

CONSERVATION PLAN FOR MASON, NH



Nissitissit Headwaters, photo courtesy of Dotsie Millbrandt

Mason Conservation Commission

September 2019

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Prepared by Mason Conservation Commission

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1. Vision and Purpose

The vision for this Conservation Plan is for Mason's wildlife and the rural human characters inhabiting our town to continue sharing a healthy environment where the quality of water and land is protected, the diversity and connectivity of unfragmented habitats are maintained, and people can enjoy the beautiful landscape. Mason can be a place where human communities thrive amid well-functioning ecosystems.

The purpose of this plan is to help guide the Town of Mason's Conservation Commission, Planning Board, Select Board, and other town officials and residents in protecting Mason's natural resources, which include:

- * water quality and quantity;
- * a thriving ecosystem with healthy wildlife habitat;
- * productive farm and forest lands that are essential to the town's rural character;
- * open space recreational opportunities that are compatible with the well-being of Mason's natural resources.

2. Goals

Mason's quiet nature, special places and large blocks of open space are very important parts of the town's rural character. Recognizing this fact, the Town of Mason can:

*** Identify and protect the lands that are important to conserve for water resources, wildlife habitat, scenic qualities, farming and forestry, and compatible open space recreation.**

The following types of land are priorities to protect. These should be the focus for Conservation Commission efforts and for Planning Board guidance to designate as open space in subdivisions when opportunities arise:

- Open space lands abutting existing conservation lands, and large unfragmented forests;
- Wildlife corridors, and Highest Ranked habitats mapped in NH 2015 Wildlife Action Plan;
- Grasslands for their scenic quality, agricultural potential, and diversity of habitat;
- Aquifers, riparian buffers and stream connectivity along Mason's streams and wetlands.

Aquifers are underground geologic formations that store and transmit groundwater in sufficient quantities to support water supply wells. Aquifers can be either fractures in bedrock, or deep sand and gravel deposits. Both kinds of aquifers are found in Mason, but only sand and gravel aquifers are mapped and protected through Mason's Aquifer Protection Bylaw.

Riparian buffers are naturally vegetated areas next to streams, ponds, and wetlands that protect these surface waters by filtering runoff from nearby land uses. They provide bank stabilization and aquatic and wildlife habitat. Riparian buffers are usually forested, helping to shade streams and protect water bodies from the impact of adjacent land uses.

- Special places to protect named in the 2007 Mason Master Plan Update:
 - The Cascades and Mason Brook
 - Walker Brook Gorge
 - Spaulding Brook and its network of wetlands
 - The scenic view from Greenville Road
 - Mason Quarry, Wolf Rock area, Scripps Lane
 - Historic places such as old cemeteries, the Town Pound, the old mill on Spaulding Brook at Fifield Tree Farm

Many of these special places are now conserved through the generosity of Mason landowners: Mason Quarry, thanks to George and Cathy Schwenk; much of the scenic view from Greenville Road, thanks to Bronson Potter; the old mill and more than a mile of Spaulding Brook thanks to the Fifield family's Conservation Easement; and the Wolf Rock area, thanks to Walter Valentine.

- * Develop a policy on the conversion of Class VI roads to Class V that carefully weighs long-term costs and benefits to the town.** Many Class VI roads serve as a town-wide trail system, and cut through large blocks of open space integral to Mason's rural character.
- * Create a town-wide trail system, connecting Mason Railroad Trail, existing trails on conservation lands, and town Class VI roads. As trails are connected, produce a Trails Map for Mason.**
- * Increase public understanding about land use issues and how water quality and quantity can be affected by land use.**

3. Recommendations for Protecting Mason's Natural Resources

The following recommendations can help achieve the Conservation Goals for Mason. They apply to protecting all of Mason's natural resources: water, wildlife habitat, special places, farm and forest land, unfragmented blocks of open space, connecting wildlife corridors and trails.

3 - 1. Voluntary land conservation

Voluntary land conservation with willing landowners through conservation easements, donation, or public acquisition offers the best option for permanent land protection, wherever possible.

Mason has been very fortunate to have generous landowners who have made major contributions to protect Mason's rural character and special places: Bronson Potter's bequest, the Fifield family's Tree Farm conservation easement, the Schwenks' gift of the Mason Quarry and Nose Meadow Conservation areas, Dr. Ellis and Dr. Lipin's gift of the Downs Forest, Ted Stewart's conservation easement on scenic Jackson Road, the Doonan family's conservation easement on Spaulding Brook Pond, the d'Arbelof family's conservation easements on Darling Hill Road, the French family's gift in memory of their ancestor Charles Crathern (Mason's long-time Town Clerk and descendant of the town's original minister), Florence Roberts gift of the Forest near Mason's center, the Esau Stanley family's gift in memory of their son "Ace" Stanley, and Walter Valentine's gift of the Wolf Rock land and Mason's first Town Forest.

