

## **8. NATURAL RESOURCES**

### **INTRODUCTION**

Newton's aesthetic beauty is its greatest asset. In a 1996 survey, the majority of respondents cited the rural character of the town as the primary reason they chose to live here. In the same survey, the reduction of open spaces and woods was given as the most serious local problem facing the town. The town's natural resources, including open spaces and woods, create the scenic quality of the town. To preserve this quality, we must actively protect Newton's natural resources .

### **WETLANDS**

The 1996 town survey identified environmental protection as one of the top three areas where improvement was necessary in the town. Protecting wetlands protects the overall environment by helping to protect groundwater drinking supplies, protecting wildlife habitat, and by providing flood control. Wetlands also serve as open, undeveloped spaces - important for maintaining our rural character, as well for buffers to noise and visual pollution around developed areas.

### ***NEWTON'S WETLANDS RESOURCES***

Soil that is unable to drain water away from the surface creates wetlands. Approximately 25%, or 1543 acres of Newton's 6336 acres, consists of poorly drained or very poorly drained soils, defined 1987 by the Army Corps of Engineers as wetlands. The Newton Prime Wetlands Report, prepared in 1992 by Gove Environmental Services, documents over 230 wetland areas. It recommends classification of twelve of these wetlands, comprising over 725 acres, as Prime Wetlands<sup>1</sup>. Not identified in this report are vernal pools - small seasonal pools that create significant habitats for reptiles and amphibians. Environmentalists have begun to recognize the importance vernal pools offer to the biodiversity of a region, and many areas have begun to identify and protect these tiny wetlands. Schools, clubs, and special interest groups have all taken part in these types of projects.

A significant component of a wetland's health and biodiversity is the uplands that surround it. Many animals, especially the larger mammals, require both wetlands and uplands habitat. Development of the surrounding uplands can reduce the biodiversity within the wetlands through direct habitat destruction and by disrupting wildlife corridors. In addition, pollutants from surrounding uplands can significantly damage the quality of the wetland. When considering wetlands preservation it is important to consider the contribution of surrounding lands to that preservation.

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<sup>1</sup> The New Hampshire Wetlands Board is required to give special consideration to the Prime Wetlands, while continuing to regulate activities in all wetlands. It identifies the wetlands considered of highest importance to the town, especially during the Dredge and Fill permitting process.

## ***THREATS***

Potential threats to Newton's wetlands are primarily the threats to our water supply. These are detailed in the Water Resource Management and Protection Plan chapter of the Master Plan. Specific threats to our wetlands include:

- Small incursions by homeowners: dumping of yard waste into wetland areas, or minor filling
- Fragmentation of wildlife habitat: disrupting wildlife corridors or destruction of upland habitat through development
- Excess nutrient loading caused by lawn fertilizers
- Pollution from the use of pesticides and herbicides
- Pollution from failing septic systems
- Excess flooding from impervious surfaces, such as roofs and parking lots

## ***EXISTING POLICIES AND PROCEDURES***

The town of Newton has an existing Wetland Zoning Ordinance that serves to protect the Wetlands from improper development. The significance of this ordinance is reviewed in the Water Resource Management and Protection Plan chapter of this Master Plan.

Wetlands are also protected at the state and federal levels. While state and federal regulations may provide broader protection, especially in the future, they do not guarantee enforcement. Local ordinances provide for local enforcement, ensuring the concerns of the community are addressed. The protection of surrounding uplands and wildlife corridors are not currently addressed in town zoning ordinances.

## **SOIL**

Soil information is critical for sound land use decisions, particularly in Newton where sewage disposal is limited to on-site septic systems and water comes from private wells. Certain types of soils are better suited to some activities than others. For example, an area with a high water table, unstable soil, and slow percolation rates is a poor choice for residential development because of the severe constraints on placement of building foundations and septic systems. An area with level topography, good drainage, and few rocks in the soil is well suited to agricultural use. For additional information see Current Soils Information.

