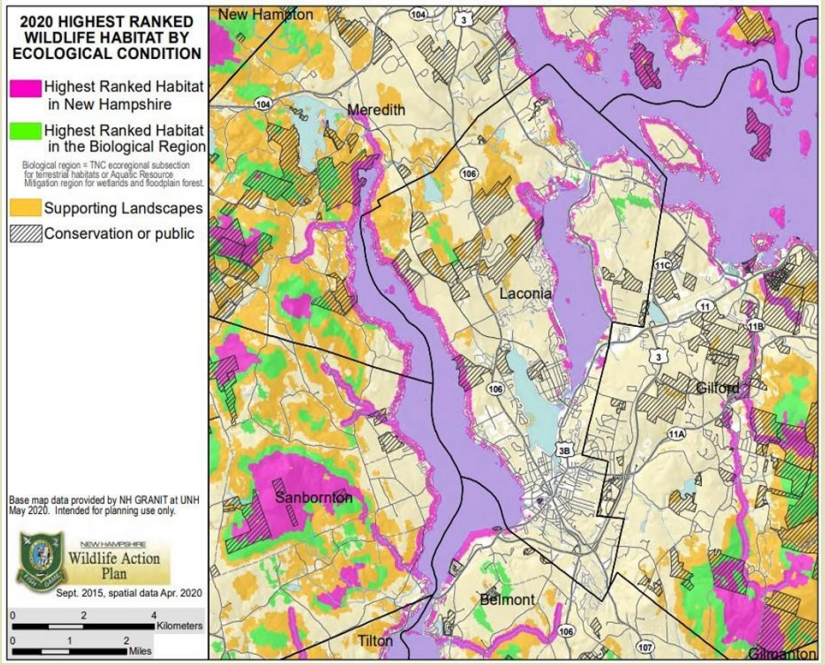
WILDLIFE OPENINGS: Permanent wildlife openings are dominated by grasses, forbs, wildflowers, brambles, and fruiting shrubs. This includes hay and pasture land, cropland, brush-hogged fields, and mechanically maintained transmission lines. Openings also create edge habitat—a transitional area that attracts the largest diversity of species. It is estimated that these openings provide required habitat for about 22% of New England's wildlife species and are seasonally important for nearly 70% of species. ***There are about 537 acres of wildlife openings in Laconia each ranging from 0.5-30 acres in size.*** Many of these openings are located in the northern areas of the City along Route 106 (Parade Road), Meredith Center Road, and White Oaks Road.

FORESTED LAND: ***Forested lands make up 40% of Laconia's acreage***. These areas include hardwood, white pine, hemlock, and mixed hardwood and softwood stands. Large tracts of these forested areas are conserved by local and state ownership and easements, particularly in the northwest quadrant of the city.

UNFRAGMENTED, ROADLESS AREAS: Unfragmented and roadless areas are an important element to habitat quality and are typically found in forested uplands. Habitat fragmentation is the process where large and contiguous habitats are divided into smaller, isolated ones. This reduces connectivity in an area, ultimately effecting biodiversity and wildlife behavior. The number of roadless areas or unfragmented blocks of land has been in steady decline with the increase in development across Laconia and New Hampshire. ***Laconia has several large tracts of land which are not impacted by roads ranging from 7 acres to over 1,300 acres.***

NH Wildlife Action Plan

The NH Wildlife Action Plan (WAP) evaluates 27 habitat types that serve the needs of the state's species of concern[9]. These habitats are evaluated for their ecological condition, which considers biological diversity, landscape context, and impacts from human activity. Scores are then ranked and identified as: highest ranked habitat in NH, highest ranked habitat in a biological region, or supporting landscapes.