Conservation easements covering riparian buffers and aquifers are an excellent water quality protection method. A large measure of groundwater protection has been accomplished through the town's Aquifer Protection Ordinance. But Mason's significant aquifers such as Spaulding Brook and Gould Mill Brook would benefit from voluntary permanent land conservation options.

With conservation easements, landowners can continue to make economic use of their land. Sustainable forestry and farm management are excellent long term uses for private lands in conservation easements. Model easements developed by the Society for the Protection of New Hampshire Forests are available through NH DES. Assistance with land conservation is available locally through the Monadnock Conservancy, the Piscataquog Land Conservancy, and the Nichols-Smith Conservation Land Trust.

Priority lands to protect are those mapped by the 2015 NH Wildlife Action Plan as Highest Ranked Wildlife Habitat, lands connecting with existing conservation lands, and lands in the town's large unfragmented blocks, particularly in the eastern and southeastern areas of town where there is presently little conserved land.

3 - 2. Funding

Voluntary land conservation depends on funding for the purchase of land or easements. Even when land or easements are donated, there are transaction costs. Matching funds for purchase of easements or land are available on a competitive basis through New Hampshire's Land and Community Heritage Program (LCHIP), the Moose Plate program, the Land & Water Conservation Fund, and NH DES Source Water Protection and *Aquatic Resource Mitigation* programs. These grants always require a local match. The Town should continue to invest in its Conservation Fund through Current Use Change Tax payments and, as appropriate projects come forth, through special appropriations voted on at Town Meeting. Selective timber harvesting on town conservation lands as appropriate could also be a source of funding.

3 - 3. Land Use Planning

Subdivision Open Space designation: Mason's subdivision regulations allow for 15% of a parcel that is proposed for subdivision to be designated by the Planning Board as permanent open space. The types of land listed in Section 2 as priorities for protection are appropriate for subdivision open space designation.

Subdivision Regulations: the Planning Board can take measures to protect water resources by including provisions in its site plan and subdivision review regulations for on-site stormwater infiltration and storage of all increases in runoff caused by increases of impervious surfaces (roofs, driveways, roadways) due to development. Water protection measures like stream crossing standards and limited impact development (LID) techniques can also be adopted through subdivision regulations, as can provisions to control stormwater run off during construction.

Conservation Subdivision: Mason's 2007 Master Plan Update recommends Conservation Subdivision as a land use tool in its Water Resources Management Plan section. (page 86) Conservation Subdivision reserves parts of the property being subdivided for permanent protection from development, while the property's allowed zoning density remains unchanged. The Conservation Plan provides the basis for determining the land to reserve. Wildlife corridors, riparian buffers, unfragmented forests, prime farmland soils, and recreational trail connections can be all protected through this form of subdivision. Conservation Subdivision would need to be adopted through a zoning bylaw.

An excellent document on Conservation Subdivision is Innovative Land Use Planning Techniques: A Handbook for Sustainable Development. It is available from NH Department of Environmental Services (NHDES) at https://www.des.nh.gov/repp/innovative_land_use.htm

3 - 4. Wetlands Protection: Mason's Wetlands Protection Ordinance can be improved by including riparian buffers and stream connectivity guidelines.

Riparian buffers are naturally vegetated lands surrounding surface waters and wetlands that provide vital natural services essential for quality of life, such as

- Water quality protection by filtering runoff through natural vegetation. One hundred feet is the recommended buffer width for adequate filtration.
- Flood hazard mitigation by storing floodwaters and enabling them to be released gradually, protecting downstream properties.
- Wildlife habitat and corridors for connecting habitats, so wildlife can find food and shelter without disturbing human habitats. Fish need shady streambanks for cool water in summer. Three hundred feet is the recommended buffer width for wildlife.

These natural services of riparian buffers are becoming even more important in this era of climate change, as heavy intense storms become more frequent. Streams and wetlands have to receive and carry away greater volumes of water. Riparian buffers are key to reducing flood damages.

Continuous stream connectivity, especially along all Mason's major brooks, is vital to enable aquatic life to travel freely along the stream, and to protect public safety by making road crossings that allow a stream's natural bed to be retained. When culverts are under-sized, road crossings can be choke points that get clogged, leading to washouts from stormwaters. Road design for adequate stream connectivity is essential given the increasing intensity of storms. Stream crossing design guidelines for the 21st century can be found at www.des.nh.gov/organization/divisions/water/wetlands/streams_crossings.htm

The town's present Wetlands Protection Ordinance needs amending to include buffers and stream connectivity guidelines to apply to proposed stream crossings. An amended ordinance should also contain reference to Best Management Practices (BMPs) for land uses and activities that pose a potential threat to water resources. A source for information on BMPs can be found here:

https://www.des.nh.gov/organization/commissioner/pip/publications/bmps_guides.htm