## ***SOIL RESOURCES***

Newton's soil was surveyed in 1979 by the USDA Soil Conservation Service (SCS) and the Southern Rockingham Regional Planning District Committee. They gathered information such as drainage, soil type, depth to high seasonal water table, slope, bearing strength, and susceptibility to frost action. Using a well developed soil classification based on the relative cost of placing dwelling units and septic systems, the SCS and the Regional Planning Committee created a soils potential map, which is included as Map 10.

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Based on the soils potential rating system, 1748 acres (28.2%) of Newton's land area are considered to have a very high potential for development and septic systems. The cost of installing a septic system in this type of soil is lower than any other soil classification.

About 1407 acres (22.7%) have a high potential for development. Development costs in these areas are also low.

About 763 acres have medium potential; soil limitations add significantly to the cost of septic system installation.

Only 372 acres (6%) are ranked as low potential. In these areas, overcoming soil limitations is very costly.

In 1693 acres (27.3%), soil potential is very low. In these areas, installation of a septic system is infeasible due to wet soils or severe slope. Some of this land is directly protected by Newton's wetlands ordinance.

The remaining 217 acres (3.5%) of Newton's land was considered unclassifiable because natural soil conditions had been altered. On-site inspections are necessary to determine actual soil potential in these areas.

### ***THREATS TO NEWTON'S SOILS***

While soil characteristics are important for land-use planning, it is the soil itself that keeps our water clean and free of pollutants from septic systems and other sources. Prevention of soil erosion, on the other hand, is critical to maintain our wetlands and preserve the contours of the land.

Potential pollution threats to our soil are also threats to our water supply and are dealt with in the Water Resource Management and Protection Plan chapter of this Master Plan.

Erosion occurs primarily when vegetation is cleared from slopes, or when development creates a drainage path away from the natural drainage in an area.

### ***EXISTING POLICIES AND PROCEDURES***

In 1979, the Newton Planning Board adopted the use of soil potential for planning and subdivision purposes. The Zoning Ordinance ties lot size directly to soil potential. By tying development density to the soil's capacity to assimilate waste effluent, soil-based lot sizing ensures that groundwater will not be degraded by recharge from septic systems. This ordinance creates a foundation for good land use. Soil potential is useful as a planning guide for generalized land use determinations; however, it may not be suitable for site-specific evaluations because it generalizes soil type over a large area. For site specific information, High Intensity Soil Mapping may be more appropriate.

The Wetland Zoning Ordinance protects much of the land where soil potential is very low.

The Non-residential site Plan Review Regulations and the Subdivision Regulations include grading, drainage, and erosion control requirements that help to protect the land from erosion.

## **GEOLOGICAL RESOURCES**

10,000 years ago, the land that is now Southern New Hampshire was at the edge of a great glacier. This glacier carved peaks and scooped out Country Pond. Large chunks of ice dropped off the glacier. As it receded, the glacier deposited debris all around these ice chunks. When the ice melted, a depression was left in the debris, called a kettle hole. Often the kettle hole filled with water, forming a pond, one of which is Ice House Pond. Streams ran through the glacier, carrying large quantities of debris. As the glacier melted, this debris deposited on the ground in long ridges called eskers.

Drumlins formed at the edges of the glacier. Part bedrock and glacial till, or all till, drumlins are unique because the long sides of all the rocks and sand grains in the drumlin are aligned with the direction of the glacier's movement. There are several drumlins in Newton including Indian Mound and the hill behind Highland Cemetery.

Bugsmouth Hill off Currierville Road had its beginnings many millennia before the glaciers. It is the basalt from an ancient volcano. Erosion has taken away the rest of what must have been a massive mountain, leaving us with a unique legacy to contemplate and learn from.

## **FORESTS AND OTHER PLANT LIFE**

What was once primarily cleared agricultural land, Newton is now heavily forested. The trees provide a significant resource for firewood both for individual homeowners and commercially (Benjamin Firewood for example). Highland Tree Farm grows Christmas trees commercially showing another benefit to this natural resource.

