

Conservation of Natural Resources

Introduction

Often the people who choose to make their life within a rural community such as ours do so because they enjoy the sounds of nature over the sounds of the city; they'd rather be kept awake by the light of a full moon than the glare of a street light; sitting in traffic often means being trapped behind bicyclists on Winona Road; and your noisy neighbors are the peepers and crickets.

Here in Ashland, we are lucky enough to live in such a rural community with wonderful ecological diversity. The Ashland Conservation Commission was founded to protect the natural resources in our community. We are a group of volunteers who are appointed by the Selectman. One of our primary goals is to increase awareness of Ashland's natural resources. This Natural Resource Inventory is the beginning of an evolving document to record our natural resources and plan for a future that includes sensible development and conservation of our rural identity.

General Information

The town of Ashland has a total acreage of 7533.8 acres with a land area of 7188.1 acres and a surface water area of 345.7 acres. From 1990 to 2000, Ashland's population increased by 2.1 percent to 1,955 (40 people). As of 2000, the median age was 36.8 years old. The population density of Ashland is approximately 172.9 people to one square mile.

Conservation Land

Ashland has 1094.5 acres or 14.5% of its total area conserved. The protection types of these lands include fee ownership (980.5 acres) and permanent conservation easement (114 acres). The State of New Hampshire is the primary protection agency for 206 acres with 888.5 acres held by Private Agencies. See Table A for a list of Ashland's conserved lands.

Table A: List of Conservation Land					
NAME	CALCULATED SIZE (acres)	PRIMARY PROTECTION AGENCY	AGENCY TYPE	PROTECTION LEVEL	PROTECTION TYPE
Church Hill WMA	151.4	NH Fish & Game	State	Permanent conservation land	Fee Ownership
Glidden Forest	108.2	Squam Lakes Conservation Society	Private	Permanent conservation land	Conservation Easement
Owl Brook	5.8	Squam Lakes Conservation Society	Private	Permanent conservation land	Conservation Easement
Preston	555.5	Lakes Region Conservation Trust	Private	Permanent conservation land	Fee Ownership
Scribner-Fellows State Forest	147.6	NH Dept. of Resources & Economic Dev. (DRED)	State	Permanent conservation land	Fee Ownership
Newsom Memorial Forest	56.3	New England Forestry Foundation	Private	Permanent conservation land	Fee Ownership
Stevens Memorial Forest	105.9	New England Forestry Foundation	Private	Permanent conservation land	Fee Ownership)

Soils

Understanding the nature and properties of soils is critical to managing and conserving our natural resources. Through its Soil Survey Program, the USDA Natural Resources Conservation Service (NRCS) studies and inventories soil resources across the country. Soil scientists make this study in order to determine what soils are present, where they are located and how they can be used.

Soil surveys contain information in the form of detailed soils maps, data tables and text narratives that can be used in order to determine appropriate uses for the land. Soil surveys also contain predictions of soil behavior for selected land uses and highlight limitations and hazards inherent in the soil and the impact of selected land uses on the environment.

It is important to note that these soil survey maps are designed for general planning purposes and are not at a scale appropriate for site specific use. A site specific soils map should be done by a licensed professional soil scientist wherever there are concerns about the capability of the land for development. To locate a certified soil scientist, please visit the Joint Board of Licensure and Certification for a current list of certified soil scientists: <http://www.nh.gov/jtboard/>.

Up-to-date soils information can be found on NRCS's WebSoil Survey website located at <http://websoilsurvey.nrcs.usda.gov/app/>. For additional help, the Town may contact their local NRCS office and/ or Conservation District, located at 19 Archertown Road, Suite 1, Orford, NH 03777 or by phone at 603-353-4651.

Ashland's soils are well suited for forestry purposes. As seen in the Table B below from the Granit mapping tool by UNH, the majority of Ashland's soils are Forest Soil Group IA, which contains deeper, loamy textured, moderately well, and well drained soils.

**Table B: Summary Forest Soil Group Acreage Report
Official Data for the Town of Ashland**

Status	Acreage
Total Acreage	7533.8
IA	2300.3
IB	246
IC	1266.6
IIA	3131.5
IIB)	202.2

Per the NRCS Data Dictionary, the definitions of these forestry soils for Grafton County are as follows:

IA This group consists of the deeper, loamy textured, moderately well, and well-drained soils. Generally, these soils are more fertile and have the most favorable soil moisture relationships. The successional trends on these soils are toward stands of shade tolerant hardwoods, i.e., beech and sugar maple. Successional stands frequently contain a variety of hardwoods such as beech, sugar maple, red maple, white birch, yellow birch, aspen, white ash, and northern red oak in varying combinations with red and white spruce, balsam fir, hemlock, and occasionally white pine. Hardwood competition is severe on

these soils. Softwood regeneration is usually dependent upon persistent hardwood control efforts.

IB The soils in this group are generally sandy or loamy over sandy textures and slightly less fertile than those in group IA. These soils are moderately well and well drained. Soil moisture is adequate for good tree growth, but may not be quite as abundant as in group IA soils. Soils in this group have successional trends toward a climax of tolerant hardwoods, predominantly beech. Successional stands, especially those which are heavily cutover, are commonly composed of a variety of hardwood species such as red maple, aspen, paper birch, yellow birch, sugar maple, and beech, in combinations with red spruce, balsam fir, and hemlock. Hardwood competition is moderate to severe on these soils. Successful softwood regeneration is dependent upon hardwood control.

IC The soils in this group are outwash sands and gravels. Soil drainage is somewhat excessively to excessively drained and moderately well drained. Soil moisture is adequate for good softwood growth, but is limited for hardwoods. Successional trends on these coarse textured, somewhat droughty and less fertile soils are toward stands of shade tolerant softwoods, i.e., red spruce and hemlock. Balsam fir is a persistent component in many stands, but is shorter lived than red spruce and hemlock. White pine, red maple, aspen, and paper birch are common in early and mid-successional stands. Hardwood competition is moderate to slight on these soils. Due to less hardwood competition, these soils are ideally suited for softwood production. With modest levels of management, white pine can be maintained and reproduced on these soils. Because these soils are highly responsive to softwood production, especially white pine, they are ideally suited for forest management.

IIA This diverse group includes many of the same soils as in groups IA and IB. However, these mapping units have been separated because of physical limitations which make forest management more difficult and costly, i.e., steep slopes, bedrock outcrops, erosive textures, surface boulders, and extreme rockiness. Usually, productivity of these soils is not greatly affected by their physical limitations. However, management activities such as tree planting, thinning, and harvesting are more difficult and more costly. Due to the diverse nature of this group, it is not possible to generalize about successional trends or to identify special management opportunities.

IIB The soils in this group are poorly drained. The seasonal high water table is generally within 12 inches of the surface. Productivity of these poorly drained soils is generally less than soils in other groups. Successional trends are toward climax stands of shade tolerant softwoods, i.e., spruce in the north and hemlock further south. Balsam fir is a persistent component in stands in northern New Hampshire and red maple is common on these soils further south. Due to abundant natural reproduction in northern New Hampshire, these soils are generally desirable for production of spruce and balsam fir, especially pulpwood. Red maple cordwood stands or slow-growing hemlock sawtimber are common in more southerly areas. However, due to poor soil drainage, forest management is somewhat limited. Severe windthrow hazard limits partial cutting, frost action threatens survival of planted seedlings, and harvesting is generally restricted to periods when the ground is frozen

Ashland does have viable farms and increased interest in farming and community gardening. As the "Farmland Soils & Aquifers" map shows, Ashland has limited soils listed as prime farmland soils, soils of statewide importance, and soils of local importance. Soils of local

importance is defined as farmland that is not prime, unique or of statewide importance, but has local significance for the production of food, feed, fiber and forage. Criteria for the identification and delineation of local farmland is determined on a county-wide basis by the individual County Conservation District Boards. The original criteria were established on June 20, 1983. Updates are noted according to the county initiating the update. The criteria for soils of local importance is as follows for Grafton County:

- Soils that are poorly drained, have artificial drainage established and are being farmed;
- Specific soil map units identified from the NRCS county soil survey legend, as determined by the Conservation District Board;
- All land that is in active farm use.

The conservation of good farmland and forestry soils should be a priority in Ashland to maintain this historic and important industry.

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Water Resources

Water quality is Ashland's top natural resource priority. Ashland's water resources include: Little Squam Lake, Squam River, Owl Brook, Mill Pond, Grist Mill Pond, Ames Brook, the Pemigewasset River, and several unnamed water bodies. Below are some data that will help understand and conserve our water resources. At the end is a list of Ashland's impaired waterbodies. As this list is large for a small town such as Ashland, it should be a priority of the Town to work with the NH Department of Environmental Services in improving these waterbodies, continue monitoring, and work with residents to implement Best Management Practices in order to improve and conserve our water resources.

Summary Shoreline Buffer Acreage Report

Acres presented here are based on surface water features selected from the New Hampshire Hydrography Dataset (see metadata for a listing of the FCODES used) and may differ from previously reported totals.

Data Status	Acreage
Total Acreage	7533.8
Surface Water Acreage	329.2
Perennial/Intermittent Streams and Shoreline Length (feet)	151230.6
Perennial/Intermittent Streams and Shoreline Buffer at 50ft	245.4
Perennial/Intermittent Streams and Shoreline Buffer at 100ft	481.2
Perennial/Intermittent Streams and Shoreline Buffer at 150ft	703.9
Perennial/Intermittent Streams and Shoreline Buffer at 200ft	914.1
Perennial/Intermittent Streams and Shoreline Buffer at 250ft	1118.5
Perennial/Intermittent Streams and Shoreline Buffer at 300ft	1319.4
Perennial Streams and Shoreline Length (feet)	124576.5
Perennial Streams and Shoreline Buffer at 50ft	184.9
Perennial Streams and Shoreline Buffer at 100ft	362.7
Perennial Streams and Shoreline Buffer at 150ft	533.6
Perennial Streams and Shoreline Buffer at 200ft	698.8
Perennial Streams and Shoreline Buffer at 250ft	860.5
Perennial Streams and Shoreline Buffer at 300ft	1019.6

Floodplain

Summary Floodplain Acreage Report

Data Status	Acreage
Total Acreage	7533.8
Floodway areas in zone AE	275.4
Zone AE (100 year SFHA)	159.7
Zone AO (100 year SFHA)	0
Zone A (100 year SFHA)	377.3
Zone X (500 year SFHA)	0.5
Zone VE (Coastal flood zone)	0
Upland	6720.9

Wetlands

Summary Palustrine Wetlands Acreage Report

Data Status	Acreage
Town Acres	7533.8
Emergent Wetlands	16.1
Forested Wetlands	49.2
Scrub-Shrub Wetlands	11
Other Palustrine Wetlands	34.3
Total Palustrine Wetlands	110.6
Percent of Town	1.5

Impaired Waters

Below is a list of Ashland's water resources of concern from the NH Department of Environmental Services 2008 List of Impaired or Threatened Waters, which can be found at http://des.nh.gov/organization/divisions/water/wmb/swqa/2008/documents/appendix_06_all_impaired.pdf. The following chart below is just a sampling of the information available in the full report.

Water Name	Water Size	Use	Impairment Name	Source Name
Little Squam Lake- Ashland Town Beach	0.752 Acres	Primary Contact Recreation	Escherichia coli	Source Unknown
Grist Mill Pond	25.010 Acres	Aquatic Life	Non-Native Aquatic Plants	Source Unknown
Pemigewasset River	3.890 Miles	Aquatic Life	pH	Source Unknown
Squam River	0.170 Miles	Aquatic Life	Non-Native Aquatic Plants	Source Unknown
Squam River	0.440 Miles	Aquatic Life	pH	Source Unknown
Squam River	0.440 Miles	Aquatic Life	Habitat	Source

			Assessments (Stream)	Unknown
Squam River	0.440 Miles	Aquatic Life	Benthic Macroinvertebrate Assessments (Stream)	Source Unknown
Unnamed Brook to Winona Lake	1.500 Miles	Aquatic Life	pH	Source Unknown
Unnamed Brook to Winona Lake	1.500 Miles	Primary Contact Recreation	Escherichia coli	Source Unknown

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Flora and Fauna

Ashland has a diverse assemblage of flora and fauna both permanent and seasonally. In order to conserve the natural resources of Ashland, high quality habitats should be identified and put on a priority for conservation. Below is a list of rare species and exemplary natural communities as known by the NH Natural Heritage Bureau. Whenever possible, accompanying habitats should be promoted for the preservation of these organisms.

New Hampshire Natural Heritage Bureau Rare Species and Exemplary Natural Communities

Ashland

Town years:	Flag	Species or Community Name	# Locations Reported Listed? in the last 20		
			Federal State	Town	State
		Plants			
		Ginseng (<i>Panax quinquefolius</i>)	-- T	Historical	75
		Hidden Sedge (<i>Carex umbellata</i>)	-- E	Historical	12
		Loesel's Twayblade (<i>Liparis loeselii</i>)	-- T	Historical	24
		Small Whorled Pogonia (<i>Isotria medeoloides</i>)	T T	Historical	50
		Vertebrates - Birds			
	**	Common Loon (<i>Gavia immer</i>)	-- T	1	270
		Vertebrates - Reptiles			
	***	Wood Turtle (<i>Glyptemys insculpta</i>)	-- SC	1	1

Listed?

E = Endangered T = Threatened

Flags **** = Highest importance These flags are based on a combination of (1) how rare the species or community is and (2) how large or healthy its examples are in that town.

*** = Extremely high importance

** = Please contact Natural Heritage Inventory at (603) 271-3623 to learn more

** = Very high importance about this or alternative ways of setting priorities.

* = High importance

Recommendations

The Ashland Conservation Commission recommends the following recommendations to conserve the natural resources of Ashland.

- The Ashland Conservation Commission promotes conservation of natural areas wherever possible. The Town of Ashland should work with local land trusts to identify high quality land that would benefit from land conservation.
- Invasive plants, from Variable-Leafed Milfoil to Japanese Knotweed, are a growing issue in Ashland. These species are crowding out our native species, causing economic damage through reduced property values, and reducing the value of our water, forests, and grassland. For the protection of the natural resources, a comprehensive mapping project of Ashland's invasives should be done and comprehensive Integrated Pest Management plans should be prepared and implemented in the most affected lands.
- Little Squam Lake and the Squam River are important to every aspect of life in Ashland. To further protect and enhance the water quality of these important waterbodies, the Ashland Conservation Commission recommends the following:
 - Work with partners such as the Squam Lakes Association to continue water quality monitoring in Little Squam Lake.
 - Work with the NH Department of Environmental Services Volunteer River Assessment Program to establish a water quality monitoring program in the Squam River.
 - Work with partners to work on issues such as stormwater management, riparian buffers, erosion control, and invasive species control for the benefit of all water bodies.
- Whenever possible, habitats supporting rare, endangered, or threatened species or species of concern should be preserved for these organisms.
- Vernal pools are important yet often overlooked habitats that are located in Ashland. These habitats constitute the sole breeding locations for species such as the Spotted Salamander and Wood Frogs. Though known to exist in Ashland, these habitats need to be mapped for further study and protection.
- The conservation of good farmland and forestry soils should be a priority in Ashland to maintain this historic and important industry.
- More volunteers are needed to work on natural resource inventories, Lake Hosting at the Ashland boat ramp, water quality monitoring, town clean-ups, and other activities that will improve the natural resources in the Town of Ashland.