Laconia's 2020 WAP breakdown includes open water (23.5%), hemlock-hardwood-pine forest (22.1%), Appalachian-oak-pine forest (19.6%), developed-impervious (18%), developed-barren (10.9%), grasslands (3.1%), marsh & shrub wetland (1.3%), temperate swamp (0.9%), peatland (0.4%), and sand/gravel (0.2%)

[9] Habitat descriptions and species of concern can be viewed at: www.wildlife.state.nh.us/wildlife/wap.html

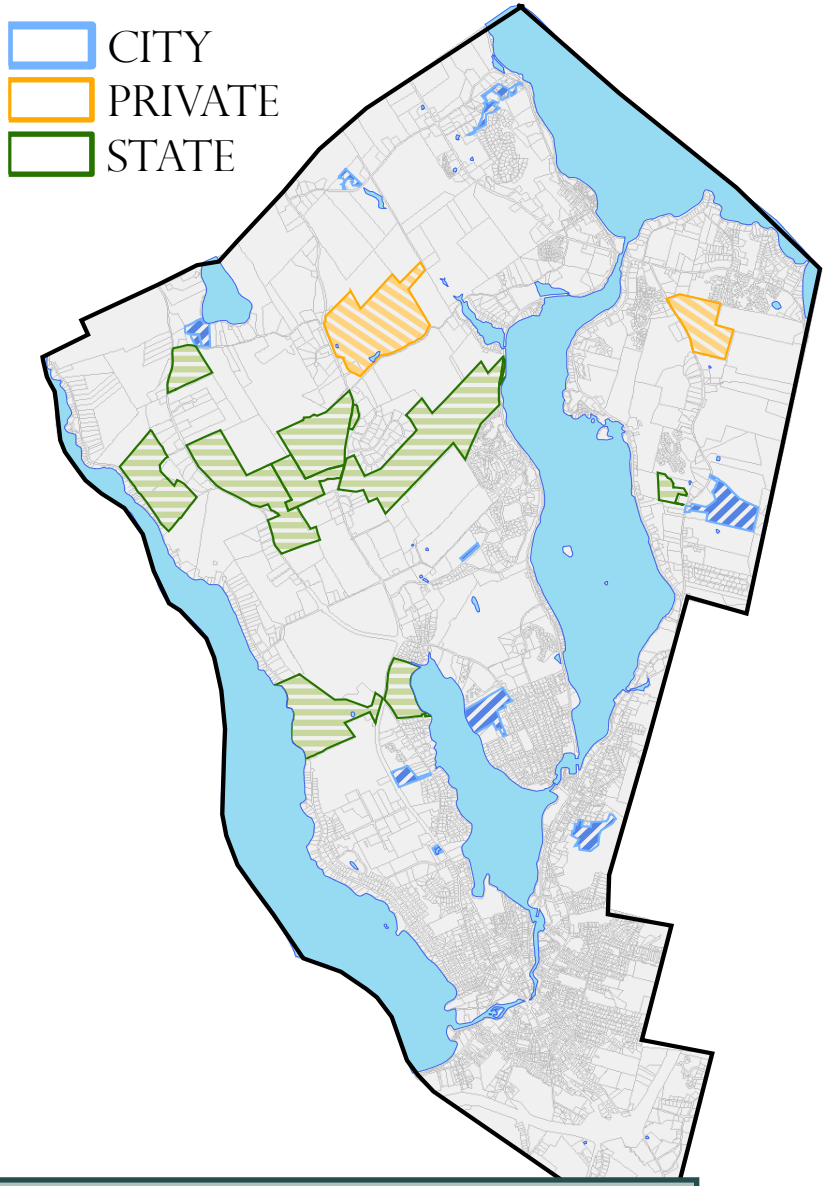
Conservation Lands

Conservation land protects habitats, water quality, and open space, while also providing land for certain recreational activities. ***The City of Laconia has over 1,300 acres (8%) of protected conservation lands within its boundaries.*** These conserved parcels include city-owned lands and easements, state-owned land and easements, and finally, private easements with other conservation organizations. Included in these 1,300 acres are:

- 126 acres of prime farmland
- 127 acres of precautionary slopes
- 991 acres of forested land
- 83 acres of wetlands
- 140 acres of hay/pasture land
- 105 acres of NH's "Highest-Ranked Habitat" (according to the 2020 Wildlife Action Plan

The conserved properties in Laconia range from 0.25-250 acres and each parcel contains varying natural resources. A number of these properties, particularly those with state ownership or easements, abut one another– which is an important consideration when conserving land. Other considerations include the habitat available, land cover type, and resources present.

In addition to these conservation lands and easements, many developments that seek city approval include open space and/or conservation land designations within their plans. While these lands are not under formal conservation easements or contracts, they are considered permanently protected and offer the typical benefits of conservation land within their individual communities.



What is a Conservation Easement?

A conservation easement creates a legally enforceable land preservation agreement between a landowner and a municipality, or a qualified land protection organization or trust. It restricts real estate development, commercial and industrial uses, and other activities on the property to a mutually agreed upon level. The landowner continues to privately own and manage the land and the easement owner monitors future uses of the land for easement compliance. The easement continues to run with the land despite any changes in ownership.

Climate Change

The Northeast Chapter of the 4th National Climate Assessment[10] highlights the major changes our region of the country can expect to see. The essence of our Northeast culture and economy is threatened by declining snow and ice and rising temperatures. New Hampshire has already began seeing warmer winters, wetter springs, and hotter and drier summers - with winters warming three times faster than summers.

Laconia's landscape is the foundation for our culture and economy. Agricultural, logging, recreation, and tourism industries are at particular risks for these climate changes - which will not go unnoticed. The impacts listed to the right are just some of those we will see at a local and regional scale.

In light of the ever-evolving science behind climate change, it is our responsibility to continue acting as stewards for the environment. Climate change is a complex issue that will change our interactions with the environment - particularly, the availability of natural resources and the services they provide us as well as the interactions between manmade and natural infrastructure and systems.

Local land use policies and planning must adapt with changing circumstances in the world, and the implications of climate change are among the most pressing concerns for natural resource management. Decisions made today will continue to impact our future, as they have in the past, for decades at a time. For that reason, future planning efforts surrounding land use and natural resources should consider the most up-to-date climate research and consider reasonable alternatives that increase our community's resilience to climate change. This might include blue-green infrastructure incentives and zoning amendments, among many other options.

Impacts to Different Types of Resources

Waters: Warmer temperatures will increase evaporation rates and limit the ability for regions to hold water; precipitation levels will continue to increase in the form of more rain and less snow; water-dependent energy generation will likely slow; changes in precipitation levels will likely increase the severity and frequency of flood and drought events; ice-out dates will continue to trend earlier in the winter; water quality may suffer from increased runoff and erosion; aquatic habitats will experience changing physical and chemical balances.

Soils: A warming climate will alter soils moisture conditions and increase soil temperatures; changes in moisture levels and precipitation events will lead to more erosion; mineral composition may change, impacting the productivity of soils for farming.

Forests: Warming global temperatures will generally increase the length of growing seasons; geographical ranges of tree species may shift, most likely moving north; certain species/ stands could be at risk from increased droughts; more intense and frequent disturbances like drought, wildlife, disease, and insect outbreaks could damage forest stand quality.

Wildlife: Changes to the global climate will alter the geographical range of many aquatic and terrestrial species; sea level rise may put freshwater resources at risk of saltwater intrusion; shifting seasons could result in changes in animal behavior, such as migration and reproduction, and disrupt the natural food chain; varying ecological conditions will impact animal-to-animal and animal-to-human pathogen spread.