The bigger benefits that the forests provide to Newton residents are not commercial; they include water resource protection, air quality maintenance, energy conservation, wildlife habitat, and aesthetic beauty. In addition to more common stands of oak, sugar maple, and white birch, which beautify our roadsides, Newton also has rare Atlantic White Cedar swamps, which may harbor threatened or endangered plant and animal species.

## **WILDLIFE, GAME AND NON-GAME**

The extensive woodlands and the abundance of water make Newton a prime area for many types of wildlife.

### ***SPECIES OF SPECIAL CONCERN***

- Spotted turtles
- Blandings turtles
- Pied-billed grebes
- Bluebirds

## ***OTHER NEWTON INHABITANTS***

- Beavers
- Ground Hogs
- Deer
- Bear
- Foxes
- Red & flying squirrels
- Skunks
- Coyotes
- Blue herons
- Bats
- Wild turkeys
- Bard owls
- Porcupines
- Hawks
- Pileated woodpeckers
- Opossums

Preserving open land and maintaining corridors for these other inhabitants of the town, as well as migration corridors for seasonal inhabitants, will ensure our children the opportunity to enjoy this diversity .

## **AIR**

While much of Newton's air quality is beyond the control of town officials, air pollution from chemicals used in manufacturing, sandblasting, and continued use of single passenger automobiles can degrade local air quality.

## **OPEN SPACE, CONSERVATION LANDS, & TRAILS**

The reduction of open spaces is the most serious problem Newton faces today, according to the 1996 resident survey. Open spaces create much of the scenic quality of Newton, but also offer the opportunity for recreation, and buffers between developments . Open spaces provide for food production, wildlife habitat, natural resource conservation, air purification and the production of oxygen, water purification, and flood control.

Within Newton's current open spaces are many trails. This informal trail system benefits many residents who use them for walking, jogging, hiking, skiing, snow-shoeing, horse-back riding, snowmobiling, mountain biking, and other recreational vehicle use. With no

formal protection of these informal trails, developments have been sited in the middle of well-used paths, preventing passage from one side of the development to the other. With the great number of residents who benefit from these trails, it makes sense to put a system in place that makes protection of the trails in the best interest of landowners and developers alike.

## **SITES AND FEATURES OF SPECIAL INTEREST**

### ***AREA #1\*. F.X. SCHMID LAND, SOUTH MAIN STREET - 209 ACRES - LIGHT INDUSTRIAUCOMMERCIAL***

In 1998 this parcel was purchased by the F.X. Schmid company, which will develop 10-15 acres. The remainder of the land contains wetland areas and diverse topographical features as well as good wildlife habitat. The PNGTS pipeline cuts through the property allowing for possible trail access.

### ***AREA #2\*. PEASLEE CROSSING ROAD, WEST SIDE - 30+/- ACRES***

This is a wooded, hilly piece of land that abuts the town schools. Trails across the parcel are used for practice by the cross-country track team. It provides an easily accessible recreation area for Newton Junction residents.

### ***AREA #3\*. FOREST REYNOLDS PROPERTY, THORNELL ROAD - 30+ ACRES***

This parcel contains open fields, woodlots, a pond, and historically significant farmhouse and barn. The property has ½ mile of frontage with picturesque stone walls and scenic fields along Thornell Road.

### ***AREA #4\*. ATLANTIC WHITE CEDAR SWAMP, BACKLAND, CENTER OF TOWN - 85 ACRES***

This area was identified as qualifying as a Prime Wetland. It represents a large area of rare Atlantic White Cedar and is bisected by the Peanut Trail, an old railroad bed purchased by the town and used as a recreational trail. This handicapped accessible trail provides good access and viewing of the area, making it extremely valuable for educational purposes. The area supports diverse wildlife including deer, birds, beaver, fox, and coyote.