3 - 5. A policy on Class VI roads should be developed by the Planning Board and Conservation Commission to guide the Select Board when making decisions on the conversion of Class VI roads to Class V. A Class VI roads policy should encourage their retention as trail connectors while discouraging the fragmentation of wildlife habitat that could result from their conversion to Class V roads. Such a policy could save the town from an increasing burden of road maintenance costs. Many roads became Class VI due to the difficulty of maintaining them. Mason has sufficient frontage on existing Class V roads to accommodate nearly a doubling in development. (from 2007 Master Plan update)

3 – 6. Outdoor Recreation

Mason's chief open space recreation facilities are our town's trails. A Trails Committee should be established to work with the Conservation Commission to create, maintain, and promote a town-wide trail network for hikers, horseback riders, cross-country skiers and snowmobilers, working together with groups of Mason trail users.

Once the network is connected, a Trails Map for Mason should be produced. The spine of Mason's trail system is the Railroad Trail, whose 6.7 miles cross the entire town from north to south. The town's old Class 6 roads and trails on public lands and private conservation lands that are open to the public make an extensive network for exploring Mason's countryside, enabling people to get out and enjoy our town's natural beauty.

Hunting and fishing are popular forms of recreation which depend on Mason's unfragmented open spaces and water quality. Conservation of large blocks of open space and riparian buffers is a vital means to sustain opportunities for hunting and fishing.

3 – 7. Public Outreach and Education

The Conservation Commission should do outreach and publicize information on best management practices for homeowners: private well protection, stormwater runoff control, landscaping with native plants, Best Management Practices (BMPs) are important to prevent fuel storage and re-fuelling of equipment from polluting surface and groundwater. Impervious surfaces in developed areas, such as roofs and driveways, accelerate storm runoff. This can cause erosion leading to sediment and pollution in nearby water bodies. Landscaping such as rain gardens can be designed to allow runoff to infiltrate into the ground, reducing stormwater erosion. Sources of information on Best Management Practices are available at NH Department of Environmental Services website as noted at the top of this page.

The Conservation Commission should do outreach to farmland and forestland owners on the conservation qualities of their land, and offer information on enhancing wildlife habitat through farm and forest management.

The Conservation Commission should disseminate information about controlling invasive plants, and should integrate schools in conservation activities. All information should be made available on the town website under the Conservation Commission documents section.

4. Steps for Town Boards and Commissions to implement the Conservation Plan:

1. The Planning Board should include a summary of the Conservation Plan as a chapter in the updated Town Master Plan, and use the Conservation Plan for guidance when specifying open space in major subdivisions.
2. The Town should inventory existing properties that are currently owned by the Town, to determine which parcels deserve permanent conservation protection. The Town may choose to convey permanent conservation easements on land it owns to a qualified land trust, or to transfer qualified tax title land to the Conservation Commission. These decisions may require Select Board or Town Meeting decision as required by statute. The Conservation Commission has prioritized current tax title lands to protect based on their natural resource values.
3. The Board of Selectmen, Planning Board, Conservation Commission, and Zoning Board of Adjustment should look for ways to integrate the Conservation Plan into their deliberations and plans, including Master Plan updates, zoning changes, subdivision regulations, subdivision reviews, site plan reviews, placement and extension of infrastructure, economic development, emergency management, and facility siting. The Natural Resources Inventory maps should be available in the Mann House and on the town website so they are easy to consult during board meetings.
4. The Planning Board and Zoning Board should include the Conservation Commission on their checklists of town entities to consult before hearings, as is done with Police, Fire, and Highway Departments. Conservation could then review the application and send a representative to the hearing to discuss any concerns.
5. The Conservation Commission should establish a Trails Committee made up of interested residents to assist with creating a town-wide trail network. This committee would work on trail design and improvements in co-ordination with the Conservation Commission and Forestry Committee. As trails are improved, the Commission and Trails Committee would work together to produce a town-wide trails map.
6. The Conservation Commission should encourage the use of conservation easements to protect large tracts of open space while keeping it in private hands, advocating for sustainable forestry as a long term land use for large parcels. The Commission should establish a plan for contacting and consulting with owners of lands in conservation priority areas. This could include mailings, field trips to existing protected lands, educational forums with land protection and forestry experts.
7. The Conservation Commission should manage existing town conservation lands to protect any rare habitats and to increase the diversity of habitat types.
8. The Conservation Commission should meet with the Planning Board and Select Board at least annually to review and update the Conservation Plan implementation.

APPENDICES

Appendix A Review and Interpretation of Mason's Natural Resource Inventory

Five maps (Hydrologic Resources, Forest and Farmland Soils, Wildlife Habitat Types, Wildlife Habitat Ranking, Unfragmented Habitat Blocks) provide the basic data and structure for Mason's Natural Resources Inventory. Each map will be examined for guidance in proposing areas of conservation interest.