10 https://nca2018.globalchange.gov/chapter/18/

Local Regulations

Summary of Local Regulations & Practices Aimed at Natural Resource Protection	
City Ordinance #235-44.2: Steep Slope Protection	To promote responsible stewardship of development and protect streams and lakes from the consequences of stormwater runoff and erosion resulting from excessive and improper construction on steep slopes; to preserve the natural topography, drainage patterns, vegetative cover, scenic views, wildlife habitats; and to protect unique natural areas.
City Ordinance #235-17: Wetlands Conservation & Water Quality District	To protect and regulate the land adjacent to water bodies, the use of wetlands and their buffer areas,
City Ordinance #235-18: Floodplain District	To protect property and life through regulations on all lands designated as special flood hazard areas by FEMA
City Ordinance #235-19: Shoreland Protection District	To establish standard for the use and development of shorelands adjacent to public waters; to minimize the degradation of shorelands, protect water quality, and assure the retention of benefits provided by such shorelands
City Ordinance: #235-22: Water Supply Protection District	To protect the water supply for the City and its inhabitants (Paugus Bay)
City Ordinance #235-44: Erosion & Sediment Control	Requires erosion and sediment control, in accordance with NH standards, for all construction projects. Allows for the city to inspect project's erosion and sediment control practices.
Site Plan Regulations	Includes safeguards for drainage, water quality, and pollution. Requires provisions for adequate open and green spaces.
Water Quality Testing	City Conservation Technician & Conservation Commission members participate in voluntary NHDES tributary testing and deep water testing with UNH's Lay Lakes Program. Water department also completes testing for water quality on Paugus Bay for drinking water purposes.

Goals & Actions

The Laconia Conservation Commission and Planning Department have identified goals and actions for natural resource management in the city. These goals and actions are achievable in 1-10 years and many of them are long lasting efforts. The Conservation Commission also has an overarching plan to increase community member's environmental knowledge and awareness through education and outreach practices. This concept will be worked into each of the other goals, as the commission sees reasonable.

Goal #1: Focus on protections that enhance and retain the quality and quantity of surface and groundwaters in Laconia.

Actions:

1. Develop an "Aquifer Protection Overlay District" aimed at protecting the city's groundwater supply.
2. Consider designating large wetland complexes upgradient from waterbodies as prime wetlands.
3. Improve the protections and documentation of vernal pools in the city. This may include developing criteria for use of a directional buffer around vernal pools in addition to a system for documenting and mapping their locations.
4. Consider conducting a private well and private septic inventory across the city.
5. Continue to monitor water quality with NHDES and the Water Department. Potentially expand this monitoring to include total suspended solids and phosphorus levels. Also consider adding tributary and deep-water testing for Opechee Bay.
6. Develop educational and outreach materials for water quality concerns.

Goal #2: Investigate climate change mitigation strategies to further protect life and property in Laconia.

Actions:

1. Conduct a Flood Hazard study that assesses areas in the city prone to natural and manmade flooding and consider options for flood storage within the community.
2. Develop stream restoration plans for prominent brooks, like Durkee, Jewett and Black Brook.
3. Identify areas in the city with increased storm water runoff and erosion potential.
4. Develop an invasive species management plan that includes a comprehensive invasive species inventory and identifies areas of top concern for management.
5. Identify areas that may be suitable for rain, pollinator, or pocket gardens.
6. Create and share educational materials focused on climate change and its local impacts.

Goals & Actions

Goal #3: Investigate and prioritize parcels for conservation land/easement acquisition.

Actions

1. Develop a system to prioritize lands for conservation acquisition that considers connectivity to other conservation parcels, undeveloped shoreland, habitat type, and other environmental parameters.
2. Focus on conserving parcels on unfragmented blocks of land across the city.
3. Educate the community on the current conservation easements/lands in the city and the access allowed on them.

Goal #4: Continue to foster partnerships between the city and local organizations, regional planning groups, and neighboring communities.

Actions

1. Conduct "issue meetings" or workshops with groups on planning and conservation efforts in the region. Opportunities might include landscaping, pollution prevention, and outreach programs.
2. Research and partner with other localities in developing a Trail System for passive recreation that complements the conservation of wildlife habitats and scenic vistas.
3. Continue to support other like-minded groups in their environmental efforts, such as NH Lakes , the Taylor Community, and various watershed networks.

Goal #5: Reduce the environmental impacts of development within the city.

Actions

1. Encourage environmentally-friendly development practices such as pervious surfaces, low-impact development, and infill.
2. Regularly review erosion and sediment control practices to ensure the city is promoting the most effective methods, including a review of the Erosion and Sedimental Control Ordinance.
3. Investigate opportunities for wildlife habitat restoration in the city, such as fish passage in Pickerel Cove and the installation of pollinator gardens.
4. Notify contractors of environmentally sensitive resources located on/around their sites.