### ***AREA #5\*. NICOL FARM - 170 ACRES***

This large tract is the only remaining working farm in Newton. It is the backland directly behind town Hall and the center of town. The farm is bisected by a town trail. This farm contributes one of the most significant pastoral views in Newton. Development of this land would represent a significant change for Newton and greatly diminish its rural character. Previously the community has supported the Nicol Farm when zoning changes were proposed that would have threatened its continuance. The town should take steps to insure that farming remains a viable business in town by assisting in permanently protecting this parcel from development.



**AREA #6\*. CURRIERVILLE ROAD**

The north side of this scenic dirt road is comprised of 27 town-owned acres designated as Conservation Land by town vote. This parcel is adjacent to State Fish and Game Land in Newton and to privately protected land in South Hampton. The combined area represents several hundred acres. This remaining land in this area consists of land that could be subdivided into single-family house lots. This would cause significant changes to this scenic area of Newton.

**AREA #7\*. BUSCH FARM, NORTH MAIN STREET**

Newton voters elected to purchase this parcel for preservation as open space.

**AREA #8\*. ROWES CORNER MARDEN'S POND, NORTH MAIN STREET**

This area contains a small pond with a picturesque dam and spillway as well as historically significant buildings. To many, this represents the center of town and is a landmark. It contains a general store, the police station, a highly visible wetland area, and many historic homes.

**AREA #9\*. GOULDS HILL ROAD**

This is a short (3/10 mile) scenic road with rock walls and overhanging maple trees. It represents the essence of a New England country road and should be preserved as such.

**AREA #10\*. STROANACH PROPERTY, ACCESSIBLE VIA BARTLETT STREET - 40 ACRES**

This town-owned parcel was voted as conservation land. It borders Country Pond and contains wetlands, ponds, open fields, and wooded areas. It provides good recreational value, wildlife habitat, and historical significance. Adjacent undeveloped land should be considered for purchase since the area contains Newton's highest yielding aquifer.

**AREA #11\*. COUNTRY POND, NEWTON AND KINGSTON**

This great pond is ringed by development and is threatened by contamination from a Super Fund site. Continued conversion of camps into year round homes may degrade water quality. This pond and town beach provide recreational value, wildlife habitat, and aesthetic value. Measures to limit future development should be taken. This could include purchasing the development rights to any remaining undeveloped parcels and the islands. Community septic systems could be built to protect the pond's water quality.

**AREA #12. TOWN FORESTS**

While Newton does not have one specific Town Forest, there are many parcels of town land that make up the forest land. They are all beneficial to wildlife, air quality, and recreational pleasure for everyone in Newton.

**AREA #13. GREENIE PARK**

Located on Heath Street, this park was deeded to the town in 1971. It covers an area of 30.6 acres of which approximately 5 acres are developed. The park has an official size

Little League field, one youth softball field, one basketball court, one tennis court, a paved area for rollerblading which is currently being used for skateboarding, a playground for tots, portable toilets (seasonal), a parking area and a concession/storage building.

#### **AREA #14. PEANUT TRAIL**

This popular multi-use recreational trail is an abandoned railroad bed running from the western point on Whittier Street through the Atlantic White Cedar swamp to the fire station on South Main Street. As the trail continues easterly across Main Street to the Massachusetts border in Merrimac, it becomes closed to motorized traffic.

#### **AREA #16. CAVES**

There are several caves in Newton, posing geographic and historic interest . To prevent trespassing on private property, their locations are not mentioned here, however, these sites should be preserved for future residents of the town.

#### **AREA #17. INDIAN MOUND DRUMLIN**

There are several sites in Newton that were created by glaciers, including a number of drumlins . The long sides of all the rocks and sand grains in the drumlin are aligned with the direction of the glacier's movement. Indian Mound is an excellent example of a drumlin .

\*Denotes those areas recommended by the Conservation Commission .

## **RECOMMENDATIONS**

### **WETLANDS**

In addition to the Recommendations for New or Revised Policies and Programs provided in the Water Resource Management and Protection Plan, the following recommendations specifically address wetlands management:

#### **Regulatory Programs**

- The most important step in wetlands preservation is to enforce the existing regulations. Since the quality of our wetlands directly affects our drinking water, this enforcement should take a high priority.
- Additional protection can be maintained for a large portion of Newton's wetlands by adopting the Prime Wetlands designation as recommended in the Newton Prime Wetlands Report.
- Amending the zoning ordinance to require adequate storm water retention facilities for large areas of hard surface such as roofs or parking lots will reduce excess flooding.

- By expanding the wetlands ordinance to regulate activities in uplands and wildlife corridors, the town can preserve the natural biodiversity within the wetlands, and further protect water quality .
- Adding protection of vernal pools (refer to 8-1) to our wetlands ordinance will enable us to actively protect those pools that have been identified, and will encourage preservation of vernal pools in the future.
- Encourage the use of composting toilets in environmentally sensitive areas, such as Country Pond.
- Consider establishing a shoreland protection district and ordinance . Such a district could include the Town's shoreland along its major watercourses and along other smaller brooks. Regulations should include setbacks for buildings and septic systems, cutting restrictions for timber removal, minimum shoreland frontage requirements, and a prohibition on certain high-risk land uses.

### ***Non-Regulatory Programs***

- Supporting a program to identify Newton's vernal pools will help us identify these small, important parts of our ecosystem.
- The Conservation Commission should help to educate homeowners about the undesirability of using pesticides and herbicides near sensitive areas. This could be done through the schools, at town events, such as voting day or Newton Day, or through flyers passed out with building permits or tax bills, etc.
- The town should consider periodic studies of pollution in our wetlands.
- The planning board should keep in mind the cumulative effects of development and human incursion on both water resources and the wildlife that depend on those resources.

### ***SOILS***

- The Planning Board should consider High Intensity Soil Mapping for site-specific evaluation of a site's potential for development .
- The Rockingham County Conservation District and the Office of State Planning have recently released model erosion and sedimentation control regulations . The Planning Board should consider adopting these extensive and comprehensive regulations.

### ***GEOLOGICAL RESOURCES***

- These geological features add to the beauty of the land around us. They should be preserved for future generations for study and recreation.

### ***FORESTS AND OTHER PLANT LIFE***

- Preserve the Atlantic White Cedar swamps and catalogue rare and endangered plant species.

## ***WILDLIFE***

- Open and wet areas should be preserved to keep our biodiversity .
- Protect wetlands uplands for corridors for wildlife.

## ***AIR***

- Require commercial enterprises using chemicals or sandblasting to adopt a zero-emissions policy.
- Encourage access to public transportation.

## ***OPEN SPACE, CONSERVATION LANDS, & TRAILS***

- The town should continue to support current use assessment as a cost-effective means of encouraging preservation of open space.
- The Conservation Commission should continue to identify high-potential, open-space land for acquisition by the town.
- The Conservation Commission should develop a landowner education program and provide information on conservation easements, estate planning and best management practices.
- The Conservation Commission should investigate public grants and trusts available to assist towns in purchasing open space lands. These include:
  - ᵀ The federal Land and Water Conservation Fund offers grants of 50% of the fair market value of lands acquired by governmental units for public recreation.
  - ᵀ The New Hampshire Fish and Game Department receives federal funds that cover 75% of fair market value of lands acquired by the Department for wildlife protection.
  - ᵀ Private foundations such as the Society for the Protection of New Hampshire Forests, the Nature Conservancy, and the Rockingham Land Trust offer funding for the preservation of natural resources.
- The Recreation Commission should develop a map of current trail systems, with the assistance of the Conservation Commission.
- The town should offer tax incentives for easements along trail routes.
- The Planning Board should require developers to preserve trail routes within a development, with tax incentives for permanent easements .