A - 1. Hydrologic Resources Map

Mason's Hydrologic Resources Map shows our town's water resources, both surface and groundwater. It includes wetland sizes and types (emergent, scrub-shrub, forested), surface water bodies, aquifers and their transmissivity, as well as soil drainage classes from excessively drained to very poorly drained and hydric soils.

The majority of Mason's area (79%) has well-drained soils. However, the town is laced with 17.5 miles of year-round brooks into which flow networks of seasonal streams, which in turn are fed by a variety of wetlands. Poorly and very poorly drained and hydric (wetland) soils are associated with this circulatory system. Small wetlands (less than 2 acres in size) occur all over town, giving the map a freckled look. Though poorly and very poorly drained soils amount to just 10% of Mason's area, wetlands are likely to be found on nearly every sizable parcel of land in Mason.

Surface Water: Being generally higher in altitude than surrounding towns, Mason's hilly terrain is a place where rivers begin. In Mason's northwest corner, water flows to the Souhegan River. Most of Mason's land forms the headwaters of two high quality rivers that start in neighboring towns. Brooks in the northern and eastern parts of Mason flow into the Nissitissit River in Brookline NH. Brooks in Mason's southern, central and western parts flow into the Squannacook River in Townsend MA. Both these rivers are excellent trout streams, and recognized as Outstanding Resource Waters by Massachusetts. The Squannacook and Nissitissit are also classified as Source Waters by the U.S. EPA because they contribute to public water supplies in Townsend, Pepperell, and Groton, MA. Mason's surface waters play an important part in sustaining the quality of these rivers.

Within Mason, our brooks are vital for fish and wildlife habitat. Their quality signifies the health of our town's watersheds. Though few residents depend on surface water for supplies, brooks and other water bodies interconnect with the groundwater upon which all our wells depend for water supplies. Brooks and ponds express the groundwater levels in their areas, and can influence nearby wells.

Mason's position at the headwaters is a beneficial situation for water resources protection – the vast majority of water running over and through the land of Mason begins in Mason. Only Walker Brook, which begins in New Ipswich and Greenville, comes from outside Mason. Mason has a high degree of control over the aspects of land use management that affect surface water quality in Mason. (from Mason 2007 Master Plan Update)

Mason's nine named brooks are the major year-round arteries of our surface water system. Protecting streamside (riparian) buffers along these water courses is a priority for conserving their quality. Ponds and all surface waters would also benefit from riparian buffers. The tables below give Mason's named streams and their lengths, and Mason's largest ponds and their acreage. (1)

<u>Brook Name</u>	<u>Miles in Mason</u>	<u>River Watershed</u>		
Spaulding	3.8	Nissitissit		
Gould Mill	3.0	Nissitissit		
Mitchell	0.9	Nissitissit		
Black	0.8	Nissitissit		
Lancy	0.8	Nissitissit		
Wallace	0.6	Nissitissit		
Mason	3.4	Squannacook		
Walker	2.2	Squannacook		
Rocky	2.0	Squannacook		
Total Brook Miles:	17.5 miles	Nissitissit 9.9 miles	Squannacook 7.6 miles	

<u>Pond Name</u>	<u>Acreage in Mason</u>	<u>River Watershed</u>
Pratt Pond	27.7	Nissitissit
Black Brook Pond	19.6	Nissitissit
Spaulding Brook Beaver Pond	12.4	Nissitissit
Marshall's Pond (Briggs Rd.)	14.0	Squannacook
Total Pond Acreage	73.7 acres	

Wetlands are a vital part of the natural drainage, flood storage, and water filtration system. At times of the year, some wetlands may appear dry, but the presence of water-loving plants like moss, reeds, rushes, and highbush blueberry indicate that water isn't far below the surface. Although Mason has few floodplain areas mapped by the federal government, it can be assumed that most areas in and adjacent to wetlands and brooks function as floodplains during spring runoff and heavy storms. Such storm events are becoming more frequent and intense as climate change occurs.

Wetlands are best left in their natural state to serve their valuable functions of flood mitigation, water filtration, and wildlife habitat. But wetlands' filtration abilities can be overwhelmed when runoff from adjacent developed areas brings in quantities of sediment and other pollutants. Research has shown that protecting wetlands with naturally vegetated buffers significantly reduces impacts from runoff. (Buffers for Wetlands and Surface Waters, a Guidebook for NH Municipalities, by Chase, Deming, and Latawiec, 1999.) Riparian buffers around wetlands are strongly recommended to assure that wetlands' ability to filter water continues.

Three main types of wetlands are found in Mason:

Emergent - open marshes with grasses, reeds, other low vegetation emerging from the water

Scrub-shrub - prevalence of alders, highbush blueberry, winterberry and other shrubs

Forested - red maple, yellow birch, black gum, other trees, often with ferns and moss.

Mason's largest wetlands are grassy marshes and shrub swamps associated with Mason's major brooks and ponds. But the majority of wetlands in Mason are of the forested type. Natural Resources Inventory Table 7 lists Mason's 5 largest wetlands, which total nearly 408 acres.

The largest, a 175-acre shrub swamp system between Townsend and Hurricane Hill Roads south of Briggs Road, begins downstream of Marshall's Pond and drains into two unnamed brooks which join together along Morse Road to form the lovely waterfall at the Railroad Trail intersection. From here this brook flows into Massachusetts to join Mason Brook. This wetland system includes no conservation land at present.

Mason's second largest wetland, a marshy shrub swamp of 90 acres, extends between Withee Brook and

Campbell Mill Roads. Gould Mill Brook flows through it and it overlies part of Mason's deepest and highest transmissivity aquifer. The town's 2.5-acre Esau Stanley Jr. Wildlife Refuge is in this wetland.

Mason Brook begins at the outflow of the third largest wetland, a 52-acre marsh on Merriam Hill Road near the town center, historically known as Nose Meadow. Beavers are often at work here. Mason has 21 acres of conservation land here, given by George and Cathy Schwenk, and Bronson Potter.

Babb Swamp, a 48-acre marsh/shrub swamp off Brookline Road at the Brookline town line, is associated with Lancy Brook. The 41-acre marsh/shrub swamp on Abbot Hill Road connects with Spaulding Brook. Neither of these sizable wetlands includes any conservation land.

Groundwater: Being entirely dependent upon individual household wells, Mason's people rely upon groundwater to supply their wells. Mason receives about 44 inches of water from snow and rain each year, of which nearly half seeps into the ground. This groundwater is stored in geologic formations called aquifers, which can be either fractures in bedrock, or sand and gravel deposits that are deep enough to store and transmit sufficient quantities of groundwater to support wells.

Bedrock fractures are the most prevalent sources of well water in Mason. But very little is known about the location or qualities of bedrock fractures in New Hampshire that might provide water. Quantities of water available in bedrock vary unpredictably throughout Mason, from scarcely one gallon per minute to 100 gallons per minute. Most bedrock in Mason has enough fractures to support household wells (5 gallons per minute), if users are careful. Due to composition of the bedrock, minerals such as iron and manganese often occur in water from bedrock fractures.

Excessively drained soils (sands and gravels) are often associated with stratified drift aquifers, which can provide abundant water supplies depending on their saturated depth and transmissivity. As mapped by US Geological Survey, Mason's most significant stratified drift aquifers are in the Spaulding Brook watershed in north central Mason, and in the Gould Mill and Wallace Brook watersheds in southeastern Mason. The Gould Mill Brook aquifer on Brookline Road near the Brookline border has the greatest saturated thickness found in Mason. Test drilling of a well here revealed 40 feet of saturated sand.

Because water in bedrock fractures and stratified drift aquifers is fed by infiltration from the soil layers above, land uses affect water quality in wells. Groundwater in Mason has been contaminated from leaking underground fuel tanks. Manure, when left in large uncovered piles, can pollute groundwater with bacteria and nitrates. Residences with malfunctioning septic systems can pollute their own wells. Even well-functioning septic systems cannot treat many household chemicals. What goes down the drain to a septic system can affect the groundwater.

The town has established an Aquifer Protection Zone where stratified drift aquifers are mapped, to control land uses that can risk pollution. But fractured bedrock aquifers are unmapped, so the Aquifer Protection zone does not apply to them. Protecting bedrock aquifers depends on the care of land users. NH DES Drinking Water Source Protection Program Fact Sheets are helpful sources of knowledge.

A – 2. Forest and Farmland Soils Map

Soil determines the suitability of land for various uses. The drainage characteristics of soil are key to land use. These range from very poorly drained (wetlands, best left alone) to well drained (productive for farming and forestry) to excessively drained (sands and gravels useful for construction but not for crops). Within Mason's rolling topography, many types of soils can be found, sometimes within a relatively small area.

The Natural Resources Inventory map of Forest and Farmland Soils shows five levels of forest productivity groups and the two highest levels of farmland quality soils: Prime Farmland and Farmland of Statewide Importance.

The 5 forest soil groups are graded by their ability to grow trees and the ease of timber harvesting. IA, IB, and IC are the top three groups in terms of fertility. Forest soil group IIA is steeper and more rocky. Group IIB soils are poorly drained and so limited to being harvested when the ground is frozen.

The Map shows that good quality forest soil types predominate in Mason. More than half the town is IB soils, plus 10% is IA soils, making more than 60% of Mason well suited for forest productivity. (NRI Table 11) Much of Mason has excellent soil potential to support sustainable forestry as a long term land use.

Good agricultural soil is quite rare in Mason. Only 3% of Mason's soils are mapped as prime farmland, and another 3% as farmland of statewide importance. (NRI Table 10). Prime farmland soils are fine sandy loams, with few or no stones, flat to gently sloping (no more than 8% slopes). Statewide important farmland is often found near prime farmland. It is somewhat stonier (but not very), and more sloping.

Prime and important farmland soils are scattered throughout Mason in relatively small areas. Some larger patches of prime farmland (perhaps twenty acres in size) are on the western edge of Mason: Nutting Hill Road, along Greenville Road, and near the Greenville border back in the forest on the Bronson Potter Homestead Conservation Land. Other sizable patches are on Starch Mill Road (two), Brookline Road (three), Gilman Hill Road, and in southwest Mason. Mason's village center is sited on a patch of farmland soils. Those old Yankee farmers knew what they were about.

Many of Mason's homes from colonial times are still surrounded by fields or pastures. Though horses may now be more prevalent in Mason than cows and sheep, the owners of all these types of animals keep pastures open. Pleasant fields along Valley Road, Greenville Road, Jackson Road, Churchill Road, Barrett Hill Road, and on Nutting Hill feed animals today. But other areas of farmland soils have reverted to forest or become house lots.

Yet agriculture can still thrive in Mason. The most intensive agriculture takes place in southwest Mason, thanks to a sizable area of prime and important farmland soils being owned by enterprising people skilled in agriculture. Apples, strawberries, sweet corn, and numerous other crops are grown in this part of town.

Mason's largest businesses, Parker's Maple Barn and Pickety Place, are based on agricultural products originating locally—maple syrup and herbs. Small scale farming forms a basis for many home businesses in Mason: maple syrup production, eggs, chickens and pigs, berries, keeping bees, making goat's milk soap. Two sizable plant nurseries are operating in Mason, raising plants for landscaping and gardening.

Although small in extent, Mason's prime and statewide important farmland soils deserve protection, and their use for agriculture should be encouraged. Where prime farmland soils occur on town conservation land, an option may be to lease this acreage to farmers who agree to follow best management practices.

A – 3. Wildlife Habitat Types Map

This map shows how extensively forested Mason is. Two forest types cover more than 90% of the town. Hemlock-hardwood pine covers 55% of Mason. Prevalent throughout the town, it also predominates state-wide. Appalachian oak-pine covers 37% of Mason, chiefly in the northern part of town, with large areas along the eastern side and sizable patches in the central and southern parts of town. This forest type is far less common statewide; only 7% of New Hampshire has Appalachian Oak-Pine forest. Mason has an unusually large share because the town lies in the transitional zone between northern and southern forest types.

Grassland is found in relatively limited areas throughout town, as hayfields and pasture. The largest concentrations of grassland are the hayfields on Greenville Road. Throughout the northeastern United States, grasslands require effort to preserve. Abandoned fields revert to forest over time. The amount of grassland habitat can dwindle unless regularly tended. Preserving grassland habitat, and enlarging it where appropriate, increases habitat diversity.

Four types of wetland habitat occur in Mason: marsh and shrub wetland, northern temperate swamp, peatland, and open water. All wetland types are found throughout town, with peatland being the rarest. Most wetlands are connected with Mason's network of streams. These numerous streams, seasonal and year-round, are a vital part of Mason's open water habitat, which also includes Mason's ponds. Some of Mason's perennial streams support native brook trout.

Mason's diversity of forest types and the variety of wetlands amidst these forests provide excellent habitat for all sorts of wildlife. However, human uses of habitats can pose risks for wildlife.

The 2015 NH Wildlife Action Plan notes some of these risks, as follows:

Risks from timber harvesting: loss of large trees with strong upper branches to support nests of eagles, osprey, and hawks; harvesting in wetlands and near streams, water bodies and vernal pools can compact soil, increase water temperatures, and impact wildlife corridors.

Risks from mowing grasslands: haying before July 15 is known to present a moderate to high threat to grassland nesting species.

Risks from development runoff: faulty septic systems, landscaping activities, roads, golf courses, industry, landfills, junkyards, and wastewater treatment facilities can affect aquatic systems by contributing excessive nutrients (e.g., phosphorus and nitrogen) and other pollutants (e.g., heavy metals, organic compounds, and sediment).

Benefits from timber harvesting: Well-managed forestry can enhance wildlife habitat, such as patch cuts of 2 -5 acres for wildlife clearings, generating shrublands and young forest habitat needed by species such as New England cottontail. When harvesting, it's also important to maintain hemlock stands that provide winter shelter for deer, moose and bear, and to maintain old growth hardwood stands that provide hard mast (nuts and acorns).

A – 4. Wildlife Habitat Ranking Map

Mason’s NRI Wildlife Habitat Ranking Map is based on the NH Wildlife Action Plan (NHWAP) of 2010, since the Natural Resource Inventory was completed in 2012. It shows that riparian corridors along perennial brooks and wetlands have the highest scores for desirable habitat characteristics occurring together. It also shows that Mason is peppered with small forested wetlands throughout.

The 2015 NHWAP update greatly increased the area of Highest Ranked Wildlife Habitat shown in Mason, due to new criteria for ranking. (2) Now Mason has 3,794 acres mapped as Highest Ranked Habitat in NH and 5,845 acres mapped as Highest Ranked Habitat in the Biological Region. Nearly 63% of Mason’s 15,354-acre area now ranks as outstanding quality wildlife habitat on a state-wide basis.

Riparian corridors along Mason’s streams continue to be Highest Ranked in NH, and now large areas in eastern and northern Mason share this ranking. The Mason-Brookline-south Milford region has one of the most sizable concentrations of Highest Ranked Habitat along the whole southern NH border.

Ranking factors for forest habitats are richness of rare plants, rare animals and exemplary natural communities, vertebrate species richness, landscape complexity and connectedness, and the size of the unfragmented block where the forest is located.

Mason’s rolling hilly landscape of forests interspersed with networks of wetlands and brooks contributes to our town’s landscape complexity and connectedness. The many large blocks of unfragmented land relatively undisturbed by humans are a key part of the quality of our ecosystem.

Mason’s outstanding unfragmented forests, wildlife corridors and riparian buffers are among the top 15% (Highest Ranked) of wildlife habitats in all New Hampshire. This irreplaceable natural resource is at risk from development pressures, and must be a priority for conservation.

A – 5. Unfragmented Habitat Blocks Map

Large land areas unfragmented by roads and development are essential for the long-term viability of numerous wildlife species. Unfragmented blocks of land are important because many animal species (especially large mammals, many birds, reptiles and amphibians) need to move about the landscape through a variety of habitat types in different seasons for their feeding and breeding ranges.

Road crossings are well-known hazards to wildlife. Roads not only cause road-kill but also tend to be corridors of development which displaces wildlife habitat and is associated with other disturbances, such as outdoor lighting, loud noise, and wandering pets that threaten wildlife.

Mason is fortunate to have large areas of unfragmented wildlife habitat. Focus Areas for Wildlife Habitat Protection in the Nashua River Watershed notes that two large areas of core wildlife habitat lie partially in Mason: Badger Hill/Spaulding Brook focus area (12,200 acres) and Townsend State Forest focus area (8,700 acres). The Spaulding Brook focus area extends across northern Mason and includes parts of Brookline, Milford, and Wilton. The Townsend State Forest focus area includes southeastern Mason and abuts the Spaulding Brook focus area, making “two well-connected core areas allowing wildlife movement into the Nashua River watershed from less developed areas further north” (page 15). These focus areas are mapped by the 2015 NH Wildlife Action Plan as Highest Ranked Habitat in NH.

The Natural Resources Inventory map of Unfragmented Habitat Blocks scores these blocks according to

their overall size and shape ratio. The higher its number, the larger and more “blocky” is the block. Most high-scoring blocks extend into adjoining towns of Brookline, Greenville, Milford, and Wilton NH, and Townsend MA. Much of Massachusetts’ area bordering Mason is designated as the Squannassit Area of Critical Environmental Concern (ACEC) in recognition of the diversity of rare species found there. These species are very likely to cross the state line. Mason’s unfragmented landscapes form a vital part of a multi-town, multi-state spread of outstanding wildlife living spaces.

Mason ‘s Top-scoring Unfragmented Habitat Blocks (from NRI Table 2)

Block Location	Total Size	Score	Conserved in Mason (acres)	Outstanding Features
Northeast Mason, southwest Milford, southeast Wilton	7,160ac.	11	1,068	Fifield Tree Farm, Spaulding and Mitchell Brooks, Badger Hill (Wilton)
Southeast Mason, southwest Brookline, Townsend Mass.	3,085 ac.	9	2.5	Stanley Wildlife Refuge, Gould Mill Brook, Lost Valley, Russell Hill (Brookline), Townsend State Forest (Townsend, MA)
East Mason north of Brookline Rd., west Brookline	2,605 ac.	9	0	Babb Meadow, Lancy Brook
Central Mason, from Depot Rd to Sandpit Rd.	1,356 ac,	9	290	Mason Quarry, Rocky Brook, Pole Hill, Wolf Rock, RR Trail
Northwest Mason, northeast Greenville, south Wilton	1,893 ac .	8	434	Russell-Abbott State Forest, Pratt Pond, RR Trail, Souhegan River (Wilton)
East Mason south of Brookline Rd (all in Mason)	1,087 ac.	8	0	Gould Mill Brook, Hurricane Hill, Marshall’s Pond (Briggs Rd.)

With one exception, Mason’s highest scoring unfragmented blocks lie in the eastern and northern areas of town. The table shows that outside of northeast Mason there is very little conservation acreage in the eastern unfragmented blocks.

NOTES

(1) Data from Mason Natural Resources Inventory, Tables 4 and 5.

(2) For 2015, the NH Fish and Game Department, which prepares and updates the NHWAP, used better modeling and new data for ranking habitat from an intensive study done by The Nature Conservancy “Condition of the Northeast Terrestrial and Aquatic Habitats”, and from “Index of Ecological Integrity” by Kevin McGarigal of UMass.

Appendix B References to Conservation Planning Documents

Mason’s 2007 Master Plan Update provides the foundation for this Conservation Plan. The Master Plan Update recommended that “the Town of Mason should develop an Open Space Protection Plan to be included in the Town’s Master Plan, identifying areas of town and types of landscape that are important for a variety of ecological and social values.” The Master Plan stated that “an Open Space Plan is the foundation for municipal land acquisition, regulatory measures, and any other public policy issues involving conservation.” The 2007 Master Plan is on the town website at <http://masonnh.us/planning-board-documents-maps/> .

Because this 2018 plan addresses outdoor recreation and public education as well as open space protection, it has been given the more inclusive title of “Conservation Plan”.

Mason’s 2012 Natural Resources Inventory (NRI) provides the basic information for this Conservation Plan. NH’s 2010 Wildlife Action Plan was used as a reference for the 2012 NRI wildlife-related maps. Mason’s NRI is now being revised to include the latest NH Wildlife Action Plan and recent conservation land gifts.

This Conservation Plan uses the updated 2015 NH Wildlife Action Plan as a reference (NHWAP). It can be found on the NH Fish and Game website at <https://www.wildlife.state.nh.us/wildlife/wap.html>

The Highest Ranked Wildlife Habitat map for Mason can be downloaded at <https://www.wildlife.state.nh.us/maps/wap.html>

Focus Areas for Wildlife Habitat Protection in the Nashua River Watershed is also a valuable reference for local areas of conservation interest. This is an ecological inventory done for the Nashua River Watershed Association by Jeff Collins of the Ecological Extension Service of Mass. Audubon Society in 2000. For further information on this study contact the Nashua River Watershed Association in Groton, MA. <http://www.nashuariverwatershed.org/what-we-do/protect-water-and-land/land-stewardship-overview/wildlife-habitat.html>

Appendix C Conservation Project Rating Sheet

Project or Parcel Name: _____ Acres: _____

Location in town: _____ Current Owner: _____

Type of Place: Forested Hillside Stream Corridor/Wetland Field / Farmland Bedrock/Gravel Aquifer Recreational Trail Plant and animal habitat Historic and Archeological

Brief summary of project or parcel:

RESOURCE VALUES

Note all values present or prevalent on property

RECREATION / ACCESS Comments Existing Trails _____ Potential for Trails _____ Water Access _____ Appropriate for hunting and fishing _____ Total Points _____**ACTIVE AGRICULTURE/FORESTRY** Prime soils (state or federal significance) _____ Valuable or active farm now or potential _____ Valuable or active forestry/silviculture now or potential _____ Total Points _____**RURAL AND COMMUNITY CHARACTER** Highly scenic from public ways _____ Natural beauty _____ Prominent view shed _____ Unique qualities/historic character _____ Total Points _____**PLANT AND ANIMAL HABITAT** Natural Heritage site or rare natural community _____ Diversity/quality of habitat on site is significant _____ Part of corridor _____ Linkage to other conservation lands _____ Un-fragmented area _____ Total Points _____**HISTORIC AND ARCHEOLOGICAL SITES** Cemetery _____ Wells/Cellar Holes _____ Stone Walls/bridges _____ Total Points _____

WATER SOURCES / QUALITY

- Pond frontage _____
- Stream frontage _____
- Wetlands _____
- Aquifer or Wellhead Protection _____
- Total Points _____

CHARACTERISTICS OF PROJECT OR PARCEL

YES/ NO/ DON'T KNOW

- Meets criteria as priority area in the Conservation Plan
- Included as specific example of priority area in Conservation Plan
- Abuts, enlarges, or provides linkages to other protected land
- Clear potential to stimulate future projects
- Benefits wide range of people
- Access for public recreational uses
- Opportunities for environmental or other educational uses
- Opportunities for historic or cultural activities and public uses
- Absence of actual or potential safety hazards
- Title is clean and unencumbered
- Potential for private land trust to assist
- Imminently threatened by change of use that would undermine Resource Values
- Is affordable for Town and will advance other priorities

Other Comments:
