

ASHFIELD OPEN SPACE AND RECREATION PLAN



2018 - 2025

PREPARED BY:

ASHFIELD OPEN SPACE AND RECREATION UPDATE COMMITTEE

AND

FRANKLIN REGIONAL COUNCIL OF GOVERNMENTS

PLANNING DEPARTMENT

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SECTION 1: PLAN SUMMARY

The 2018 Ashfield Open Space and Recreation Plan is a comprehensive inventory of the Town's natural, agricultural and recreational resources and a plan for their stewardship and protection. It contains an analysis of the Town's needs and goals and objectives designed to guide important decisions about the use, conservation and development of the town's land and resources. A Seven-Year Action Plan provides real steps that the Town can take towards achieving these goals.

The Plan emphasizes the remarkable wealth of the Town's resources, including:

- Large blocks of contiguous forest
- Northwest to southeast ridgeline forming the dominant profile against which much of Ashfield is seen
- Prime farmland and working agricultural businesses
- Ashfield Plain
- Ashfield National Register District
- Route 112 and Route 116 Scenic Byways
- Abundant supplies of high-quality ground and surface waters, including Ashfield Lake
- Swift, Bear and South Rivers and other perennial and intermittent streams and wetlands
- Belding Park, DAR State Forest and other public parks, playgrounds and recreational resources
- Recreational trail systems that connect residents to the town's natural resources
- Scenic and historic landscapes, corridors and roads

These resources provide residents with clean air and water, jobs, and abundant and varied recreational opportunities. Ashfield's forests and farmland give the Town its rural character, contribute to the local property tax base, and are at the heart of what residents love about living here.

The Seven-Year Action Plan, developed from discussions at 11 public meetings and two Public Forums, identifies goals and objectives for the Town to focus on over the next seven years. The Ashfield Open Space and Recreation goals are:

- I. Protect the natural systems that support wildlife and provide clean water and air.
- II. Promote active farming and forest management.
- III. Protect Ashfield's cultural heritage and scenic resources.

- IV. Promote recreation that is rooted in the rural landscape.
- V. Promote zoning policies and planning procedures that channel growth to locations where it makes the most sense.

Ashfield is fortunate in comparison to many towns in Massachusetts, in that thousands of acres of land with important natural resources have been permanently protected from development, and that private property owners continue to maintain their land as farms and forest and practice good stewardship. Ashfield has parks and recreational assets utilized heavily by residents and that also serve as regional attractions. This plan update identifies these existing assets as well as needs and gaps. By identifying and prioritizing lands for protection and recreation improvements, the Town is in a better position to act when opportunities arise, and to be strategic in allocating town resources. Achieving the goals of this plan will require a concerted, cooperative effort on behalf of landowners, elected officials, municipal boards and committees and resident volunteers.



One of Ashfield's many dirt roads in fall. Photo by Mollie Babize.

SECTION 2: INTRODUCTION

A. STATEMENT OF PURPOSE

The purpose of this Open Space and Recreation Plan is to provide an accurate and thorough basis for decision-making involving the current and future open space and recreation needs of the residents of Ashfield. The update of the 2008 Plan represents consensus on the most important recreation and natural resource needs in town and on the best solutions for addressing them. The Seven-Year Action plan identifies steps which, when carried out by an Open Space Committee and other town boards and commissions, will move Ashfield closer towards successfully achieving its open space and recreation goals and objectives.

B. PLANNING PROCESS AND PUBLIC PARTICIPATION

The planning process for this update of the 2008 Open Space and Recreation Plan included the development of an Open Space and Recreation Planning Committee, a Public Forum to launch the update process, a series of working group meetings to develop the draft plan over the course of several years, and a Public Forum where the draft Action Plan was presented for comment.

The Open Space and Recreation Planning Committee was formed in 2015 to work on the update with assistance from the Franklin Regional Council of Governments (FRCOG) staff. In the first year, FRCOG began work on developing the required maps for the plan and an initial Public Forum was held on June 23, 2016 to provide information on the plan update process and to discuss Town residents' Open Space and Recreation priorities to help direct the work of the Committee. Nine residents attended the initial Public Forum. Committee members included the Town Administrator; members of the Agricultural Commission, Conservation Commission, Planning Board, Zoning Board of Appeals, Park Commission, Historical Society, Board of Health; and interested residents. The Committee met a total of 11 times between April 2016 and June 2018 to review draft sections and maps, and to plan for the public outreach components of the process.

On Thursday, May 24, 2018 a Public Forum was held at the Town Hall to present the draft Open Space and Recreation goals, objectives, and action items, and to gather feedback on priorities for the next seven years. The forum was advertised in the local newspapers and on the Town's website. Approximately 10 people attended the forum. Input from the forum was used to identify priorities in the Seven-Year Action Plan. Comments expressed at the public forum were recorded and included in Section 10: Public Comments. The draft plan was available on the Town website before the forum for public review.

SECTION 3: COMMUNITY SETTING

For 250 years, the landscape of the Town of Ashfield has delighted and challenged both residents and visitors. The undulating and verdant landscape climbs from its low point in the northeast corner, where the Bear River flows into Conway (700' above sea level), levels out briefly through the center of town, then dramatically rises to the peak of Peter Hill (1843') just west of Route 112 before dropping down toward Plainfield. In 2018, four-fifths of this rolling landscape remains wooded, the occasional openings and their unexpected vistas all the more spectacular as a result. This complex matrix of woodlands, farmlands and built lands is in transition, at times slow and other times dramatic, while the underlying hilly landform is slow to change. Developed land (roughly five percent of the land in town) reflects a dispersed, rural pattern, in contrast to the densely developed Ashfield Plain Historic District, listed as a National Register District Places in 1991, recognized by the National Register of Historic Places as having historical significance.

The frequent contrasts within this landscape—open fields backed by steep and forested hillsides, tree-canopied dirt roads revealing the occasional home, dispersed settlements leading to a compact historic village center, rain-charged streams tumbling along and under arterial roads—have been celebrated and enjoyed by each generation of Ashfield residents. For all the change the community has seen over the centuries, the underlying landform has remained, conferring Ashfield's hilltown identity.

The town's rural character and village landscapes have been formed by its human inhabitants over thousands of years, much of this history uncharted. Planning for open space and recreation in Ashfield must consider the complex relationships between people and the open spaces and natural resources upon which they depend. If development occurs without consideration for natural resources, such as drinking water supplies, the quality of life for current and future generations of Ashfield residents could be diminished over time.

The information provided in this section, *Community Setting*, inventories and assesses the human and land use components of the landscape, moving from the present, to the recorded past, and then to the potential future based on current development trends. The *Regional Context* gives a snapshot of Ashfield today and identifies the ways in which the location of the Town within the region has affected its growth and quality of open space and recreational resources. *History of the Community* looks back at the manner in which human inhabitants settled and developed the landscape and incorporates changes that occurred during the 50-year period from 1960-2010. Because the town's *Growth and Development Patterns* have been strongly influenced by this history, this section (D) has been moved to precede the statistical information and analysis described in *Population Characteristics*, which describe the current population, and how these population and economic trends may affect the Town in the future, including its open space, drinking water supplies, and municipal services.

A. REGIONAL CONTEXT

The Town of Ashfield is located in the southwestern corner of Franklin County in the Berkshire foothills of western Massachusetts, bordering on Hampshire County to the southwest. It is located approximately 11 miles west-southwest from Greenfield and 105 miles west-northwest of Boston. Its neighbors are the towns of Buckland, Conway, Goshen, Cummington, Plainfield and Hawley. Ashfield is divided more or less into four quadrants by two intersecting state highways: Route 116, which runs from Springfield north to Amherst, and then west to Adams; and Route 112, which runs from Huntington north to Colrain. Both Routes 112 and 116 are state-designated Scenic Byways. Travelers to and from Ashfield need to take one of these roads either south to Route 9, north to Route 2, or east to Routes 5/10 and I-91.

Major employment centers include Greenfield, the Franklin County Seat (about 20 road miles), Amherst, home of UMass (23 miles), Northampton (20 miles) and Springfield (43 miles). Ashfield's distance from major employment centers and lack of direct access to major railroads or highways has limited growth and preserved the town's rural landscape. Many residents have stayed here or moved here because they value this place and community enough to make working the land worthwhile, or they are self-employed or commute to jobs elsewhere.



Route sign on Cape street in Ashfield. Picture courtesy of the Ashfield webpage.

The commute itself is part of the reason many people choose to live in Ashfield. The views along Route 112 (Cape Street and Ashfield Mountain Road) include significant historic, archeological, natural, cultural and agricultural resources on either side of this highway. These outstanding vistas, in particular the section from the elementary school to Ashfield's town center, feature

protected agricultural land, set against ridgelines to the east, and embody the classic farm/forest character of Ashfield. For this reason, it was designated a Scenic Byway.

Similarly, Route 116 from Deerfield to Plainfield, was also designated a Scenic Byway. The approach through Conway along Route 116 is largely unchanged due to the steeply wooded hillside, carved by perennial and intermittent streams; hemlocks overhang the roadway much of the way since utility lines run through interior lands rather than along the highway. From the Conway/Ashfield town line, Route 116/Conway Road meanders past open fields and farmland, some (like the former Fitzgerald farm, now Double Edge Theater) are in permanent protection, other land (such as the Robertson farm in South Ashfield) in Chapter. The South River rushes

alongside the road, bringing to mind a few of the many mills that once anchored Ashfield's economy. The approach to town center—the rise in the road, the level and straight Main Street with its landmark buildings, open common, and tightly developed mixed use buildings—has its own drama and lets the driver know that he or she has arrived!

The roads that bring the commuter up from the busy valley, and the gateways that introduce the scenic and working character of Ashfield, are part of what its residents enjoy.

A.1 Regional Sustainability Plan Context

In 2013, *Sustainable Franklin County: Franklin County's Regional Plan for Sustainable Development* (RPSD) was completed by the Sustainable Communities Consortium including Community Action, Franklin County Regional Housing and Redevelopment Authority (HRA), North Quabbin Community Coalition (NQCC), Franklin County Community Development Corporation (FCCDC), and the towns of Greenfield, Deerfield, Montague, and Orange. The RPSD is a long-term guide for Franklin County municipal governments, regional organizations, businesses, non-profits, and individuals. Through extensive public participation, individual residents and representatives of many organizations contributed to the creation of the plan. The plan identifies issues and constraints, goals, and recommendations and strategies in seven subject areas: housing, transportation, economic development, energy, natural resources, cultural resources, and land use and infrastructure. The overall sustainable development goals that came out of the public participation process are as follows:

- Increase and improve the housing stock, while focusing on affordability;
- Provide additional options for alternative transportation;
- Encourage economic development, by redeveloping vacant sites;
- Promote energy conservation and efficiency;
- Protect natural resources, including farmland and drinking-water supplies;
- Foster the growth of arts and culture;
- Concentrate new growth near town centers and focus on infill development; and
- Improve infrastructure, particularly broadband.

The plan notes that the predominant residential development patterns in the county are converting farms and forests to residential lots and fragmenting the remaining farmland and forestland. The Approval Not Required (ANR) provision of the Subdivision Control Law allows for residential development along existing roads without Planning Board approval when frontage and access requirements are met. Combined with large lot zoning in many towns, which can require anywhere from one to four acres of land per home, the result is continual residential development spaced along town roadways, away from town centers. New subdivisions, while less common than ANR development, are also often located outside of existing town centers, further fragmenting the land and converting green spaces to development.

A.2 Natural Resources Context

Ashfield's 40 square miles drain into two watersheds, with a dividing line running roughly from the northwest corner to the southeast corner of the town. The first, the Deerfield River Watershed, comprises the more settled northeastern section of town, and is drained by Smith Brook, the Bear and South Rivers, and the Chapel Brook, all of which flow north and east into the Deerfield River or its tributaries. The second is the Westfield River Watershed, which gathers the southerly flow of the Swift River, Ford Brook and Taylor Brook in the west side of town. All are part of the Connecticut River Watershed, which empties into Long Island Sound.

Because of Ashfield's challenging topography, much of the steeper, interior lands remain forested. Large lots, particularly along the pronounced northwest to southeast ridgeline that separates the Deerfield River watershed from the Westfield River watershed, remain undeveloped. This ridgeline, which includes Peter Hill, Bug Hill, Seventy-Six Hill and Brier Hill, forms the dominant profile against which much of Ashfield is seen, as does Ridge Hill parallel to and east of Ashfield Mountain Road (Rt.112). In recent years, the volunteer efforts of mountain biking and hiking enthusiasts and the generosity of local landowners have made portions of these lands available through the establishment of many miles of Ashfield trails.

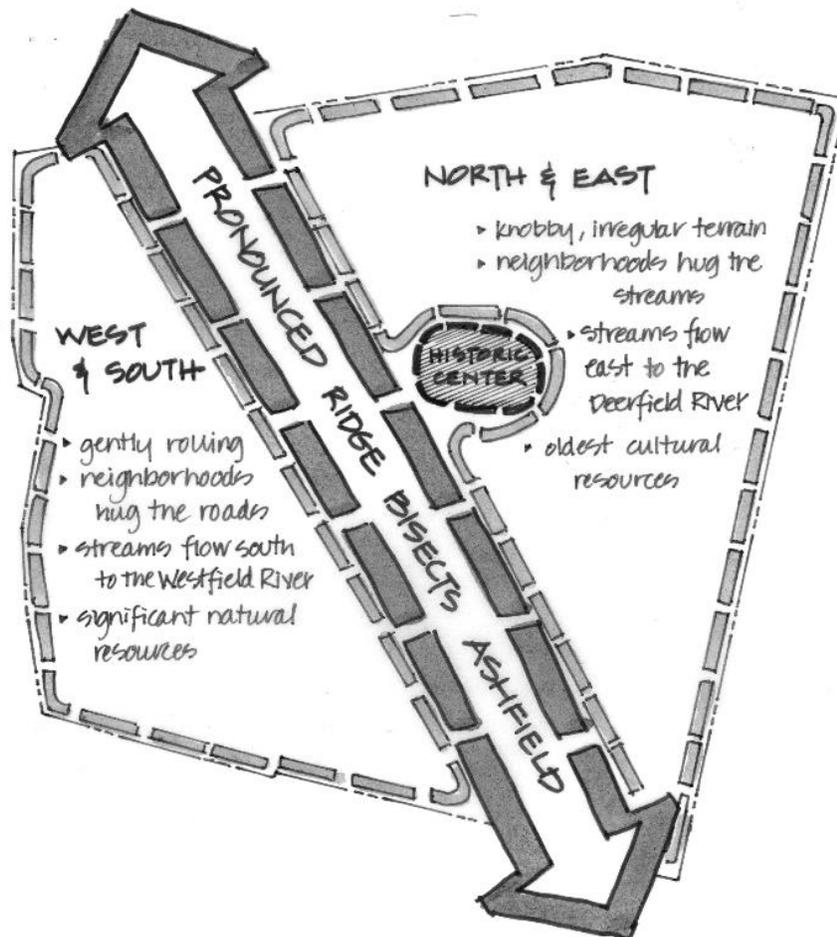


diagram by Mollie Babize

Near the center of town, Ashfield Lake feeds into the South River, and is a recreational site. In the southwest portion of town, a small portion of the Poland Brook Wildlife Management Area crosses into town, as does a portion of the Daughters of the American Revolution State Forest.



Ashfield Lake. Picture courtesy of the Ashfield webpage.

Ashfield, like the greater Franklin County region, has abundant forest

resources. Approximately 79 percent of Ashfield is forested.¹ Between 1999 and 2005, Ashfield experienced a 0.5% decrease in forest land use, representing a loss of approximately 115 acres. Forests may have been cleared for development, as well as for other purposes, such as farming or to support certain types of wildlife habitat. During that same period, residential development, primarily on low density lots greater than 0.5 acres, decreased by 467 acres.

In 2014, Harvard Forest published *Changes to the Land: Four Scenarios for the Future of the Massachusetts Landscape*,² an evaluation of the consequences of four different trajectories for how land use could change in the state over the next 50 years, with a specific focus on the impacts to the region's forests. The scenarios reflect different amounts and intensities of land development, timber harvesting, farmland expansion, and forest conservation.

The four scenarios are as follows:

- *Scenario #1: Recent Trends* – Represents a future in which recent patterns of forest conversion to development, agriculture, land conservation, and timber harvest resemble land use during the period from 1999 to 2005.
- *Scenario #2: Opportunistic Growth* – Represents rapid economic growth and new development with little environmental regulatory controls, no land use planning, and management of natural resources is directed by economic opportunity with little public oversight.
- *Scenario #3: Regional Self-Reliance* – Represents a future in which the region's reliance on oil, growing energy demands, and soaring food prices drive up interest in biomass harvesting for energy and clearing of forests for agricultural production to meet the food and energy needs of the region.
- *Scenario #4: Forests as Infrastructure* – Represents a future in which the forested landscape is actively managed and protected from development as valuable living infrastructure. As growth and development continue, emphasis is given to retaining

¹ 2005 MassGIS Land Use data.

² <http://harvardforest.fas.harvard.edu/changes-to-the-land>.

forests for carbon storage, renewable energy, local wood products, clean water, and habitat.

Key findings from the study show that the Forest as Infrastructure scenario ranked first in terms of benefits to people and nature. Under this scenario, accelerated land conservation targeted to areas of priority habitat would protect more than half a million acres of priority habitat by 2060. Widespread adoption of “improvement forestry” would maintain critical forest benefits while increasing local wood production. The majority of new development would be clustered and concentrated near existing cities and towns to minimize forest loss and reduce the impact of growth on water resources and forest habitat.

Finally, the study found that the loss of forests to development has more immediate and pronounced impacts on carbon storage and water quality than gradual forest changes associated with climate change. The report emphasizes how local land-use decisions can greatly influence the ability of the state’s forests to offset greenhouse gas emissions and moderate the effects of climate change. The overarching policy implications from the study are that there is much to gain by conserving forests and managing them well by:

- 1) Recommitting to land conservation;
- 2) Redoubling land-use policy and smart-growth efforts³ through local and state zoning reform that supports transit-friendly, walkable communities where new growth uses land efficiently and limits impacts on natural resources; and
- 3) Promoting sustainable forestry in the Commonwealth.

Farmland and prime agricultural soils are another natural resource of regional significance that is impacted by development. Currently approximately 10 percent of the land in Ashfield is actively being farmed. Protecting farmland and keeping it affordable is a key strategy to help ensure the region’s sustainability. Currently, only 25% of the region’s farmland is permanently protected.⁴



Hay for forage grown on prime farm soil. Picture by Ken Miller.

³ To learn more about Smart Growth, see the Massachusetts Executive Office of Energy and Environmental Affairs’ Smart Growth/Smart Energy Toolkit at http://www.mass.gov/envir/smart_growth_toolkit/.

⁴ *Sustainable Franklin County: Franklin County’s Regional Plan for Sustainable Development*. Franklin Regional Council of Governments, 2013. www.frcog.org.

The 2015 *Franklin County Farm and Food System Project* shows that Franklin County could have enough active farmland to achieve food self-reliance, working towards the goal to produce locally 50% of the vegetables, dairy and meat, and much of the grain and fruits, consumed in the County by the year 2060.

The project concluded that:

there would need to be substantial shifts in what Franklin County farmers grow and that production would need to at least double. To support this significant increase in production, there would need to be over 40,000 additional acres of land devoted to farming in Franklin County by 2060, some of which might be developed by bringing recently idle farmland back into production and by prioritizing developing land for farming on prime farmland soils.⁵

Recommendations in the plan to support increased production related to land include increasing farmers' access to land, through land matching and leasing as well as by making public-owned land available for farming, where appropriate. Other land recommendations include increasing the amount of land under permanent protection and preventing land from being converted from farming to other uses, in part by offering farmers more technical assistance with farm transition and estate planning.

B. HISTORY OF THE COMMUNITY

B.1 Native Americans in the Ashfield Area

The Connecticut River Valley was a vital crossroads for Native people of the Northeast, among them the Pocumtuck. Settlements clustered along the river itself, but the hills of what we now call Ashfield were vital hunting and fishing grounds for the Pocumtuck and likely other peoples within the Algonquian nation, whose movements responded to the change of seasons and availability of resources. A map included in a publication by the Massachusetts Historical Commission, *Historic & Archaeological Resources of the Connecticut River Valley*, shows primary routes along what is now Route 2 to the north and Route 9 to the south of Ashfield, with secondary trails that follow the approximate alignment of Route 116 east-west, along the eastern face of what we call Ridge Hill from the north, and southeasterly along what may be Williamsburg Road today. With colonization by predominantly English settlers, these people lost their rights to harvest these forests and waters as woodlands became farmland and the wood burned for potash.

B.2 Settlement of Huntstown and Incorporation of the Town of Ashfield.⁶

⁵ *Franklin County Farm and Food System*. Franklin Regional Council of Governments, 2015. www.frcog.org.

⁶ Information in this section is based on research by Nancy Gray Garvin from the following sources: Huntstown Proprietors Records, Huntstown Proprietors' Treasurer's Book, Tax and Voter Lists, Ashfield Town Hall; Hampshire County Deed Abstracts; Mark Williams, *The Brittle Thread of Life The New England Backcountry in the Eighteenth Century* (unpublished PhD. dissertation, Yale University, 2006), 396-403; Roy Akagi, "The Town Proprietors of the New England Colonies" (PhD. dissertation, University of Penn., 1923), 193; F.G. Howes, *History of Ashfield*, Vol. I; F.G. Howes, *Huntstown Proprietors Map*, Ashfield Wal Society; E.R. Ellis, *Biographical Sketches of Richard Ellis ...*(1888) Ashfield Historical Society; "A Record of the Plantings, Gathering and

Ashfield is a Proprietor Town, one of the sixteen Canada townships granted by Acts of the General Court of the Province of Massachusetts Bay to the officers and soldiers who had served in the failed 1690 Expedition to Canada during King William's War. The current town of Ashfield, first called Weymouth Canada, and then Huntstown to honor Captain Hunt, was granted in December 1735 to the sixty soldiers and mariners who went from Weymouth to Canada with Capt. Ephraim Hunt. Ephraim Hunt was deceased when his son, Ebenezer Hunt, and other members of the Expedition petitioned the Court for this land "in consideration of their hardships and Sufferings in said Expedition." They were granted a piece of land not to exceed "Six Miles square . . ." "Beginning at a Stake in Stones in Deerfield Westline . . ." This line is now Conway, which was formed from Deerfield in 1767. The Town was to be laid out in Sixty Equal Shares plus a school lot, a minister lot, and a church lot. This was done through a series of five divisions of the land with sixty-three lots in each division. The drawing for the first division lots took place in 1739, the second in 1762, the third in 1770, the fourth in 1782 and the fifth drawing in 1783. The fourth division lots were finalized at the drawing for the fifth division lots.

The Proprietors (the soldiers, their heirs, or their assigns) gathered in Weymouth in July 1739 to draw for their lots in the First Division. These lots had been laid out by five surveyors chosen by the Proprietors in 1738. The surveyors included John Phillips, one of the 1690 soldiers, and Daniel Owen, nephew of a 1690 soldier.

Each Proprietor drew for one of the sixty-three lots, each of about fifty acres, located in the northeastern part of town, and the rights to all future divisions. Some of these men had sold their lots before the first drawing. Some of the proprietors sold their rights to future divisions with the original lot. Others sold the rights to future divisions separately from the sale of their lots.

By 1742 at least twenty-six of the 1739 proprietors still owned their lots, but only one, Heber Honestman, had settled in Huntstown. Five of the 1690 soldiers were at the 1739 drawing. The rest of those drawing lots were heirs of the soldiers or their assigns. There were ten people who had purchased the right to draw from an heir. One of these was freed slave Heber Honestman, of Easton, who had purchased his proprietors' right from Josiah Prat, son and heir of 1690 soldier Samuel Prat. Heber Honestman drew Lot #1 and came to Huntstown with his family in the early 1740s to settle on this lot. In his Ellis genealogy, published in 1888, Dr. Ellis gave an undocumented, simplistic sequence of Huntstown settlers. He claimed that Richard Ellis, from Easton, was the first settler in 1745, Thomas Phillips, brother-in-law to Ellis, the second settler, and Chileab Smith, of Hadley, the third settler. Heber Honestman and the other settlers were not mentioned. This "history" continues to be promulgated today.

In 1739 Richard Ellis with his son, Reuben, built one of the first dwellings in Township #1 (now Westminster, Vt.) of which he was a proprietor. The Massachusetts Bay Colony had awarded Township #1 to the 1690 soldiers from Norton, which included Easton. Ellis was "of Deerfield"

Proceedings of the Baptist Church of Christ in Ashfield," Ashfield Historical Society; Newsletters, Ashfield Historical Society; Pat Smith and Nancy Garvin, "Route 112 Scenic Byway Corridor Management Plan, Archeological and Historic Resources" (FRCOG, 2009), 5: 22-26; Mass. Historical Commission, "MHC Reconnaissance Survey Town Report, Ashfield, 1982," Ashfield Historical Society; Warren Chase, "Notes on Old Deeds," Ashfield Historical Society; Mark Williams, "Corrections and Additions to Warren Chase's Notes," Ashfield Historical Society.

in 1741 when he sold this property. Beriah Chilson of Uxbridge was “of Huntstown” before August 1742 when Thomas Phillips was still “of Easton.” John Nightingale, from Braintree, was “of Huntstown” in 1742/43 when Chileab Smith was still “of Hadley.” Chileab Smith was “of Huntstown” by the spring of 1753 when he founded the Baptist Church with four family members.



One of Ashfield’s many graveyards documenting the past. Picture by Alan Rice.

The Proprietors appointed a committee of six men to build the first grist mill in 1744 on “Pond Brook,” now the South River, north of Plain Cemetery. By 1753 the Proprietors, who met first in Braintree, then in Hadley, and by 1764 in Huntstown, had built a saw mill and second grist mill on Bear River. In 1754 the newly constituted Court of Sessions recorded a ten rod road from

Deerfield to “Heber’s fence” on “Bellow’s Hill.” Of the fourteen families—from Deerfield, Hadley, Hatfield, Easton and Braintree—living in Huntstown in 1754, eight were Proprietors, namely Heber Honestman, Richard Ellis, Thomas Phillips, Josiah Rockwood, John Nightingale, John Sadler, Moses Smith, and Chileab Smith. Of these Proprietors, only Heber Honestman was at the original drawing in Weymouth. The others had purchased their lots after the drawing.

Several members of Capt. Ephraim Hunt’s family were at the 1739 drawing. Daniel Williams, of Easton, whose wife, Rebecca Hunt, was a granddaughter of Ephraim Hunt, purchased many of the rights to future divisions from these family members, for a total of more than 1600 acres. His son, Ephraim Williams, settled in Ashfield ca. 1775. By 1793, Ephraim Williams, great-grandson of Capt. Ephraim Hunt, was the largest land owner in town. His descendants still own some of this land.

In the years 1754 and 1755, residents were forced to leave the Town for some months for Fear of the Indians. By 1756 twenty-nine people had returned to the Town and fifty-four others were “scattered . . . for want of Protection.” They successfully petitioned the governor to build a stockade fort around Chileab Smith’s house. A second fort was purported to have been built in 1757 for the Ellis and Phillips family, one-half mile south of the Smith fort.

Huntstown was incorporated on 21 June 1765 as the Town of Ashfield, but the Proprietors continued to meet until the early 1800s. In 1766 sixty-eight property owners were listed on the tax and voter list. Besides those from Massachusetts, a group of settlers had come from Stafford,

Enfield, Middletown/Chatham, and other Connecticut towns. By 1776 the local population was 628 individuals. The population peaked at 1,809 in 1810 and then began a gradual decline as the War of 1812 ended and Ashfield residents began to move west. In 1830 it peaked at 1,832 and then steadily declined at each census. In 1940 Ashfield's population was 872. According to the U.S. Census, there were 1,737 residents in Ashfield in 2010.

By 1763, Jacob Sherwin, a Congregational minister and Yale University graduate from Hebron, Conn., had settled on "Bellows" Hill. Fifteen original members, including Heber Honestman, met at the home of Ebenezer Belding. By 1771 the Congregationalists had built a church on the Plain, located in the front section of what is now Plain Cemetery. In 1814 they moved into a new building on Norton Hill. In 1857 they hired Charles Tubbs of Springfield to move this building down to the Plain, after a second Congregational building had been built there. In 1868 the two congregations reunited. The 1814 building is now the Town Hall. In 1820 fourteen men established St. John's Episcopal Church. The present building was built in 1827 on a lot donated by Levi Cook.

In 1786 the original Baptist Church split over a dispute between Chileab Smith and his, son Ebenezer, the first Baptist minister. Chileab and his son, Enos, established a second church just over the line in Buckland. In 1798 the two churches reunited, but disbanded ca. 1850. Some of the members built a second Baptist church in South Ashfield in 1814 and disbanded in 1841. In 1867 another Baptist Society was formed. They disassembled and moved a building from Buckland to Ashfield. This building was later sold to the Grange and is now the Community Hall. The Universalist Church, established with sixty members in 1840, purchased the South Ashfield Baptist Church building in 1844. In 1868 they voted to adjourn and never re-opened. The Methodists met in the two room school house at Chapel Falls from 1832 to 1855.

As outlying areas of the town became populated, the town voted to establish various school districts. Each had its own schoolhouse. The first was Baptist Corner in 1766, to be followed in 1772 by a school on "the Plain" and the "Round School" in South Ashfield. In 1777 the town formed the Spruce Corner district. In 1782 Steady Lane, Briar Hill, Cape Street, Northwest and Wardville were established. In 1810 the Chapel District was formed from part of Briar Hill. In 1813 "Beldenville" was formed and in 1815 a second district was formed in South Ashfield. The two South Ashfield districts united in 1889 into a new building. In 1823 the town built a schoolhouse in New Boston (Watson). The fourteenth district in Apple Valley was not formed until 1845. The first Sanderson Academy was established by Rev. Alvan Sanderson in 1816 as a secondary school. Students paid tuition; they met in private homes and later in a building moved to Main Street from Steady Lane. In 1885 John Field donated land for a playing field. After his death his wife donated money for a school and library to be built in his memory on the playing field. The new school was dedicated in 1889. Education in the new building was tuition-free for Ashfield residents. This building burned in 1939. A new consolidated school building opened in 1940. It incorporated all twelve grades and the district schools closed. The 1940 building was taken down in 2002.

In the fall of 1967 Ashfield sent its 7 to 12 grade students to Mohawk. In 1970 Ashfield joined with Plainfield, Heath, and Rowe to form Mass. School Superintendent Union #65. In 1986 Ashfield and Plainfield joined to form the K to 6 grade Ashfield-Plainfield Regional School

District. In 1993 the state passed the Education Reform Act. This appears to have been the impetus for the Ashfield-Plainfield Regional School District and the Union #65 School District to join Colrain and Shelburne in becoming members of the Mohawk Trail Regional School District for grades K to 12. When the Mohawk Regional School District added Pre-K in the 2016-17, school year; Ashfield Community Pre-School shifted their programs to focus on toddlers.

Most of the early Ashfield residents would today be called subsistence farmers. They usually had one cow, a horse or oxen, and swine. Crops were mostly hay, corn, rye, and oats. There were 188 sheep on the 1766 tax valuation list. In 1821 there were 7,667 sheep. By 1840 Ashfield was the leading wool-producing town in the county. About 1812 Samuel Ranney began raising peppermint in South Ashfield by taking wild plants from the banks of the South River. He built a steam still to extract the oil. In 1821 the Town listed five distilleries on its tax assessments. At least one of these may have been used to distill cider into brandy from native apple trees growing mostly in Apple Valley. In 1824 over \$40,000 worth of peppermint oil was produced and in 1825 several hundred acres were planted to peppermint. Jasper Bement began using young men as itinerant peddlers to distribute household notions, distilled mint and other essences to outlying places in New England and upstate New York. Peddler Archibald Burnet went to Phelps, New York, took a job on a farm and married Experience Van Demark, daughter of his employer. The Burnet family brought mint from Ashfield to Phelps. It grew so well there that the Burnets, Ranneys, and other mint-growing families from Ashfield moved to Phelps by 1836 and took the mint industry with them.

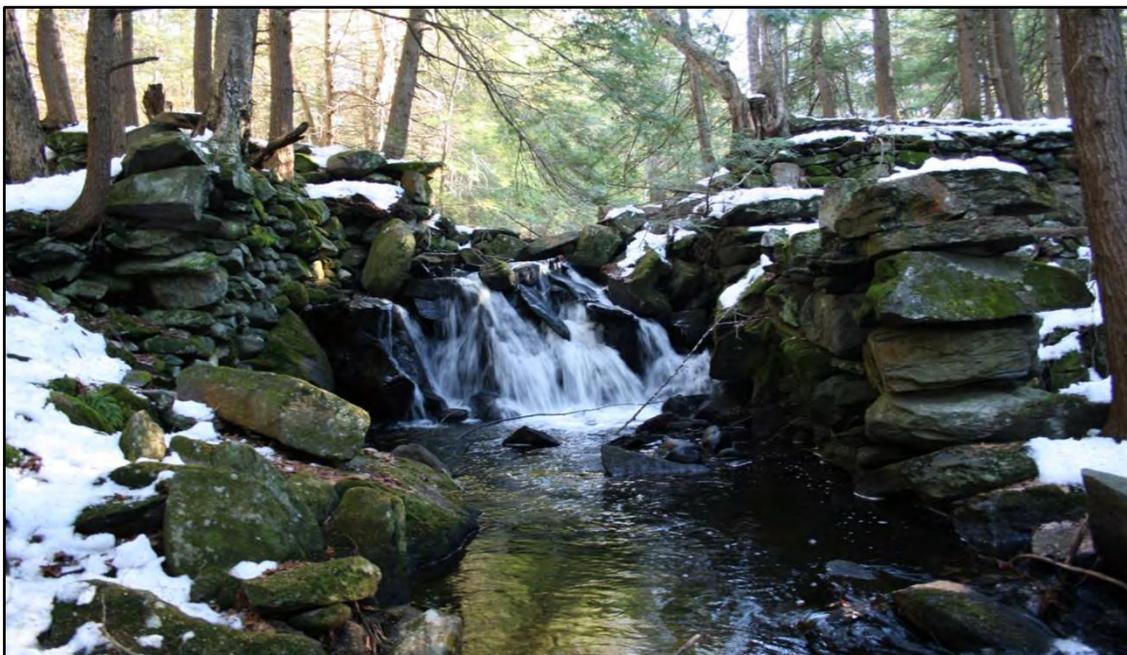
In the early 1800s Daniel Forbes began grafting apple trees and producing new varieties in Apple Valley. Apples became a major crop and are grown commercially today on the same farm. In 1855 Ashfield was the leading butter producer in the county; cheese was another common product. In 1855 there were fourteen sawmills. Small woodworking shops made items such as broom handles, axes, hoes, wooden faucets and surgical splints. There were tanneries, several carding and fulling mills, and a pottery in South Ashfield. In 1878 the Great Pond Dam, then privately owned, broke during a heavy rain and some of the industry on the South River was wiped out by the ensuing flood. By 1892 George Thayer operated a mill in Spruce Corner, earlier owned by Amasa Holbrook and Nelson Gardner, and made apple barrels. In 1900 Thayer & Harmon began manufacturing wooden handles. William Ford rebuilt his water-powered mill on Ford Pond in Watson after it burned in 1892. By 1910 he was manufacturing whip butts and apple barrels in connection with the Thayer mill. The Ashfield Cooperative Creamery opened in 1880. It processed 121,494 pounds of butter the first year. In 1912 production peaked at 797,000 pounds. The creamery closed in 1927 after it became more profitable for farmers to ship their milk to the H.P. Hood & Sons milk station in Shelburne Falls.

Agriculture continues to be an integral part of the Ashfield economy as consumers “Buy Local.” Presently Ashfield has one operating cow dairy farm. Several other farms raise beef cows. These farmers pasture their animals, harvest hay and corn on their own land and on other land they use for free or rent, thus maintaining the town’s open spaces. There are several beekeepers, some of whom sell honey commercially. There are two commercial fruit orchards. Forestry products, Christmas trees, and maple syrup are produced and sold. Several farms have sheep and produce wool products. A growing number of market gardeners sell their produce to local stores

and restaurants. Several farms sell eggs from free-ranging chickens. Many of these farmers sell their products from May to November at the very successful Farmers' Market held each Saturday on the Town Common. In December 2005 the Town voted to form an Agricultural Commission and in May 2006 a Right-to-Farm Bylaw easily passed at the annual town meeting.

B.3 Ashfield's Changing Landscape⁷

In many ways, change on a landscape level appears to be slow and incremental. But when viewed over a half century and compared with the prior two centuries since the town was incorporated in 1765, Ashfield's transformation during the last half of the 20th century was significant. This bucolic landscape continued to attract new residents in increasing numbers, economies shifted, technologies advanced, even the nature of families changed, and as a result though the shape of the land remained constant, its use and thus appearance have been significantly altered.



Ashfield was once dotted with many mills on the swift-flowing streams in the area. Photo by Alan Rice.

Ashfield has seen dramatic fluctuations in population over the centuries, most notably in the mid-1800s when, frustrated by depleted and stony soils, farmers moved west. Abandoned fields throughout New England began their slow successional reforestation. Ashfield's population in 1940 was just 872; twenty years later, the town had grown 30 percent to 1131. It grew another 12 percent to 1264 by 1970, and by the year 2000, the town boasted 1800 residents. There were a mere 467 housing units in Ashfield in 1960; by the year 2000, the total was 821. As the population grew 59%, housing stock increased 77.5%. More homes, smaller households.

⁷ The narrative in section B.2 was excerpted from a chapter in Volume III of *The History of the Town of Ashfield*, written by Mollie Babize, and dated 1/10/2015. The period covered the years 1960-2010.

Most of the increase in housing and population happened during the late 1980s, when 142 new units were built (that's two of every five homes built between 1960 and 2010).

The pattern of housing, the profile of the residents, and the accompanying shift in economic base had a significant impact on the landscape in Ashfield. For generations, families lived and worked on the land, raising livestock and crops, harvesting wood and syrup, passing on their skills and wisdom to the next generation of farmers, foresters and tradespeople. Certainly there were professionals as well—doctors, ministers, teachers—but they were the minority. Summer residents brought with them new cultural events, such as the celebrated Ashfield dinners, and certainly added to the rich community life. But change to the town as a whole was slow to happen until the second half of the 20th century. By 2000, a third of the people living in Ashfield had been born in another state.

A number of factors influenced the dramatic demographic and economic changes. Farming became increasingly difficult economically. Federally imposed milk prices and then a federal whole-herd buyout program in the mid-1980s prompted many farmers to sell their dairy cows. Cost of fertilizer, seed and equipment rose. Young people became disenchanted with land-based vocations, and many began to move away. It became harder to find labor to help out on the farm. Those who remained in farming needed a second income to support the family.

This coincided with a national women's movement in the 1960s and '70s, no doubt reflected in Ashfield. Through economic necessity but also personal ambition, women began to choose careers of their own. On the town's 1960 street list, only 23 women claim a vocation other than housewife or homemaker; of these, six were teachers, four were in sales, three were nurses or hospital attendants, and the balance included a librarian, a telephone operator, an actress, a book keeper, a secretary, two students, a welfare agent, a laborer, and a farmer. Certainly there were many women who worked in farming (97 men said they were farmers then, roughly a fifth of the male population), but these women must have considered it part of their role as housewife. By 1985, the street list included 346 women with professions other than housewife or student, and by 2010 only 48 identified themselves exclusively as homemaker.

At the same time, and somewhat ironically for Ashfield, the 1970s and '80s saw a "back to the land" movement among young people who were interested in moving out of cities and towns and into more rural communities. Publications like the Whole Earth Catalog catered to this movement, with a focus on self-sufficiency, "do it yourself" instructions, and reviews of tools and other resources helpful for those with little knowledge of living on the land. With their land no longer in production and a need for cash, some landowners began to sell off lots, and the pattern of development in Ashfield began to change.

A set of land use maps developed at the University of Massachusetts, digitized and available through MassGIS data layers, show a significant loss of more than a fifth of Ashfield's productive agricultural land between 1971 and 2005. The loss of farmland in Ashfield (20.7%, including cropland, pasture and tree crops) was nearly double that of Franklin County (11%) where deeper and more fertile river valley soils are more productive. A third of Ashfield's pasture land was lost, not surprising since grazing land and hayfields were on the more marginal soils—wet, shallow to bedrock, poor in nutrients. As these fields were abandoned, the woods

began their brushy encroachment. A mere ten feet of brushy edge on a single acre reduces the open land by a quarter. Though successional fields are great for wildlife, many open vistas were lost.

Some farmers found other land-based sources of income, such as Tom and Cynthia Cranston, who sold their dairy herd and converted pastures into a successful Christmas tree farm. The Pieropans and Thayers also started Christmas tree farms, and that, along with growth in orchards, accounts for a 15% increase in land dedicated to “perennial agriculture.” But the cumulative loss of nearly 700 acres of pasture and cropland made a big difference in the appearance of the landscape and in the economic and demographic makeup of Ashfield.

Surprisingly, the amount of forested land lost was minimal by comparison: in 1971, 20,886 acres (81%) of Ashfield’s total acreage were in forest; by 2005 woodlands totaled 20,438 acres, a loss of just 448 acres, a mere two percent of the total forest cover in Ashfield. Tom McCrumm, owner of South Face Farm, a local maple syrup producer and past Coordinator of the Massachusetts Maple Producers Association, notes that change in a forest is “mercifully slow;” the self-healing process that occurs in the woodlands is “one reason why we live here,” he says. He also observes that many long-range views previously enjoyed from Ashfield—some well into Vermont and New Hampshire—are lost to incremental forest regrowth. Long-time Planning Board chair Michael Fitzgerald believes the woodlands are more diverse as a result. Certainly, the forest cover provides a critical defense against climate change by sequestering carbon in the soil and trees.

Although the amount of forestland remaining is substantial, its nature may be changing. Many of the new homes built were tucked into previously continuous woodlands and along arterial roads, adding to forest fragmentation and disrupting wildlife corridors. Forest cover lost to development may be partially replaced by old fields reverting to woodlands. Some key species—notably ash and hemlock—are being lost to invasive pests, such as the emerald ash borer and wooly adelgid, respectively. Disturbed lands are the first to be invaded by invasive non-native plant species as well; Japanese knotweed thrives along roadsides and riverbanks, old fields are covered with multiflora rose, and Asiatic bittersweet climbs aggressively in disturbed woodlands, often taking down mature trees.

The land use maps of 1971, 1985, 1999 and 2005 clearly document changes in the landscape. Where the 1971 map shows long stretches of road frontage with little or no development, the 1985 map is peppered with new residential lots in all quarters of the town. In the southwest section, new development appeared along Plainfield, John Ford, Ranney Corner and Watson-Spruce Corner Roads. In the northwest, long narrow lots claim frontage on Hawley, Watson, and Old Stage Roads. There is a marked increase in residential development on Murray, John March and Bellus Roads in the northeast quadrant. Perhaps most dramatically, West Road, previously forested between Steady Lane and Brier Hill, shows 19 new house lots by 1985.

By contrast, the older settlements were less vulnerable to changes. The Ashfield Plain Register District (listed with the National Register of Historic Places in 1991) and other historic and more densely settled neighborhoods such as South Ashfield, Spruce Corner, and Watson remain

comparatively unchanged. These older neighborhoods, located at key intersections, retain the character of the early settlements.

In the mid-1960s, the state adopted enabling legislation that gave towns the authority to create planning boards and adopt zoning regulations. In December 1967, Ashfield enacted “protective bylaws” requiring 200 feet of frontage and a two-acre minimum lot size. New Zoning Bylaws enacted in 1995 continued to impose these dimensional requirements, and they have remained in effect through several subsequent rounds of adopting amendments to the Zoning Bylaws. The intent behind continuing these large minimum lot requirements was to comply with the increasingly stringent requirements of Title 5 and the distance required to separate private water wells from individual septic systems, which serve the vast majority of properties in Town. Failed septic systems around Ashfield Lake polluted the South River (aka “Sewer Brook”), and led to the development of a wastewater treatment plant in June 1980, along with an upgrade in the formerly private water district for the village center, but these districts serve only a small number of properties.

Because Ashfield has a great deal of rugged and challenging terrain including wetlands, ledge and steep slopes, it seemed prudent at the time to retain the large lot sizes until new technology or clustered systems came along that allowed new ways of managing wastewater. However, this regulatory framework resulted in the historic village center pattern of small lots, mixed use, and buildings close to the road, becoming a relic of the past. In addition, the Approval Not Required (ANR) process of development continues to cut up the frontage along Town roads and to disrupt wildlife habitats and scenic vistas.

Over the years, many new cottage industries sprang up throughout the town’s single agricultural-residential zone. As a result, the Planning Board created more objective evaluative criteria for Special Permits.

In addition to the plethora of creative home occupations, many more residents began working outside of town with a resulting increase in commuting. By 2000 the census figures show that 908 of the 1,027 men and women reported in the work force did not work at home. The average commute time these workers cited was a half-hour, though a significant number commuted longer distances. Only 57 said their work was in agriculture or forestry; 319 worked in education, health or social services.

With an increase in commuting, the roads themselves began to change. State and federal highway standards required wider pavement, drainage swales, and metal guardrails; these improvements and new utility lines pushed historic land use further from view or eliminated it entirely. Dirt roads that hadn’t been maintained during the winter—portions of Bug Hill, Old Stage, Hawley and Upper Bird Hill Roads—now had to be upgraded and plowed in winter to provide access to new homes. The pattern of development along Ashfield’s roads interrupted long stretches of forestland, giving the town a more domesticated look.

According to Highway Superintendent Tom Poissant, the loss of dairy farms meant that nobody maintained the old drainage ditches to manage stormwater. Farmers also used to mow the roadsides along their properties. Now the town had to cover this essential maintenance. Winter

sanding, salting and plowing has increased incrementally, resulting in a ten-fold increase in the annual highway budget to maintain Ashfield's 79 miles of roadway. "Used to be, if there was a big storm people would stay home. The biggest issue was getting the milk out, and folks would use a horse and sleds if need be," reflects Poissant. "Now, people expect the roads to be maintained so they can get to work regardless of the weather."

The dramatic growth in new housing construction in the 1980s led to a concerted effort to permanently protect larger blocks of land, particularly those in agricultural use. Concerned citizens, among them Harry Dodson and Steve Judge, worried that the incremental subdivision of properties throughout town would fragment forest land and permanently take agricultural land out of production. Alarmed that Ashfield might become a bedroom community, in 1987 they created the Franklin Land Trust, a private non-profit organization that can accept or purchase the development rights of open space, place the land in permanent protection, and provide the owner the cash difference between its value as agricultural land and its potential value for housing. Collaborating with the state's Agricultural Preservation Restriction (APR) Program, established in 1979, 380 acres of the 410-acre Loomis Farm on rapidly changing West Road was the first property to be protected in December 1987.

There is no doubt that the protection of these and subsequent properties has helped to maintain the rural character of Ashfield. In the words of Richard Todd, "We have avoided the sort of wholesale transformation that can sometimes overtake a small town." Large swaths of forested hillsides and significant pockets of productive agricultural land provide the proximity to nature Ashfield residents so enjoy. Interior lands maintain corridors and habitat for wildlife, protect water quality of the many streams, sequester carbon, and enable some residents to earn their living through land-related occupations.

The years between 1960 and 2010 saw significant change in Ashfield. It is a matter of perception whether change has been slow and incremental, or dramatic and rapid. Yet there remain in Ashfield those touchstones on the landscape, those elements that embrace a sense of place over time: the classic architecture of the Town Hall and two churches, the lake right at the center of town, the old cemeteries holding a collective memory through the names of village residents, the remaining farm fields and homesteads tucked below the prominent ridgelines. Some landmarks have been reclaimed: the Bullitt Reservation resurrected the original town poor farm, the Highway Department returned land to Belding Park which received a facelift, young farmers are bringing new crops to old fields, the town common is now in town ownership.

Despite the changes in land use and population, we remain a community of farmers and artists, of professionals and tradespeople, of foresters and writers, and it is in this diversity that our strength lies. Like the landscape, this diversity in population both challenges and delights. We still gratefully rely heavily on volunteers to run town government, though in recent years a paid executive position has been created. We still have a hardware store, and the Lake House, and though nobody harvests ice from the lake, there are still those who regularly fish through the ice when the weather permits. Families who have stewarded Ashfield land for generations live next door to newcomers who are discovering the wonders of a dark sky, of seeing bear and fox and turkeys and beaver, and who record their sightings on the whiteboard at Country Pie Pizza.

C. POPULATION CHARACTERISTICS

In order to identify the open space and recreation needs of the community, it is essential to know about the people who call Ashfield their home. Therefore the size, age, density, income, and occupations of the population are discussed so that informed decisions may be made regarding the type, quantity, location and level of future investments in open space and recreation areas and facilities.

C.1 Demographic Information

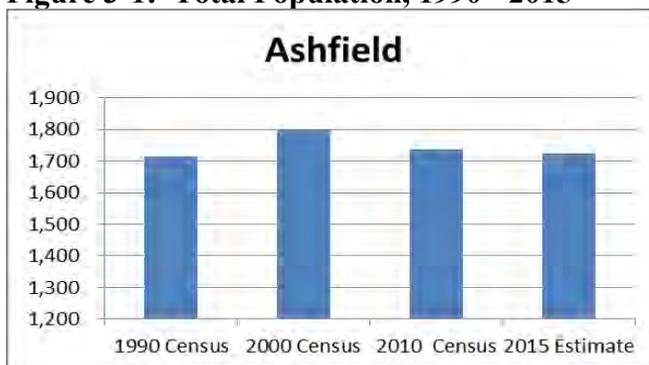
According to the 2010 U.S. Census, Ashfield has 1,737 residents, and a current population density of 43 people per square mile is estimated for 2015. As indicated below in Table 3-1 and Figures 3-1 and 3-2, the population in Ashfield grew by 5% between 1990 and 2000. Between 2000 and 2010, however, Ashfield’s population decreased by 3.5%, and is estimated to have decreased by another 0.8% by 2015. This decrease was in line with trends in Franklin County over this period, where the population is estimated to have decreased by 1.1%. However, for state of Massachusetts as a whole, the population is estimated to have grown by 3.8% since the 2010 Census.

Table 3-1: Total Population, 1990 - 2015

Geography	U.S. Census Population			
	1990	2000	2010	2015 Est.
Ashfield	1,715	1,800	1,737	1723*
Franklin County	70,092	71,535	71,372	70,601
Massachusetts	6,016,425	6,349,097	6,547,629	6,794,422

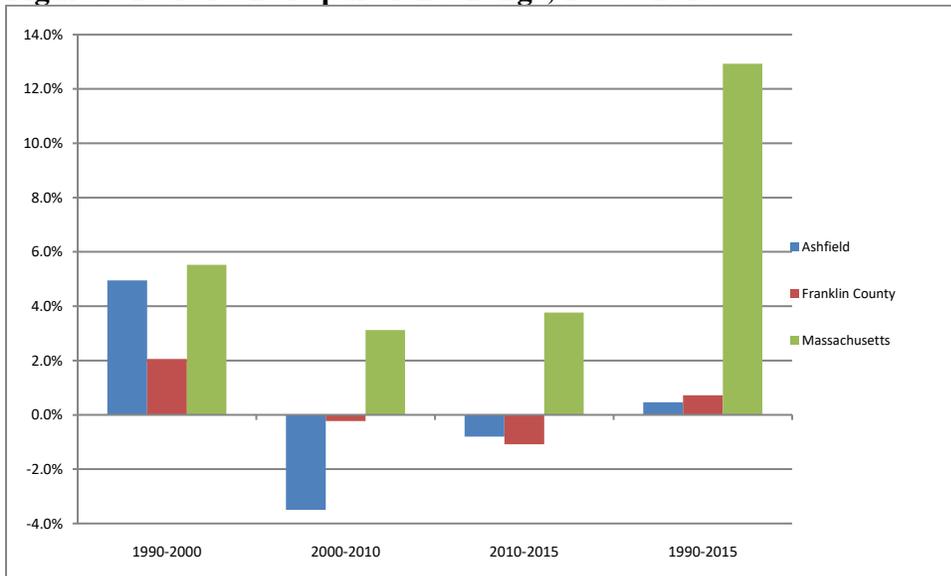
Source: U.S. Census Bureau. *Ashfield Annual Report 2017

Figure 3-1: Total Population, 1990 - 2015



Source: U.S. Census Bureau.

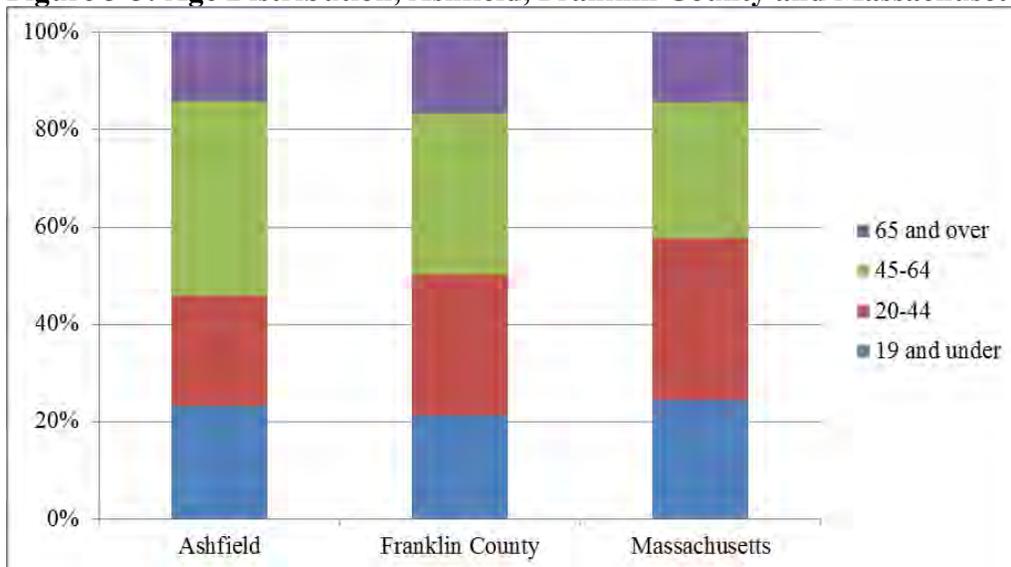
Figure 3-2: Percent Population Change, 1990 - 2015



Source: U.S. Census Bureau.

To determine how the recent and projected population increase in Ashfield translates into demand for open space and recreational resources, it is necessary to look at the age distribution of the current and projected population. According to the U.S. Census, shown in Figure 3-3 below, the Town of Ashfield has a higher percentage of citizens in the 45-64 age category (40%) than Franklin County (33%) and Massachusetts as a whole (28%). However, the Town has a smaller percentage of young adults in the 20-44 age category, with 23%, compared to 29% in Franklin County and 34% in Massachusetts as a whole.

Figure 3-3: Age Distribution, Ashfield, Franklin County and Massachusetts

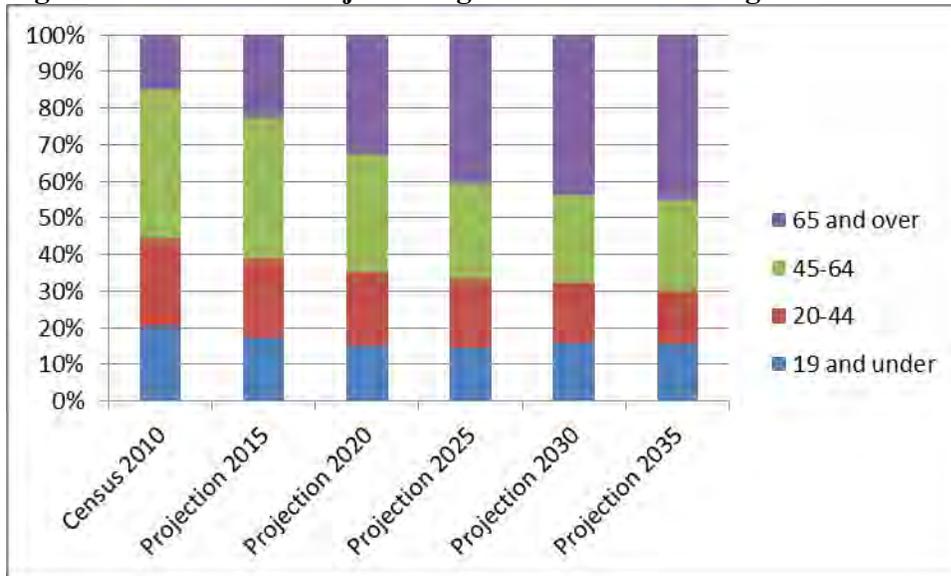


Source: U.S. Census Bureau, 2010-2014 American Community Survey 5-Year Estimates.

If the relatively large cohort of older (45-64) working-aged residents were to continue to reside in Ashfield, it could result in a significant population of individuals in the older age cohorts in

ten to twenty years. As shown in Figure 3-4, population projections estimate that by 2035, roughly 45 percent of Ashfield’s population will be 65 years of age or older, compared to 22 percent currently. The Town of Ashfield should consider whether its current recreation opportunities meet the needs of an aging population, particularly in terms of facilities that are accessible to those with disabilities, and recreational programming that is attractive to older residents. However, even with an aging population, the Town should continue to provide facilities and programs appropriate for all ages.

Figure 3-4: Ashfield Projected Age Distribution through 2035



Source: U.S. Census Bureau, 2010-2014 American Community Survey 5-Year Estimates.

In identifying the best location for the development of new open space and recreation resources, the Town should consider where the concentration of population may occur and which parts of the local citizenry require specific needs. As will be seen below in Section D, Growth and Development Patterns, future growth depends in large part on zoning, slopes, soil and groundwater related constraints, and on which lands are protected from development. Town officials could identify key parcels that might be future parks and walking trails that are close to the current distinct neighborhoods, and/or areas that could be later developed for residential uses. Officials could be looking for opportunities to conserve land in Ashfield that protects valuable scenic and natural resources and provides public access to trail networks and open spaces.

Whatever the generational make up of the future community, recreation and open space needs may change over time. What would Ashfield’s response be to these potential increasing and changing needs? How can these services and facilities be created in an inexpensive manner for both the town and the residents? The answers to these questions may depend in part on the current and potential economic well being of the Town of Ashfield and its residents.

C.2 Economic Wealth of Residents and Community

Measures of the income levels of Ashfield’s residents as compared to the county and state are helpful in assessing the ability of the citizenry to pay for recreational resources and programs, and for access to open space.

Table 3-2: Income and Poverty

Geography	Per Capita Income Estimate	Median Household Income Estimate	Percent of Individuals Below Poverty Level*
Ashfield	\$35,072	\$71,364	7.7%
Franklin County	\$29,658	\$54,072	11.9%
Massachusetts	\$36,441	\$67,846	11.6%

* For whom poverty status was determined.

Source: American Community Survey 2010-2014 Five Year Estimates. Five-year estimate of income for the past 12 months and reported in 2014 dollars.

Table 3-2 describes the earning power of residents in Ashfield as compared to the county and the state. The 2014 ACS 5-year estimated Ashfield per capita income was \$35,072, which was higher than the county figure of \$29,658, and lower than the state figure of \$36,441. The median household income for Ashfield was estimated to be \$71,364, which was higher than the county (\$54,072) and lower than the state estimates (\$67,846). Another way to describe a community’s income and economy is the poverty rate. In Ashfield, 7.7 percent of residents for whom poverty status was determined (for Ashfield, this was the entire population), were estimated to be living below the poverty level. Ashfield’s poverty rate was significantly less than in the county (11.9 percent) and state (11.6 percent).

Environmental Justice (EJ) is based on the principle that all people have a right to be protected from environmental pollution and to live in and enjoy a clean and healthful environment. The Environmental Justice Executive Order No. 552 requires EEA agencies to take action in promoting environmental justice. The Executive Order requires new environmental justice strategies that promote positive impacts in environmental justice communities and focus on several environmental justice initiatives. EJ communities are defined as being low income, having a high minority population, and/or to have a high rate of English language isolation, based on the 2010 U.S. Census data. According to MassGIS, there are no Environmental Justice populations identified in the Town of Ashfield.

Although Ashfield’s resources today consist of both its people and its natural and built landscapes, the status of its finances could be affected by an interdependent relationship that exists between the two. The costs of the community services provided to residents are paid for with the tax revenues generated by different kinds of property, both developed and undeveloped. Some developed uses, such as housing, often require more services including education and road maintenance. The costs associated with one household are rarely paid for by the revenues generated by that same property. One reason that towns encourage economic development is to have another type of property in town, other than residential, to share the tax burden. Protected open space on the other hand can cost towns very little in community services, provide a modest amount of tax revenues, and reduce the amount of housing that can ultimately occur in town.

This relationship is explored in more detail below in subsection D, Growth and Development Patterns.

Poverty is known to create barriers to access (to health services, quality education, healthy food, housing, and other basic needs and opportunities) and to contribute to poor health status generally. Franklin County's poverty rate is estimated to be slightly above the Massachusetts average. An estimated 7.7% of Ashfield's residents live below the poverty line, and the estimated 2014 median household income in town of \$71,364 was higher than the county and state medians. However, that does not mean that there are not pockets of poverty that create challenges for some Ashfield residents. Poverty is determined by annual income based on the size of a household and the number of children within the household. For example, the poverty threshold for a one-person household in 2012 was \$11,720. The poverty threshold for a four-person household with two children was \$23,283.

In 2008, Governor Patrick released a Call to Action, which documents the extent of the obesity epidemic in Massachusetts, its consequences, and efforts to tackle it. To help address this significant public health problem, the Massachusetts Department of Public Health launched the Mass in Motion (MiM) program in January 2009. The program includes technical assistance and grants to cities and towns to help them build policies, systems and environments that promote wellness and healthy living. Mass in Motion emphasizes the link between how a community is designed, including access to parks, healthy food, and transportation options, and public health. Ashfield is a member community of the Franklin County Mass in Motion program. The program focuses on helping cities and towns design healthier communities by:

- Conducting Health Impact Assessments (HIAs) to understand how community projects, plans, or policies can affect us and our health
- Following "Complete Streets" policies that make roads safe and enjoyable for all users by installing safe bike lanes, bike racks, easy-to-follow signage, and safe crosswalks
- Preserving open space and developing recreational space and community centers where people can gather and socialize
- Improving and cleaning up existing green space and parks

In 2013 the Massachusetts Department of Transportation (MassA DOT) issued the Healthy Transportation Policy Directive, ensuring that all Mass DOT projects are designed and implemented in a way that provides for safe and healthy transportation options for the public, including walking, biking, and transit. The policy is a result of the Healthy Transportation Compact, a requirement of the 2009 transportation reform legislation. The compact is an inter-agency initiative between state transportation, public health, energy and environment, and housing and economic development agencies, designed to facilitate transportation decisions that balance the needs of all transportation users, expand mobility, improve public health, support a cleaner environment and create stronger communities.

In 2015, Mass DOT launched the Complete Streets program, which encourages communities to adopt a complete streets policy. Adopting a policy commits towns to work to integrate the needs of all users of the public right of way into street and roadway projects. An objective of the Complete Streets program is to "facilitate better pedestrian, bicycle, and transit travel for users of

all ages and abilities by addressing critical gaps in pedestrian, bicycle, and transit infrastructure, and safety.” Through the program, communities with a state-approved policy and a prioritized list of projects are eligible for construction funding up to \$400,000 for FY 2016 and 2017.

In order to plan for the protection of open space and natural resources and the provision of recreational opportunities in the Town of Ashfield, residents should consider the role natural resources play across the region. The character of the landscape in Ashfield is dominated by two watersheds; large blocks of dense, contiguous forestland; and farms that continue a long tradition of sheep farming and wool production, apple growing, one cow dairy farm and several beef cattle operations along with numerous other agricultural enterprises, including beekeeping. Each of these characteristic landscapes is discussed in detail in Chapter 4, Environmental Inventory and Analysis. The presence and relatedness of these significant resources present both opportunities and challenges to open space and recreation planning for Ashfield. In addition, these landscapes have shaped the historical development of Ashfield and the surrounding region.

C.3 Employment Statistics

Employment statistics like labor force, unemployment rates, numbers of employees, and place of employment are used to describe the local economy. Labor force figures can reflect the ability of a community to provide workers that could be employed by incoming or existing businesses. Unemployment rates can show how well residents are fairing in the larger economy while employment figures describe the number of employees in different types of businesses. Employment can be used as a measure of productivity. The number of people employed in each business can be used to determine the types of industries that should be encouraged in town. The town may decide to encourage business development to provide services to residents, create more jobs, and as a way of increasing taxable property values, which can help pay for municipal services and facilities, including recreational parks and programming as well as protected open space.

C.3.1 Labor Force: Ashfield residents that are able to work

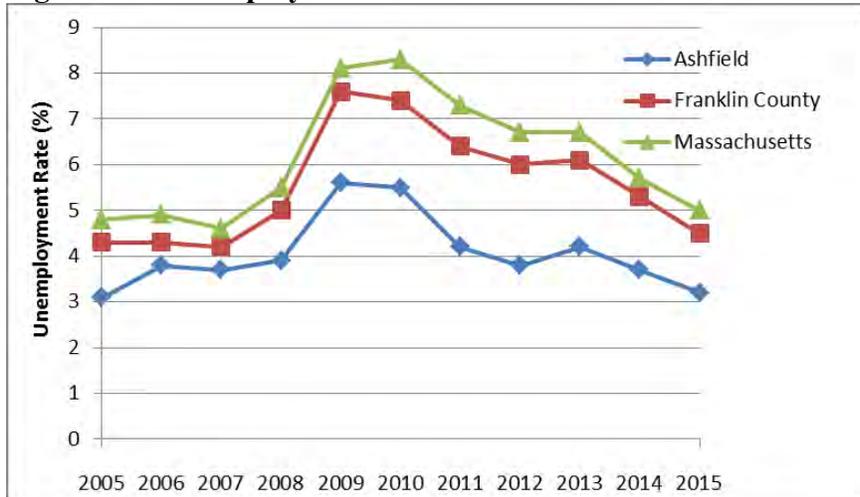
The labor force is defined as the pool of individuals who are 16 years of age and over, and are either employed or who are actively seeking employment. Persons not actively seeking employment, such as some enrolled students, retirees, or stay-at-home parents, are excluded from the labor force. In 2015, the Town of Ashfield had a labor force of 1,128 with 1,092 residents employed and 36 unemployed (*see Table 3-3 below*). Ashfield experienced a 3.2 percent rate of unemployment, lower than both Franklin County’s overall rate of 4.5 percent and the Commonwealth of Massachusetts’ rate of 5.0 percent. For the period 2005 through 2015, Ashfield generally had a lower rate of unemployment than the county and state (*See Figure 3-5 on the following page*). The Town experienced the same fluctuations in unemployment as the county and state over the course of the last ten years, but was not as severely impacted as other areas in terms of unemployment rates (*see Table 3-3 below*). However, it is also evident that Ashfield’s labor force figures and the number of employed in town are influenced by the greater economy, as demonstrated by the highs and lows in Figure 3-5.

Table 3-3: Labor Force and Unemployment Data, 2015

Geography	Labor Force	Employed Persons	Unemployed Persons	Unemployment Rate
Ashfield	1,128	1,092	36	3.2%
Franklin County	39,341	37,564	1,777	4.5%
Massachusetts	3,570,000	3,392,100	177,800	5.0%

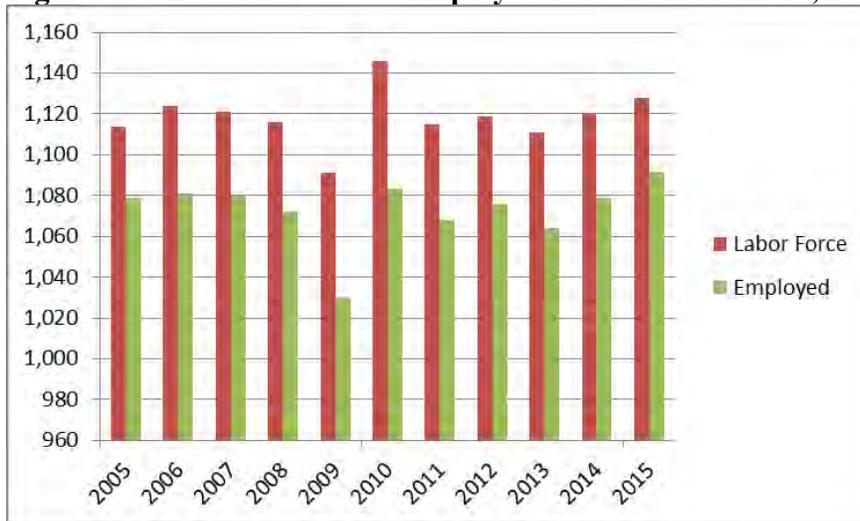
Source: Massachusetts Executive Office of Labor and Workforce Development.

Figure 3-5: Unemployment Rates 2005 to 2015



Source: Massachusetts Department of Labor and Workforce Development.

Figure 3-6: Labor Force and Employed Persons in Ashfield, 2005 through 2015



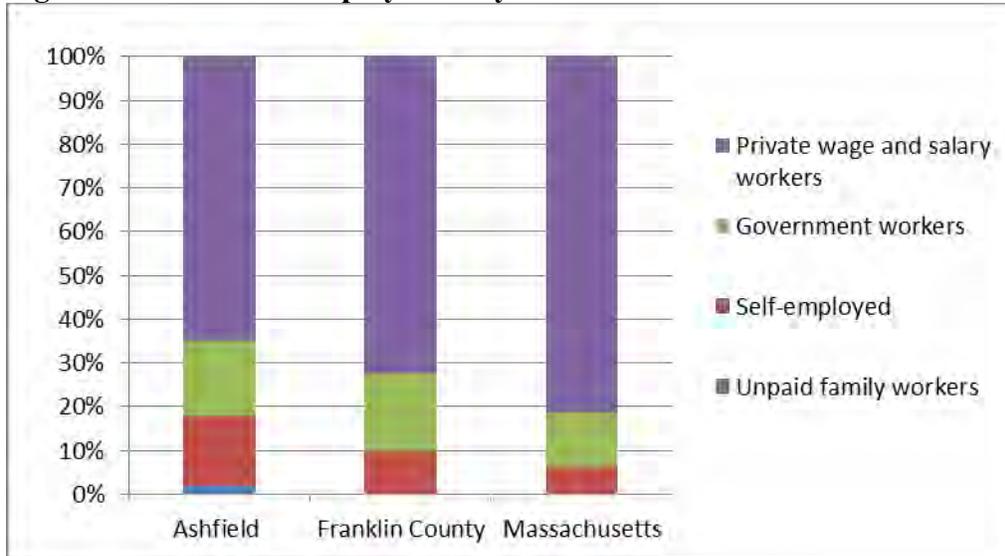
Source: Massachusetts Department of Labor and Workforce Development.

As Figure 3-5 demonstrates, Ashfield’s unemployment rate has fluctuated between 3.1% and 5.6% from 2005 through 2015, with the highest rates occurring in 2009 and 2010, during the economic downturn, and the lowest rates occurring at the beginning and end of the period. As shown in Figure 3-6, during this same time frame, Ashfield’s labor force remained largely constant at approximately 1,100 persons, and the number of employed persons fluctuated within

a small range around 1,000, with the lowest number of employed persons occurring in 2009 at 1,030.

Figure 3-7 shows the class of worker for the civilian employed population aged 16 years and over, and demonstrates that the Town of Ashfield has more self-employed workers at 16% of the working population, compared to Franklin County at 9.6% and Massachusetts as a whole at 6.1%. In addition, unpaid family workers represent nearly 2% of the Ashfield working population, compared to 0.2% in Franklin County and 0.1% in Massachusetts.

Figure 3-7: Ashfield Employment by Class of Worker



Source: U.S. Census Bureau, 2010-2014 American Community Survey 5-Year Estimates.

C.3.2 Employment in Ashfield: People who work in town, whether residents or not

In 2014 the total average monthly employment in Ashfield was 248 people, according to the Massachusetts Department of Labor and Workforce Development data.⁸ The largest sectors of employment for the Town of Ashfield are shown below in Table 3-4. The largest sectors for employment in Ashfield are Accommodation and Food Services, Construction, and Manufacturing. The percentage of people employed in the Accommodation and Food Services sector is 18% of the average monthly employment, Construction sector establishments employ 11%, and the Manufacturing sector employs another 11%. Weekly wages in the Accommodation and Food Services sector are the lowest at an average of \$233, while wages in both the Construction and Manufacturing sectors are the highest in town at an average of \$885 per week. According to 2016 data compiled by the Massachusetts Executive Office of Labor and Workforce Development and InfoGroup, the largest employer located within the Town of Ashfield is Sanderson Academy, with between 20 and 49 workers. Table 3-5 below lists the Town's largest employers.

⁸ Massachusetts Department of Labor and Workforce Development, Employment and Wages Report (ES-202).

Table 3.4: Average Monthly Employment by Sector, 2014

Description	No. of Establishments	Average Monthly Employment	Total Wages	Average Weekly Wages
Total, All Industries	51	248	\$7,312,855	\$567
23 - Construction	7	28	\$1,288,773	\$885
31-33 - Manufacturing	3	28	\$1,284,692	\$882
42 - Wholesale Trade	3	11	\$164,375	\$287
54 - Professional and Technical Services	6	13	\$672,380	\$995
56 - Administrative and Waste Services	5	9	\$185,892	\$397
62 - Health Care and Social Assistance	6	14	\$264,930	\$364
72 - Accommodation and Food Services	4	44	\$533,404	\$233
81 - Other Services, Ex. Public Admin	4	3	\$177,497	\$1,138

Source: Massachusetts Department of Labor and Workforce Development, ES-202 data for 2014.

Table 3-5: Ashfield's Largest Employers, 2016

Employer Name	Estimated Range of Employees*	Industry Sector**
Mohawk Trail Regional School District	20-49	Elementary and Secondary Schools
Ashfield Lakehouse	10-19	Restaurants and Other Eating Places
Clark Brothers Orchards	10-19	Fruit and Tree Nut Farming
Double Edge Theatre	10-19	Performing Arts Companies
Elmer's Country Store & Deli	10-19	Restaurants and Other Eating Places
Harris & Gray	10-19	Foundation, Structure, and Building Exterior Contractors
Just Soap	10-19	Soap, Cleaning Compound, and Toilet Preparation Manufacturing
Lakeside Ventures Inc. dba Neighbors Convenience Store	10-19	Grocery Stores/ Gasoline Stations
Maya Machine Potter	10-19	Machine Shops; Turned Product; and Screw, Nut, and Bolt Manufacturing
Roberts Brothers Lumber Co Inc	10-19	Lumber and Other Construction Materials Merchant Wholesalers
Town of Ashfield	10-19	Justice, Public Order, and Safety Activities
Ashfield Community Preschool	5-9	Child Day Care Services
Ashfield Water District	5-9	Water, and Fire Hydrants
Bear Swamp Orchard & Cidery	5-9	Fruit and Tree Nut Farming
Countrypie Pizza Co	5-9	Restaurants and Other Eating Places
US Post Office	5-9	Postal Service
Pantermehl Logging and Land Clearing	5-9	Logging and land clearing services
S.T. & I. Services	5-9	Estate Auctions, Structure Demolition
Ashfield Hardware Supply	2-5	Hardware and Beyond

* Includes full-time, part-time and per diem employees.

**Standard categories used in the North American Industry Classification System (NAICS).

Source: MA Department of Workforce Development (InfoGroup), 2016.

D. GROWTH AND DEVELOPMENT PATTERNS

This section of the plan provides basic data on the patterns and trends in land use and development in Ashfield driven by the characteristics of the landscape and the culture that has shaped it over the years. This includes the subsection, *Ashfield's Changing Landscape*, which provides a narrative analysis of how growth and development has changed with the landscape over the more than 250 years since Ashfield was incorporated in 1765. The next section describes the existing infrastructure in Ashfield and the effects it has had on development patterns. Finally, the section concludes with an analysis of long-term development patterns, including a discussion of current land use controls, currently anticipated residential and commercial developments, and their impacts on the natural and built environment.

Landscapes, in their simplest form, are composed of just two key features: a slowly changing land form base and a more rapidly changing landscape pattern placed upon that base by nature and culture. One key attribute of land form—slope—can vary from essentially flat through undulating and rolling hills to the steepest of mountains. The proportions of forest, farmland, and built landscape (villages and roads) determine the character of the landscape, and distinguish urban, suburban, rural and wild lands depending upon which predominates. Land coverage in Ashfield represents a forest/farm landscape—forest predominates, with open farm fields in a supporting role, accented by the historic built village center.

Walter Cudnohufsky

D.1 Patterns and Trends

In Table 3-6 a comparison of the types of land uses and their acreages in Ashfield between 1971 and 1999 demonstrates which natural resources are most susceptible to development pressures. Cropland and forestland have been the primary resources converted to other uses, particularly to residential development. As residential development on large lots of a ½ acre or larger increased, both cropland and forestland acreages decreased.

Table 3-6: Land Use Change in Ashfield, 1971 - 1999

Land Use	1971 Acres	1999 Acres	1971-1999 Change
Forest	20,886	20,553	-333
Water and Wetlands	599	612	-13
Agriculture (cropland and pasture)	3,127	2,457	-670
Small Lot Residential (< .5 acre)	39	43	4
Large Lot Residential (> .5 acre)	551	1,040	489
Commercial	19	25	6
Industrial	10	18	8
Recreation	14	109	95
Urban Open Land	17	41	24
Open Land	385	729	344
Other (transportation, waste disposal, mining)	26	27	1

Source: 1971 and 1999 MassGIS Land Use data.

Urban Open Land on the above table consists of areas in the process of being developed from one land use to another (if the future land use is at all uncertain). Open Land, in contrast,

consists of vacant land, idle agriculture, rock outcrops, and barren areas. Vacant land is not maintained for any evident purpose and it does not support large plant growth.

The land use tradeoffs between 1971 and 1999 were primarily a loss of forest and farmland and a gain in low-density residential development. During this time, cropland and pasture decreased by 670 acres, while forested land decreased by 333 acres. Residential lots greater than ½ acre increased by 489 acres.

Due to changes and improvements in the methods for data collection and analysis, the MassGIS land use datasets for the earlier years of 1971 and 1999 are not directly comparable to the 2005 data. Table 3-7 below provides a summary of land uses in Ashfield in 2005. In 2005, approximately 79 percent of the total area in town was forested, 10 percent was in agricultural use, and just over 2 percent was in residential use, the majority on lots greater than a ½ acre. Less than 1 percent was in high density residential, commercial, industrial, mining, water, recreation use, urban public/institutional, powerline/utility, or other uses.

Table 3-7: Summary of Ashfield Land Use, 2005

Land Use Category	Acres	Percentage of Total Acreage in Town
Agriculture	2,583	10.0%
Forest	20,438	79.3%
Residential (< .5 acre lots and multi-family)	38	0.1%
Residential (> .5 acre lots)	604	2.3%
Commercial	38	0.1%
Industrial	9	0.03%
Mining	23	0.1%
Open Land	300	1.2%
Water	104	0.4%
Wetlands	1,376	5.3%
Recreation	76	0.3%
Urban Public/Institutional	14	0.05%
Powerline/Utility	125	0.5%
Other	38	0.1%
Total	25,766	100%

Source: 2005 Massachusetts GIS Land Use data.

The loss in natural resources may go beyond simply the loss in acreage. As farm and forest land acres are converted to residential and commercial uses the landscape becomes fragmented. Fragmentation of the landscape can negatively impact the quality of wildlife habitat, watershed protection, recreation opportunities, farm viability, forest management opportunities, and ultimately the municipal services budget. Many rural towns in western Massachusetts have much of their landscape covered in forest vegetation. Unlike more urbanized towns, this forestland is not intersected by roads or residential development. As development spreads across the landscape, wildlife habitat may become segmented so that animals requiring large amounts of interior forest habitat are forced to search for it in still more remote areas. Fragmenting large

blocks of contiguous forestland also jeopardizes the water quality and quantity in many first and second order streams, which are the most extensive and sensitive components of a watershed's stream network. The value of recreational opportunities associated with hiking, snowmobiling, and mountain biking often depends on whether there exists a network of fields and forests that are somewhat removed from residential areas. Ashfield residents need also to be aware of the indirect value of open farmland.

Development pressures threaten the continued viability of Ashfield farms. The more fragmented farmland becomes, the more expensive it becomes to farm, based on additional time and fuel costs. In the same way, fragmentation of the landscape affects the viability of forest management operations. When a large forest block is fragmented by a subdivision, the resulting parcels associated with single family homes are often too small to manage individually for forestry purposes. Finally, the most inefficient method of providing municipal services such as police, fire, sewer, water, waste disposal, and plowing is associated with a fragmented landscape where residential development is spread sparsely across the town.

Table 3-8 below shows the number of residential and commercial building permits issued in Ashfield by the Franklin County Cooperative Inspection Program (FCIP) from 1993 to 2015.

Table 3-8: Ashfield Building Permit 1993-2015

Year	# of Building Permits		
	Residential	Commercial	Total
1993	1	2	3
1994	5	0	5
1995	6	4	10
1996	5	3	8
1997	3	0	3
1998	6	1	7
1999	6	0	6
2000	3	0	3
2001	7	0	7
2002	10	1	11
2003	5	0	5
2004	8	0	8
2005	6	1	7
2006	6	0	6
2007	5	0	5
2008	3	0	3
2009	2	0	2
2010	0	0	0
2011	1	1	2
2012	1	0	1
2013	8	1	9
2014	2	0	2
2015	2	0	2

D.2 Infrastructure

D.2.1 Transportation Systems

Roads

Routes 112 and 116 constitute the important transportation corridors that link Ashfield to the surrounding municipalities. Route 112 is the main north-south thoroughfare while Route 116 runs largely east to the west. Both of these routes are designated by the state as Scenic Byways. Travelers to and from Ashfield must take one of these roads either south to Route 9, north to Route 2, or east to Routes 5/10 and I-91 to connect with neighboring communities and nearby major population centers.

Transit

There is no public transportation available in the Town of Ashfield. Transportation for the elderly and people with disabilities is provided by the Franklin Regional Transit Authority's (FRTA) demand response service.

Rail

The nearest rail line to Ashfield is the Connecticut River Main Line railroad, owned by Pan Am Railways, the lies parallel to Interstate 91 and Routes 5/10 and offers freight rail and Amtrak passenger service, with access in Franklin County at the JWO Transit Center in Greenfield. The Amtrak Vermonter provides service from St. Albans, Vermont, to Washington, D.C., via Hartford, New Haven, New York, and Philadelphia. It currently runs twice a day, with plans to add to the number of trips in the future. A connection to Montreal is also planned for the future.

Air

The closest airport to Ashfield in Franklin County is the Turners Falls Municipal Airport, a general aviation facility located in Montague. Commercial flights can be obtained at Bradley International Airport, an approximately forty-five minute ride south via I-91 to Windsor Locks, Connecticut.

Pedestrian and Bicycle

Since 1991 and the passage of the federal Intermodal Surface Transportation Efficiency Act (ISTEA), bicycling and walking have been recognized as viable and efficient modes of transportation. Consequently, bicycle and pedestrian facilities are included as a regular part of transportation planning activities on the federal, state, regional, and local levels. Not only are bicycling and walking integral components of the transportation system in Ashfield and Franklin County, but they are also crucial components that help make the region a livable place. The U.S. Department of Transportation and the Federal Highway Administration have recently focused their attention on the important role these modes of transportation play and the many benefits they provide a community, including: reduction of greenhouse gases and other air pollution, lowered energy costs, less use of land and pavement, increased health benefits for people, economic savings, increased social interactions, and community revitalization.

Recently the FRCOG partnered with the YMCA in Greenfield, Baystate Franklin Medical Center, Greenfield Community College, and the Franklin County Chamber of Commerce to

develop and launch *Walk Franklin County – for the Health of It!* This cooperative program works to promote walking for transportation, reduction of air pollution, and physical fitness and health. The *Walk Franklin County – for the Health of It!* project is a free program that allows participants to measure and record their walking progress and receive rewards for reaching their walking goals. The FRCOG has completed sets of walking maps for each town in Franklin County, including two walking routes in Ashfield Center: a two-mile walk around Ashfield Lake and a 3-mile walk around the lake and the Ashfield Golf Course on Norton Hill Road. These maps are available online at <http://www.walkfranklincounty.org/maps.php>.

The Franklin County Bikeway is a project under implementation by the FRCOG with the aim to provide a biking network, with both on-road and off-road facilities, throughout Franklin County, linking employment, recreational, and educational destinations. Routes within Ashfield include the 24.7-mile Buckland-Ashfield Loop, which follows Routes 112 and 116 through Shelburne Falls, Buckland, Ashfield Center, and Conway Center and then follows Shelburne Falls Road in Conway back to Shelburne Falls to complete the loop. The 30.65-mile Western Franklin County Loop follows Route 116 west from Ashfield Center into Plainfield and beyond, connecting back up to Route 112 in Buckland. The 9.5-mile Ashfield-Williamsburg Connector runs south from Route 116 on Williamsburg Road towards Williamsburg with connections to Northampton. These routes are all marked with Franklin County Bikeway signs. Bikeway maps are available online at: http://www.frcog.org/services/transportation/trans_bikeway.php.

D.2.2 Water Supply Systems

The water that Ashfield residents drink may come from private wells or public water district supplies. Water district supplies have both groundwater and surface water sources. Groundwater sources are springs and wells while surface water sources include reservoirs and rivers. A well pumps water from underground. The underground water collects in layers of sand and gravel called aquifers. Rain permeating through layers of soil can reach groundwater, which in turn may replace water within an aquifer.

*Ashfield Water District*⁹

Based on information provided by a representative of the Ashfield Water District, the District, formed in the late 1980s, is a distinct autonomous entity created by the Legislature which is governed by commissioners. The District is currently served by two wells and generally incorporates the village center area as well as a few properties west of Route 112 and along Hawley Road. The water system's infrastructure was upgraded in mid 1990s and currently handles an annual average of about 24,000 to 25,000 gallons per day (GPD) in the winter and 30,000 GPD during the rest of the year. This annual average is currently below the system's physical capacity limit which has been established through MassDEP environmental regulations. MassDEP has recommended that the Town purchase a 300 foot buffer surrounding the well on Hawley Road; however, this is not currently possible as the owner of that land is not willing to sell.

⁹ This information is taken from the *Ashfield Community Development Plan*; Dodson Associates, RKG Associates and the Franklin Regional Council of Governments; June 2004. Addition information obtained through a personal communication with Betty Stewart in June 2016.

The District's two storage tanks hold 150,000 gallons of water, enough to supply the Town for five days in the event of an emergency. The well on Smith Road is reported to have a virtually unlimited supply of water.

The District generates revenues via two methods. First, each user on the system is metered and is charged on the amount of water used on a per gallon basis, plus a service charge. These revenues help to cover the District's operating expenses. Secondly, a Water District property tax levy is applied to every property within the district to cover debt service expenses (whether or not they are water customers). The District has 147 customers, the vast majority of which are residential properties. There are numerous commercial or public institutional users in the system throughout the District.

D.2.3 Ashfield Wastewater Treatment Plant¹⁰

As opposed to the Water District which is autonomous, the Ashfield Wastewater Treatment Plant (WWTP) is a department within the Ashfield municipal government. Sewer Commissioners are elected by the Town at large. The geographic area served by the WWTP is smaller than the Water District and generally incorporates the village center (Main Street) and properties east of Ashfield Lake (along Buckland Road), with additional properties included on South Street, Bronson Avenue, and Norton Hill Road.

There are currently 162 "dwelling units"¹¹ utilizing the sewer service, which includes both residential and commercial users (such as Decker Machine Works, Elmer's Store, the Town Hall and the Fire Department). An additional 14 dwelling units are grandfathered and should be connected when their Title 5 systems fail. According to the Sewer Plant operator, the sewer system is currently working under its designed capacity of 25,000 gallons per day (GPD). According to MassDEP, current use is approximately 20,000 GPD for the annual average of monthly maximum day flows. The Max Day Flow reported on March 3, 2011 was over 30,000 GPD.¹² The sewer system should have enough capacity to handle up to an additional 1,872 GPD or 6 new hook-ups (of 3-bedroom homes) in addition to the grandfathered units before it would need to take steps to reduce inflow into the collection system so as to increase its remaining available capacity, or file and application to modify the Groundwater Discharge Permit to allow greater than 25,000 GPD effluent flow, and increase its Soil Absorption System size to accept such additional flows.¹³ The Ashfield WWTP must have permission from MassDEP prior to any new users hooking up to the sewer system.

¹⁰ This information is taken from the *Ashfield Community Development Plan*; Dodson Associates, RKG Associates and the Franklin Regional Council of Governments; June 2004. Addition information obtained through a personal communication with Sewer Plant Operator Elizabeth Nichols in October 2016.

¹¹ "Dwelling Unit" means one (1) or more living and sleeping rooms providing complete living facilities for the use of (1) or more individuals constituting a single housekeeping unit, with permanent provision for living, sleeping, eating, cooking, and sanitation. In addition, the number of residential equivalent dwelling units is calculated for commercial and industrial properties according to a formula included in the Town of Ashfield's Sewer Fixed-Cost Operating Fee Regulations.

¹² E-mail from Kurt Boisjolie of MassDEP to Elizabeth Nichols re Ashfield WWTP hookup question, dated April 17, 2014.

¹³ Ibid.

Pursuant to Article 9 of the Town of Ashfield – Sewer Use Regulations, the following fees are charged by the Ashfield WWTP:

- Annual sewer fixed-cost operating fee, charged to all “Currently Sewered Properties” and payable quarterly;
- Annual sewer volume-based fee charged to owners of all properties discharging wastewater into the public sewers of the Town and payable quarterly; and
- Annual debt service fees, charged to all “Currently Sewered Properties”¹⁴ and payable quarterly (not used since the new Town Garage was completed and sewer debt service was discharged).

All sewer fees collected are used to pay expenses of the Town’s Sewer Enterprise Fund, set up under MGL Chapter 44, Section 53f½.

D.3 Long-Term Development Patterns

D.3.1 Land Use Controls

The entire town of Ashfield is designated as a single Rural-Residential and Agriculture zoning district (*see the Zoning Map at the end of this section*). Ashfield’s Zoning Bylaw requires that new building lots must include a full two acres (87,120 sq. ft.) and 200 feet of frontage along a public road.

A Back Lot Development bylaw (Section IV.E) was added to the Zoning Bylaws in 2002 to allow for development of parcels that are already eligible for ANR development—with roadside frontage of at least 400 feet and sufficient acreage to accommodate back-lot development—with a Special Permit from the Planning Board. In exchange for a Special Permit to create back lots, the bylaw requires that permanent conservation restrictions be placed on the roadside land that would otherwise have been eligible for ANR development. For every back lot created, at least two acres of roadside land must be preserved, including at least 150 feet of frontage, and the total road frontage conserved must be at least 400 feet. No more than four back lots can share a common driveway under the bylaw. As reported by the OSRP Update Committee, as of 2016, this bylaw provision has never been utilized.

D.3.2 Cost of Community Services

The challenge for Ashfield and other communities is to find a model for growth that protects vital natural resource systems and maintains a stable property tax rate. In designing the model, it is important to understand the fiscal impact of different land uses, which can be calculated based on the relationship of property tax revenues generated to municipal services used. Although protected open space typically has a low assessed value and thus generates low gross tax

¹⁴ Any property currently connected to the public sewer or any property whose owner has received a notice from the Ashfield Board of Health requiring that the owner connect the property to the public sewer. A property does not have to be discharging wastewater to the public sewer to be considered a Currently Sewered Property.

revenues, municipal expenditures required to support this use are typically much lower than the tax revenue generated.

The American Farmland Trust (AFT) and other organizations have conducted Cost of Community Services (COCS) analyses for many towns and counties across the country. A COCS analysis is a process by which the relationship of tax revenues to municipal costs is explored for a particular point in time. These studies show that open spaces, while not generating the same tax revenues as other land uses, require less public services and result in a net tax gain for a community. Residential uses require more in services than they provide in tax revenues compared to open space, commercial, and industrial land uses. Communities, at the time of the study, were balancing their budgets with the tax revenues generated by other land uses like open space and commercial and industrial property.

Figure 3-8 demonstrates the summary findings of 151 COCS studies from around the country. For every dollar of property tax revenues received from open space, the amount of money expended by the town to support farm/forestland was under fifty cents while residential land use cost over a dollar. Taxes paid by owners of undeveloped farm and forestland help to pay for the services required by residential land uses. When a town has few land uses other than residential, homeowners and renters pay the full cost of the services required to run a municipality, maintain public ways, and educate young people. In this way, local property real estate taxes tend to rise much faster in communities that have little protected land and higher rates of residential development.

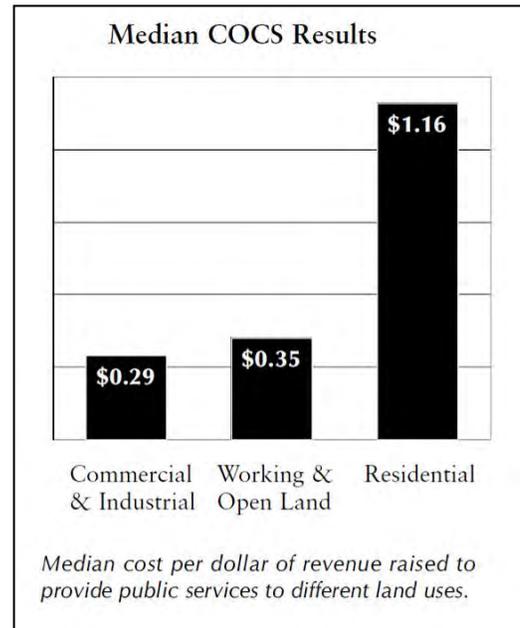
In 2009 a COCS study was completed for the Town of Deerfield, and may provide a useful local example for Ashfield. In Deerfield the study found that:

- 79% of fiscal revenue in fiscal year 2008 was generated by residential land, 9% was generated by commercial land, 9% by industrial land, and 3% by farm and open land.
- 90% of expenditures were used to provide services for residential land compared with 5% for commercial land, 4% for industrial land, and 1% for farm and open land.

In other words, in fiscal year 2008:

- For each \$1 of revenue received from residential properties, Deerfield spent \$1.14 providing services to those lands.
- For each \$1 from commercial land the town spent 55 cents,
- For each \$1 from industrial land, the town spent 47 cents providing services; and
- For each \$1 received from farm and open land, the town spent 33 cents.

Figure 3-8: Summary of Cost of Community Services (COCS) Studies



Source: American Farmland Trust; 2016. http://www.farmlandinfo.org/sites/default/files/COCS_08-2010_1.pdf

Residential land uses created a deficit of \$1.7 million, while the other three categories generated surpluses: \$573,397 from commercial, \$608,422 from industrial, and \$318,842 from farm and open land. While residential land use contributes the largest amount of revenue, its net fiscal impact is negative.

These findings support open space and farmland preservation, and commercial and industrial development, as a way to help towns balance their budgets. The studies are not meant to encourage towns and cities to implement exclusionary zoning that seeks to make it difficult to develop housing, particularly for families with school age children, who require more in services.

The long term impacts of these strategies needs to be considered. Patterns of commercial and industrial uses vary considerably between towns but all communities need to consider the impact of commercial and industrial development on the overall quality of life for residents. Increased industrial development could generate jobs as well as an increased demand for housing in town. Permanently protecting a large portion of the town's open space and farmland from development could provide locally grown food and jobs, but may also jeopardize the ability for future generations to determine the best use for the land. It also can increase the cost of the remaining available land, making affordable housing development more difficult.

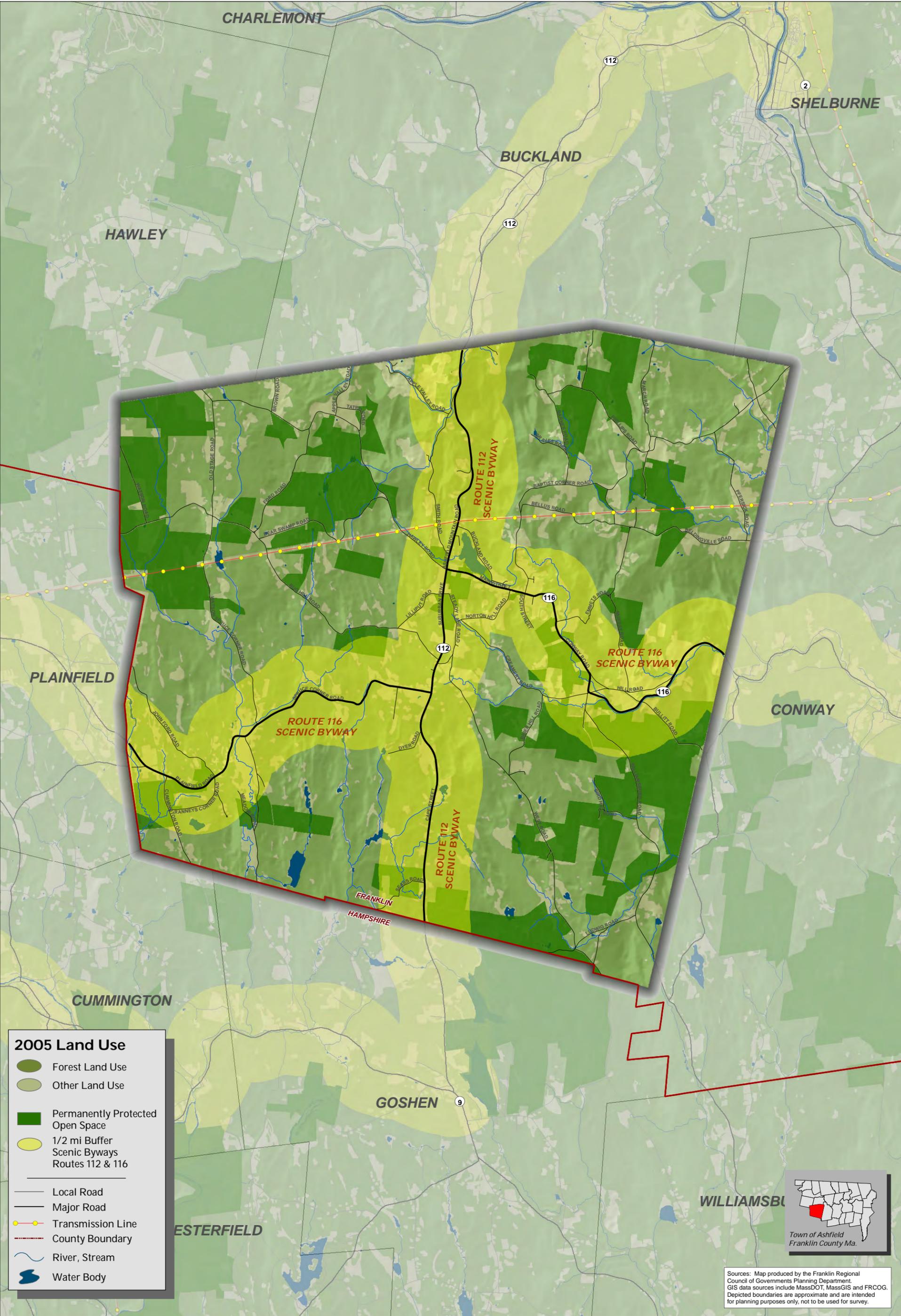
Additionally, the current capacity of different services in town should be evaluated when considering what types of development to encourage. If a community is near or at capacity for services such as police, fire, water, roads, or schools, any additional population growth could be quite costly as these services would need to be expanded. However if a community has an excess in service capacity in these areas, new residential growth would not necessarily be a strain on the town's budget.¹⁵

The best types of commercial and industrial development to encourage in Ashfield might have some of the following characteristics: locally owned and operated; in the manufacturing sector; being a "green industry" that does not use or generate hazardous materials; businesses that add value to the region's agricultural and forest products; and businesses that employ local residents. It is also important to consider that successful commercial and industrial development often generates increased demand for housing, traffic congestion and some types of pollution. Therefore, the type, size, and location of industrial and commercial development require thorough research and planning.

The 2004 Community Development Plan concluded that: "from a location and market prospective, the primary location for any future non-residential development would be within the village center area along Main Street within the general vicinity of the Town Hall and existing cluster of mixed use and commercial buildings. It is unlikely that non-residential development of a significant scale will gravitate to regions outside of the village center district. That being said and based on the limited amount of vacant land along Main Street, there is very limited opportunity to create new mixed use (residential/office/retail) construction. As such, any "new" development along this section of Main Street would have to come from the redevelopment of existing properties – with the 117 acres of residential property presenting the most probable development option."

¹⁵ *Cost of Community Services Studies: Making the Case for Conservation*. Julia Freedgood, 2002.

For Ashfield, an approach that encompasses both appropriate business development and conservation of natural resources will best satisfy the desires of residents to maintain their community character while offsetting the tax burden. By continuing to pursue growth management strategies that include active land conservation and zoning measures that balance development with the protection of natural resources, Ashfield will be able to sustain and enhance the community's agricultural and rural village character and help to maintain a high quality of life for residents.



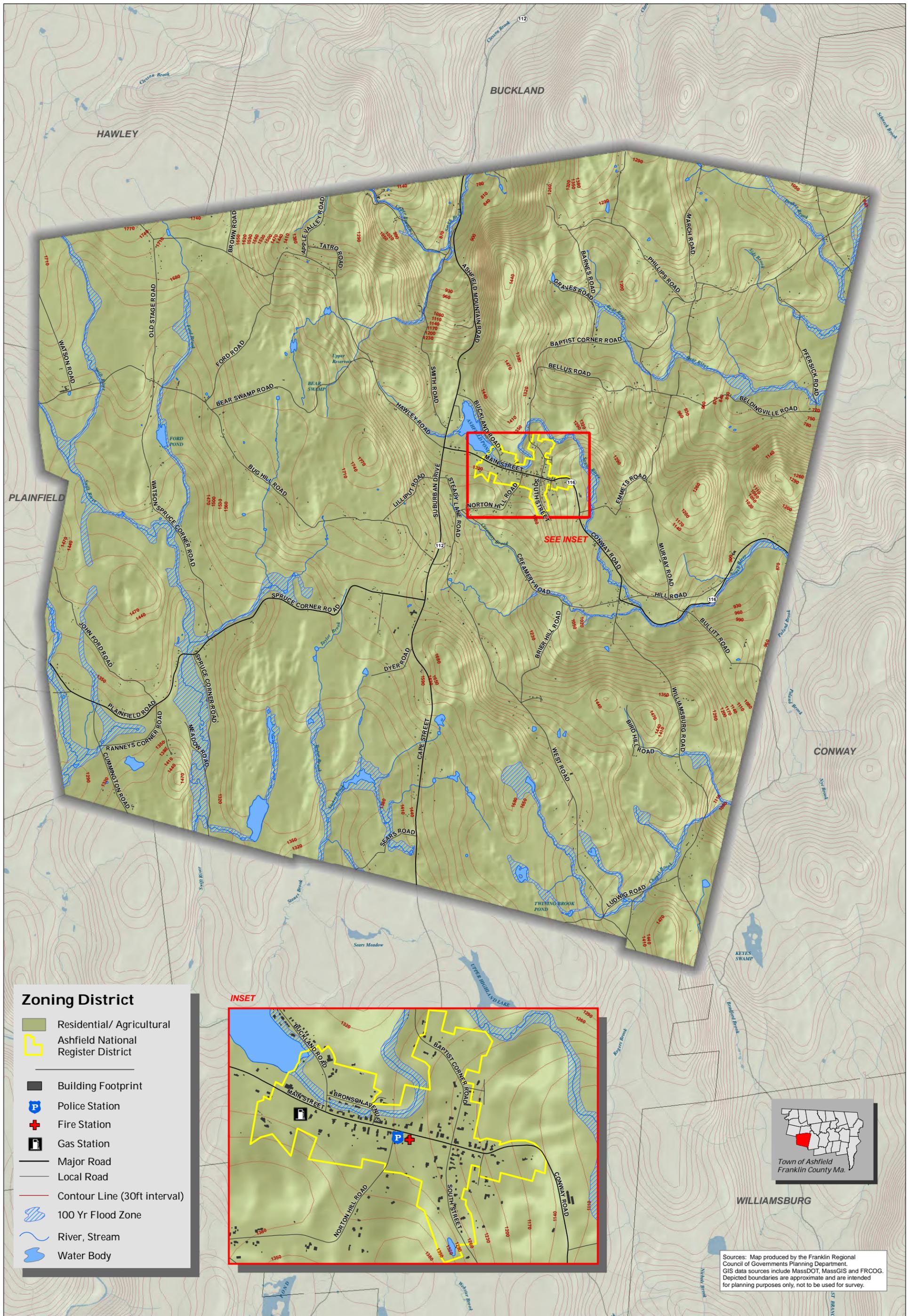
2005 Land Use

- Forest Land Use
- Other Land Use
- Permanently Protected Open Space
- 1/2 mi Buffer Scenic Byways Routes 112 & 116
- Local Road
- Major Road
- Transmission Line
- County Boundary
- River, Stream
- Water Body



Sources: Map produced by the Franklin Regional Council of Governments Planning Department. GIS data sources include MassDOT, MassGIS and FRCOG. Depicted boundaries are approximate and are intended for planning purposes only, not to be used for survey.





Town of Ashfield Open Space & Recreation Plan 2018

Zoning

SECTION 4:

ENVIRONMENTAL INVENTORY AND ANALYSIS

This section of the Ashfield Open Space and Recreation Plan provides a comprehensive inventory of the natural resources and the significant cultural resources within the Town of Ashfield. The purpose behind any inventory is to provide a factual basis upon which assessments can be made. The environmental inventory identifies the Town's soils, special landscape features, surface waters, aquifers, vegetation, fisheries and wildlife, and unique environments and scenic landscapes.

Each of these resource areas is analyzed from two perspectives. First, the basic values that the Town's natural resources provide the citizenry of Ashfield are ecological services and cultural amenities. Ecological services include for example, drinking water filtration, flood storage capacity, maintenance of species diversity, and soil nutrient levels. Cultural amenities include the recreational use of open spaces, the quality of life benefits that are maximized by maintaining the area's rural character and scenic beauty, and the direct and indirect beneficial impacts that well-conserved natural resources, such as good drinking water and open spaces, have on the local economy. Second, it is important to determine whether the resource requires conservation so that the quantity and quality of the resource required by the citizenry is sustained.

A. DOCUMENTING AND MAPPING ECOSYSTEMS

Just as the Town of Ashfield contains multiple and varied ecosystems, the state of Massachusetts, while relatively small, has many diverse ecosystems and habitats. Documentation and mapping of such ecosystems and habitats – and their associated flora and fauna – can be a first step toward protecting and preserving these resources.

A.1 BioMap2

In 2010 The Massachusetts Department of Fish and Game and The Nature Conservancy launched *BioMap2: Conserving the Biodiversity of Massachusetts in a Changing World*.¹ This project, produced by the Natural Heritage and Endangered Species Program (NHESP), is a comprehensive biodiversity conservation plan for Massachusetts, and endeavors to protect the state's biodiversity in the context of projected effects of climate change.

BioMap2 combines NHESP's 30 years of rare species and natural community documentation with the Division of Fish and Wildlife's² 2005 State Wildlife Action Plan (SWAP). It also integrates The Nature Conservancy's assessment of ecosystem and habitat connections across the State and incorporates ecosystem resilience in the face of anticipated impacts from climate change. *BioMap2* data replace the former BioMap and Living Waters data.

¹ <http://www.mass.gov/eea/agencies/dfg/dfw/natural-heritage/land-protection-and-management/biomap2/>

² <http://www.mass.gov/eea/agencies/dfg/dfw/>

The following are the core statewide findings summed up in BioMap2’s Executive Summary.

Core Habitat Statewide Summary: Core Habitats consists of 1,242,000 acres that are critical for the long-term persistence of rare species and other Species of Conservation Concern, as well as a wide diversity of natural communities and intact ecosystems across the Commonwealth. Core Habitat includes:

- Habitats for rare, vulnerable, or uncommon mammal, bird, reptile, amphibian, fish, invertebrate, and plant species;
- Priority Natural Communities;
- High-quality wetland, vernal pool, aquatic, and coastal habitats; and
- Intact forest ecosystems.

Critical Natural Landscape Statewide Summary: Critical Natural Landscapes (CNLs) consists of 1,783,000 acres complementing the Core Habitats, including large natural Landscape Blocks that provide habitat for wide-ranging native species, support intact ecological processes, maintain connectivity among habitats, and enhance ecological resilience. The areas include buffering uplands around coastal, wetland and aquatic Core Habitats to help ensure their long-term integrity. CNLs, which may overlap with Core Habitats, include:

- The largest Landscape Blocks in each of 8 ecoregions; and
- Adjacent uplands that buffer wetland, aquatic, and coastal habitats.

Table 4-1: BioMap2 Statewide Summary Total Acres and Acres Protected

	Total Acres	Percent of State	BioMap2 Acres Protected
Core Habitat	1,242,000	24%	559,000
Critical Natural Landscape	1,783,000	34%	778,000
BioMap2 Total (with overlap)	2,092,000	40%	861,000

A.2 NHESP Priority Habitats

Priority and Estimated Habitats is a program administered by NHESP. Identification and mapping of Priority and Estimated Habitats is based on the known geographical extent of habitat for all state-listed rare or endangered species, both plants and animals, and is codified under the Massachusetts Endangered Species Act (MESA). Habitat alteration within Priority Habitats is subject to regulatory review by the Natural Heritage & Endangered Species Program. Priority Habitat maps are used for determining whether or not a proposed project must be reviewed by the NHESP for MESA compliance.³

³ <http://www.mass.gov/eea/agencies/dfg/dfw/natural-heritage/>

A.2.1 Benefits of BioMap2 and NHESP Priority Habitats

On the statewide level, mapping Core Habitat and Critical Natural Landscapes helps to guide strategic conservation to protect those areas that are most critical to the long-term survival and persistence of rare and other native species and their related habitats and ecosystems.

On the local level, Ashfield can use this information to better understand where the Town's ecosystems and habitats fit into the bigger picture. For example, a small parcel of land could be a key link to two larger, intact ecosystems.

On an individual landowner level, *BioMap2*—as well as NHESP Priority and Supporting Habitats—is an important tool that can be used to apply for grants to help improve, manage and monitor certain lands. An example is the Mass Wildlife Landowner Incentive Program, which helps fund efforts to maintain grasslands and create areas of young tree and shrub growth (early woodlands) to enhance wildlife habitat, with preference given to land that is classified as, or located nearby, NHESP areas.

Information and mapping from *BioMap2* and NHESP Priority Habitats for the Town of Ashfield will be referenced throughout this section on Environmental Inventory and Analysis. BioMap2 Core Habitat and Supporting Natural Landscapes, and NHESP Priority Habitats, are shown on the Soils and Environmental Constraints Map at the end of this section. (*See Appendix A for a copy of the BioMap2 report for the Town of Ashfield and Appendix B for a letter from NHESP regarding information on species listed under the Massachusetts Endangered Species Act (MESA), as well as on Priority Natural Communities, Certified and Potential Vernal Pools, Coldwater Fishery Resource streams and rivers, and other aspects of biodiversity documented for the Town of Ashfield.*)

A.3 Resiliency to Climate Change

In 2011, the Massachusetts Executive Office of Energy and Environmental Affairs issued the *Massachusetts Climate Change Adaptation Report*.⁴ Climate change will result in potentially profound effects on the economy, public health, water resources, infrastructure, coastal resources, energy demand, natural features, and recreation throughout the state. The issue of climate change, and in particular climate change adaptation, is complex. The impacts of climate change will vary not only geographically but temporally—some of the impacts may not be felt for another 30 years or further in the future, while others are already upon us. When considering land conservation strategies and suitable sites for recreation facilities, climate change adaptation and resiliency should enter into the decision-making process of the town.

The Nature Conservancy (TNC) released a report in 2013 entitled “Resilient Sites for Terrestrial Conservation in the Northeast and Mid-Atlantic Region.”⁵ According to the Introduction of the TNC report, climate change is expected to alter species distributions. As species move to adjust to changing conditions, federal, state and local agencies and entities involved in land conservation need a way to prioritize strategic land conservation that will conserve the maximum

⁴ <http://www.mass.gov/eea/air-water-climate-change/climate-change/climate-change-adaptation-report.html>

⁵ <https://www.conservationgateway.org/ConservationByGeography/NorthAmerica/UnitedStates/edc/reportsdata/terrestrial/resilience/Pages/default.aspx>

amount of biological diversity despite shifting species distribution patterns. Current conservation approaches based on species locations or on predicted species' responses to climate, are necessary, but hampered by uncertainty. TNC states that it offers a complementary approach, one that aims to identify key areas for conservation based on land characteristics that increase diversity and resilience. The central idea of this project is that by mapping key landscapes and evaluating them for characteristics that buffer against climate effects, conservationists can identify the most resilient places in the landscape.

The Nature Conservancy's resilience analysis aims to identify the most resilient examples of key landscapes to provide conservationists with locations where conservation is most likely to succeed over centuries. The Massachusetts Division of Conservation Services' Landscape Partnership Grant Program, which seeks to preserve large, unfragmented, high-value conservation landscapes, including working forests and farms of at least 500 acres in size, specifically references the TNC report and mapping.⁶

Ashfield is currently partnering with the town of Conway to study Municipal Vulnerability Preparedness to evaluate and prepare for several aspects of climate change. These include:

- The impacts of more frequent and severe storm events
- Strengths and vulnerabilities of residents, infrastructure, and natural resources related to these hazards
- Specific actions that can reduce the impact of severe storms and other hazards
- Ways to increase the flood resilience of the South River Watershed and our towns

B. GEOLOGY, SOILS AND TOPOGRAPHY

Decisions about land use should take into consideration the inherent suitability of a site for different kinds of development. Environmental factors such as geology, soils, and topography are essential to understanding the spatial relationships of land-based natural resources and determining potential sites for future residential, commercial and industrial development or for new parks, hiking trails and open space.

B.1 Geology

Ashfield is underlain by schist and granite created before the formation of the supercontinent Pangaea, more than 400 million years ago, and variously up-thrust, twisted and eroded to form the basic landforms we see today. Two hundred million years ago, during the age of the dinosaurs, the supercontinent began to break up, and a related rift created the Connecticut valley. During the Tertiary period, less than 100 million years ago, the whole area was thrust upward, forming a plateau which has been eroding ever since.⁷ Along the way there have been innumerable other geological events, such that the area is renowned for the study of geology.

⁶ <http://www.mass.gov/eea/grants-and-tech-assistance/grants-and-loans/dcs/grant-programs/landscape-partnershipprogram.html>

⁷ Richard D. Little, *Dunes, and Drifting Continents: The Geology of the Connecticut River Valley*, 3rd Edition; 2003.

B.2 Soils

Most of Ashfield's soil has its origin during the Wisconsin Glacial Age, which began about 80,000 years ago and ended about 10,000 years ago. As the ice sheet advanced and later retreated, it scrubbed the bedrock clean and left a mixture of rock fragments, sand, silt and clay behind, which is known as glacial till. Runoff from the glaciers created innumerable streams, rivers and lakes, resulting in the deposit of layers of sand and gravel in many areas. In higher locations, deposits washed off entirely, exposing the underlying bedrock. In the millennia since the glaciers departed, topsoil began to form as succeeding waves of plant communities moved into the area, taking advantage of the soils to which they were best adapted.

As a result of these complex origins, soils vary widely throughout the town. The Natural Resources Conservation Service Soil Surveys identified more than sixty distinct soil types, which fall into three principal associations. The Merrimac-Ondowa association, found in the Ashfield Plain and South Ashfield, is characterized by well-drained and somewhat excessively drained sandy and gravelly soils in the foothills of the Berkshires. It typically includes terraces and floodplains along fast-flowing mountain streams, where there are deep deposits of water-

sorted sand and gravel. The Westminster-Marlow association, found in areas west of Route 112, is marked by soils that are well-drained and moderately well-drained soils with an olive subsoil, common to the Berkshire Hills. These soils formed in glacial till, and they vary from very dense and shallow soil to fine-textured farmland. Finally, the Westminster-Colrain-Buckland association, found on the east side of town, includes moderately well-drained soils with a dull brown or olive subsoil, commonly found in the foothills west of the Connecticut Valley.

What is Prime Farmland?

According to Natural Resources Conservation Service (NRCS), Prime Farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and that is available for these uses. It has the combination of soil properties, growing season, and moisture supply needed to produce sustained high yields of crops in an economic manner if managed with acceptable farming methods.

In general, Prime Farmland has an adequate and dependable water supply from precipitation or irrigation, a favorable temperature and growing season, an acceptable level of acidity or alkalinity, an acceptable content of salt or sodium, and few or no rocks. Its soils are permeable to water and air. Prime Farmland is not excessively eroded or saturated with water for long periods of time, and it either does not flood frequently during the growing season or is protected from flooding.

The Soils and Environmental Constraints Map at the end of this section illustrates the principal soil associations according to their level of drainage and the related constraints on development. The driving factor is soil suitability for septic systems, but typically the same factors affect the ability to build new roads, driveways and structures. Severe development constraints are found along much of the higher terrain in the Northeast side of town, with many areas of bedrock near the surface, ledge outcroppings, boulders and steep slopes. Moderate constraints are identified in areas which have deeper soils, but where there are other problems, including high water table, seasonal flooding, or poor permeability due to the density of the soil itself. The map explains the location of the town's villages, farms and home sites, and makes clear why development has spread slowly across Ashfield's back land. It also implies that the

best locations for additional growth in town may be the original village centers settled more than two hundred years ago.

B.2.1 Prime Farmland and Development

Agricultural soils, especially Prime Farmland and Farmland of Statewide Importance, have characteristics that make them suitable for, and therefore vulnerable to, development. (In the remainder of this section, these two types of soils are referred to together as “prime.”) This is in conflict with the fact that farmland is a critical resource in providing locally grown food and contributing to the rural character of the landscape of Ashfield. Areas of Prime Farmland are also shown on the Soils and Environmental Constraints Map.

As early settlers soon discovered, good farmland is a limited commodity in Ashfield. Found mostly along the various river and stream valleys, Prime Farmland is designated by the U.S. Department of Agriculture based on its capacity for producing various agricultural crops. In general, it has the fertility, acidity and moisture content that will allow sustained high yields of crops with common farming methods. It is not subject to frequent flooding or erosion, has few rocks, and gradual slopes. Farmland of statewide importance is also highly productive, but tends to be somewhat steeper, stonier, wetter, or drier, and therefore will be less productive over all. Not surprisingly, the areas of Beldingville, Baptist Corner, Ashfield Center and South Ashfield that were the first to be settled each contain large areas of Prime Farmland soils.

Prime Farmland and Farmland of Statewide Importance are scattered throughout Ashfield, reflecting the somewhat random effects of glacial deposition, followed by thousands of years of slow accretion of topsoil. Beavers likely sped the process in the stream valleys, building dams and ponds which catch the sediment washing down from the hills. Eventually the ponds silt up and become a wet meadow, and the beavers move on – but when the forest begins to grow back they start over with new dams. Over hundreds or thousands of years, this cycle builds deep deposits of topsoil. This perhaps helps to explain why the largest concentrations of prime and statewide important farmland are in the valleys of the Swift River, Bear River and South River.

It is not possible for the Town of Ashfield to protect all of its farmland, yet there are ample arguments for protecting a significant percentage of the Prime Farmland soils from development. Farming will be most profitable on the best soils. Farms that remain in operation help to maintain the historical land use patterns that people so commonly relate to rural landscapes. The presence of fresh, locally grown produce in roadside farm stands is often taken for granted by residents, until they are gone.

Prime Farmland soils can be reclaimed from forestland. Houses, on the other hand, are not a land use from which farming can recover. Once farmland is converted through development to residential uses, its agricultural value is negated and it will likely never be farmland again. Ashfield fortunately has the opportunity to work with willing landowners to preserve as much of the remaining farmland as possible. An effective way of conserving farmland would be to prioritize the parcels of those landowners that want their land protected. The Agricultural Preservation Restriction (APR) Program is a voluntary program that provides a non-development alternative to farmers and other owners of "prime" and "state important" agricultural land. The program offers to pay farmland owners the difference between the "fair market value" and the

"agricultural value" of their farmland in exchange for a permanent deed restriction, which restricts any use of the property that will have a negative impact on its agricultural viability.⁸ The APR program requires a local match for the program that can come from any combination of three sources: the municipality, a non-governmental organization such as a land trust, and from a bargain sale conducted by the landowner. The local match requirement is 20 percent, however this percent is reduced if the town has implemented certain policies, including establishing an Agricultural Commission and adopting a Right-to-Farm bylaw.

Ashfield has both an Agricultural Commission and a Right-to-Farm bylaw in place. Agricultural Commissions advocate for farmers, farm businesses, and farm interests in town, and can help work with other boards and committees on farm related issues or concerns. A Right-to-Farm bylaw encourages the pursuit of agriculture, promotes agriculture-based economic opportunities, and protects farmlands within a town by allowing agricultural uses and related activities to function with minimal conflict with abutters and town agencies.⁹ Many towns with Right-to-Farm bylaws publicly display their support for farming through signage indicating they are a "Right-to-Farm" community.



Examples of "Right-to-Farm" signage in Massachusetts' towns. Source: MA Executive Office of Energy and Environmental Affairs.

With the issues of global warming and the need for energy conservation, farmland protection becomes more vital. Locally grown and harvested products allow communities to be more self-sufficient and to help contribute to the reduction of pollution and use of fossil fuels. Protecting farmland for agricultural use has larger implications beyond the town level for the region's food supply. Protecting farmland and local food supplies was identified as the top natural resource goal through the public participation process for the 2013 *Sustainable Franklin County: Franklin County's Regional Plan for Sustainable Development (RPSD)*. To examine whether Franklin County has the land resources needed to support an increasing demand for local food—and to achieve some level of food self-reliance—the Conway School of Landscape Design (CSLD) was hired to undertake an analysis of Franklin County's farmland for the RPSD.

The study found that currently over half of all pasture land in Franklin County is in West County, as is nearly all of the orchard land. The study finds that in order for the County to achieve food self-reliance, an additional 3,880 acres of pasture and 13 acres of orchard would need to be put into production (see Table 4-2 below). Currently the County has adequate cropland for self-reliance; however, it is important to note that many farms produce crops for local markets as well

⁸ Massachusetts Agricultural Preservation Restriction Program: <http://www.mass.gov/eea/agencies/agr/land-use/agricultural-preservation-restriction-program-apr.html>.

⁹ Massachusetts Executive Office of Energy and Environmental Affairs: <http://www.mass.gov/eea/agencies/agr/land-use/right-to-farm-by-law.html>.

as markets outside of the County. The study also notes that while population growth in the County overall is expected to be low in the future, many of East County’s farm parcels are along roadways, making them more vulnerable to development.

Table 4-2: Franklin County Farmland Needed for Self Reliance

Farmland Type Needed	Existing Farmland Acreage	Farmland Acreage Needed	Balance
Cropland	23,750	16,547	+7,203
Pasture	12,320	16,200	-3,880
Orchard	1,180	1,193	-13
TOTAL	37,250	33,940	+3,310

Source: *Franklin County Farmland and Foodshed Study*, Conway School of Landscape Design, 2012. As presented in the *2013 Sustainable Franklin County: Franklin County’s Regional Plan for Sustainable Development’s* Natural Resources Chapter.

Agricultural trends in Franklin County between 2002 and 2012 show a steady increase in the number of farms and the amount of land in farms in the County, which is contrary to national trends. At the same time the size of farms is decreasing. Additionally, the number of farms where farming is the primary occupation of the principal operator has increased in Franklin County since 2002.¹⁰ All of these trends seem to suggest that farming is a growing economic sector in the County, where small farms operated as the owner’s primary business are surviving and thriving. Ensuring that good farmland remains available and affordable for farming will help continue to support the growth of this important part of the region’s rural economy.

B.3 Topography

Ashfield lies on the border of the Berkshire Highlands/Southern Green Mountains, the Berkshire Transition, and the Vermont Piedmont Ecoregions. The Berkshire Highlands Ecoregion is an area drained by the Deerfield, upper Westfield, Hoosic, and Housatonic Rivers. Lakes and ponds are relatively abundant. This ecoregion has deep soils that support northern hardwoods and spruce-fir forests. The Berkshire Transition Ecoregion shares characteristics with the Berkshire ecoregions and the Connecticut River Valley Ecoregion. Forests are transition hardwoods and northern hardwoods. This area drains to the Westfield and Connecticut River basins. The Vermont Piedmont Ecoregion contains transition hardwood and northern hardwood forests. Hills are sometimes quite steep. Surface waters are highly alkaline. This area drains to the Deerfield and Connecticut River basins.

The combination of bedrock geology and glacial deposits has given Ashfield a varied and dramatic topography. East of Route 112, the land drains primarily East and North into the Deerfield River Watershed, and it is marked by steep hills and narrow valleys. The high point is Peter Hill, just west of Ashfield Plain, at 1,843 feet; the low point is where the Bear River flows east into Conway, at about 700 feet in elevation. Relative relief can be dramatic, as in the nearly six hundred foot difference between Ashfield Lake and Peter Hill, just ¾ mile distant. Dramatic views may be had from many of the roads, with long vistas of the Clesson Brook or South River Valleys framed by steep hillsides.

¹⁰ U.S. Census of Agriculture, 2002, 2007, and 2012. <http://www.agcensus.usda.gov/>

West of Route 112, the land drains south into the Westfield River Watershed, and is marked by the beginning of the Berkshire plateau. Relative relief is much less pronounced, varying just 200-300 feet from valley to hilltop. Views generally end at the edges of clearings, or are contained by the rim of the valley – though some longer views may be had from the high farms and pastures in Watson.

C. LANDSCAPE CHARACTER

Perched on the edge of the Berkshire Plateau, Ashfield combines the typically steep and rugged topography of the hill towns with the more moderate, rolling landscape of the Berkshire plateau. Draining into two watersheds, and further dissected by rocky ridgelines into a number of different districts, there is no single place where you can capture the entirety of the town’s character. Part of its charm is that the town can only be understood as a series of landscapes that unfold as you move through it. Each district has its own unique identity; the result of a particular combination of soils, climate, and topography with the actions of people over centuries. The result is an extraordinarily varied and interesting landscape, with the added bonus that people continue to work the land, and the active processes of farming, logging, milling, and mining add to the town’s visual and social diversity. Areas with a distinct character include:

- Ashfield Center and the Ashfield Plain;
- Steady Lane;
- South Ashfield and the Creamery Brook/South River Valley;
- Beldingville/Baptist Corner and the Bear River Valley;
- Apple Valley ;
- Wardville
- Brier Hill
- Watson/Spruce Corner and the Swift River Valley; and
- Chapel Falls.

The Scenic and Unique Resources Map at the end of this section shows these areas, along with other special places that will be described in more detail in the following sections on Ashfield’s natural and cultural resources.

C.1 Potential Changes in Development

Each of these distinctive areas of Ashfield combines a beautiful natural setting of wooded hills, meadows and streams with a rich cultural landscape reflecting 250 years of settlement, yet each is marked by such a unique combination of elements that you recognize immediately where you are. The result is a rich sense of place, not only for the town in general, but for each of its separate neighborhoods. It is a fragile balance, however, that keeps this sense of place alive. As roadsides are developed for Approval Not Required (ANR) frontage lots, the varied scenery is replaced by a monoculture of houses in a range of styles, few of which reflect local architectural traditions. As active agriculture declines, fields and meadows grow up to woods, eliminating the sweeping views from many of the ridge-top roads. Only by preserving these landscapes as intact systems—including structures, working landscapes and visual context—can we preserve

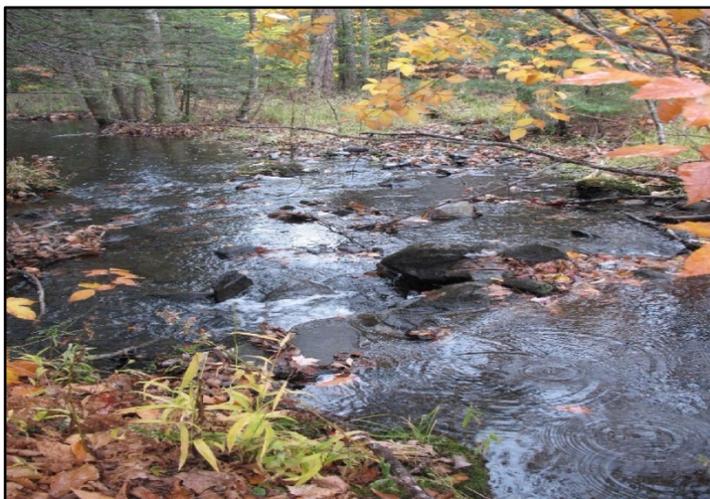
Ashfield’s unique sense of place. This doesn’t mean that progress should stop, only that we need to guide growth and change so that it reinforces the special places, rather than erasing them.

The overall character of Ashfield could be affected by a number of potential changes. Potential impacts of climate change could begin to push populations further west in the State, away from the coast, and more of Ashfield’s land could be used for residential development. Diminishing supplies of fossil fuels—and their rising costs—continue to cause people to turn to alternate sources of locally produced energy sources, such as wood and solar, which could impact Ashfield’s woodlands and open spaces. Related to the rising costs of fossil fuels, costs of shipping foods long distances could cause an even greater demand for locally grown and processed food, potentially placing a greater demand on farmland in Ashfield. Land that is currently forested and that contains Prime Farmland soils could be converted to farmland. Flooding from an increase in the intensity of storms and rainfall may further limit the availability of land for new development. While challenging, with thoughtful planning, these potential changes in development could be integrated into Ashfield’s existing character and could lead to greater energy independence and food security.

D. WATER RESOURCES

Ashfield is blessed with abundant clean water, which is provided by thousands of acres of undeveloped forests and wetlands. These areas collect precipitation in the form of rain and snow, filter and purify it through growing vegetation and soil, and allow it to percolate into the ground to replenish the water table. Water moves slowly along the water table, and is released slowly into wetlands and streams, maintaining flows throughout all but the driest periods. Deeper underground, water collects in fissures in the bedrock, and accumulates in buried sand and gravel deposits to form aquifers.

There are 104 acres of surface waters covering approximately 0.4 percent of the surface area of the Town of Ashfield, as well as over 600 acres of forested wetland (2.4%), and 775 acres of



One of the many cold-water streams in Ashfield, many that support native Brook Trout. Photograph by Mollie Babize.

non-forested wetland (3%). Most of the rivers in Ashfield and the multiple streams and brooks that feed into them are classified as Cold Water Fisheries.

The 2016 Massachusetts Integrated List of Waters prepared by MassDEP is the Final Listing of the Condition of Massachusetts’ Waters Pursuant to Sections 305(b), 314 and 303(d) of the Federal Clean Water Act. The Integrated List of Waters assigns one of the following five categories to a given water body, depending upon their status with respect to the support of their designated uses:

1. Unimpaired and not threatened for all designated uses;
2. Unimpaired for some uses and not assessed for others;
3. Insufficient information to make assessments for any uses;
4. Impaired or threatened for one or more uses, but not requiring the calculation of a Total Maximum Daily Load (TMDL) (Category 4a includes waters for which the required TMDL(s) have already been completed and approved by the EPA); or
5. Impaired or threatened for one or more uses and requiring a TMDL.

In each case, the most severe pollutant is identified. Although the affected water bodies may contain other pollutants, the Integrated List of Waters only includes the results of evaluations upon which DEP has performed some measure of quality control.

The 2016 Integrated List of Waters lists the following water bodies in Ashfield as impaired or threatened:

1. Ashfield Pond (MA33001) – Category 4A for mercury in fish tissue
2. South River (MA33-07): Headwaters, outlet Ashfield Pond, Ashfield to Emmet Road, Ashfield – Category 5 for water temperature
3. South River (MA33-101, formerly part of MA33-08): Emmet Road, Ashfield to confluence with Johnny Bean Brook, Conway) – Category 5 for fecal coliform and E. coli

D.1 Surface Water

D.1.1 Watersheds

Ashfield is contained within the both the Deerfield River Watershed and Westfield River Watershed, and there is a small portion of the Connecticut River Watershed in the extreme southeast corner of Town near Ludwig Road. The South River is a sub-watershed of the Deerfield River Watershed. The headwaters of both the Deerfield River and the Westfield River are located in or near Ashfield. Maintaining high water quality of headwater streams is important for habitat, drinking water, recreation, and water quality of downstream communities.

Deerfield River Watershed

The Deerfield River is a major tributary to the Connecticut River. From its headwaters at Stratton Mountain in Vermont, the Deerfield River flows southward for 70 miles through the steep terrain of the Berkshires to its confluence with the Connecticut River. Throughout its length, ten hydroelectric facilities take advantage of extreme drops in elevation (2,000 feet) to supply thousands with power. The Deerfield River Watershed covers all or part of twenty municipalities, including Ashfield.

According to the 2004 Deerfield River Watershed Open Space and Recreation Plan prepared by the Franklin Regional Council of Governments, between 1985 and 1999, the Deerfield River Watershed lost 10 percent of its cropland, 22 percent of its pastureland, and 1 percent of forest. At the same time, the watershed experienced a 58 percent increase in large-lot residential development, which occurred primarily through the construction of single-family homes on lots

along existing roadways. During roughly the same period, the population of the watershed grew by 14 percent.

The Deerfield River Watershed Assessment Report 2004-2008, published by the MA Executive Office of Environmental Affairs, states that overall, water quality in the Deerfield River Watershed is quite good; however, several areas have encountered local water quality problems. According to the assessment, the principal water quality problem has been fecal coliform counts that exceed state standards occasionally during wet weather events. The report notes that nonpoint source pollution particularly from localized illegal dumping, acid mine drainage, stormwater runoff, failing septic systems, and agricultural activities, as well as elevated levels of arsenic within sediments behind several impoundments are also areas of concern.

Also published in 2004 by the MA Executive Office of Environmental Affairs, the Deerfield River Watershed 5-year Watershed Action Plan outlines six overarching goals for the watershed, with accompanying objectives and action items. The goals are:

- Coordinate flow management to benefit multiple uses
- Protect and improve water quality in the watershed
- Restore and improve stream continuity and aquatic habitat
- Protect wetlands and promote terrestrial habitat diversity
- Provide safe recreation and public access/use
- Protect open space and maintain rural landscape

Westfield River Watershed

The Westfield River Watershed drains 517 square miles from the eastern Berkshires to the Connecticut River (Figure 6). The main stem (the upper portion sometimes referred to as the East Branch) originates in the high country of Savoy and Windsor and flows 27 miles in a southeasterly direction, where it joins the Connecticut River. There are a total of 850 miles of rivers, streams, and brooks and 4,200 acres of lakes and ponds in the watershed. The Westfield River Watershed is bordered by the Deerfield, Hoosic, Housatonic, Farmington and Connecticut River watersheds and is contained almost entirely within Massachusetts. The watershed covers all or a part of twenty-eight municipalities, including Ashfield.

Because the headwaters originate in mountains with little soil to retain water, the Westfield River rises quickly in response to large storms and snowmelt. After those flows subside, little water is left for base flows. Consequently, the river naturally fluctuates between high and low flows. The upper portion of the watershed is rural. Timber harvesting and agricultural activities dominate the land use. The lower portion of the watershed is more developed and includes the heavily urbanized areas of Agawam, West Springfield, and Westfield. The Westfield River Watershed supplies surface water to seven public water supply systems and three industrial users and groundwater to four of the seven municipal supply systems.

D.1.2 South River

The South River is located in the Deerfield River Watershed (Segments MA33-07 and -101). It begins at the outlet of Ashfield Pond in Ashfield, Massachusetts South River and flows east and

then north through Conway, Massachusetts to its confluence with the Johnny Bean Brook in Conway. Agriculture and residential properties dominate the floodplains in the lower 7 miles of river where the valley widens. Overall, land use in the 26.3 square miles subwatershed is 77% forest, 13% agriculture, 6% residential, and 2% open land (MDEP 2003a).

The South River (SARIS ID # 3313650) is listed by MassWildlife as a Coldwater Fish Resource (CFR), defined as “a waterbody (stream, river, or tributary thereto) where reproducing Coldwater Fish use such waters to meet one or more of their life history requirements.”¹¹ MassWildlife regularly stocks trout in the South River in the spring. According to the Massachusetts Department of Environmental Protection’s (MDEP) 2003 assessment of the South River, aquatic life and first and secondary contact recreation uses are supported in the South River. However, it is listed in the 2016 Integrated List of Waters as Category 5 for water temperature, E. coli and fecal coliform.

D.1.3 Bear River

The Bear River is located in the Deerfield River Watershed (Segment MA33-17). The headwaters of the Bear River begin in Ashfield just east of Ridge Hill. The newly formed river flows through a golf course, where it is impounded, and then continues in a southeasterly direction until it passes into Conway. There it changes direction, flowing to the northeast. After passing under the Shelburne Falls Road the river enters a very steep valley before its confluence with the Deerfield River in Conway. The Bear River is also listed as a Coldwater Fish Resource (SARIS ID# 3313950).

The drainage area of this segment is approximately 11.78 square miles. Land-use estimates (top three) for the subwatershed include: 79% forest, 12% agriculture, and 5% open land. The presence of multiple age classes of brook trout and Atlantic salmon, multiple intolerant species, and the absence of macrohabitat generalists indicated excellent habitat and water quality conditions as well as stable flow regimes. Water quality in the Bear River was deemed to be “non-impacted” and in such pristine condition that it was used as the reference station condition for the 2000 Deerfield River Watershed Biomonitoring Survey, providing the benchmark against which the biology of all of the other segments of the watershed were assessed.

According to the Deerfield River Watershed 2000 Water Quality Assessment Report, “In order to prevent degradation of water quality in the Bear River it is recommended that land use planning techniques be applied to direct development, preserve sensitive areas, and maintain or reduce the impervious cover. The Towns of Ashfield and Conway should support recommendations of the recently developed individual municipal open space plans and/or Community Development Plans to protect important open space and maintain their communities’ rural character.”¹² For instance, the pipeline, proposed in 2014, would have impacted this stream due to construction, possible leakage, and a planned “dumping station”.

¹¹ <http://www.mass.gov/eea/agencies/dfg/dfw/wildlife-habitat-conservation/what-is-cfr-.html>. Because there are some streams in the state with the same name, the unique SARIS (Stream Inventory) numbers help identify the correct CFR location.

¹² Deerfield River Watershed 2000 Water Quality Assessment Report; MA Dept. of Environmental Protection; Report Number: 33-AC-1; October 2004; p. 89.

D.1.4 Swift River

The Swift River is part of the Westfield River Watershed (Segment MA32-12). It originates out of a small unnamed pond just south of Hawley Center in Hawley and flows southeasterly into Ashfield over moderately sloping terrain with some wetland areas. The river then flows in a more southerly direction by the village of Spruce Corner after which it enters the extensive Bassett Meadow wetland. The river then continues south into Goshen through steeper forested terrain until it reaches Route 9 where it abruptly turns west and then southwest into Cummington. The drainage area of this segment is approximately 30 square miles. Land-use estimates (top 3, excluding water) for the subwatershed include: 82% forest; 8% agriculture; and 3% residential.

The presence of multiple year age classes of reproducing brook trout is indicative of high quality cold water. The Swift River is also listed as a Coldwater Fish Resource (SARIS ID# 3211775) and is classified as a Class B fishery. MassWildlife regularly stocks trout in the Swift River in the spring. Based on the available information there are no WMA regulated water withdrawals or NPDES regulated surface wastewater discharges in the Swift River subwatershed.

D.1.5 Other Streams and Brooks

First and second order streams and brooks play an important role in Ashfield. Within a watershed, the first and second order streams and brooks provide a diversity of wildlife and fisheries habitat, scenery, and recreational opportunities. Each watershed contains a network of these small channels, known as headwater streams, which represent a majority of the drainage network and are exceptionally vulnerable to development within the watershed. Riparian corridors are the combination of the water body, the streambed, banks, and surrounding vegetation, which is significantly different than the surrounding uplands.

The following inventory lists Ashfield's streams and brooks. (*See also the Water Resources Map at the end of this section.*) According to the NHESP, there are a total of 26 Coldwater Fisheries Resource (CFR) streams in Ashfield. As mentioned above, the Bear River, the South River, and the Swift River are (including the North Branch) classified as CFRs. There are 13 small, unnamed tributaries to these brooks and rivers are also classified as CFRs. The following named streams are divided into two categories depending on which watershed they are located in and they are presented roughly in order as they appear north to south (an asterisk by the name indicates that the stream is classified as a CFR):

Deerfield River Watershed	Westfield River Watershed	Connecticut River Watershed
Upper Branch of Clesson Brook*	Ford Brook*	Bradford Brook*
Smith Brook*	Billings Brook*	
Drakes Brook*	Taylor Brook	
Sids Brook*	Stones Brook*	
Creamery Brook		
Chapel Brook*		

A number of these streams and brooks have habitat for rare and endangered species that are affected by pollution and can be protected through good open space management and acquisition of lands where these bellwether species exist (*see Table 4-3: Plant Species in Ashfield Listed as Special Concern, Threatened, or Endangered in Section E, Fisheries and Wildlife*).

D.1.6 Lakes, Ponds, and Other Surface Water Bodies

Ashfield Lake/Pond

Ashfield Lake (also often referred to as Ashfield Pond) is one of the prime water resources in the Town of Ashfield, with its 38 acres in the center of town providing scenic views and many recreational opportunities, including fishing, swimming, walking and boating. Belding Memorial Park (12.5 acres) wraps around the south east side of Ashfield Lake. The west end includes a boat launch, parking area, memorial and gazebo. The east side include the Ashfield town beach, parking, tennis courts and a lawn area that slopes down to South River, the outlet of Ashfield Lake. The town beach is for residents and guests only. Ashfield Park Commission is responsible for the oversight of the Town-owned land on the banks of Ashfield Lake. MassWildlife stocks the lake with trout in the spring and fall.

As noted above, Ashfield Lake is categorized as Class 4A on the 2016 Integrated List of Waters due to mercury in fish tissue. Class 4A means that it is “impaired or threatened for one or more uses, but not requiring the calculation of a Total Maximum Daily Load (TMDL).” Category 4A includes waters for which the required TMDL(s) have already been completed and approved by the EPA. Most uses have not been assessed:

Figure 4-1: Ashfield Pond Water Quality Assessment

Lake, Location	WBID	Size (Acres)	Aquatic Life  (Impairment Cause)	Fish Consumption  (Impairment Cause)	Primary Contact  (Impairment Cause)	Secondary Contact  (Impairment Cause)	Aesthetics  (Impairment Cause)
Ashfield Pond, Ashfield	MA33001	38	Not Assessed	Not Assessed	Not Assessed	Not assessed	Not assessed
<small>Ashfield Pond has a public bathing beach and although no bathing beach closures were recorded during the 2001 /2002 seasons at the Ashfield public beach too limited data are available so the <i>Primary</i> and <i>Secondary Contact Recreational</i> and <i>Aesthetic</i> uses are not assessed. It should be noted that Ashfield Lakehouse, a private organization, also has a beach. Fish tissue from Ashfield Pond was analyzed for mercury as part of a study in 1994 by Rose <i>et. al.</i> (1999) to examine fish mercury distribution in Massachusetts lakes. Concentration of mercury in tissue did not exceed the MA DPH action level. No site specific advisory was issued and, so, the <i>Fish Consumption Use</i> is not assessed.</small>							

Source: Deerfield River Watershed 2000 Water Quality Assessment Report

The Ashfield Lake Dam is owned by the Town of Ashfield and is located at the southern end of the lake, north of Main Street, and is accessed at its east abutment from the recreational area on Buckland Road. It is an earthen dam approximately 775 long with a maximum height of 16 feet and a typical crest width of 14 feet. The dam is classified as an Intermediate-size, High (Class I) hazard potential dam because it appears that a failure of the dam at maximum pool will likely result in the loss of life and serious damage to homes and commercial facilities. According to a Phase I Inspection/ Evaluation Report prepared by Tighe & Bond following an inspection on September 23, 2014, “the overall physical condition of Ashfield Lake Dam was found to be **Fair** based on the Office of Dam Safety’s 2008 rating guidelines. The primary reasons for the Fair condition rating are the trees and brush located near the downstream side of the dam and the deteriorated mortar of the stone masonry spillway.”¹³ To assist the Town in planning for a rehabilitation of the dam, the report includes recommendations for short-range tasks to be performed in the near term during the planning phase, and tasks to be included the rehabilitation project.

¹³ Tighe & Bond Inc., Ashfield Lake Dam Phase I Inspection/Evaluation Report, Date of Inspection: September 23, 2014.

Paddy Hill Pond – located near the Town’s southern border in the Westfield River Watershed. Paddy Hill Pond is a productive, pond with moderate aquatic plant growth and no documented invasive exotic plant species. Fringed by emergent marsh and surrounded by mixed forest uplands, Paddy Hill Pond has no development along its shores and little development in its watershed. The pond is likely important habitat for aquatic insects and other invertebrates, as well as potential habitat for young fish.

Twining Brook Pond – located in the extreme southeast corner of Ashfield in the Deerfield River Watershed off West Road in the Commonwealth Of Massachusetts DAR State Park.

Ford Pond – located on Ford Brook south of the intersection of Bug Hill Road and Ford Road in the Westfield River Watershed. It is a former mill pond currently owned by the Alan Lilly family.

Bear Swamp – headwaters of Smith Brook begin at Bear Swamp and then flow into Upper Reservoir in the Deerfield River Watershed. To early settlers, Bear Swamp was truly rough terrain: steep, wooded hillsides and exposed bedrock descending to boggy wetlands and swamp. Nonetheless, all of the land was cleared for forest products, pasture, and even hayfields. Other than remnants of water mills and maple sugaring works, man’s imprint here has been largely swallowed by the return of the forest. And along with the oak and cherry, maple and birch and evergreens, have come clusters of lowland vernal pools, shaded from the sun. The trees provide habitat and nesting places for myriad bird species. Come spring, several species of warblers announce their arrival, as mallards and wood ducks murmur in the ponds and freshwater marshes. And from the seasonal pools emerge the insistent songs of spring peepers and wood frogs. Great-horned owls and barred owls hoot in winter, while pileated woodpeckers loudly hammer home their presence on dead pines all year long.

D.2 Class A Water Sources

The Upper Highland Springs Reservoir (MA33025) is located just northwest of Well #1 on Bear Swamp Road in the Deerfield River Watershed. The reservoir covers approximately 2.5 acres is categorized as a Class A, Public Water Supply.

D.3 Flood Hazard Areas

According to the 2014 Ashfield Multi-Hazard Mitigation Plan, of Ashfield’s 25,766 total acres, 1,367 acres lie within the 100-year floodplain. Most of this land is in residential use. Current development in the floodplain includes 11 acres of residential land, about 3 1/2 acres of commercial, almost 14 acres of public/institutional and about 1 ½ acres of industrial uses. There is no land being used for public or institutional uses in the floodplain.

Generally speaking, the vast majority of the 1,367 acres of land in the floodplain consists of narrow strips along the brooks and rivers in Town. There is a concentration of residential development in and/or adjacent to floodplain along the South River in the southwest corner of town and other dispersed areas of Town.

A Flood Hazard District was adopted in 1999 and is comprised of all areas designated as Zone A on the Town of Ashfield Flood Insurance Rate Map (FIRM), dated September 7, 1985. According to the Town of Ashfield Zoning Bylaws, development in the Flood Hazard District subject to the certain requirements.

The Multi-Hazard Mitigation Plan identified the following areas in town as areas prone to chronic flooding :

- North side of Hawley Road, between Bear Swamp road and Tatro Road;
- West side of Old Stage Road, just north of the intersection with Watson Road;
- North side of Bug Hill Road approximately halfway between the intersections with Bear Swamp and Lilliput Roads; and
- North side of Lilliput Road approximately halfway between the intersections with Bug Hill Road and Suburban Drive.

(See also the Water Resources Map at the end of this section.)

Note should also be taken of the fact that the town's wastewater treatment facility lies near the floodplain of the South River. There is potential for the release of hazardous waste should floodwaters reach this facility.

D.3.1 Fluvial Erosion Hazard Areas

Rivers and streams in Ashfield have a long history of mills that were built along their banks, particularly on the South River. A considerable length of channel has been manipulated with numerous dams constructed and the channel realigned and straightened. The history of land use along and within the river has created a legacy of channel instability, accelerated rates of sediment production, and degraded physical habitat (e.g., limited pools, low quality cover, little channel complexity) for brook trout and other aquatic species.

Fluvial erosion hazard (FEH) zones are areas along rivers and streams that are susceptible to bank erosion caused by flash flooding. Any area within a mapped FEH zone is considered susceptible to bank erosion during a single severe flood or after many years of slow channel migration. While the areas of the FEH zones often overlap with areas mapped within the 100-year floodplain on Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs), the FIRMs only show areas that are likely to be inundated by floodwaters that overtop the riverbanks during a severe flood. However, much flood-related property damage and injuries is the result of bank erosion that can undermine roads, bridges, building foundations and other infrastructure. Consequently, FEH zones are sometimes outside of the 100-year floodplain shown on FIRMs. FEH zones can be mapped using fluvial geomorphic assessment data as well as historic data on past flood events. Both the FIRMs and FEH maps should be used in concert to understand and avoid both inundation and erosion hazards, respectively.¹⁴

Following the collapse of a retaining wall along the South River near the Route 116 bridge in Conway in March 2010 and the subsequent collapse of the repaired structure in the aftermath of Tropical Storm Irene in August 2011, the Franklin Regional Council of Governments (FRCOG)

¹⁴ *Ammonoosuc River Fluvial Erosion Hazard Map for Littleton, NH*. Field Geology Services, 2010.

was awarded a 604b grant from MassDEP to hire a fluvial geomorphology consultant to determine the causes of erosion, channel instability, and habitat degradation in the South River Watershed. This project, completed in 2013, identified 20 priority restoration sites throughout the South River Watershed and provided descriptions and recommended repairs, including for the following sites in Ashfield:

1. Downstream of Emmet Road, the stream runs through agricultural land owned by the Williams Farm. Riparian buffer establishment, possible ag runoff issues, encouraging meandering with deflectors.
2. Two Route 116 bridges (in the vicinity of Burton Hill Road). Lots of bank erosion. Buffer, fencing livestock out of stream, adding wood to channel, encourage meandering, increase floodplain access, trap sediment on floodplain.
3. The South River roughly doubles in discharge downstream of Creamery Brook, which enters just downstream of the village of South Ashfield. Downstream of the Creamery Brook confluence the stream is confined with Route 116 running along the left bank for most of the remainder of the Ashfield portion of the stream.
4. Immediately downstream of Creamery Brook confluence (upstream of Bullitt Road). Lots of unstable glacial banks and mass failures contributing excess sediment to the stream. The slopes of the bank upstream of Bullitt Road were stabilized by Jacobs Engineering Co for Mass DPT in the fall of 2012.
5. Downstream of Bullitt Road, and downstream of the current Jacobs Engineering project site, adjacent to a gravel parking pull-off along Route 116. Large glacial mass failures in this area could be stabilized by deflectors and encouraging side channel activation. This is similar to a site we surveyed in Conway, where bank cutting and a channel sill could reroute some or most of the flow into existing side channels thereby stabilizing the toe of the large mass failures (landslides).
6. Just downstream of the intersection of Route 116 and Hill Rd. Wide, shallow plane bed channel. We would like to encourage some meandering, flow complexity, pool formation and sediment storage in-stream and on the floodplain. Anchored in-stream wood and/or deflectors.

The 2013 assessment provided conceptual restoration designs for four reaches of the South River and a final engineering design for the highest priority restoration site in the Town of Conway. FRCOG and Conway received an s.319 grant from MassDEP to implement the priority restoration project, downstream of the Route 116 bridge. The project, completed in September 2016, combined bank stabilization measures to address eroding river bank and a floodplain lowering component to provide the river access to its floodplain to increase sediment storage and reduce flood flow velocities. Ideally, these measures will reduce the potential for future infrastructure damage at this location, as well as improve the aquatic habitat.

A fluvial geomorphic assessment of the South River Watershed was completed in 2016 for the Massachusetts Emergency Management Agency (MEMA) as a case study to test the practicality of applying Vermont's Geomorphic Assessment Protocols for identifying flood and erosion hazards along rivers and for prioritizing river restoration projects to address those hazards in Massachusetts. Use of the Vermont protocols enabled the development of River Corridor

Protection Area maps highlighting areas at risk for erosion and a River Corridor Plan detailing potential restoration projects that will reduce hazards while improving aquatic habitat.

Unlike the previous effort focused solely on the mainstem, the 2016 assessment and corridor management plan also included the following major contributing tributaries (listed in order from upstream to downstream):

- Creamery Brook (3.2 stream miles assessed) and two unnamed tributaries to Creamery Brook herein referred to as West Brook (1.2 miles) and Brier Hill Brook (1.5 miles);
- Chapel Brook (1.6 miles) that becomes Poland Brook (2.8 miles) when it crosses the town boundary from Ashfield into Conway;
- Johnny Bean Brook (0.8 miles); and
- Pumpkin Hollow Brook (1.9 miles).

The final meeting to present the corridor management plan on Fluvial Geomorphic Assessment and River Corridor Planning for the South River Watershed, MA was held in the Ashfield Town Hall on March 29, 2016 and was well attended by interested residents and officials from watershed towns, including many from Ashfield.

D.4 Wetlands

Ashfield's wetlands are sparsely scattered throughout town except for a small congregation between Spruce Corner Road and Meadow Road along the Swift River. Most of the wetlands consist of intermittent streams within narrow ravines created by the rolling landform. Although many hillsides and meadows contain significant wetland vegetation and soils, they are not regulated as such by state law, since they are moistened by underground springs and are not connected to flowing surface waters. Beavers create significant marshes in flat land along streams.

Historically, wetlands have been viewed as unproductive wastelands, to be drained, filled and "improved" for more productive uses. Over the past several decades, scientists have recognized that wetlands perform a variety of extremely important ecological functions. They absorb runoff and prevent flooding. Wetland vegetation stabilizes stream banks, preventing erosion, and trap sediments that are transported by runoff. Wetland plants absorb nutrients, such as nitrogen and phosphorus, which would be harmful if they entered lakes, ponds, rivers and streams. They also absorb heavy metals and other pollution. Finally, wetlands are extremely productive, providing food and habitat for fish and wildlife. Many plants, invertebrates, amphibians, reptiles and fish depend on wetlands to survive. Wetlands have economic significance related to their ecological functions: it is far more cost-effective to maintain wetlands than build treatment facilities to manage stormwater and purify drinking water, and wetlands are essential to supporting lucrative outdoor recreation industries including hunting, fishing and bird-watching.

In recognition of the ecological and economic importance of wetlands, the Massachusetts Wetlands Protection Act is designed to protect eight "interests" related to their function: public and private water supply, ground water supply, flood control, storm damage prevention, prevention of pollution, land containing shellfish, fisheries, and wildlife habitat. To this end, the

law defines and protects “wetland resource areas,” including banks of rivers, lakes, ponds and streams, wetlands bordering the banks, land under rivers, lakes and ponds, land subject to flooding, and “riverfront areas” within two hundred feet of any stream that runs all year. Local Conservation Commissions are responsible for administering the Wetlands Protection Act; some towns also have their own, local wetlands regulations.

D.5 Aquifers

Water plays a very important role in supporting our communities. We use water every day for drinking, for disposal of our sewage, for irrigating croplands and lawns and for our local industries. The amount of money we, as individuals, pay for our clean drinking water depends on its supply and the amount of effort that is invested in purifying it. Surface reservoirs often require expensive filtration plants that are monitored regularly by paid professionals. In comparison, aquifers contain water that enters the soils within a sub-watershed as precipitation and which slowly infiltrates the ground water levels. This slow infiltration process helps to purify the water at little cost to the consumer. This is one way in which watersheds in their natural, vegetated state provide a valuable ecological service. Land naturally contributes to the hydrologic cycle by storing and releasing water. However, the manner in which we use land can hinder this ecological process by preventing water from infiltrating topsoil or by allowing contaminated water to leach into the groundwater. Protected open space can help preserve the integrity of aquifers by sustaining the land’s natural water retention capacity and by reducing the areas covered by land uses which may store, use, or distribute hazardous materials.

The quality and the quantity of the water within Ashfield’s aquifers will have great impact on the Town’s future growth potential. As the percentage of impervious surfaces increases, the quantity of water that is available for consumption decreases because more of the water that should be entering the ground water is being quickly whisked away to surface waters. Also, as the demand for water for commercial activities, industrial processing and human consumption increases, this further limits the supply. Permanently protecting critical parcels of land from development will help maximize the amount of available surface and groundwater.

Wells tap into the underground water supplies called aquifers that are recharged from precipitation. There are two Department of Environmental Protection (DEP) Approved Zone II Aquifer Protection Recharge Areas in Ashfield (*see the Water Resources Map*). The Ashfield Water District maintains two water supply wells that provide water to the center of town and the Ashfield Lake area. The District also maintains the former reservoir as an emergency water source.

The wells are both bedrock wells drilled to depths of 400 and 440 feet, respectively, and have approved withdrawal rates of 24.6 and 23.7 gallons per minute based on continuous rate pumping tests. The Zone I and Zone II Approved Wellhead Protection Areas’ radii are 332 feet and 1,132 feet, respectively, for Well #1 and 330 feet and 1,132 feet, respectively for Well #2. The Zone I is the protected area immediately surrounding the wellhead while the Zone II protection area for a water supply well is where the actual recharge area has been delineated.

The water system’s infrastructure currently handles an annual average of about 24,000 to 25,000 gallons per day (GPD) in the winter and 30,000 GPD during the rest of the year. MassDEP has

recommended that the Town purchase a 300 foot buffer surrounding the well on Hawley Road; however, this is not currently possible as the owner of that land is not willing to sell.

The wells are located within a bedrock aquifer with relatively thin till covering. The predominant bedrock is mapped as highly contorted schist with granofels, marble or quartz of the Waits Formation. There is no record indicating a confining, protective clay layer or artesian conditions in the vicinity of the wells. Wells located in these geological conditions are considered to have a high vulnerability to contamination due to the absence of hydrogeologic barriers that can prevent contaminant migration from the surface. Water from the Ashfield wells does not require and does not have treatment at this time. However, the District does have the capability to chlorinate water from the wells if it is necessary.¹⁵

E. VEGETATION

E.1 Forests

Nearly 80% of Ashfield's total land area is forested. The Town lies on the border of the Berkshire Highlands/Southern Green Mountains, the Berkshire Transition, and the Vermont Piedmont Ecoregions. The Berkshire Highlands Ecoregion has deep soils that support northern hardwoods and spruce-fir forests. The Berkshire Transition Ecoregion shares characteristics with the Berkshire ecoregions and the Connecticut River Valley Ecoregion. Forests are transition hardwoods and northern hardwoods. The Vermont Piedmont Ecoregion contains transition hardwood and northern hardwood forests.

The Northern Hardwoods-Hemlock-White Pine Forest (NHHWPF) is the prevailing forest in higher elevations of western and north-central Massachusetts, with smaller occurrences throughout on north facing slopes and in ravines. It is an uneven aged forest with a closed canopy dominated by a mix of long lived deciduous and evergreen trees, with sparse shrub and herbaceous layers. NHHWPF are the common type of forest in the cooler parts of the state and provide habitat for common wide ranging species.

In the Transition Hardwoods-White Pine forest, northern hardwoods including yellow birch (*Betula alleghaniensis*) and paper birches (*Betula papyrifera*), American beech (*Fagus grandifolia*), and sugar maple (*Acer saccharum*) and red maple (*Acer rubrum*), are the major species, while northern red oak (*Quercus rubra*) and hickories (genus *Carya*) are found on the warmer and drier sites. Eastern hemlock (*Tsuga Canadensis*) is found on the cooler sites while white pine (*Pinus strobus*) is characteristic of the well-drained sandy sites. Red maple and black ash (*Fraxinus nigra*) can be found on the poorly drained sites. The forest type commonly occurs up to an elevation of 1,500 feet above sea level in upland central Massachusetts and southern New Hampshire, northward through the Connecticut River Valley.

A unique forest type detected by NHESP in Ashfield is the Rich, Mesic Forest, one of the types of Priority Natural Communities identified in BioMap2. Priority Natural Communities are assemblages of plant and animal species that share a common environment and occur together

¹⁵ Source Water Assessment Program (SWAP) Report for Ashfield Water District Prepared by the Massachusetts Department of Environmental Protection, Bureau of Resource Protection, Drinking Water Program, April, 2003.

repeatedly on the landscape. A Rich, Mesic Forest (RMF) is a western Massachusetts variant of northern hardwood forest restricted to elevations below 2,400 feet, usually on east or south east-facing slopes. Sugar maple (*Acer saccharum*) dominates the canopy, with white ash (*Fraxinus Americana*), bitternut hickory (*Carya cordiformis*), elm species (*Ulnus spp.*), and basswood (*Tilia americana*) being other characteristic trees. The diverse herbaceous layer includes many spring wild flowers on moist, nutrient rich slopes. Common species of spring ephemerals include bloodroot (*Sanguinaria caanadensis*), maidenhair fern (*Adiantum pedantum*), late blue cohosh (*Caulophyllum thalictroides*), sweet cicely (*Osmorhiza clantonii*), Dutchman's breeches (*Dicentra cucullaria*), squirrel corn (*Dicentra canadensis*), toothwort (*Cardamine diphylla*), wild leek (*Allium tricoccum*), Goldie's fern (*Dryopteris goldiana*), and zigzag goldenrod (*Solidago flexicaulis*). RMF communities have been identified in the northeast section of Ashfield north of Beldingville Road along the Bear River, in the southeast section of Town on Williamsburg Road along Chapel Brook, and on the Town's southern border near the confluence of Taylor Brook and Stone's Brook (see the BioMap).

The Town of Ashfield has a long history of working forests and wood product industries, beginning with the establishment of the first saw mill on the Bear River in the mid-1700s. By 1855 there were fourteen sawmills and small woodworking shops made items such as broom handles, axes, hoes, wooden faucets and surgical splints. By the late 1800s, a mill in Spruce Corner was making apple barrels, and other mills were manufacturing wooden handles and whip butts at the turn of the century. Trees as crops have also long been a part of Ashfield's economy, beginning in the early 1800s with the grafting of apple trees and production of new varieties on a farm in Apple Valley. Apples became a major crop and are still grown commercially today on that same farm; there are currently two commercial fruit orchards in town. There are also several Christmas tree farms currently operating in Ashfield, as well as numerous maple sugar operations.



Traditional bucket collection for maple sap. Pipeline collection has become more common over the last few decades. Photograph by Alan Rice.

Ashfield has many large patches of interior forest, which when combined with forest edges, fields, early successional tree growth, wetlands, and riparian corridors, are best for maximizing regional biodiversity. Larger contiguous patches provide more interior area for deep forest-dwelling species. Larger patches are also important for the more specialized species that cannot survive with excessive disturbances from outside factors, and that rely on other interior species for food. The interior areas provide habitat for specialist predators and larger mammals that

require larger home ranges. This species diversity in turn attracts more wildlife, which in turn contributes to the overall health of the system.

Forests provide an important environmental benefit in their role of carbon sequestration. It is estimated that Massachusetts forests are currently sequestering 12% of our annual carbon emissions. One acre of forest can hold 85 tons of carbon. As the impacts of climate change begin to be felt, forests will play an ever increasingly important role in mitigating increases in climate change in the future.

As the Town of Ashfield proceeds to work to protect forestland for its multiple values, the differences between public and private ownership will become important. Protected land held in private ownership may ensure that there is wildlife habitat, the potential for working forests to continue to produce timber, income for the landowner, and property taxes for the Town. Public ownership helps to ensure public access to these resources for recreational activities. The Town of Ashfield should consider this network of healthy forests, and these areas of interior forest as most important for protection.

Protecting forests is the second highest natural resource goal in the 2013 *Sustainable Franklin County: Franklin County's Regional Plan for Sustainable Development (RPSD)*. Forests considered important to protect include unfragmented forests, old-growth forests, and forests that support rare and endangered plant and animal species. Forests along rivers and streams are also a priority to protect for their important habitat, water recharge functions, and bank stabilization. Forests located on soils good for timber production should also be protected. The plan lists several potential impacts on forests due to climate change, including decline of maple syrup production, the deterioration of the Eastern Hemlock, and the spread of invasive species. According to the plan, sustainable forestry practices, such as selectively harvesting trees, can increase the ability of forests to sequester carbon. Sustainable forestry practices also provide employment, support rural communities, and encourage landowners to retain their woodlots rather than selling them. Benefits of forest management include providing a sustainable source of wood products, increasing the diversity of habitats for wildlife, and offering places for recreation.

E.2 Aquatic Vegetation

The vegetative covers of wetlands, riverine, and lake/pond areas in Ashfield are typical of wetlands and water bodies in western Massachusetts. These areas increase the overall biodiversity of the Town and region by providing a great variety of important habitat types. The vegetation that lines these shores and grows in the water is important to the health of the water bodies. It also provides crucial habitat for edge species where water and land meet. This habitat is enhanced because the plants that grow there reduce bank erosion and keep the nutrient and oxygen levels of the water in balance.

E.3 Pasture and Croplands

Pasture and crop lands are also important vegetation types for Ashfield. Cropland and pasture accommodate the majority of game species, both within the parcels and along their edges. Pastures provide important habitat for many bird and insect species, which are important to the residents who enjoy observing wildlife as a recreational activity. These values underscore the

benefits of keeping existing farmlands in production and maintaining pasture and orchards. They are important for food production, which is part of the local economy, for wildlife viewing, and for their significant historical and scenic landscapes that contribute to the Town's rural character.

E.4 Rare and Endangered Plant Species

The Natural Heritage and Endangered Species Program (NHESP) of the Massachusetts Division of Fisheries and Wildlife (MassWildlife) has designated several “Priority Habitat” areas in the Town of Ashfield. A Priority Habitat is an area where plant and animal populations protected by the Massachusetts Endangered Species Act Regulations (321 CMR 10.00) may occur. These areas mostly follow rivers and brooks in Ashfield, including the Swift River, Bear River, South River, Chapel Brook, Smith Brook, and the Upper Branch of Clesson Brook. Priority Habitat is also located around several ponds east of Cape Street near the Town’s southern border and in an upland area near the Highland Springs Upper Reservoir.

Statewide, NHESP has identified 256 native plant species as endangered, threatened, or of special concern. Twenty-eight rare plant species have been documented in the Town of Ashfield (see Table 4-3 below). These plants occur in some of the Priority Habitats identified above. NHESP has produced fact sheets for some of these rare species which include the species status, description, aids for identifying and habitat as well as drawings or photos.¹⁶ (*See the fact sheets for the species listed below in Appendix C.*)

Table 4-3: Plant Species in Ashfield Listed as Special Concern, Threatened, or Endangered

Scientific Name	Common Name	MESA Status	Most Recent Observation
Ophioglossum pusillum	Adder's-tongue Fern	T	1921
Ribes lacustre	Bristly Black Currant	SC	2007
Sanicula canadensis	Canadian Sanicle	T	1896
Arceuthobium pusillum	Dwarf Mistletoe	SC	2014
Equisetum scirpoides	Dwarf Scouring-rush	SC	2014
Carex pauciflora	Few-flowered Sedge	E	1825
Hypericum ascyron	Giant St. John's-wort	E	1909
Penstemon hirsutus	Hairy Beardtongue	E	1943
Eleocharis intermedia	Intermediate Spike-sedge	T	1875
Platanthera dilatata	Leafy White Orchis	T	1907
Carex michauxiana	Michaux's Sedge	E	1940
Carex tuckermanii	Tuckerman's Sedge	E	1907
Senna hebecarpa	Wild Senna	E	1934

SC – Special Concern; T - Threatened; E – Endangered.

Source: NHESP Town Species Viewer: <http://www.mass.gov/eea/agencies/dfg/dfw/natural-heritage/species-information-and-conservation/town-species-viewer.html>.

Plants (and animals) listed as *endangered* are at risk of extinction (total disappearance) or extirpation (disappearance of a distinct interbreeding population in a particular area). *Threatened* species are likely to become endangered in the foreseeable future. Species of *Special Concern* have been documented to have suffered a decline that could result in its becoming

¹⁶ http://www.mass.gov/dfwele/dfw/nhosp/species_info/mesa_list/mesa_list.htm

threatened, or occur in very small numbers and/or have very specialized habitat, the loss of which could result in their becoming threatened.

E.5 Public Shade Trees

Public shade trees are located along the streets in Ashfield center, along other Town roads, and in parks and cemeteries. Trees are also located at some businesses, in parking lots and landscaped areas, which provide shade for customers and employees. The loss of trees in public spaces can significantly change the character of that place. Some ways towns protect shade trees include adopting a scenic roads bylaw, limiting the amount of salt used on roads, and requiring replacement of any trees that are lost.

The many benefits of street trees include improved air quality; reduced flooding and improved water quality as trees intercept rain through their leaves and branches and absorb water through their roots; higher property values for neighboring homes; slower traffic speeds and less traffic noise; and cooler temperatures in the summer which can extend the pavement life of the street. Street trees in more heavily developed areas also provide a pleasant environment for pedestrians to walk, thereby encouraging recreation and visitors and shoppers to spend time in a downtown.

F. FISHERIES AND WILDLIFE

Ashfield contains a large amount of upland and bottomland wildlife habitat. The forests of the Town consist of large unbroken tracts of dense forest that allow for good species movement within Ashfield and with the surrounding region. The Town still has a sizable number of active agricultural areas, which provide an important ecological function for the maintenance of edge species (those species that require this transitional zone for daily activities).

Ashfield is part of a region-wide **wildlife corridor** referred to as the Berkshire Wildlife Linkage in a 2013-2014 study by The Nature Conservancy.¹⁷ Within the linkage, there is a patchwork of core habitats, as well as potential barriers to wildlife moving between them in the form of well-traveled roads and areas of residential and commercial development along these roads. The study found abundant wildlife along the Westfield River and an adjacent ridge, with 13 mammal species observed by trackers and cameras. They did not find that route 112, a north-south highway with relatively high traffic volume, was a significant barrier to mammal movement.

A definitive list of wildlife that has been observed in Ashfield has not been compiled, except anecdotally. A comprehensive list has been developed based on the work done by Richard M. DeGraaf and Mariko Yamasaki in their book, *New England Wildlife: Habitat, Natural History and Distribution*,¹⁸ and is included in Appendix G. Species not likely to be found in Ashfield have been crossed out. The approach in this publication presents the natural histories and distributions of 338 inland wildlife species in New England. It also details the habitat

¹⁷ Applin, Jessica and Marx, Laura. 2014. *Wildlife Connectivity In Western Massachusetts: Results and Recommendations from a 2013-14 Study of Wildlife Movement in Two Corridors*.

¹⁸ DeGraaf, Richard M and Yamasaki, Mariko. 2001. *New England Wildlife: Habitat, Natural History, and Distribution*.

relationships of all New England terrestrial and aquatic species, presented in sections on amphibians and reptiles, birds, and mammals.

F.1 Rare and Endangered Wildlife Species

Natural Heritage Endangered Species Program and the Nature Conservancy *BioMap2* show Core Habitats critical for the long-term persistence of rare species and Critical Natural Landscape, including buffers along Core Habitats. *These areas mapped in Ashfield are shown on the Soil and Environmental Constraints Map at the end of this section.*) Seventeen areas within Ashfield are BioMap2 Core Habitat; including 8 Aquatic Cores, 12 Wetland Cores, 3 Priority Natural Community Cores, and areas for 11 Species of Conservation Concern. Some of these areas overlap. Adjacent to some of these Core Habitats in Ashfield are 9 areas of BioMap2 Critical Natural Landscape, including 7 Aquatic Buffers, 14 Wetland Buffers, and 3 Landscape Blocks, some of which overlap. *(For a detailed explanation of BioMap2 and the Core Habitats within Ashfield, see the BioMap2 Town Report in Appendix A.)*

There are five examples of Priority Natural Communities documented to NHESP from Ashfield: one Acidic Graminoid Fen; one Rich Conifer Swamp; and three Rich Mesic Forests. NHESP maintains a list of all Massachusetts Endangered Species Act (MESA)-listed species observed and documented in each Massachusetts town, as shown for Ashfield in Table 4-4. *(See Appendix D for fact sheets for the natural communities and Appendix C for fact sheets for the species.)*

Table 4-4: Wildlife Species in Ashfield Listed as Special Concern, Threatened, or Endangered

Taxonomic Group	Scientific Name	Common Name	MESA Status	Most Recent Observation
Bird	<i>Botaurus lentiginosus</i>	American Bittern	E	2009
Amphibian	<i>Ambystoma jeffersonianum</i>	Jefferson Salamander	SC	2013
Fish	<i>Catostomus catostomus</i>	Longnose Sucker	SC	2014
Bird	<i>Cistothorus platensis</i>	Sedge Wren	E	1955
Reptile	<i>Glyptemys insculpta</i>	Wood Turtle	SC	2015

SC – Special Concern; T - Threatened; E – Endangered.

Source: Massachusetts Natural Heritage and Endangered Species Program, Town Species Viewer:

<http://www.mass.gov/eea/agencies/dfg/dfw/natural-heritage/species-information-and-conservation/town-species-viewer.html>

According to NHESP, there are 10 Certified and 39 Potential Vernal Pools documented from Ashfield. Most of the Potential Vernal Pools are likely able to be certified. Certification by the Town of vernal pools on its own properties and requiring developers in town to certify pools on any property requiring permits from the town, would protect a key resource essential for the long-term health of wildlife species in Ashfield.

As mentioned in the beginning of this section, climate change is expected to alter species distributions. As species move to adjust to changing conditions, federal, state and local agencies and entities involved in land conservation need a way to prioritize strategic land conservation that will conserve the maximum amount of biological diversity despite shifting species distribution patterns. The *BioMap2* project and The Nature Conservancy’s resiliency mapping

are two resources that can be consulted when working to prioritize conservation for species diversity and health.

G. SCENIC RESOURCES AND UNIQUE ENVIRONMENTS

This section identifies the scenic resources and unique environments that most Ashfield residents would agree represent the essence of Ashfield's character. The purpose for inventorying the scenic resources and unique natural environments in Ashfield is to provide the basis for prioritizing resource protection efforts. For this reason the following section includes information about the different values associated with each scenic resource and natural environment and identifies areas where there are multiple values represented in one landscape. Those landscapes that contain, for example, scenic, wildlife, and cultural values may be seen as having a higher priority for protection than a landscape that contains only one value.

In many ways the history of Ashfield – how people came to settle the land, use its resources, and enjoy its forests, streams, and lakes – can be seen in the landscapes that have retained a sense of the past. Often the most scenic views include old farm buildings, fields cleared long ago, orchards, and undeveloped hillsides and mountains. Red brick mill buildings and historic homes provide a sense of the Town's culture and the work of its ancestors. There are many examples in Ashfield where a scenic landscape is also important because of its relation to a drinking water supply, or because it contains rare species habitat.

The unique environments in Ashfield play a very important role in providing residents with a sense of place that is different than neighboring Hawley, Buckland, and Conway. Rivers, mountains, wetlands, and town and village centers provide markers on the landscape for residents and visitors alike.

Table 4-5 (on the following pages) lists the different unique environments located throughout the Town of Ashfield based on their location and describes their scenic, natural/ecological, and cultural/historical values. The numbers in Table 4-5 correlate with the Scenic and Unique Resources Map, showing the location of each scenic landscape feature in Ashfield. The text that follows the table addresses the common themes associated with the greatest concentration of values as displayed in both the map and the table. For example, the relationship between the high elevation points or ridgetops, and the wildlife habitat values of these areas is important. The wildlife value is in part due to the presence of large contiguous blocks of undisturbed forest, which are more prevalent along the region's ridgelines and higher elevation plateaus than anywhere else. In the far right column the landscape's protection status is estimated.

Several themes emerge from both Table 4-5 and the Scenic Resources and Unique Environments Map. Scenic resources and valued natural environments naturally fall into several categories as described in the following sections.

Table 4-5: Significant Scenic/Historic/Natural Landscapes/Environments in Ashfield]

Map #	Location of Landscape	Landscape w/Significant Scenic Value	Landscape w/Significant Natural/Ecological Value	Landscape w/Significant Cultural/ Historical Value	Protection Status
1	Watson Agricultural District	✓		✓	Large former dairy farm is protected under APR Program
2	Swift River Valley	✓	✓	✓	
3	Spruce Corner	✓	✓	✓	Not permanently protected
4	Taylor Brook		✓		Not permanently protected
5	Paddy Hill Pond	✓		✓	Not permanently protected
6	Apple Valley	✓		✓	Not permanently protected
7	Smith Brook		✓		Not permanently protected
8	Little Switzerland	✓			Not permanently protected
9	Bear Swamp	✓	✓		Sections of the area are protected under APR or CR, but mainly no permanent protection
10	Bug Hill	✓	✓		Not permanently protected
11	Peter Hill	✓		✓	Not permanently protected
12	Ridge Hill	✓		✓	Not permanently protected
13	Baptist Corner	✓		✓	Not permanently protected
14	Beldingville	✓	✓	✓	Sections of the area are protected under APR or CR, but mainly no permanent protection

Map #	Location of Landscape	Landscape w/Significant Scenic Value	Landscape w/Significant Natural/Ecological Value	Landscape w/Significant Cultural/ Historical Value	Protection Status
15	Bear River Valley	✓	✓	✓	Not permanently protected
16	Mount Owen	✓	✓	✓	Not permanently protected
17	Ashfield Pond	✓	✓	✓	Not permanently protected
18	Ashfield Plain Register District		✓	✓	Not permanently protected, with a few exceptions – town common
19	South Ashfield	✓	✓	✓	Sections of the area are protected under APR or CR, but mainly no permanent protection
20	South River Valley	✓	✓	✓	Not permanently protected
21	Steady Lane/ Creamery Brook Valley	✓	✓	✓	Sections of the area are protected under APR, but mainly no permanent protection
22	Seventy Six Hill	✓	✓		Not permanently protected
23	Brier Hill	✓	✓	✓	Not permanently protected
24	Chapel Brook Valley/Chapel Falls	✓	✓	✓	Trustees of Reservations
25	Chapel Ledges	✓	✓	✓	Trustees of Reservations
26	Belding Park	✓	✓	✓	Town Land
27	DAR State Forest	✓	✓		State Land

G.1 Natural Resource Priority Areas

For the most part, these are relatively narrow corridors that follow the river and stream systems, and link up large areas of forested wetlands and unfragmented upland. The exception is the large area of wetland and forest that runs from Spruce Corner Road north to Bear Swamp. These forested riparian corridors and adjacent forested areas are critical, not only as habitat for many species of animals, but also for protection of water supply. They filter and absorb stormwater runoff, preventing flooding and recharging groundwater aquifers. During dry periods, groundwater flows back into the rivers and streams, maintaining a steady flow of water.

High priority areas include much of the Swift River Valley, which drains the western side of Ashfield and flows south to the Westfield River. A belt of important natural resources extends across the South part of the town and along Chapel Brook and the South River into Conway. From the town center northeast into Baptist Corner and Beldingville, the most important natural resources also follow the streams and wetland systems, but are more limited in extent by the lack of large contiguous forest blocks.

Disturbance of the primary natural resource zones is of particular concern because these areas represent the connective tissue of the Town's ecosystem. If a parcel of land within these areas is lost to development, filled for development or clear cut, it affects not only that parcel, but to some extent everything up and down stream. If plants and animals can no longer travel across the site, or if they lose an area they need for feeding or nesting, the entire corridor may lose an important species.

G.2 Agricultural Lands

Most of the agricultural lands in Ashfield are unprotected from development. However, since the 2008 Open Space and Recreation Plan, approximately 420 acres of farmland have been protected through the Agricultural Preservation Restriction (APR) Program. This trend can be supported by the Town since active farmland also provides the community with scenic values, input to the local economy, wildlife habitat, hunting areas, and the maintenance of the original settlement and land use patterns reflecting the community's origins.

G.3 Historic District and Village Centers

The Ashfield Plain Historic District is a National Register District established in 1991. The Register District includes 125 contributing structures in an area of 133 acres bounded on the north and south by steeply rising hills. On the west, it is bounded by the man-made Ashfield Dam and the 38-acre Ashfield Pond. To the east of the district the terrain drops off sharply and farmland eventually gives way to the village of South Ashfield. The district is essentially linear, along Main Street/Route 116. Buckland Road intersects Main Street near the district's eastern edge and curves around Ashfield Pond to link Main Street with Route 112 to the west. Many of the district's core residences were once associated with modest agricultural pursuits. Most buildings date to the late Federal and Early Industrial Periods. The Federal and Greek Revival styles are the predominant architectural styles. One of the most iconic buildings in the district is



Ashfield Town Hall and Elmer's Store. Photo by FRCOG.

the Ashfield Town Hall, is a near-literal interpretation of a design from the famous architect Asher Benjamin.

In addition, Ashfield residents have identified the village centers of Baptist Corner, Beldingville, Spruce Corner, South Ashfield, Steady Lane, Apple Valley, Wardville, Cape Street, Brier Hill, Chapel Falls, and Watson as being areas of cultural and historic value. These village centers combine scenery, historic land use patterns, historic structures, and cemeteries within landscapes that often have ecological and scenic values of their own. These centers were school districts before transportation was available to bring children to a central school. Each of these centers had a school, and a few had cemeteries. Like scenic roads or

drives, village centers provide Ashfield residents access to historical and natural resources.

G.4 Scenic Byways and Roads

Two Scenic Byways intersect in the center of Ashfield: Route 112 and Route 116. The Massachusetts Legislature designated Route 112 as a state scenic byway in 2004. The byway includes a one-half-mile buffer strip along each side of the road within the towns of Colrain, Shelburne, Buckland, Ashfield, in Franklin County; and Goshen, Cummington, Worthington, and Huntington in Hampshire County. The Route 112 Corridor Management Plan was published in 2009, following a comprehensive planning process including Ashfield residents. The Route 112 Scenic Byway runs 53.4 miles north to south through a landscape of historic village centers, working farms, rolling hills, deep forests, and rushing waters. The Byway extends south from the Vermont state line, where it begins at 738 feet above sea level, and then dips down to 400 feet where it crosses the Deerfield River Valley.



Route 112 snaking up Ashfield Mountain

The Route 116 Scenic Byway was designated a Scenic Byway by the Massachusetts Legislature in 2008. The Byway runs through Deerfield, Conway, and Ashfield in Franklin County; Plainfield in Hampshire County; and Savoy, Cheshire, and Adams in Berkshire County. The total length of the Byway is 38.74 miles. Along the way, the Byway travels through historic farming

villages, along scenic back roads, through rural town centers, and thick forested lands along the route from Deerfield in the Connecticut River Valley to Adams in the Berkshire Hills. There are farming and agricultural lands along the byway as the road enters Ashfield, passing through the heart of this rural community on its Main Street. As it extends through Ashfield there are several locations where the Byway passes through smaller farming villages often located at the intersections of roadways. It is a unique travel route that provides a scenic east-west course through Western Massachusetts. The Route 116 Corridor Management Plan was published in 2013, following a comprehensive planning process run by an Advisory Committee comprised of municipal officials, landowners, business owners and interested citizens, including Ashfield residents.

In addition, there are many scenic drives throughout Ashfield. Often roads link Ashfield's most scenic and significant historical landscapes. Since residents most often view the landscape as it passes outside their vehicle's window, roads play an important role in linking us to scenic views. Local scenic road designation provides limited protection to historic and scenic resources along local byways. Smith Road is the only designated local scenic road in Ashfield. Once designated, the Planning Board must give written approval before any repair, maintenance, construction, or paving of the road is allowed if that activity would involve the cutting or removal of trees, or the tearing down or destruction of stone walls in the public Right of Way.

G.5 Unusual Geographic Features

Ashfield is typical of other Western Massachusetts hilltowns in that the end of the last ice age saw glaciers retreat and leave an assortment of interesting features on the landscape, including balancing rocks and other erratics. One such unique features in the town is Chapel Brook, owned by The Trustees of Reservations, consisting of a small mountain with a 100-foot rock face. It is a popular destination for rock climbers. Below the mountain, the brook is home to Chapel Falls, a series of steep ledges, that turns wild and unruly in times of high water, and a local swimming spot.

Ashfield Stone Company has turned the geologic features in the town into a quarry business. Ashfield Stone is a mica garnet Schist. Schist is a naturally layered stone having been folded up from ancient seabed and metamorphosed in the slow crush of continents some 400 million years ago. The Crowsfoot Schist was originally the molten core of ancient volcanos metamorphosed. The layers that comprise this schist are thin and fine like filo pastry. This wonderful and versatile stone has been used traditionally for centuries in its chisel split or cleft form. All of the oldest gravestones, doorsteps, walls, walkways, patios, doorsteps and hearths in this region have been fashioned from this stone. The company is still splitting this schist for these (and many other) applications, today.

H. ENVIRONMENTAL CHALLENGES

H.1 Non-Point Source Pollution

The Massachusetts 2014 Integrated List of Waters identifies high levels of fecal coliform in the South River from Emmets Road in Ashfield to the confluence with the Deerfield River in Conway that may impair its full potential as a cold water fishery and a swimmable water body. Every stream, brook, and river in Ashfield continues to be threatened by non-point source pollution from roadways, agricultural runoff and sedimentation.

The use and storage of road salt can be a source of soil and water contamination. Although the town has made it a policy to use salt sparingly, MassHighway is responsible for salting on Route 116. In areas where the highway parallels the South River or where wells are close to the road, there is the possibility of water contamination.

H.2 Risk of Contamination to Community Drinking Water Supplies

The 2003 Source Water Assessment Program (SWAP) Report for Ashfield Water District outlines four key issues in protecting the water quality of the town's wells:

- Zone I ownership: The District does not own the entire Zone I area for Well #1, which includes a private residence and farm. Defined by a 332 foot radius, the Zone I should ideally have no possibility of contamination. The SWAP report recommends acquiring the property eventually, and working with the landowner in the meantime to prevent contamination.
- Residential Land Uses: Several residences are within protection areas for the wells, raising the possibility of contamination from household hazardous materials, such as solvents, fertilizers and paint; leakage of stored heating oil, and contaminated stormwater run-off. The SWAP report recommended landowner education about best management practices (BMPs) for protecting water supplies.
- Transportation Corridors and Utility Right-of-Ways: Roads located close to both wells raise the possibility of contaminants such as road salt, petroleum products, and accidental or illegal dumping of hazardous materials. The report recommends careful oversight, planning for emergencies, and installation of BMPs where needed to control stormwater run-off.
- Hazardous Materials Storage: Storage of town equipment at water department property, and several nearby businesses with vehicles and machinery raise the possibility of contamination. The report recommends careful oversight and education of town staff and business owners.¹⁹

H.3 Flooding, Erosion, and Sedimentation

The 2014 Ashfield Multi-Hazard Mitigation Plan identifies numerous areas in town where chronic flooding is an issue. Flooding in the hilly sections of town causes erosion and road washouts, while flooding in the flat area of downtown has caused property damage such as flooded basements. The plan recommended mapping Fluvial Erosion Hazard (FEH) zones, which are areas along rivers and streams that are susceptible to bank erosion caused by flash

¹⁹ Source Water Assessment Program (SWAP) Report for Ashfield Water District Prepared by the Massachusetts Department of Environmental Protection, Bureau of Resource Protection, Drinking Water Program, April, 2003.

flooding and seek to limit new development in these areas. The recommended mapping was accomplished as part of the 2016 MEMA fluvial geomorphic assessment.

Rivers and streams alter their course by erosion of their banks and the deposition of sediments. This natural process can be accelerated and exacerbated by human activities that increase stormwater runoff, alter river banks and vegetation, and impact aquatic and riparian habitat. Valuable farmland and infrastructure can be threatened by eroding river banks.

According to the 2016 fluvial geomorphic assessment of the South River Watershed: “The South River watershed’s rich history of mills and associated river uses, including dam construction and extensive channel straightening, has left a continuing legacy of aggravated flood and erosion hazards, degraded aquatic habitat, and high sediment loading. As numerous mill dams have fallen into disrepair, large volumes of sediment are being released into the river as the channel incises through the former impoundments behind these old dams. Considerable sediment is also derived from mass failures along high banks of glacial deposits in naturally confined portions of the river where flood flow velocities and scour are enhanced without a floodplain to dissipate flow energy. The sediment derived from former impoundments and mass failures tends to accumulate in areas where flow velocity declines rapidly. Sediment deposition near bridges and other infrastructure threaten the structures through bank erosion driven by gravel/sand bar growth. Straightened channels have a propensity to reform meanders along their length with the process of meander development beginning with potentially rapid shifts in channel position of tens of feet in a single flood. Where occurring far from infrastructure and other human resources, continued meander growth, despite the associated bank erosion, can positively impact the river by reducing flood flow velocities, improving aquatic habitat (e.g., greater pool depths, increased flow complexity, and improved particle size segregation), and reducing downstream sediment loading through long-term sediment on gravel/sand bars and emerging floodplains.”²⁰ Adopting a River Corridor Protection Overlay District would be one approach to addressing FEH and sedimentation issues.

H.4 Forestry Issues

The Northern Hardwoods-Hemlock-White Pine Forest (NHHWPF), which is the predominant forest type, in Ashfield is particularly susceptible to non-native exotic species and pests. Ashfield’s woodlands have begun to suffer from invasive non-native plants—those which can outcompete the native vegetation and interrupt natural succession if they escape into natural areas to reproduce. The species presently seen in the woods and wetlands are barberry, multiflora rose, burning bush euonymus, Norway maple, Japanese (and other) honeysuckle, Asiatic bittersweet, Japanese knotweed, buckthorn, phragmites and purple loosestrife. The invasions of autumn olive and Russian olive frequently seen in the highway right-of-way in the Pioneer Valley are not yet such a problem in Ashfield. Most of the above-named plants, as pure stands, do not have the same wildlife habitat or timber value as the indigenous plant species, nor is their fall color the same. Other pests include the beech fungus which has rendered a once economically important species almost useless, and the Emerald Ash Borer, which will be here soon, if not already.

²⁰ Fluvial Geomorphic Assessment and River Corridor Planning for the South River Watershed, MA; Dr. John Field, Field Geology Services, Farmington, ME; March 2016.

Hemlock pests may have significant consequences for Ashfield's forests, especially in the wooded ravines and wetlands. The hemlock wooly adelgid is killing virtually all hemlocks in PA, NY, NJ, and CT. According to experts at Smith College, the wooly adelgid came up from Connecticut into the Springfield area in the early 1990s. Since then it has extended its range north to Amherst and Northampton, and the limit of its cold hardiness is likely to be farther north than Ashfield, where it is now found. Another threat to the hemlocks has been the hemlock looper, which has killed over 1,000 acres of hemlock in Franklin County.

According to the *Massachusetts Climate Change Adaptation Report*, climate change impacts to New England forests could include changes in forest structure, more frequent droughts associated with forest fires, and invasive insects and diseases. While active management is not suitable for all lands, sustainable forestry can increase resilience to climate change through improving wildlife habitats, eliminating invasive species, helping to control the spread of disease, and increasing the ability of forests to store carbon.²¹ Sustainable forestry means keeping forests healthy, dynamic, and available for future generations. It addresses all of the resources provided by forests, including habitat, clean water and air, recreation, timber, jobs, and scenic beauty, and seeks to keep viable all of these options and opportunities.²²

Challenges to practicing sustainable forestry in Ashfield and the greater region identified in the sources cited above include:

- a lack of local markets for low-grade wood, such as pellets and other products that could be made from small diameter trees, which would make sustainable long-term management more financially feasible;
- the need for assistance for local loggers and sawmills to upgrade equipment, cover insurance and energy costs, and meet regulations; and
- the need to educate landowners and the public about the benefits of working forests and sustainable active forest management.

H.5 Agricultural Issues

According to the 2005 Mass GIS land use data, Ashfield has 2,583 acres of agricultural land, including crops, pasture and orchards. However, all these acres are not equal in productivity or condition. Long-term hay fields are becoming overrun with bedstraw (*Galium spp.*) and goutweed or bishops weed (*Aegopodium podagraria*), both aggressive plants with no forage value to livestock. Control in absence of crop rotation is difficult. Corn and crop fields, usually relegated to the better soils, are subject to over-fertilization and nutrient loss to waterways.

²¹ Hines, S.J.; Daniels, A. 2011. Private Forestland Stewardship. (October 10, 2011). U.S. Department of Agriculture, Forest Service, Climate Change Resource Center. www.fs.usda.gov/ccrc/topics/forest-stewardship/.

²² *Diameter Limit Cutting and Silviculture in Northeastern Forests: A Primer for Landowners, Practitioners, and Policy Makers*. USDA Forest Service, 2005; *What is Sustainable Forestry?* Peter J. Smallidge, NYS Extension Forester, Cornell Forestry Extension Program.

Abandonment of agricultural lands has slowed somewhat in the past few decades, as smaller farms have started in response to the local food movement. There are still unused acres and matching those who have these to those in need remains a challenge.

Resources are available to educate farmers and would-be farmers on nutrient management, land access, pasture and orchard management, but outreach and awareness is not sufficient in all cases.

H.6 Environmental Equity

Environmental Equity means taking a look at conservation and recreation opportunities available in the town and determining if there are areas of the town that seem to be lacking resources. Although there are no Environmental Justice populations identified in the Town of Ashfield and the Town enjoys a low poverty rate of 7.7%, some residents may still be unable to afford recreational opportunities that require a fee, and may lack transportation to open space and recreation resources in other areas of Town. It is therefore important to ensure free access and transportation to an adequate amount of well-maintained open space and recreational resources.

As noted in Section 5, there are several areas of town where close access to a public park or trail is lacking. However, residents often own or reside near large properties that provide ample opportunities for recreational activities such as bird watching, hiking, snowmobiling, fishing, skiing, etc. These resources can be accessed with permission, if necessary, from neighbors, and are available free of charge.. After extensive discussion, it was the conclusion of the OSRP Update Committee that outdoor recreation resources are well distributed geographically around Town.

Overall, there appears to be a need to better connect the downtown parks and open spaces with the passive recreation opportunities located outside of downtown. Efforts to provide safer access to Belding Park have not been successful to date. Off-road trails, sidewalks, and on-road bicycle improvements could all be explored as options to improve access between neighborhoods and outdoor recreation opportunities spread throughout the community.

H.7 Development Challenges

Disturbance of the larger remaining forested areas in Ashfield as a result of development is of particular concern because these areas represent wildlife corridors that are the connective tissue of the Town's ecosystem. If a parcel of land within these areas is lost to development—of roads and house lots, for logging, for other active uses, filled for development, or extensively clear cut—it affects not only that parcel, but to some extent everything up and down stream. If plants and animals can no longer travel across the site, or if they lose an area they need for feeding or nesting, the entire corridor may lose an important species. Further loss of these areas to development would have a gradual, but cumulative effect on the long-term health of the town's ecosystem.

Many of the cultural resource areas in Ashfield are vulnerable to development, especially in the South River and Creamery Brook Valleys and the Beldingville/Baptist Corner District. This is

especially important because these resource areas lie close to the road and are the easiest places to build new homes and septic systems, threatening the farmland and viewsheds along the roads that define the Town’s landscapes and create a unique sense of place.

H.8 Hazardous Waste and Brownfield Sites

As defined by the U.S. Environmental Protection Agency (EPA), "Brownfields" are properties that the expansion, redevelopment, or reuse of may be complicated by the actual presence or perceived potential presence of a hazardous substance, pollutant, or contaminant. Ashfield has worked with the Franklin Regional Council of Governments and property owners to assess the extent of contamination and promote redevelopment of identified Brownfield sites in Town. As of the end of 2017, one site in Ashfield had a Phase I assessment conducted through the FRCOG Brownfields Program, the Ashfield House LLC. located at 369 Main Street. A Phase I ESA was completed on June 20, 2012, which was required as part of an environmental site assessment conducted relative to a request for additional rental vouchers at the Ashfield House.

In addition to the FRCOG program, the Massachusetts Department of Environmental Protection (DEP) maintains a list of brownfield sites where known contamination has occurred. In Ashfield, 12 sites have been reported to the DEP between October 1994 and August 2017.²³ These include releases of oil and other hazardous materials on multiple roadways in Town, as well as at the Ashfield Neighbors gas station (in 2008 and 2014) and Decker Machine Works (in 2014). For the majority of these releases, response actions taken were deemed to be sufficient to achieve a level of no significant risk or at least ensure that all substantial hazards were eliminated. The “PSC” compliance status of the 2014 release at the gas station indicates a site/release where a Permanent Solution Statement was submitted indicating that response actions were sufficient to achieve a level of No Significant Risk for all current uses of the property, but that the conditions remaining at the site (such as anthropogenic background or contamination located under a parking lot) may limit how the property can be used without additional cleanup.

Another source of potential contamination of ground water is underground storage tanks (USTs). According to MassDEP, there are five USTs located in Ashfield:²⁴

1. Ashfield Neighbors (244 Main St.);
2. Elmer’s Groceries, Inc. (Main St.);
3. Zenick Garage (Main St.);
4. Jeff’s Auto and Truck Repair (Main St.); and
5. Stuart Harris & Raymond Gray (21 Main St.)

H.9 Landfills

According to MassDEP, the Town of Ashfield has one closed landfill, an active transfer station, and two private dumping grounds.²⁵ The municipal landfill located on Route 112 (851 Ashfield

²³ <https://eeaonline.eea.state.ma.us/portal#!/search/wastesite>

²⁴ <https://ma-ust.windsorcloud.com/ust/facility/search/list?0>

²⁵ <https://www.mass.gov/lists/massachusetts-landfills-transfer-stations-compost-sites-recycling-facilities>

Mountain Rd.) was closed in 1993, and is classified as incomplete and not lined. Over the years, there have been identified leaks from the unlined, uncapped landfill. MassDEP is aware of these problems and the Town has researched the costs to cap the landfill, and has begun to budget funds towards this effort. The Town's current Transfer Station, located at the site of the former landfill, is managed by the Hilltown Resource Management Co-op.

Private dumping sites in Ashfield identified by MassDEP include the:

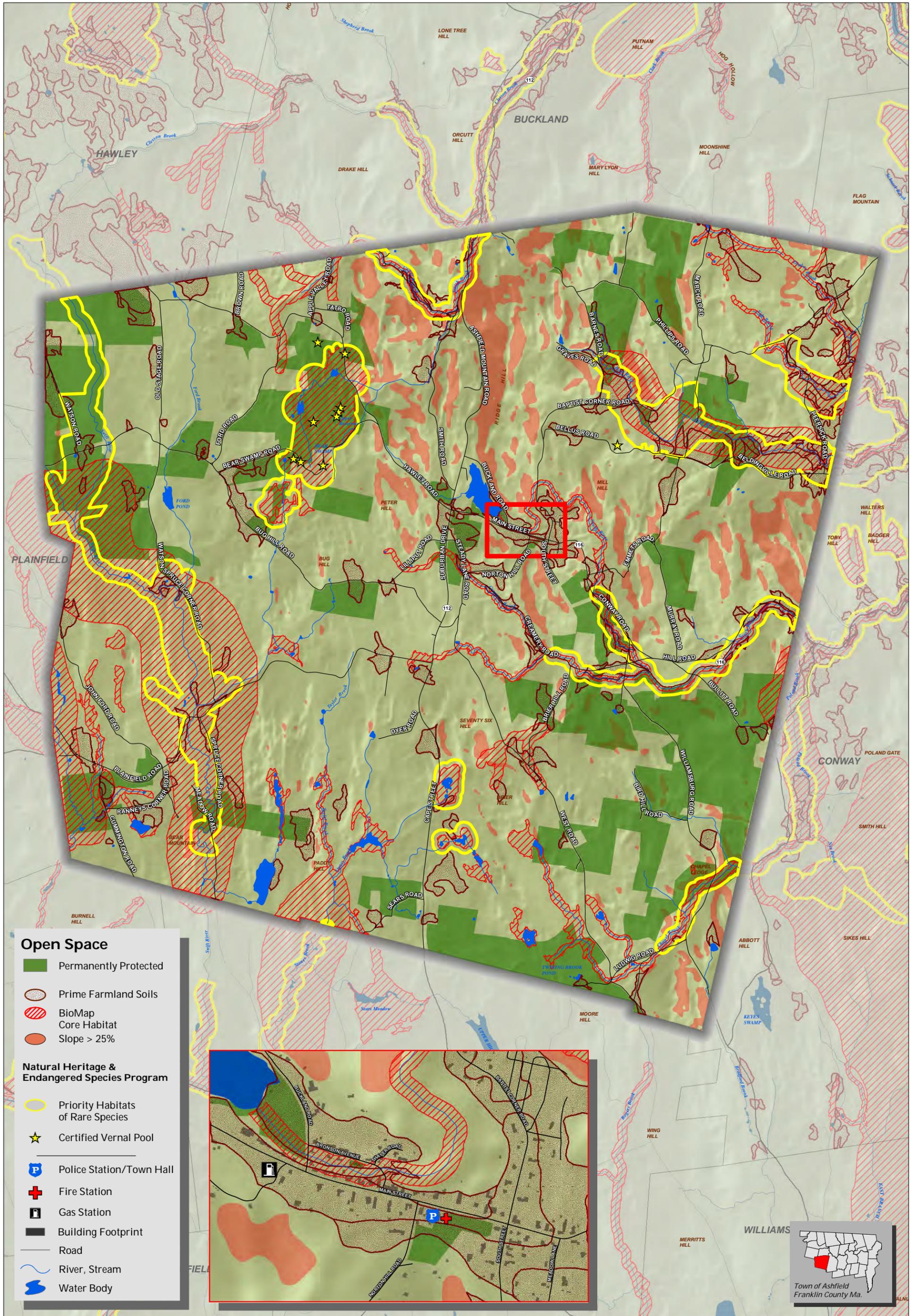
1. "Deane Dump" on South Warger Rd., closed in 2007 with a closure status of "incomplete;" and
2. Roberts Brothers Lumber Co. Inc. property at 1450 Spruce Corner Rd., inactive since 2012, also with an "incomplete" closure status.

I. ANALYSIS

The world is changing around Ashfield, and as such, any planning must recognize that regional collaboration is critical to address the issues that do not have political boundaries. Weather and economic factors have become increasingly volatile requiring land managers to respond proactively. To do this, critical landscapes must be prioritized as they relate to increased flooding, changes in forests due to invasive plants and insects, unique habitats, farmland abandonment in a time when transporting food over long distances makes less sense, and water quality and quantity needs of the community. The regional context of contiguous forestlands and wildlife corridors, agricultural soils, watersheds, and existing protected lands give greater weight to lands within Ashfield that will be priorities for future protection.

As Ashfield moves into the future, several key features need to be honored to maintain and enhance the features that make the town a sought-out community. Specifically, any plan should strive to maintain the existing matrix of unfragmented woodlands, productive farmlands and historic village centers. Plans for development, including housing and infrastructure will include actions that will address resilience to the increasing challenges, both cultural and environmental. The town will seek to protect ground and surface water for future drinking water and agricultural needs, protect diverse habitats, encourage self-reliance and support those who work the land. Evaluating historic village centers will re-discover why these areas were developed initially and provide local services to residents and may provide opportunities to improve infrastructure to support additional development rather than concentrating it in the town center on Ashfield Plain. This becomes increasingly important as the town acknowledges its aging population and the need for greater walkability in village centers.

The narrative in this Section 4 highlights the areas that have concerns and can be addressed proactively through this plan. These are further developed in future sections of this document.



Open Space

- Permanently Protected
- Prime Farmland Soils
- BioMap Core Habitat
- Slope > 25%

Natural Heritage & Endangered Species Program

- Priority Habitats of Rare Species
- ★ Certified Vernal Pool
- P Police Station/Town Hall
- + Fire Station
- G Gas Station
- Building Footprint
- Road
- River, Stream
- Water Body



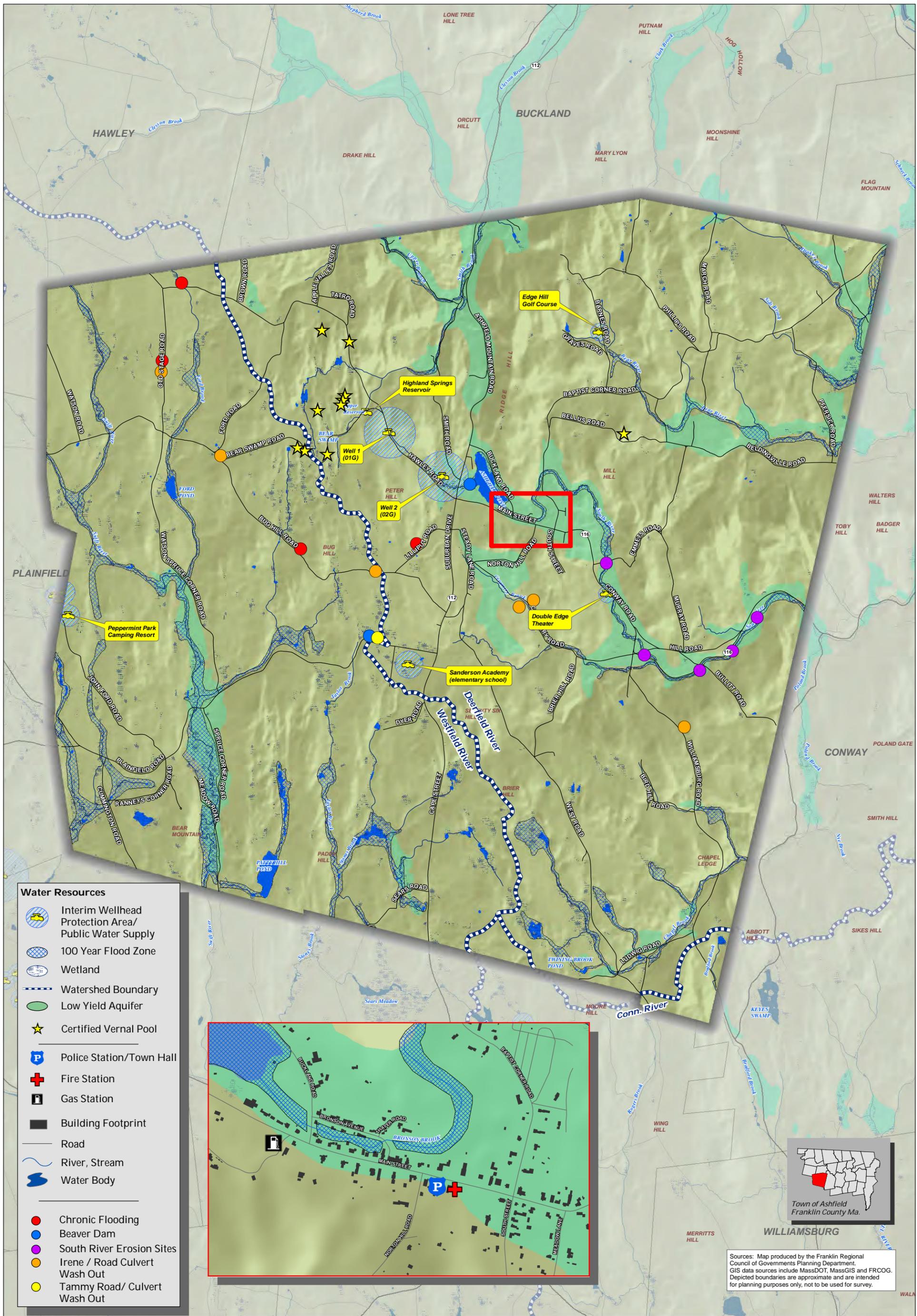
**Town of Ashfield
Open Space &
Recreation Plan 2018**

**Soils & Environmental
Constraints**

0 0.5 1 2 Miles



May 24, 2018

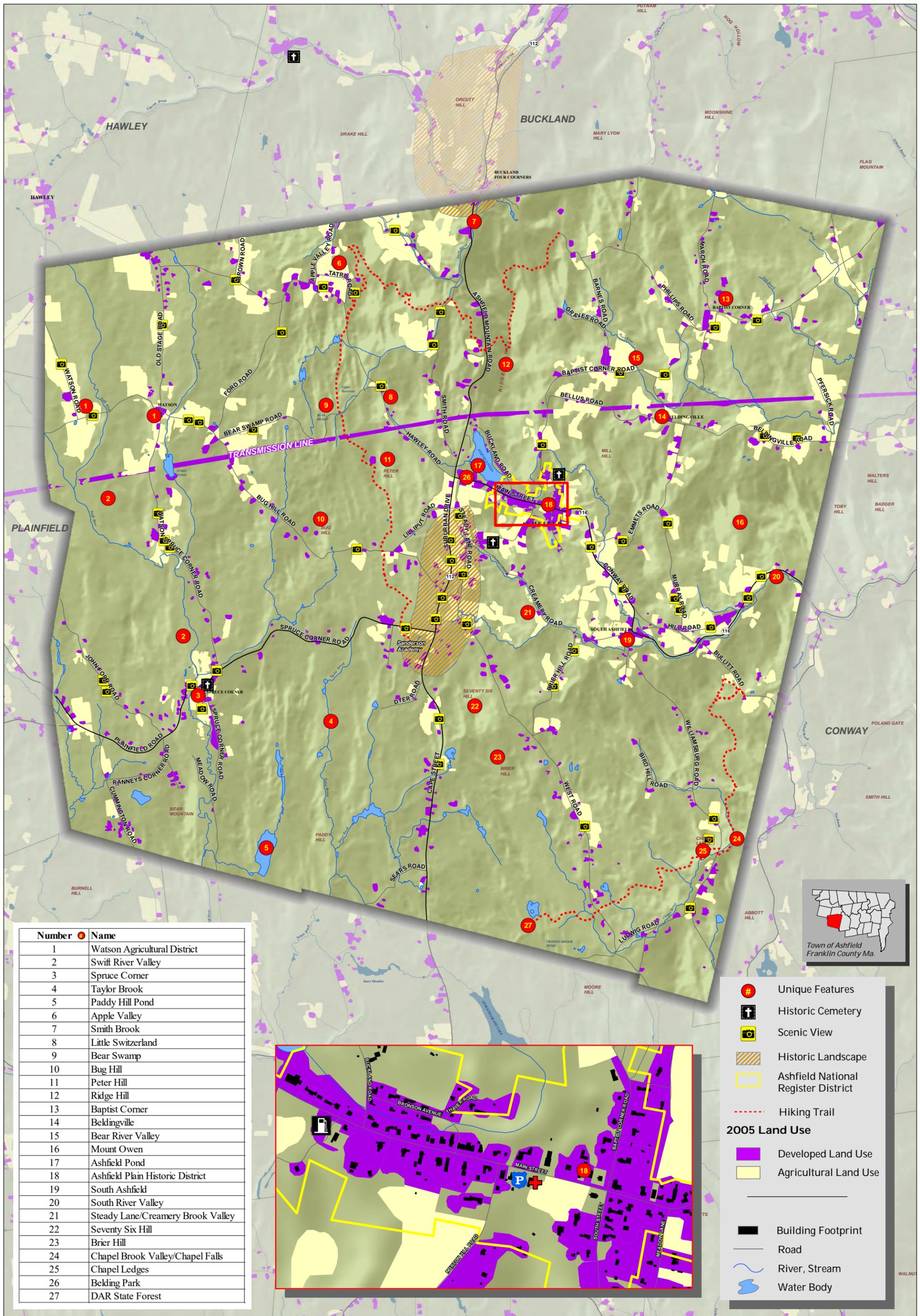


Town of Ashfield Open Space & Recreation Plan 2018

May 24, 2018

Water Resources





Town of Ashfield Open Space & Recreation Plan 2018

May 24, 2018

Scenic & Unique Resources



SECTION 5:

INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST

Open space in Ashfield consists of farms, forests, parks and recreation areas under both public and private ownership and management. This section of the Ashfield Open Space and Recreation Plan provides a comprehensive inventory of all of the lands that provide open space, wildlife habitat, agricultural and forest products, watershed protection, scenic beauty, and recreation opportunities for the benefit of Ashfield residents. The inventory includes public, private, and non-profit lands and shows the location, types, and distribution of open spaces in relation to the population and other values that depend on the protection that open spaces provide. The inventory identifies the natural resource areas still in need of protection and suggests the types and ideal locations of additional recreational facilities. Open space protection is important because, as natural areas are fragmented and lost to development, the benefits these spaces provide to people, plants, and animals are diminished over time.

A. OPEN SPACE AND LEVELS OF PROTECTION FROM DEVELOPMENT

In the Ashfield Open Space and Recreation Plan, the focus is on undeveloped land that is valued by residents because of what it provides: actively managed farm and forestland; wildlife habitat; protection and recharge of groundwater; public access to recreational lands and trail systems; important plant communities; structures and landscapes that represent the community's heritage; flood control; and scenery. The term 'natural resource' describes the biological and physical components of an ecosystem that people depend on for their existence and, for some, their livelihood. These components are air, surface and ground water, sustainable wood products, soil nutrients, vegetation, fisheries, and wildlife. Recreational facilities can include open space, parks, and developed areas like tennis courts and swimming pools. Recreational facilities also include those that provide access to open space and natural resources, such as boat ramps and trails, or provide a means for active transportation, such as bike paths and sidewalks.

Ashfield is graced with abundant open space; indeed, nearly two-thirds of the town's lands are under permanent or temporary protection. The majority of these lands, and in particular those under the temporary protection of Chapter 61 provisions, are owned and maintained by Ashfield residents, who farm the soils, manage the woodlots, or provide passive recreational access to the natural beauties of the land through a growing network of well-used trails. The town is indebted to these stewards.

While the majority of protected lands are in outlying districts, the compact village center has immediate access to agricultural and woodland vistas, as well as the most prominent and accessible recreational resources, Belding Park and Ashfield Lake. Nestled on the plane and embraced by prominent ridgelines, the character of the village center is defined by these open lands. They provide Ashfield its unique sense of place.

Properties under permanent protection—shown in green on the Open Space Map—constitute more than one-fifth of the total lands in Ashfield. Of those, the great majority are privately owned: over 2,193 acres are held under Conservation Restrictions, another 1,852 with Agricultural Preservation Restrictions, and the balance owned by private non-profit conservation organizations. Nearly 600 acres are owned by the Commonwealth of Massachusetts. The town itself owns a small number of parcels, some in permanent and others in limited protection.

Properties with temporary protection—shown in yellow, orange and tan—add another 10,409 acres of open space, more than 2/5 of Ashfield lands. These are owned by residents who have enrolled land under the Chapter 61 tax programs. Farmlands (Chapter 61A) comprise 4,977 acres, forest lands (61) a close second with 4,370 acres, and another 1,062 are in 61B, the open space/ recreation designation. As long as the economy can support these land stewards, Ashfield will continue to enjoy the benefits these open lands provide the town.

Properties with limited protection—shown in shades of red and turquoise —include town-owned lands (78 acres) and privately owned lands (113 acres). Town-owned properties with limited protection include the Town Hall, Fire Station, Library, Highway Garage, Sewer Treatment Plant, Transfer Station, etc. Privately owned lands with limited protection include properties owned by the Mohawk Trail Regional School District and properties in the “Stonybrook Subdivision” on Watson-Spruce Corner Road.

Patterns of open space tell us a lot about the land base itself. Agricultural lands dominate the northern half of town, in both the northwest and northeast quadrants, while woodlands are the primary resource in the south, where lands under Chapter 61/forestry provide crucial links to permanently protected woodlands.

The ridgeline—defined by Ridge Hill, Peter Hill, and curving down to 76 Hill and Brier Hill—determines the watershed between the Deerfield River and the Westfield River. It is also the prominent divide between two roughly parallel lines of protected open space (including both permanent and temporary). One swath encompasses much of the northeast quadrant, from Route 112 at the northern town boundary down to where Route 116 exits to Conway. This five-mile stretch is a tightly linked combination of forest and farmland, under both permanent and temporary protection.

The larger, seven-mile swath extends from the northwest corner, with its large amount of agricultural land and the Bear Swamp conservation area, down to the southeast corner where the Poland Brook conservation lands are extended by additional CR and Chapter 61 properties. This is less contiguous in the southwest corner of town, where blocks of unprotected land interrupt the pattern, but significant amounts of conservation restricted and Chapter 61 forest lands form large bands of open space. Of particular importance is the north-south band of protected lands along Taylor Brook. This band extends to the north all the way to Bear Swamp and orchard lands in Apple Valley, with few breaks.

The two state roads that traverse Ashfield—Route 112 north to south, and Route 116 east to west—are both designated Scenic Byways, primarily due to the large blocks of open lands and scenic vistas along these roads. In particular, they are the gateways to Ashfield. From the

woodlands of Conway, farmland along 116 heading into town opens up to views of ridgelines beyond. Similarly, the woodlands embracing Route 112 from Goshen heading north open up to the spectacular vista above town center. The contrast between deep woodlands and the open farmlands that reveal the rolling nature of this hilltown enhances the experience of each.

Other secondary roads—namely Baptist Corner, Williamsburg Road, Hawley Road, and Watson Spruce Corner and Old Stage Roads—are embraced on both sides by protected lands. The variety of landscapes, as well as the constellation of owners, have created this rich landscape in which we live.

A.1 Permanent Protection

Open space can be protected from development in several ways that differ in the level of legal protection they provide, the method by which they are protected, and by the type of landowner. When land is considered to be “permanently protected,” it is intended to remain undeveloped in perpetuity. This level of protection is ensured in one of two ways: (1) ownership by a state conservation agency, a not-for-profit conservation land trust, or the local Conservation Commission; or (2) attachment of a conservation restriction or similar legal mechanism to the deed.

Land is considered to be permanently protected from development when it is owned by the Commonwealth of Massachusetts and managed by a state conservation agency, including the Department of Fish and Game (DFG) or the Department of Conservation and Recreation (DCR). Land is also considered permanently protected when it is owned by the town and is under the authority of the Conservation Commission, or when it is owned by a land trust for conservation purposes. Land acquired by a public agency for the purpose of water supply protection is also considered to be permanently protected.

Private landowners can also protect their properties through the attachment of a conservation restriction (CR). A CR is a legally binding agreement between a landowner (grantor) and a holder (grantee)—usually a public agency or a private land trust—whereby the grantor agrees to limit the use of his/her property by forfeiting interests in the land (development being one type of interest) for the purpose of protecting certain conservation values. The conservation restriction may run for a period of years or in perpetuity and is recorded at the Registry of Deeds. Certain income, estate or real estate tax benefits may be available to the grantor of a conservation restriction.

There are several types of conservation restrictions. Some protect specific resources, such as wildlife habitat, or farmland. Actively farmed land with prime soils or soils of statewide importance may be eligible for enrollment in the state’s Agricultural Preservation Restriction (APR) Program. Adopted by the State Legislature in 1977, the APR Program ensures the permanent protection of large blocks of farmland. Administered by the Massachusetts Department of Agricultural Resources (MDAR), this program offers farmers the difference between the “fair market value” and the “agricultural value” of their land. In exchange, a permanent deed restriction is placed on the property, which precludes uses that may harm the

agricultural viability of the land. The farmer continues to own the land and can sell it, but only for agricultural uses, making it economically feasible for farmers to keep farming.

Removing permanent protection from any parcel of land that is in the APR Program, protected with a conservation restriction, owned by a state conservation agency, a land trust or a town for conservation purposes, or acquired by a fire or water district for the purpose of water supply protection requires a vote by two thirds of the State Legislature as outlined in Article 97 of the Amendments to the Massachusetts State Constitution. For the purposes of this Open Space and Recreation Plan, cemeteries are also considered to be permanently protected from development.

The “permanent protection” conveyed by Article 97 does have its limits. The State Legislature has, on dozens of occasions, voted to release this protection at the request of local communities, so that conservation land can be used for schools, roads, economic development, or other public projects not related to resource protection. Reforms have been proposed to make this process more difficult. Recent court cases have also addressed Article 97 protection, such as when Berkshire Superior Court Judge John A. Agostini ruled in May 2016 that eminent domain through the federal Natural Gas Act of 1938 trumped the Article 97 provisions in the state Constitution, allowing the Tennessee Gas Pipeline Co. to proceed with plans to extend a natural gas pipeline through a section of the Otis State Park in Sandisfield. It is important for local advocates of conservation to be vigilant of attempts to remove the protection status from open space in the Town of Ashfield.

A.2. Temporary Protection

The Farmland Assessment Act was enacted by the State Legislature in 1973 and amended in 2006. Parcels enrolled in Massachusetts Chapter 61 (forestry), 61A (agriculture) and 61B (open space/recreation) tax programs created by this Act are considered to be “temporarily protected” from development. This program offers landowners reduced local property taxes in return for maintaining land in productive forestry, agricultural or recreational use, or in a wild condition, for a period of time. These “chapter lands” provide many public benefits from maintaining wildlife habitat and recreational open space to sustaining rural character and local forest and farm-based economic activity.

Another benefit of the Chapter 61 programs is that they offer towns the opportunity to protect land. When a parcel that has been enrolled in one of the Chapter programs is proposed for conversion to a use that would make it ineligible for the program, the town is guaranteed a 120-day waiting period during which it can exercise its right of first refusal to purchase the property. After a Purchase and Sale Agreement has been signed, the municipality has ninety days to complete the purchase if it elects to buy the property (or assign the right). The right of first refusal can be sold to, or given to, a land trust that can often respond much more quickly than the Town can. It is important for the Town of Ashfield not to consider land under Chapters 61 (forest), 61A (farm) or 61B (open space/recreation) as permanently protected. At the same time, the value the program offers to the Town should not be disregarded.

A.3. Limited Protection

If a Town-owned parcel of land is under the legal authority of the Select Board, rather than the Conservation Commission, it is considered to have limited protection from development. The parcel could be called a wildlife sanctuary or a town forest but may not have the long-term protection afforded by Conservation Commission lands. In this case, converting a town forest to a soccer field or a school parking lot could be decided by the Select Board or Town Meeting.

A parcel of land used for the purposes of water supply protection is considered in much the same way. Unless there is a legal restriction attached to the deed or if the deed reads that the land was acquired expressly for water supply protection, the level of protection afforded these types of parcels varies depending on the policies of each community. In most cases, the water district would be required to show the Massachusetts Department of Environmental Protection just cause for converting the use of the land. However, this is not an insurmountable hurdle. The Town of Athol took their surface drinking water supplies off-line after developing a productive well field. A change in land use around the reservoir from water supply protection to active recreational use may occur.

B. INVENTORY OF PROTECTED OPEN SPACE

The ways in which lands are protected from development produce different values. For example, lands that are permanently protected through the use of a conservation restriction (CR) or agricultural preservation restriction (APR) can stay in private ownership. This results in having the decisions regarding the property's management in the hands of individuals, instead of a non-profit or a state or federal agency. In this case the land also remains on the local property tax rolls, and contributes to the local economy if actively managed for forestry or agriculture. Although public access is sometimes required in conservation restrictions purchased by state conservation agencies and land trusts, it is not guaranteed. Lands that are purchased in fee by state agencies and large land trusts are likely to provide access to the general public and sometimes offer payments in lieu of taxes to the Town.

Table 5-1 is an inventory of land in Ashfield that is either permanently protected, temporarily protected, or under limited protection, and was prepared utilizing information from the Town of Ashfield Assessors records, from consultations with the Assessors Clerk Jennifer Morse, from Mass GIS data, and from Ashfield Open Space and Recreation Committee members. It also presents summary information including the sum total of acres in each of the categories of open space. These totals are estimates based on the information available. For land protected with a conservation restriction (CR) or agricultural preservation restriction (APR), the entire acreage of a parcel is counted as permanently protected, although it is likely that some of these restrictions only apply to major portions of a parcel. APR and CR parcels that are also enrolled in the Chapter 61 program are counted only once as permanently protected land, and are not included in the Chapter 61 acreage totals.

As shown on Table 5-1 below, approximately 16,200 acres in Ashfield are open space with some level of protection from development. This represents 64 percent of the total land area of the

town (25,766 acres). As mentioned previously, 1,894 acres were permanently protected from development since the 2008 Open Space and Recreation Plan, an increase of nearly 52 percent. Approximately 1,100 acres of privately-owned land were permanently protected since 2008, representing a 38 percent increase. Permanently protected State-owned land increased by 341 acres, an increase of 135 percent. Permanently protected land owned by non-profit conservation organizations increased by 297 acres, or 63 percent, since 2008.

Table 5-1: Summary of Open Space by Level of Protection and Ownership

Level of Protection	Acres	Percent of Total Land in Ashfield*
PERMANENTLY PROTECTED LAND		
Publicly-Owned		
State Department of Conservation and Recreation (DCR)	301	1.2%
State Department of Fish and Game (DFG)	293	1.1%
Ashfield Conservation Commission	15	0.06%
Town of Ashfield	17	0.07%
<i>Total Publicly-Owned</i>	<i>626</i>	<i>2.4%</i>
Privately-Owned		
Conservation Restrictions (CR)	2,193	8.5%
Agricultural Preservation Restrictions (APR)	1,852	7.2%
Non-Profit Conservation Organizations	767	3.0%
Other Private Organizations	115	0.4%
<i>Total Privately-Owned</i>	<i>4,927</i>	<i>19.1%</i>
TOTAL PERMANENTLY PROTECTED LAND	5,553	21.6%
LIMITED & TEMPORARILY PROTECTED LAND		
Total Town-Owned Land With Limited Protection	<i>78</i>	<i>0.3%</i>
Total Privately-Owned Land with Limited Protection	<i>113</i>	<i>0.4%</i>
Temporarily Protected Land (privately-owned)		
Chapter 61 (Forest)	4425	17.0%
Chapter 61A (Farm)	4,977	19.3%
Chapter 61B (Open space/recreation)	1,062	4.1%
<i>Total Chapter 61, 61A & 61B</i>	<i>10,464</i>	<i>41%</i>
TOTAL LIMITED & TEMPORARILY PROTECTED LAND	10,655	41.3%
TOTAL LAND WITH SOME LEVEL OF PROTECTION	16,208	62.9%
Undevelopable Land	604	2.3%

* Total land area is 25,766 acres according to MassGIS 2005 land use data.

Source: Ashfield FY2016 Assessor's Records and 2017 updates in consultation with Assessor's Clerk Jennifer Morse, MassGIS, and Committee input.

Currently, private landowners are the largest owners of permanently protected open space in Ashfield. About 4,927 acres of permanently protected land, representing 19 percent of land in town, is owned by private landowners. Non-profit conservation agencies own roughly 767 acres,

or 3 percent, of land in town, while other private organizations own 115 acres of permanently protected land. The State owns roughly 594 acres in Ashfield, representing 2.3 percent of land in town, while the Town of Ashfield owns 32 acres of permanently protected land (including Conservation Commission-owned land), or just over 0.12 percent of land in town.

An additional 78 acres of Town-owned land is under limited protection. There are also 113 acres of privately owned land with limited protection from time-delimited deed restrictions on development. Temporarily protected land enrolled in one of the Chapter 61 programs increased by 1,263 acres since 2008, for an overall increase of nearly 14 percent. It should be noted that the acreage enrolled in the Chapter 61B recreational tax program increased by 323 acres, or 44 percent, since 2008. Overall the number of acres with some level of protection in Ashfield increased by 3,117 acres since 2008, for an increase of 24 percent.

It is important to consider land protection on a regional scale beyond the borders of Ashfield for a number of reasons. Forests clean the air, filter water supplies, control floods and erosion, sustain biodiversity and genetic resources, provide wood products and recreation, and sequester carbon. It takes large, intact natural landscapes to sustain these benefits over the long term. These services have tremendous value, from supporting the local economy through forest product jobs, outdoor recreation, and farming, to performing functions that otherwise would need to be engineered by humans. For example, the Massachusetts Audubon Society has estimated that the nonmarket value of the natural areas within the State—for flood control, climate mitigation, and water filtration—is over \$6.3 billion annually. Boston is one of just four major U.S. cities approved by the EPA for unfiltered water supply systems, where forests do the work of cleaning the water.¹

The tables on the following pages document the lands of conservation and recreation interest in the Town of Ashfield, to the extent that records are available. All of the parcels are separated by level of protection and ownership. In addition, information is provided for each publicly-owned parcel or property including, when available: the owner, property manager, site name, its current use, condition, recreation potential, public access, the type of public grant received, zoning, degree of protection, area in acres, and the Ashfield Assessor's map and lot numbers. These parcels are also shown on the Open Space Map at the end of this section. Parcels are identified on the map by level of protection and type of ownership. It should be noted that the Ashfield Assessors are continually revising the maps and changing the numbers as properties are sold or subdivided, which affects the accuracy of parcel level data information over time. The open space areas that have ecological, scenic, and historical values were considered in depth in Section 4, Table 4-5: Significant Scenic/Historic/Natural Landscapes/Environments in Ashfield. These areas are also shown on the Scenic and Unique Resources Map at the end of Section 4.

The condition of these properties was assessed (on a scale from poor to excellent) based on interviews with residents and field surveys. The recreation potential for the properties was estimated (on a scale from low to high) based on the degree of the expected recreational activities. The parcel's level of public access was also considered and ranked (on a scale from poor to excellent) based on information presented within the Ashfield Assessor's Maps. Each

¹ "Partnership: Quabbin to Wachusett Grant Ranks Second in Nation." Mount Grace Land Conservation Trust. <http://www.mountgrace.org/partnership-quabbin-wachusett-grant-ranks-second-nation>

property was considered on its own without the potential benefits gained from abutting parcels. Access to a public way, which abutting parcels could offer, was only considered when these lands were permanently protected public lands. Often a parcel was assigned a 'poor' ranking primarily because it was landlocked.

Table 5-2: State-Owned Land Managed by State Conservation Agencies in Ashfield

Property Manager	Site Name	Acres	Assessors Map	Assessors Lot(s)	Current Use	Condition	Recreation Value	Public Access
DFG	Ashfield Hawley WMA	182.54	3	35	Watershed protection/Habitat	Good	Unknown	Old Stage Road
DFG	Poland Brook WMA	39.00	11	21	Habitat Management	Good	High	Off Williamsburg Rd.
DFG	Poland Brook WMA	71.00	11	24	Habitat Management	Good	High	Off Williamsburg Rd.
<i>Subtotal DFG</i>		292.54						
DCR	DAR State Forest	104.27	13	40	Recreation	Good	High	Cape Street
DCR	DAR State Forest	91.60	14	35	Recreation	Good	High	West Road
DCR	DAR State Forest	105.00	14	37	Recreation	Good	High	Off West Road
<i>Subtotal DCR</i>		300.87						
TOTAL ACREAGE		593.41						

Source: Ashfield FY2016 Assessor’s Records and 2017 updates in consultation with Assessor’s Clerk Jennifer Morse, MassGIS, and Committee input.

Table 5-3: Town-Owned Land Permanently Protected from Development in Ashfield

Property Owner	Property Manager	Site Name	Acres	Assessors Map	Assessors Lot(s)	Zoning	Degree of Protection	Current Use	Condition	Recreation Value	Public Access	Type of Public Grant Received
Town of Ashfield	Conservation Commission	Brewer-Tatro Memorial Woods, Hawley Rd	11.40	4	76	Residential/Ag	Permanent	Passive Recreation	Good	Good	Off Hawley Road	
Town of Ashfield	Conservation Commission	Brewer-Tatro Memorial Woods, Hawley Rd	4.00	4	77	Residential/Ag	Permanent	Passive Recreation	Good	Good	Off Hawley Road	
Subtotal Ashfield ConCom			15.40									
Town of Ashfield	Park Commission	Belding Park by Lake	12.15	7-2	2		Town Owned	Recreation	Good	High	Main Street	
Town of Ashfield	Town of Ashfield	Town Common	4.52	7-4	40	Residential/Ag	CR	Recreation Events	Good	Good	Main Street	
Subtotal Town of Ashfield			16.67									
TOTAL ACREAGE			32.07									

Source: Ashfield FY2016 Assessor’s Records and 2017 updates in consultation with Assessor’s Clerk Jennifer Morse, MassGIS, and Committee input.

Table 5-4: Privately-Owned Land Permanently Protected from Development in Ashfield

Owner	Holder of the Restriction	Location/Site Name	Type of Restriction	Acreage	Assessors Map	Assessors Lot(s)
CONSERVATION ORGANIZATIONS						
The Trustees of Reservations	TTOR	Bullit Road	Permanent*	153.00	11	20
The Trustees of Reservations	TTOR	Williamsburg Road	Permanent*	153.00	14	1
The Trustees of Reservations	TTOR	Williamsburg Road	Permanent*	118.00	14	2
The Trustees of Reservations	TTOR	Williamsburg Road	Permanent*	5.00	14	3
The Trustees of Reservations	TTOR	Williamsburg Road	Permanent*	6.00	14	4
The Trustees of Reservations	TTOR	Off Williamsburg Road	Permanent*	4.00	14	70
The Trustees of Reservations	TTOR	Off West Road	Permanent*	10.00	14	79
The Trustees of Reservations	TTOR	Off West Road	Permanent*	28.00	14	80
The Trustees of Reservations	TTOR	Hawley Road	Permanent*	2.00	3	106
The Trustees of Reservations	TTOR	Off Hawley Road	Permanent*	14.00	3	107
The Trustees of Reservations	TTOR	Ford Road	Permanent*	4.00	3	61
The Trustees of Reservations	TTOR	Ford Road	Permanent*	98.00	3	63
The Trustees of Reservations	TTOR	Off Ford Road	Permanent*	15.00	3	64
The Trustees of Reservations	TTOR	Off Bear Swamp Road	Permanent*	11.00	4	71
The Trustees of Reservations	TTOR	Bear Swamp Road	Permanent*	11.00	4	72
The Trustees of Reservations	TTOR	Hawley Road	Permanent*	65.00	4	75
The Trustees of Reservations	TTOR	Hawley Road	Permanent*	8.00	4	78
The Trustees of Reservations	TTOR	Tatro Road	Permanent*	34.00	4	86
The Trustees of Reservations/ C/O Sally Loomis, Executive Director	TTOR	Bear Swamp Road	Permanent*	28.00	4	73
Subtotal TTOR Acreage				767.00		
Trust for Public Land	TPL	West Road		0.25	11	53
SUBTOTAL CONSERVATION ORGANIZATIONS' ACREAGE				767.25		

Owner	Holder of the Restriction	Location/Site Name	Type of Restriction	Acreage	Assessors Map	Assessors Lot(s)
OTHER PRIVATE ORGANIZATIONS						
Ashfield Burial Ground Association		Williamsburg Road		2.00	11	8
Ashfield Burial Ground Association		West Road		0.30	14	39
Ashfield Burial Ground Association		March Road		0.25	2	26
Ashfield Burial Ground Association		Beldingville Road		0.27	5	12
Ashfield Burial Ground Association		Norton Hill Road		2.00	7	18
Ashfield Burial Ground Association		Baptist Corner Road		9.00	8-1	1
Ashfield Burial Ground Association		Spruce Corner Road		1.40	9	31
Ashfield Burial Ground Association		Northwest Cemetery, off Apple Valley Rd.		0.25	N/A	N/A
Subtotal ABGA Acreage				15.47		
Ashfield Water District		Smith Road		19.18	7	109
Ashfield Water District		444 Hawley Road	Deed	0.70	4	66
Ashfield Water District		101 Bear Swamp Road	Deed	3.00	4	69
Ashfield Water District		Bear Swamp Road	Deed	2.00	4	70
Ashfield Water District		Off Bear Swamp Road	Deed	70.3	7	74
Subtotal Ashfield Water District Acreage				95.18		
Trustees of Sanderson Academy		Off Buckland Road		3.90	7-2	51
SUBTOTAL OTHER PRIVATE ORGANIZATIONS' ACREAGE				114.55		
CONSERVATION RESTRICTIONS (CR)						
CLARK CALVIN & JOAN	Franklin Land Trust	BIRD HILL RD	CR	67.18	11	31
CLARK CALVIN & JOAN	Franklin Land Trust	CONWAY RD	CR	9.80	11	7
CLARK CALVIN JR / CLARK JOAN E	Franklin Land Trust	WILLIAMSBURG RD	CR	5.56	11	32
CLARK CALVIN M JR / CLARK JOAN E	Franklin Land Trust	173 WILLIAMSBURG RD	CR	15.01	11	10

Owner	Holder of the Restriction	Location/Site Name	Type of Restriction	Acreage	Assessors Map	Assessors Lot(s)
CLARK CALVIN M JR / CLARK JOAN E	Franklin Land Trust	BIRD HILL RD	CR	12.06	11	93
CLARK CALVIN M JR / CLARK JOAN E	Franklin Land Trust	WILLIAMSBURG RD	CR	4.83	11	96
CLARK CALVIN M JR / JOAN E	Franklin Land Trust	CONWAY RD	CR	80.00	11	11
CLARK CALVIN M JR / JOAN E	Franklin Land Trust	WILLIAMSBURG RD	CR	44.88	11	12
CLARK CALVIN M JR / JOAN E	Franklin Land Trust	745 WILLIAMSBURG RD	CR	109.23	11	22
CLARK CALVIN M JR / JOAN E	Franklin Land Trust	WILLIAMSBURG RD	CR	22.01	11	66
CLARK CALVIN M JR / JOAN E	Franklin Land Trust	476 WILLIAMSBURG RD	CR	11.68	11	88
COLER RONALD TRUST / COLER NINA ANDERSON TRUST	Franklin Land Trust	168 BAILEY RD	CR	78.10	1	18
CORENS PETER	Franklin Land Trust	NORTH BEAR RIVER RD	CR	79.20	5	10
CORENS PETER	Franklin Land Trust	BELDINGVILLE RD	CR	73.40	5	14
CORENS PETER D	Franklin Land Trust	607 BELDINGVILLE RD	CR	32.60	5	50
CORENS PETER D	Franklin Land Trust	BELDINGVILLE RD	CR	43.87	5	52
CUDNOHUFISKY,WALTER TRUST / CUDNOHUFISKY, SUSAN, TRUST	Franklin Land Trust	455 BUG HILL RD	CR	97.50	7	71
CUTLER JAMES P	Franklin Land Trust	BELDINGVILLE RD	CR	21.80	5	14A
ERICKSON LARS C / HUNG JUDY W	Franklin Land Trust	653 BEAR SWAMP RD	CR	12.76	6	22
FARLEY CHRISTOPHER ET AL	Franklin Land Trust	PLAINFIELD RD	CR	11.60	12	14
FARLEY CHRISTOPHER W / JACOBSON JULIET A	Franklin Land Trust	OFF PLAINFIELD RD	CR	8.43	12	79
GEMME GARY / GEMME JOAN	Franklin Land Trust	83 BIRD HILL BRANCH RD	CR	119.00	11	29
HULL FORESTLANDS LP		CAPE ST	CR	100.98	13	17
JEROME CHRISTINE M	Franklin Land Trust	106 BIRD HILL RD	CR	104.25	11	64
JONAS ROBERT A	Franklin Land Trust	274 PHILLIPS RD	CR	234.23	2	9
KERAMIDAS HARRY T / RASTORFER RENEE Y		131 TATRO RD	CR	7.65	3	12

Owner	Holder of the Restriction	Location/Site Name	Type of Restriction	Acreage	Assessors Map	Assessors Lot(s)
LAMONTAGNE RAY CHARLES J / SOUSA SARAH	Trustees of Reservations	369 BULLITT RD	CR	103.40	11	16
MERRILL TAMSEN	Franklin Land Trust	BRIAR HILL RD	CR	79.50	11	70
MERRILL TAMSEN	Franklin Land Trust	BRIAR HILL RD	CR	7.60	11	71
MILLER KENNETH B INVESTMENT TRUST / MILLER BARBARA P INVESTMENT TRUST	Franklin Land Trust	CUMMINGTON RD	CR	114.46	12	18
NORCROSS WILDLIFE / FOUNDATION INC		SPRUCE CORNER RD	CR	154.15	13	33
PANTERMEHL ARTHUR JR / PANTERMEHL RICHARD		612 BEAR SWAMP RD	CR	141.12	6	62
QUIGLEY MARY / BABIZE MOLLIE		73 NORTH BEAR RIVER RD	CR	4.16	5	10B
STROSSI ROBERT / STROSSI ROBERT INVESTMENT	Franklin Land Trust	34 WEST BRANCH RD	CR	69.52	14	63
THORP OLAF J	Franklin Land Trust	BIRD HILL RD	CR	14.80	11	30
TUCKER WILLIAM / PAMELA AVRIL	Franklin Land Trust	1752 WEST RD	CR	91.20	14	36
WISWELL VIRGINIA G	Franklin Land Trust	470 PLAINFIELD RD	CR	5.00	12	78
SUBTOTAL CR ACREAGE				2,192.52		
AGRICULTURAL PRESERVATION RESTRICTIONS (APR)						
CONKLIN JAY K	MDAR	198 STEADY LANE RD	APR	7.50	7	78
CURRY SARAH / CURRY CLAYTON	MDAR	642 BEAR SWAMP RD	APR	12.73	6	21
DOUBLE EDGE THEATRE	MDAR	948 CONWAY RD	APR	53.66	8-3	4
DOUBLE EDGE THEATRE PRODUCTION	MDAR	CONWAY RD	APR	37.69	8-3	10
DOUBLE EDGE THEATRE PRODUCTION	MDAR	OFF CONWAY RD	APR	7.00	8-3	6
FERGUSON ROBERT E + MARGARET J / MERRILL TAMSEN	MDAR	CREAMERY RD	APR	10.07	8-3	29
GARVIN LESTER E TR / NANCY E TR	Franklin Land Trust	BAPTIST CORNER RD	APR	11.49	5	4

Owner	Holder of the Restriction	Location/Site Name	Type of Restriction	Acreage	Assessors Map	Assessors Lot(s)
GOREVIC RONALD / FISHER JULIE	MDAR	770 WATSON-SPRUCE CORNER RD	APR	32.00	6	42
GOUGEON RICHARD H & MELINDA J / GOUGEON STEVEN & WILLIAMS JENN	MDAR	HAWLEY RD	APR	0.57	3	57
GOUGEON RICHARD H / GOUGEON MELINDA JANE	MDAR	OFF HAWLEY RD	APR	8.50	3	59
GOUGEON RICHARD H / MELINDA JANE	MDAR	OFF HAWLEY RD	APR	11.20	3	56
HAY BENJAMIN / HAY DOUGLAS	MDAR	OFF OLD STAGE RD	APR	50.33	3	34
HEIDEMAN JUNE L, GRAVES MARK D / CONNELL SUZANNE E	MDAR	278 BARNES RD	APR	153.53	2	85
LIBBY PATRICIA D / KIM L REARDON	MDAR	BRIAR HILL RD	APR	77.68	11	56
LIBBY PATRICIA D / KIM L REARDON	MDAR	BRIAR HILL RD	APR	8.22	11	63
LIBBY PATRICIA D / KIM L REARDON	MDAR	WEST RD	APR	6.32	14	61
LIBBY PATRICIA D / REARDON KIM L	MDAR	WEST RD	APR	81.17	14	76
LILLY ALAN / LILLY SHIRLEY	MDAR	WATSON-SPRUCE CORNER RD	APR	268.80	6	12
LILLY KEITH E / LILLY COLLEEN M	MDAR	WATSON-SPRUCE CORNER RD	APR	69.00	6	8
LILLY SHIRLEY A / LILLY ALAN W	MDAR	1592 BUG HILL RD	APR	46.80	6	17
LILLY SHIRLEY A / LILLY ALAN W	MDAR	WATSON-SPRUCE CORNER RD	APR	52.94	6	18A
LILLY SHIRLEY A / LILLY ALAN W	MDAR	BEAR SWAMP RD	APR	54.00	6	27
LILLY SHIRLEY A / LILLY ALAN W	MDAR	OFF BEAR SWAMP RD	APR	23.10	6	33
LILLY SHIRLEY A / LILLY ALAN W	MDAR	BUG HILL RD	APR	7.88	6	53
LILLY SHIRLEY A / LILLY ALAN W	MDAR	BUG HILL RD	APR	10.28	6	54
MILLER KENNETH B INVESTMENT TRUST / MILLER BARBARA P INVESTMENT TRUST	Franklin Land Trust	193 CUMMINGTON RD	APR	35.82	12	16
PEDLOSKY HOLLY SMITH	MDAR	EMMET RD	APR	11.04	8-6	17

**Section 5 -
Inventory of Lands of Conservation and Recreation Interest**

Ashfield Open Space and Recreation Plan

Owner	Holder of the Restriction	Location/Site Name	Type of Restriction	Acreage	Assessors Map	Assessors Lot(s)
PRATT MARY MAY	MDAR	HAWLEY RD	APR	43.60	3	43
SALZ NORBERT J / CLARK JANET I	MDAR	144 STEADY LANE RD	APR	71.90	7	27
SCHREIBER THOMAS + SHIRLEY	MDAR	451 WATSON RD	APR	459.00	6	9A
SMITH SHARON OFF-DUNLAP	MDAR	MURRAY RD	APR	3.10	8-6	10
SMITH SHARON OFF-DUNLAP	MDAR	437 MURRAY RD	APR	91.30	8-6	11
WILLIAMS INVESTMENT TRUST / WILLIAMS, ARTHUR L JR TRUSTEE	MDAR	CONWAY RD	APR	30.22	8-2	22A
WOLFRAM MARK J	MDAR	BELDINGVILLE RD	APR	4.00	5	37
		SUBTOTAL APR ACREAGE		1,852.44		
TOTAL PRIVATELY-OWNED LAND UNDER PERMANENT PROTECTION						
				4,926.76		

Source: Ashfield FY2016 Assessor's Records and 2017 updates in consultation with Assessor's Clerk Jennifer Morse, MassGIS, and Committee input.

*Lands owned in fee by the Trustees of Reservations do not have legal restrictions on them unless they are sold.

Table 5-5: Land with Limited Protection from Development

Property Owner	Property Manager	Site Name	Current Use	Condition	Recreation Potential	Public Access	Public Grant Received	Zoning	Degree of Protection	Acres	Assessors Map	Assessors Lot
Town-Owned:												
Town of Ashfield	Town of Ashfield	896 Cape Street	Highway Garage	Good	None	Limited		Res/Ag	Limited	18.75	10	102
Town of Ashfield	Town of Ashfield	Spruce Corner Road	Tax taking 2006	Good	None	Limited		Res/Ag	Limited	2.90	10	58
Town of Ashfield	Town of Ashfield	Old Stage Road	Tax taking 2008	Good	None	Limited		Res/Ag	Limited	7.35	3	103
Town of Ashfield	Town of Ashfield	Steady Lane Road	Too small to build on	Good	None	Limited		Res/Ag	Limited	0.30	7	96
Town of Ashfield	Town of Ashfield	Bronson Avenue	Town Parking lot	Good	None	Bronson Ave.		Res/Ag	Limited	0.27	7-2	10
Town of Ashfield	Town of Ashfield	44 Buckland Road	In front of ball field	Good	None	Buckland Rd.		Res/Ag	Limited	0.56	7-2	69
Town of Ashfield	Town of Ashfield	Bronson Avenue	Land for sewer line/pump station	Good	None	Limited		Res/Ag	Limited	0.03	7-2	84
Town of Ashfield	Town of Ashfield	Bronson Avenue	Walk from parking lot to ball field	Good	None	Bronson Ave.		Res/Ag	Limited	0.01	7-2	85
Town of Ashfield	Town of Ashfield	Belding Memorial Library	Library	Good	None	Main St.		Res/Ag	Limited	0.66	7-4	14
Town of Ashfield	Town of Ashfield	Town Hall	Town Hall	Good	None	Main St.		Res/Ag	Limited	0.25	7-4	22
Town of Ashfield	Town of Ashfield	Fire Station	Fire Station	Good	None	Main St.		Res/Ag	Limited	0.03	7-4	23
Town of Ashfield	Town of Ashfield	Town Hall Parking Lot	Parking Lot	Good	None	Main St.		Res/Ag	Limited	0.10	7-4	24
Town of Ashfield	Town of Ashfield	Sewer Treatment Plant	Sewer Treatment Plant	Good	None	Limited		Res/Ag	Limited	26.50	8-6	15
Town of Ashfield	Town of Ashfield	Sewer Treatment Plant	Sewer Treatment Plant	Good	None	Limited		Res/Ag	Limited	4.40	8-6	2
Town of Ashfield	Town of Ashfield	851 Ashfield Mountain Road	Town Transfer Station	Good	None	Ashfield Mt. Rd.		Res/Ag	Limited	6.69	4	29
Town of Ashfield	Town of Ashfield	Stroheker Road	Stone Bridge	Fair/Poor	Historic Property	Limited		Res/Ag	Limited	9.20	4	39
Total Town-Owned Land With Limited Protection										78.00		
Privately-Owned:												
Field Board Inc.		46A Buckland Road						Res/Ag	Limited	0.21	7-2	68
Field Board Inc		46B Buckland Road						Res/Ag	Limited	0.20	7-2	76
Field Board Inc		Thayer Road						Res/Ag	Limited	0.00443	7-2	86
Mohawk Trail Regional School District		808 Cape Street	Sanderson Academy							34.40	10	32
Total Privately-Owned Land With Limited Protection										34.8		

Table 5-6: Privately Owned Parcels of Land in the Chapter 61, 61A, and 61B Land Classification and Taxation Program

Owner	Location	Program	Acres	Assessors Map	Assessors Lot
BEAR MTN HOMEOWNER'S ASSOC INC / C/O CHARLES ROSS	BEAR MOUNTAIN DR	61	52.09	12	72
BULISSA DAVID R / GALE A	JOHN FORD RD	61	65.00	9	6
BULISSA DAVID R & GALE A	JOHN FORD RD	61	41.43	9	5
BURTON MARK / BURTON LISA	MURRAY RD	61	10.06	5	35
BURTON MARK A / LISA K P	BELDINGVILLE RD	61	35.02	5	70
BURTON MARK A / LISA K P	365 BELDINGVILLE RD	61	13.97	5	9
COWLS W D INC	SPRUCE CORNER RD	61	241.00	10	23
CUTLER JAMES P	BELDINGVILLE RD	61	10.00	5	45
CUTLER JAMES P	421 BELDINGVILLE RD	61	5.20	5	46
DAVIDSON ROBERT M / RUSSELL STEFANIE L	844 SPRUCE CORNER RD	61	54.65	10	46
DELANEY CHARLES J	SPRUCE CORNER RD	61	122.00	10	41
DELANEY ROBERT E / JUDY M	SPRUCE CORNER RD	61	31.49	10	90
DELANEY ROBERT E / JUDY M	BAILEY RD	61	40.50	1	21
ELWELL WILLIAM DAVISON / DONNA ELWELL	2081 BAPTIST CORNER RD	61	73.60	2	56
ETHEREDGE EDWARD D / HOTT LAWRENCE R	WILLIAMSBURG RD	61	5.98	14	25
FEGA ROGER P	SEARS RD	61	103.26	13	15
FEGA ROGER P	264 SEARS RD	61	17.11	13	16
GARVIN LESTER E TR / NANCY E TR	OFF WEST BRANCH RD	61	128.20	14	62
GRAVES DONALD E	FORD RD	61	42.50	3	62
GRAY ALDEN / AUDREY	687 BAPTIST CORNER RD	61	35.75	4	10
GRAY ALDEN J / GRAY AUDREY M	OFF BAPTIST CORNER RD	61	7.30	4	12A
GRAY RAYMOND	OFF WEST RD	61	39.54	11	39A
GRAY RAYMOND M / GRAY MARSHA A	1379 CAPE ST	61	128.42	10	15
HALL MARY C LIFE ESTATE	OFF SMITH RD	61	15.60	4	64
HALL MARY C LIFE ESTATE	SMITH RD	61	95.80	4	67
ISDALE REVOCABLE TRUST MARY ANN KINNE / ISDALE MARY ANN & IAN	221A PFERSICK RD	61	29.00	2	79

Owner	Location	Program	Acres	Assessors Map	Assessors Lot
ITZKOFF SEYMOUR / PATRICIA	462 JOHN FORD RD	61	201.05	9	20
ITZKOFF SEYMOUR / PATRICIA	JOHN FORD RD	61	95.40	9	61
ITZKOFF SEYMOUR / PATRICIA	OFF JOHN FORD RD	61	6.25	9	70
JONES ARNOLD D / FAITH B	236 LILLIPUT RD	61	104.00	7	49
KERIVAN KATHLEEN	502 BUG HILL RD	61	42.25	7	69
KERNAN D & DUFRESNE F	WEST RD	61	16.80	10	13
LIST TERENCE G / LIST JEFFREY H.	BELDINGVILLE RD	61	3.30	5	31
LIST TERENCE G. / LIST JEFFREY H	OFF BELDINGVILLE RD	61	9.30	5	67
MARKEY ROBERT J	444 BELLUS RD	61	13.40	5	41
MARKEY ROBERT JOSEPH / ORFIRER JULIE ELIZABETH	406 BELLUS RD	61	25.00	5	48
MENZEL PAUL J / GRAVES DONALD E	PADDY HILL AREA	61	50.00	10	21
MENZEL PAUL J / GRAVES DONALD E	PADDY HILL AREA	61	74.40	13	24
MILLER SETH / STEVENSON TINA	300 ASHFIELD MOUNTAIN RD	61	30.80	4	30
MILT ELLEN	FORD RD	61	57.12	3	49
MONDS LINDA DARLENE / BURCH CYNTHIA KAY	1538 WEST RD	61	148.80	14	46
MURRAY CAROLINE D	111 STROHEKER RD	61	12.80	4	47
NUBILE ALLAN J / BARBARA J	147 LUDWIG RD	61	16.20	14	21
NYLEN ROBERT / NYLEN KATHARINE	786 BUG HILL RD	61	189.70	7	73
O'CONNELL NOEL VINCENT TR / SWANSON KATHERINE M TR	CAPE ST	61	56.02	10	17
O'CONNELL NOEL VINCENT TR / SWANSON KATHERINE M TR	CAPE ST	61	20.00	10	16
OVERTON JOHN / OVERTON NADYA	SPRUCE CORNER RD	61	77.60	13	39
PANTERMEHL ARTHUR JR / PANTERMEHL RICHARD	BUG HILL RD	61	2.00	6	50A
PANTERMEHL ARTHUR P JR / PANTERMEHL RICHARD	OFF BUG HILL RD	61	80.00	6	51
PATIERNO MARY	401 BRIAR HILL RD	61	50.32	11	83
PECK REALTY TRUST / PECK A. WILLIAM	MARCH RD	61	8.00	2	93

Owner	Location	Program	Acres	Assessors Map	Assessors Lot
PEDLOSKY HOLLY SMITH	EMMET RD	61	28.35	8-6	16
PEDLOSKY HOLLY SMITH	OFF EMMET RD	61	12.56	8-6	3
PIERCE GARY J / ALINE L CORTEZ	OFF WILLIAMSBURG RD	61	13.66	14	65
PIERCE GARY J / ALINE L CORTEZ	OFF WILLIAMSBURG RD	61	12.52	14	74
PYLANT JOHN / GIERASCH LILA	582 PFERSICK RD	61	46.00	5	20
ROBERTS LEONARD H	PADDY HILL AREA	61	272.20	10	22
ROBERTS LEONARD H	SPRUCE CORNER RD	61	91.99	13	34
ROGERS JANET M	GRAVES RD	61	15.42	4	103
ROGERS JANET M / LABELLE BEVERLY	243 GRAVES RD	61	127.00	4	2
ROTIMA S A INC	ASHFIELD MOUNTAIN RD	61	56.00	1	29
SELBY MARK R /	790 BELDINGVILLE RD	61	75.42	5	15
SHEA GREGORY J	PFERSICK RD	61	6.73	5	22
SMITH ANDREW & NANCY / SMITH INVESTMENT TRUST	OFF PFERSICK RD	61	36.43	2	78
SPRONG JAY W / SPRONG CONSTANCE	1679 WEST RD	61	31.80	14	55
STAFILARAKIS PAUL	LUDWIG BRANCH RD	61	116.00	14	26
STARK JONATHAN E. / STARK SUSAN PERKINS	MARCH RD	61	166.00	2	114
STEPHAN GEORGE / STEPHAN DIANE M	1771 CAPE ST	61	106.00	13	8
THAYER WILLIS J / TRENHOLM MARTHA J	NORTH WARGER RD	61	46.50	2	59
THOMAS DEBORAH	1379 WEST RD	61	78.65	14	57
WAGGONER MARGARET	CAPE ST	61	45.52	13	12
WESCOTT HOLLY / RICE ALAN D	CREAMERY RD	61	27.57	8-3	3A
WHITNEY-LUSSIER FAYE / LUSSIER PHILIP K	OFF BAPTIST CORNER RD	61	75.70	4	7
WIEDMANN GAIL D	1547 CAPE ST	61	82.80	13	2
WILLIAMS MICHAEL P.	170 MARCH RD	61	20.06	2	96
TOTAL CHAPTER 61 ACREAGE			4,369.84		

Owner	Location	Program	Acres	Assessors Map	Assessors Lot
ALLON KYLA	BAPTIST CORNER RD	61A	22.99	5	62
ARSENAULT, JOAN B	OFF STEADY LANE LN	61A	6.00	7-3	14
ARSENAULT, JOAN B	314 NORTON HILL RD	61A	19.53	7-4	4
BANKS JOSETTE / CHASE VINCENT	203 MURRAY RD	61A	94.10	5	34
BURNETT JOSEPHINE / C/O WILLIS BURNETT	2308 CONWAY RD	61A	41.00	8-5	6
CAPRA ANNE M.	68 PLAINFIELD RD	61A	40.00	9	27
CARLISLE DEBORAH L	1148 CAPE ST	61A	84.00	10	19
CLARK BRIAN E / SUSAN S	HAWLEY RD	61A	36.00	3	31
CLARK DANA M	42A CLARK RD	61A	115.79	1	43
CRANSTON REAL ESTATE TRUST / CRANSTON THOMAS TRUSTEE	197 BELLUS RD	61A	162.39	4	14
CRANSTON SETH T. / CRANSTON MARYELLEN	372 BAPTIST CORNER RD	61A	11.00	4	21
CROWNINGSHIELD DENNIS E	112 STROHEKER RD	61A	17.00	4	46
CROWNINGSHIELD DENNIS E / CROWNINGSHIELD ROBYN A	ASHFIELD MOUNTAIN RD	61A	101.85	4	34
CROWNINGSHIELD DENNIS E / CROWNINGSHIELD ROBYN A	STROHEKER RD	61A	0.50	4	45
CULVER DAVID G /	1042 WILLIAMSBURG RD	61A	52.44	11	26
CURTIS PETER T / BARBARA B	CONWAY RD	61A	52.97	8-3	9
CURTIS PETER T / BARBARA B	828 MURRAY RD	61A	66.80	8-4	1
CURTIS PETER T / BARBARA B	884 MURRAY RD	61A	13.61	8-4	1A
CURTIS PETER T / BARBARA B	837 MURRAY RD	61A	19.00	8-4	2
CUSHMAN MARY M.	192 HILL RD	61A	10.34	8-4	26
DEANE DOUGLAS	205 SOUTH WARGER RD	61A	10.40	2	72
FERLA SUSAN	1237 BAPTIST CORNER RD	61A	107.61	5	3
FERLA SUSAN	BAPTIST CORNER RD	61A	6.97	5	47
FULLER MARIE E	31 BULLITT RD	61A	15.40	8-4	19
GARVIN LESTER E TR / NANCY E TR	45 BELDINGVILLE RD	61A	12.21	5	60
GARVIN LESTER E TR LEGARVIN IT / GARVIN	87 BELDINGVILLE RD	61A	3.15	5	61

**Section 5 –
Inventory of Lands of Conservation and Recreation Interest**

Owner	Location	Program	Acres	Assessors Map	Assessors Lot
NANCY E TR NEGARVIN IT					
GRAY ALDEN J / GRAY AUDREY M	CONWAY RD	61A	60.93	8-5	8
HALL JOHN B TRUSTEE LIFE / HALL HELEN I TRUSTEE LIFE	EMMET RD	61A	24.49	8-6	6
HELEN I. HALL LIVING TRUST / HALL HELEN TRUSTEE	161 EMMET RD	61A	8.90	8-6	7
HENDERSON NANCY	295 BUG HILL RD	61A	27.00	7	46
HILLIER THOMAS J / HILLIER SUSAN GORDON	CREAMERY RD	61A	1.05	8-3	42
HILLIER THOMAS J / HILLIER SUSAN GORDON	485 CREAMERY RD	61A	64.53	11	82
HOWES ROGER E	LILLIPUT RD	61A	53.66	7	53A
HYNES GERALD D & ANNE M	159 DYER RD	61A	6.66	10	105
INTRES RICHARD & NANCY	926 WATSON-SPRUCE CORNER RD	61A	61.67	6	39
JAMES NED / ZELLER MARILYNN L	83 SCOTT RD	61A	67.00	1	45
LABELLE JOHN A	40 STROHEKER RD	61A	9.79	4	43
LAGOY EDWARD G / BARBARA A	374 WATSON-SPRUCE CORNER RD	61A	87.20	9	60
LANOUE DAVID G / AMY P	242 WATSON-SPRUCE CORNER RD	61A	82.50	9	57
LANOUE RICHARD W / CYNTHIA M	142 WATSON-SPRUCE CORNER RD	61A	20.30	9	73
LEUE EMILY / PLUMER ANDREW	1704 CAPE ST	61A	3.02	13	21A
LILLY KEITH E / LILLY COLLEEN M	OLD STAGE RD	61A	158.80	3	38
LILLY MARGARET R / LILLY ALAN W	966 WATSON-SPRUCE CORNER RD	61A	76.00	6	37
MACLEAN KATHLEEN A	1356 BUG HILL RD	61A	6.81	6	28
MANGSEN DENNIS R / MANGSEN CYNTHIA L	888 BAPTIST CORNER RD	61A	52.72	5	2
MANNING BETH / ROSNER GILLIAN	553 BELLUS RD	61A	36.85	5	5
MASSACHUSETTS LAND LEAGUE	HAWLEY RD	61A	10.00	3	32
MCALEAVEY D GRAY CR WW RM LH / GRAY IRREVOCABLE FUNDING TRUST	38 BARNES RD	61A	206.11	5	1
MCCRUMM THOMAS A / HAUPT JUDITH H	755 719 WATSON-SPRUCE CORNER RD	61A	75.50	9	2

**Section 5 –
Inventory of Lands of Conservation and Recreation Interest**

Owner	Location	Program	Acres	Assessors Map	Assessors Lot
MCCULLOCH DAVID J / MCCULLOCH ANN M	72 WATSON RD	61A	94.42	6	4
MCCULLOCH DAVID J / MCCULLOCH ANN M	OFF WATSON RD	61A	42.60	3	36
MCGOVERN GERARD M / MCGOVERN BRENDA R	1237 SPRUCE CORNER RD	61A	8.50	9	30
PANTERMEHL BEATRICE / PANTERMEHL JR ARTHUR P	1411 BUG HILL RD	61A	18.86	6	29
PANTERMEHL BEATRICE B	OFF BUG HILL RD	61A	28.38	6	29A
PANTERMEHL DREW	1266 BUG HILL RD	61A	42.60	6	34
PANTERMEHL RICHARD	15 FORD RD	61A	72.80	6	19
PANTERMEHL RICHARD P / PANTERMEHL JR. ARTHUR P	BUG HILL RD	61A	1.70	6	57
PANTERMEHL RICHARD P / PANTERMEHL JR. ARTHUR P	FORD RD	61A	81.70	6	20
PANTERMEHL RICHARD P / PANTERMEHL ARTHUR P	OFF FORD RD	61A	12.30	3	46
PANTERMEHL RICHARD P / PANTERMEHL MARTHA L	OFF OLD STAGE RD	61A	48.61	3	39
PAUL E. BACON REVOCABLE TRUST / BACON, PAUL	436 446 CUMMINGTON RD	61A	55.50	12	22
PAUL E. BACON REVOCABLE TRUST / BACON, PAUL	535 CUMMINGTON RD	61A	59.25	12	23
PAUL E. BACON REVOCABLE TRUST / BACON, PAUL	CUMMINGTON RD	61A	4.25	12	73
PICHETTE CURTIS E / J MARLENE	CREAMERY RD	61A	27.90	11	81
PIEROPAN ALBERT L, TRUSTEE / ELICE D, TRUSTEE	69B PFERSICK RD	61A	3.84	2	116
PIEROPAN ALBERT L, TRUSTEE / ELICE D, TRUSTEE	PFERSICK RD	61A	5.20	2	117
PLESS PHILIP E / TAYLOR LINDA	DYER RD	61A	4.34	10	107
PRATT JANICE C / PRATT ROBERT L	APPLE VALLEY RD	61A	124.40	3	4
RIMBACH ALBERT H JR	CREAMERY RD	61A	19.00	11	75
ROBERTS BROTHERS LUMBER CO	1450 SPRUCE CORNER RD	61A	19.00	12	46
ROBERTS DOROTHY / ROBERTS RUSSELL	1291 BUG HILL RD	61A	17.00	6	35
ROBERTS LEONARD	SPRUCE CORNER RD	61A	11.50	9	33

**Section 5 –
Inventory of Lands of Conservation and Recreation Interest**

Owner	Location	Program	Acres	Assessors Map	Assessors Lot
ROBERTS LEONARD H	SPRUCE CORNER RD	61A	71.50	9	71
ROBERTS LEONARD H	SPRUCE CORNER RD	61A	2.61	9	72
ROBERTS P. BENJAMIN / HENRY LISA	119A 119B PFERSICK RD	61A	15.80	2	52
ROBERTSON CHRISTOPHER / ROBERT JR	2003 CONWAY RD	61A	233.85	8-5	10
ROBERTSON CHRISTOPHER / ROBERT JR	CONWAY RD	61A	94.00	8-4	16
ROBERTSON ROBERT + RUTH / ROBERTSON CHERYL A ET AL	CREAMERY RD	61A	2.10	11	78
ROBERTSON ROBERT + RUTH / ROBERTSON CHERYL A ET AL	57 CREAMERY RD	61A	3.13	11	79
ROBERTSON ROBERT + RUTH / ROBERTSON CHERYL A ET EL	CREAMERY RD	61A	2.10	11	106
ROBERTSON ROBERT JR / ROBERTSON EMILY P	835 BAPTIST CORNER RD	61A	20.27	4	8
ROBERTSON ROBERT JR / ROBERTSON CHRISTOPHER	2035 CONWAY RD	61A	10.70	8-5	9
SCHREIBER THOMAS + SHIRLEY	OLD STAGE RD	61A	28.00	6	14
SEARS RAMON R / SEARS ANDREA OCIESA	CREAMERY RD	61A	13.52	11	6A
SENECAL TODD / SENECAL SHELI	76 LILLIPUT RD	61A	11.34	7	53B
SHIPPEE RHONDA L / SHIPPEE MATTHEW A	OLD STAGE RD	61A	104.80	3	40
SMITH SHARON OFF-DUNLAP	OFF MURRAY RD	61A	0.77	8-6	14
STREETER HOWARD A JR	1281 SPRUCE CORNER RD	61A	6.63	9	34
SUOZZI MARK / LYNDA	1244 HAWLEY RD	61A	13.80	3	23
TAYLOR LYNN M	OFF BELDINGVILLE RD	61A	25.00	5	33
TAYLOR LYNN M	335 HILL RD	61A	67.50	8-4	3
THE JOURNEYS END NOM TRUST / LEUE TOM/MARK TRUSTEES	1692A CAPE ST	61A	79.58	13	21
THIBAUT DAVID & FAITH	CONWAY RD	61A	27.49	8-4	5A
THIBAUT DAVID / THIBAUT FAITH	430 PFERSICK RD	61A	187.60	5	17
THIBAUT DAVID P	BULLITT RD	61A	16.00	8-4	18
TOWNSLEY ROLAND E / TOWNSLEY RAYMOND F	435 APPLE VALLEY RD	61A	362.91	1	51
VINCENZO FRANK D. & EVELYN M.	WATSON-SPRUCE CORNER RD	61A	148.00	9	4

**Section 5 –
Inventory of Lands of Conservation and Recreation Interest**

Owner	Location	Program	Acres	Assessors Map	Assessors Lot
WADE SUSAN	81 SMITH RD	61A	9.39	7	98
WELLS SHARON	12 LILLIPUT RD	61A	10.00	7	53
WILDERMUTH PETER D JR / WILDERMUTH JENNIFER LEE	1280 SPRUCE CORNER RD	61A	7.80	9	23
WILLIAMS INVESTMENT TRUST / WILLIAMS, ARTHUR L JR TRUSTEE	CONWAY RD	61A	14.50	8-2	22B
WILLIAMS INVESTMENT TRUST / WILLIAMS, ARTHUR L JR TRUSTEE	CONWAY RD	61A	6.10	8-6	13
WILLIAMS MICHAEL P	BAPTIST CORNER RD	61A	9.00	2	112
YOUNG JAMIE F / MILANI PAUL A	101 WEST RD	61A	88.70	7	7
ZAGRUBSKI EDWARD & CLARA LIFE ESTATE / ZAGRUBSKI JAMES E	2304 BAPTIST CORNER RD	61A	78.50	2	76
ZALENSKI JEFF PAM JASON / ZAGRUBSKI JAMES	BAPTIST CORNER RD	61A	70.00	2	58
ZALENSKI WALTER D / BARBARA	BAPTIST CORNER RD	61A	5.41	2	108
TOTAL CHAPTER 61A ACREAGE			4,976.59		
ASHFIELD COMM GOLF CLUB INC / C/O CHARLIE STETSON	134 NORTON HILL RD	61B	29.50	7-4	18
ASHFIELD COMM GOLF CLUB INC / C/O CHARLIE STETSON	OFF NORTON HILL RD	61B	10.20	7-4	5
CONNALLY ERIC & WEST MARIA / PORTELLI D & LAWRENCE L	86 WILLIS HOWES RD	61B	5.68	12	59
CRAFTS ROBERT A / MARILYN K	BUCKLAND RD	61B	28.00	7-2	71
CRANSON DOUGLAS / CRANSON MURIEL	326 SUBURBAN DR	61B	17.35	7	32
DAMATO RAYMOND	275B PHILLIPS RD	61B	35.00	2	83
DUCHIN CHARLES	PHILLIPS RD	61B	17.14	2	86
FEINSTEIN WILLIAM C / SHERR DEBORAH A.	891 BUG HILL RD	61B	56.87	7	92
FESSENDEN ANNA / SNYDER NOEL F R & HELEN A	CONWAY RD	61B	47.00	8-6	1
FORMAN SHEPARD & LEONA	WATSON-SPRUCE CORNER RD	61B	19.10	6	8A
HEDDENS JOHN C / LOIS L	943 BARNES RD	61B	35.00	1	5
HEIDEMAN JUNE L, GRAVES MARK D / CONNELL SUZANNE E	BARNES RD	61B	33.00	4	1

**Section 5 –
Inventory of Lands of Conservation and Recreation Interest**

Owner	Location	Program	Acres	Assessors Map	Assessors Lot
KIRKPATRICK WARREN / LESURE ELIZABETH G	OFF CAPE ST	61B	129.90	13	22
MATLAND KIM / FARMER LINDA	1127 BUG HILL RD	61B	52.92	6	46
MENDELSON Betsy	BAILEY RD	61B	5.20	1	22A
PICHETTE DAVID W / ROSEMARY A	720 BUG HILL RD	61B	40.00	7	70
PIKE,CHRISTOPHER,J;FREDERICK, PAUL;BENJAMIN,NORMAN; / C/O NORMAN PIKE	OFF BUCKLAND RD	61B	8.77	7-2	70
POTOCHNIAK DIANNE / c/o ELIZABETH LESURE	PADDY HILL AREA	61B	146.40	13	28
RAGAN JOSEPH / RAGAN TRACY	WEST RD	61B	13.19	11	45
SILVER DAVID L W / SILVER SUSAN MP	822 WEST RD	61B	4.50	11	47
STELLA MARIE / MARIE STELLA 2012 TRUST	719 BARNES RD	61B	10.58	1	8
THE JOURNEYS END NOM TRUST / LEUE TOM/MARK TRUSTEES	CAPE ST	61B	116.00	13	10
WHITCOMB LANCE S / NATALIE H	CONWAY RD	61B	6.00	8-5	5
WHITNEY-LUSSIER FAYE A / LUSSIER PHILIP K	535 MAIN ST	61B	65.50	8-1	2
WMECO / PROPERTY TAX BUREAU	BELLUS RD	61B	3.59	5	49
WMECO / PROPERTY TAX UNIT	ASHFIELD MOUNTAIN RD	61B	8.61	4	31
WMECO / PROPERTY TAX UNIT	SMITH RD	61B	0.21	4	63
WMECO / PROPERTY TAX UNIT	OFF SMITH RD	61B	10.31	4	67A
WMECO / PROPERTY TAX UNIT	HAWLEY RD	61B	0.25	4	90
WMECO / PROPERTY TAX UNIT	SMITH RD	61B	2.49	4	96
WMECO / PROPERTY TAX UNIT	HAWLEY RD	61B	0.08	4	98
WMECO / PROPERTY TAX UNIT	HAWLEY RD	61B	2.83	4	99
WMECO / PROPERTY TAX UNIT	ASHFIELD MOUNTAIN RD	61B	6.56	4-1	17
WMECO / PROPERTY TAX UNIT	PFERSICK RD	61B	10.26	5	19
WMECO / PROPERTY TAX UNIT	PFERSICK RD	61B	2.33	5	19A
WMECO / PROPERTY TAX UNIT	BELLUS RD	61B	3.80	5	44
WMECO / PROPERTY TAX UNIT	BELDINGVILLE RD	61B	6.50	5	8

**Section 5 –
Inventory of Lands of Conservation and Recreation Interest**

Owner	Location	Program	Acres	Assessors Map	Assessors Lot
WMECO / PROPERTY TAX UNIT	OFF BEAR SWAMP RD	61B	7.20	6	25
WMECO / PROPERTY TAX UNIT	BUG HILL RD	61B	22.50	6	32
WMECO / PROPERTY TAX UNIT	BUG HILL RD	61B	8.50	6	36
WMECO / PROPERTY TAX UNIT	HAWLEY RD	61B	0.43	7	61
WMECO / PROPERTY TAX UNIT	BEAR SWAMP RD	61B	12.15	7	63
WORTH STEPHEN M / WORTH VICTORIA KENT	457 STEADY LANE RD	61B	20.80	7	8
TOTAL CHAPTER 61B ACREAGE			1,062.20		
TOTAL CHAPTER 61, 61A AND 61B ACREAGE			10,408.63		

Source: Ashfield FY2016 Assessor's Records and 2017 updates in consultation with Assessor's Clerk Jennifer Morse, Massachusetts Department of Conservation and Recreation (DCR), MassGIS, and Committee input.

C. INVENTORY OF RECREATIONAL RESOURCES

The Scenic and Unique Resources Map shows the parks and playgrounds in Ashfield that are open to the public. These include the following areas:

Ashfield Town Common – 4.5 acres

The Town Common has been long the site of the Ashfield Fall Festival and other public gatherings. Three acres of the site purchased by the Town in 2003 have been reserved for possible future use, such as for additions to Town Hall, additional parking, or a new fire station. The 1.5 acre common is permanently protected by a conservation restriction held by the Franklin Land Trust.

Ashfield Community Golf Club – 29.5 acres

Nine-hole golf course located on Norton Hill Road just outside of the center of Town.

Belding Memorial Park – 12.5 Acres

The park wraps around the south east side of Ashfield Lake, and includes frontage on both Main Street and Buckland Road. The west end includes a boat launch, parking area, memorial and gazebo, as well as several buildings formerly occupied by the town highway department. The east side include the Ashfield town beach, parking, tennis courts and a lawn area that slopes down to Bronson Brook, the outlet of Ashfield Lake.

Bear Swamp Reservation – 290 Acres

Owned by the Trustees of Reservations, the Bear Swamp Reservation is an easy hiking area with trails around a small pond. An Overlook and picnic site is located across the road with a view over Apple Valley that is currently obscured by trees. A nice rock ledge faces the pond and there is a peat bog walk. The reservation is located in northwest Ashfield with an entrance on Hawley Road, west of Route 112. The Bear Swamp to Route 112 Trail runs from the Overlook to Route 112.

Chapel Brook Valley/Falls and Chapel Ledges – 282 Acres

The Trustees of Reservations owns land on either side of Williamsburg Road in the extreme southeast corner of Town, about 2 miles from the intersection of Route 116, Creamery Road and Williamsburg Road. The area incorporates Chapel Brook, hiking trails, scenic vistas, Pony Mountain, natural pools and falls for swimming, and ledges for rock climbing. Parking is an issue for those seeking access to these recreational resources.

DAR State Forest – 182 Acres

Ashfield contains about 10% of the 1,020-acre Daughters of the American Revolution State Forest, established in 1929. Accessible by foot from West Road, the Ashfield portion includes hiking trails and a campground by Twinning Brook Pond.

Edge Hill Golf Course – 153.53 Acres

Privately owned golf course open to the public that expanded to 18 holes in 2009. Located on Barnes Road in the northeast section of Town. Accessories and lessons available.

Poland Brook State Wildlife Management Area – 71.4 Acres

The entire wildlife management area includes 618 acres, most of which is in Conway. Together with the Chapel Brook Reservation, this forms an almost continuous greenway from DAR state forest nearly to Riley Road in Conway.

Ashfield Trails, a private group of individuals working on developing a network of hiking trails, has created maps useful to both tourists and residents. There are presently five trails in Ashfield managed by Ashfield Trails: 1) TTOR Pebble and Two-Bridges Trail from Bullett Road to Chapel Falls; 2) Chapel Brook Reservation to the D.A.R. State Forest; 3) Sanderson Academy to Bear Swamp; 4) Bear Swamp to Route 112; and 5) Route 112 to Bailey Road (Ridge Hill Trail). Another trail goes from Bailey Road to the Mary Lyon birthplace in Buckland off Barnes Road. Maps are being updated and will be available on the town website, the Ashfield Trails Facebook page, and limited print copies at the Library.

Other recreational activities available are fishing in Ashfield Lake and in the many cold-water streams, snowmobile trails, cross-county skiing, snowshoeing, mountain biking, and hunting with a license in season.

D. PARK AND OPEN SPACE EQUITY

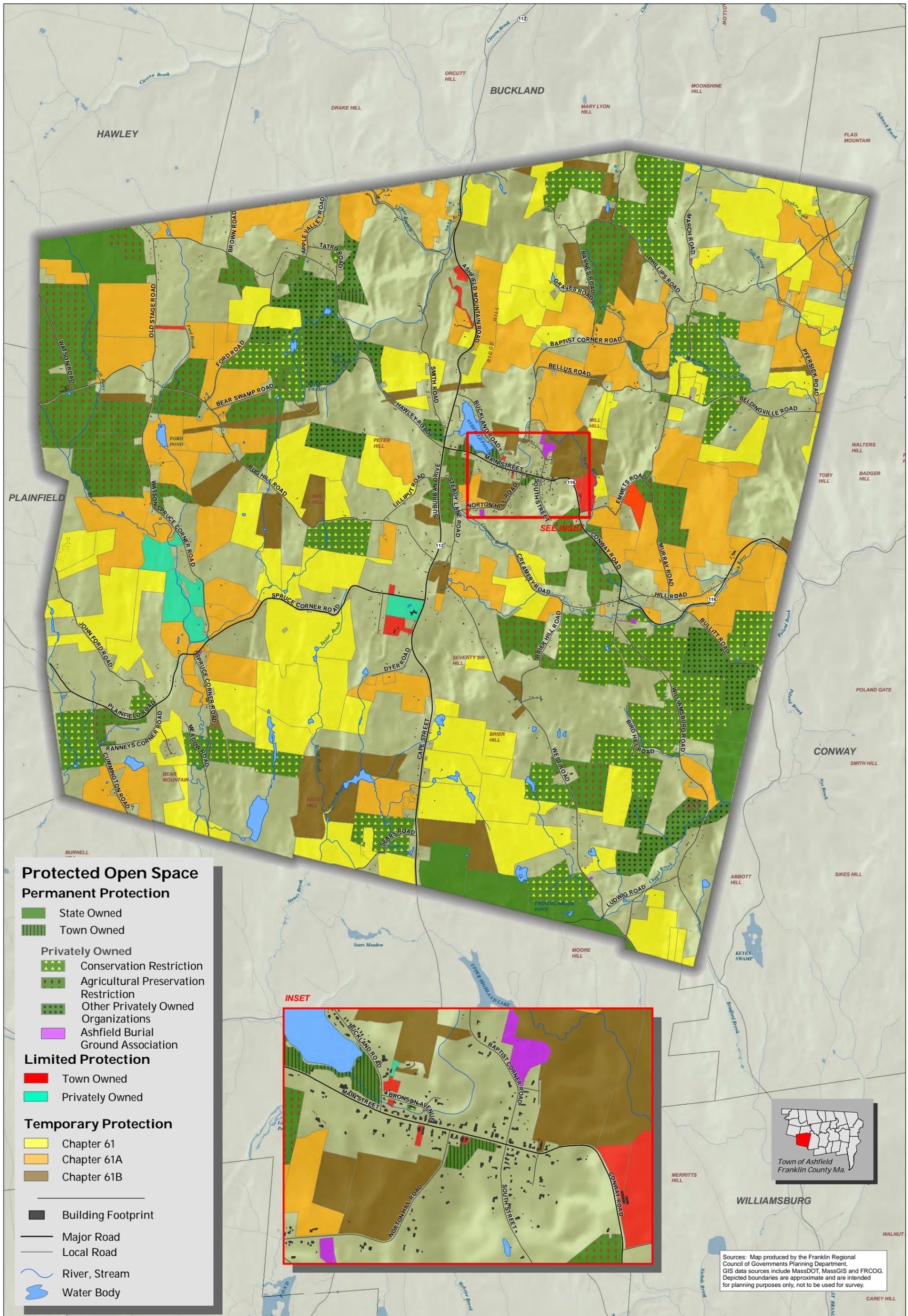
Park and open space equity means taking a look at conservation and recreation opportunities available in the town and determining if there are areas of the town that seem to be lacking resources. While there are no identified Environmental Justice Population areas in the Town of Ashfield, some residents may be unable to afford recreational opportunities that require a fee, and may lack transportation to open space and recreation resources in other areas of Town. It is therefore important to ensure free access to an adequate amount of well-maintained open space and recreational resources within walking distance of populated areas and downtown, and to provide free or affordable recreational programming for all residents.

The Trust for Public Land (TPL), a conservation organization that works with communities across the country to develop parks and outdoor recreation opportunities, has established a half mile, or 10 minute, walk from home to a park or publicly accessible open space as a common national standard for communities to strive for.² In more developed areas, this could mean a park, playground, or bike path within a ten minute walk from all homes. In more rural areas, this standard is more challenging. However, a community could still strive for residents to have access to a village park, for instance, or a trailhead within a 10 minute walk from their homes.

When applying this standard to Ashfield, the downtown area, where a large number of residents live, has good access to parks within walking distance from homes. There are several areas of town, however, where close access to a public park or trail is lacking. However, residents often own or reside near large properties that provide ample opportunities for recreational activities such as bird watching, hiking, snowmobiling, fishing, skiing, etc. with permission, if necessary, from neighbors.

² <http://www.tpl.org/our-work/parks-for-people>.

Overall there appears to be a need to better connect the downtown parks and open spaces with the passive recreation opportunities located outside of downtown. Off-road trails, sidewalks, and on-road bicycle improvements could all be explored as options to improve access between recreation opportunities and neighborhoods.



Protected Open Space

- Permanent Protection**
- State Owned
 - Town Owned

- Privately Owned**
- Conservation Restriction
 - Agricultural Preservation Restriction
 - Other Privately Owned Organizations
 - Ashfield Burial Ground Association

- Limited Protection**
- Town Owned
 - Privately Owned

- Temporary Protection**
- Chapter 61
 - Chapter 61A
 - Chapter 61B

- Building Footprint
- Major Road
- Local Road
- River, Stream
- Water Body



Sources: Map produced by the Franklin Regional Council of Governments Planning Department. GIS data sources include MassDOT, MassGIS and FRCOG. Depicted boundaries are approximate and are intended for planning purposes only, not to be used for survey.

**Town of Ashfield
Open Space &
Recreation Plan 2018**

Open Space



SECTION 6: COMMUNITY VISION

A. Description of Process

The Ashfield Open Space and Recreation Plan (OSRP) Update Committee held ten open meetings over the period from 2016 to 2018. In addition, two Public Forums were held on June 23, 2016 (at the initiation of the update process) and on May 24, 2018 to review and provide input into the final draft of the updated plan. This plan reflects a shared vision that has emerged from extensive analysis and public discussion. It represents a snapshot of what the town is like now, as well as an image of what Ashfield's residents would like it to be in the future. The goals and strategies identified in this plan will not in themselves ensure that preferred vision, but they demonstrate how that dream could be realized through gradual collective action over the coming decades.

B. Statement of Open Space and Recreation Goals

The scenic vistas, rich woodlands, clear waters, and community spirit cherished by Ashfield's residents are a reflection of a landscape and a lifestyle rooted in many lifetimes of hard work and careful management. Protecting this rural legacy in the face of continued growth and change in the community will require a concerted effort to preserve the land and safeguard the livelihood of those who make their living from it. Nor can the effort stop with conservation of just part of the tapestry that makes up the quality of life enjoyed by the citizens of the town. This rich fabric will only be preserved if each of the strands of which it is made is protected for future generations. The following goals reflect the major themes identified by participants in this planning process as critical to preserving Ashfield's past, present, and future:

- 1. Protect the natural systems that support wildlife and provide clean water and air.** Ashfield's rivers, streams, ponds and wetlands form the backbone of a living ecosystem that helps cleanse our drinking water, reduces flooding, supports wildlife, sequesters carbon, and provides for hunting and fishing. By identifying and protecting the core of this ecosystem, these functions can be preserved for future generations.
- 2. Promote active farming and forest management.** The best way to protect Ashfield's working landscapes is to support the farmers, loggers, and others who maintain the town's rural traditions. Conservation strategies developed in partnership with those most directly affected will have the greatest chance of success.
- 3. Protect Ashfield's cultural heritage and scenic resources.** The rural character and scenic views enjoyed by Ashfield citizens are the direct result of centuries of human use that has kept the land open and wove a rich tapestry of farms, woodlots, villages, cemeteries, historic structures, and wild landscapes. To protect these resources will require the recognition of the historic matrix in the town, including the working landscape of hamlet, farm and forest.

4. **Promote recreation that is rooted in the rural landscape.** Fundamental to Ashfield's quality of life is the ability to get out into the landscape to enjoy hiking, hunting, skiing, snowmobiling and other traditional rural pursuits. To preserve and enhance these experiences in Ashfield, we must preserve regional continuity of large areas of protected open space, while at the same time respecting the rights of landowners.

5. **Promote zoning policies and planning procedures that channel growth to locations where it makes the most sense.** It is important that the Town embrace proactive planning that guides development according to the objectives described in this document.

SECTION 7: ANALYSIS OF NEEDS

A. RESOURCE PROTECTION NEEDS

Natural Systems

High priority natural resource areas include much of the Swift River Valley, which drains the western side of Ashfield and flows South to the Westfield River. This area includes significant habitats for rare and endangered species south of Spruce Corner as well as many potential vernal pools and wildlife corridors.

Another belt of high priority natural resources begins at Ashfield Pond and extends across the South part of the town and along Chapel Brook and the South River into Conway. The South River Valley also includes a significant rare and endangered species habitat area. From the town center northeast into Baptist Corner and Beldingville, the most important natural resources follow the streams and wetland systems. Ashfield Pond suffers from encroaching invasive plants (the weekly water testing from May through September indicate excellent quality – low coliform results). Flood risks, especially in high density hamlets need to be re-assessed as the climate continues to change. Re-mapping the 100-year flood zone is recommended.

There is a need to collaborate with surrounding towns to manage resources such as stream corridors, forests, rare habitats, etc., as they do not respect political boundaries. It is important to map contiguous forests to identify opportunities for habitat corridors, carbon sequestration and erosion hazards, as well as identifying the influx of invasive plant and insect species. Thin soils on steep slopes need to be protected from development for both erosion and scenic concerns.

Cultural Heritage

High priority cultural resources include historic sites and village centers, cemeteries, bridges and mill sites. Like natural resources, these cultural resources are connected into larger systems that define the character of areas such as Beldingville and Baptist Corner, Watson, Apple Valley, Spruce Corner, Ashfield Center, Wardville, Brier Hill, Chapel Falls, Cape Street and Steady Lane. These cultural landscapes preserve Ashfield's history and early settlement patterns and must be protected as intact systems if Ashfield's rural character are to survive.

Farmland

Farms and farmland have been identified as high priority resources. The 2015 Franklin County Farm and Food System Project recommend increasing production of local food throughout the county to meet the goal of producing 50% of the food consumed in the vicinity. Efforts to increase farmer's access to land, protecting land permanently, and preventing land conversion from agriculture to other land uses can be employed. Farmers need access to the tools and assistance in order to meet these goals. These can be provided through public programs, the Agricultural Commission and other non-profit organizations in the area. Priorities for protecting agricultural land should start with prime soils and be augmented by other critical landscape

features such as essential habitats. Farmers need to be prepared for increased flooding as well as prolonged droughts by developing management strategies and crops/livestock to meet new conditions. The effects of climate change on sugarbushes could be significant in the future, as rising temperatures will push the timing into January, with a shorter season. Many of Ashfield's historic farmsteads, together with the fields, meadows and woodlots that surround them represent the rural, agrarian heritage of the community. They are also a valuable scenic resource that draws visitors to the town and enhances quality of life for residents.

Forestland

With nearly 80% of Ashfield's land area in forests, and mostly privately owned, it is imperative that forest landowners have the tools and information available to them to manage their forests with the adoption of "improvement forestry" as a guiding principle. This approach represents a forest landscape that is actively managed and protected from development as valuable living infrastructure. This does not mean no harvesting; it gives emphasis to retaining forests for carbon storage, renewable energy, local wood products, clean water and habitat.

Water Supply

Ashfield's primary public water supply is drawn from two bedrock wells near the former Reservoir on Hawley Road. The wells are on Ashfield Water District-owned land but significant portions of the Zone A and B Wellhead Protection Areas are in private ownership and are a high priority for protection. Other than the homes in Ashfield Center, most residents get their water from individual private wells.

Low development densities make a dramatic decline in water quality unlikely, but a slow degradation is possible due to contaminated road runoff, agricultural runoff and storage of chemical contaminants in homes, businesses or public facilities. From an open space perspective, the most important need is to protect the zones of immediate contribution to the wells, as well as protecting the wooded hillsides and floodplain forests that hold and filter precipitation.

Town Character/ Scenic Resources

Ashfield's scenic roads, views and "special places" were identified and mapped with the assistance of volunteers as part of the inventory process, including the Route 112 and 116 Scenic Byways that serve as gateways into town. These resources are threatened by invasive plants which are spreading along the roadsides and salt use on roads is damaging to trees.

Ashfield Trails now has a network of trails throughout the town including a new one from Bear Swamp to Route 112, then over Ridge Hill to Bailey Road and then to the Mary Lyon birthplace off Barnes Road in Buckland. These resources, as a whole, create the rural character and small-town atmosphere that is critical to preserving the quality of life enjoyed by local residents. There is a balance in the diversity of open farm fields set against wooded hillsides, intricate river systems, where the community comes together, and undeveloped ridgelines which provide contiguous corridors for wildlife. As important as individual views and special places are, the planning process identified the importance of protecting both individual sites and the connected cultural and scenic corridors that are experienced as residents traverse the town. It is useful to

think of these resources as a system, analogous to a natural ecosystem, which needs to be considered as a whole if its essential functions are also to be preserved. By protecting scenic roads, important viewsheds and working landscapes as an intact system, social and economic change can continue without destroying Ashfield's unique sense of place.

B. SUMMARY OF RECREATIONAL NEEDS

2017 SCORP Data

The Commonwealth has completed the 2017 Statewide Comprehensive Outdoor Recreation Plan (SCORP), an update of the SCORP 2012, five-year plan. SCORP plans are developed by individual states to be eligible for federal Land and Water Conservation Fund (LWCF) grants and serve as a tool for states to use in planning for future needs and uses of outdoor resources for public recreation and relaxation. The SCORP also provides information about use of and demand for outdoor recreational resources in the state that may be relevant to Ashfield's open space and recreational planning efforts. The public participation process utilized three online surveys (one for recreation users, one for municipal recreation providers, and one for land trusts), public meetings throughout the state, a statistically-relevant phone survey, and a youth survey of middle and high school students to gather information on current supply and demand for outdoor recreational resources.

The goals and objectives of the 2017 SCORP are:

1. Access for Underserved Populations:

- Support the acquisition of land and development of new open spaces in areas that lack existing or useable open spaces, such as Environmental Justice neighborhoods
- Develop parks and open spaces that offer amenities that go above and beyond ADA requirements for people with disabilities
- Consider the needs of underserved demographic groups — senior citizens and teenagers — in park and open space designs
- Encourage establishment of programming endowments

2. Support the Statewide Trails Initiative:

- Support the acquisition of land and development of new open spaces that can provide a trail network
- Fill in the gaps of existing trail networks
- Ensure that any existing or new trails are fully accessible to people with disabilities

3. Increase the Availability of Water-based Recreation:

- Support the acquisition of land that will provide for water-based recreation
- Support the acquisition of land that will increase drinking water supply protection
- Develop water-based recreational facilities, including swimming areas, spray parks, boating facilities, fishing areas, etc.

4. Support the Creation and Renovation of Neighborhood Parks:

- Promote the acquisition and development of neighborhood parks where none currently exist

- Develop amenities supported by neighborhood parks, such as playgrounds, off-leash dog parks, and community gardens
- Work with community development organizations to improve walking access to local parks

When respondents to the online survey asked which activities a member of their household planned to participate in over the next 12 months, the top responses included: walking or jogging (on trails and greenways), hiking, and walking or jogging (on streets and sidewalks). People were generally quite happy with the quality of their community's outdoor recreation facilities, with 78.1% stating that the facilities were in excellent or good shape. State facilities did slightly worse, with 75.0% rated as excellent or good.

Respondents explained what motivates them to participate in outdoor recreation. The number one response was for physical fitness, followed closely by mental well-being and being close to nature. The nearness of an outdoor recreation facility to home was the top reason that it was visited most frequently. The enjoyment of the scenery and trees and greenery were the second and third most cited driver of visitation. Even though the majority of respondents have a park or conservation area within walking or biking distance to their residence (75.6%), the vast majority of people drive there (68.8%). This could be due to the fact that people lack time to recreate, which is the number one reason people said they do not use outdoor recreation facilities more frequently (55.5%).

Many of the municipalities that responded to the survey did not provide regular programming. When asked how important it was for more programming to be available for senior citizens, 83.7% of respondents said that it was either a somewhat or very important priority. 88.2% said that it was either a somewhat or very important priority to them that more four to 12 year old programming be offered. Even more requested is programming for teens, with 91.2% saying that it was either a somewhat or very important priority.

The top responses to the on-line survey in regard to what types of projects respondents would like to see funded in the future fall into three categories:

- 1) **trails**—hiking, biking, paved walkways, trails with access for people with disabilities, and mountain biking;
- 2) **playgrounds**—for ages 2-5, designed for people with disabilities, for ages 6-12, and for ages 6 months to 2 years; and
- 3) **water**—swimming pool, canoe/kayak access, and fishing areas.

Phone survey participants were asked what the top three improvements to municipal recreational facilities they would like to see. The top five responses can be broken into two categories:

- 1) **water-based recreation**—outdoor swimming pools or spray parks; beaches, fresh or saltwater swimming areas; canoeing/kayaking/rafting/tubing areas; fishing/ice fishing areas; and waterskiing/jet skiing areas (59.0%);
- 2) **neighborhood-park-type amenities**—playgrounds, picnic areas, off-leash dog parks, and community gardens (52.0%);

- 3) **trails**—hiking trails; paved, multi-use trails, such as rail trails; unpaved, multi-use trails, such as mountain bike trails, cross-country skiing or snowshoeing trails; off-road motorcycle or ATV trails; and snowmobiling trails (48.0%).

The youth survey indicated that the most popular outdoor activities for youth are team activities, such as soccer, football, lacrosse, field hockey, and rugby. Team sports are particularly of interest for boys and younger respondents. Girls also enjoy team sports, but like swimming pools in equal numbers. Teens between the ages of 15 and 18 are just as apt to mention swimming; hiking; and running, jogging, or walking as favorite activities. The three most common outdoor activities the respondents participated in during the past year were running, jogging, or walking; swimming (any type); and road biking. They would like to increase their participation in running and swimming. The respondents were asked how their participation in outdoor recreation could be increased. Providing recreation areas close to home, providing equipment like sports equipment, and providing recreation spaces that are “just for kids my age” were the top three responses.

Over the next five years, the Executive Office of Energy and Environmental Affairs will be engaging an active effort to work with local municipalities and state agencies to develop a database that lists all of the amenities at each facility by region. This will help to determine where specific types of amenities should be built when it is evident that there are gaps in supply. The list can begin with municipal- and state-owned facilities. Over time, private and non-profit facilities may be added. This database could also be used by residents who are searching for a particular activity, to know where they can go to swim in a pool or play disc golf. Forty-three percent of the phone survey respondents said that they use the internet to learn about outdoor recreation facilities, resources, and activities. Therefore, the resources available on the web should be increased and more user-friendly.

Local Recreational Resources

Existing marked, public hiking trails were based on maps of The Trustees of Reservations properties at Bear Swamp and Chapel Falls, and state land at DAR State Forest. Volunteers helped to identify other existing trails that follow old town roads, logging roads, and hunting paths. Potential trails were also mapped out and properties identified as private or public. Ashfield Trails began to establish a community network of trails in and around the Town of Ashfield. There is a need to extend this network to underserved neighborhoods and to connect to regional trail systems.

Public playing fields and playgrounds are currently located at Sanderson Academy and Ashfield Lake and the Field baseball field. Based on current participation levels, the Town does not have immediate needs for additional playing fields.

The Park Commission is responsible for the oversight of the Town-owned land on the banks of Ashfield Lake. This land includes beach access, play areas and tennis courts in the eastern portion and a boat launch, memorial and gazebo on the western portion, as well as picnic areas at the beach and upper park. It includes a structure formerly used by the town highway department. This houses boats left over the winter, a police cruiser and assorted equipment for the Fire

Department. The Park Commission has identified a need for improvements to the tennis courts at Belding Memorial Park and for other infrastructure at the beach on Ashfield Lake.

The Ashfield OSRP Update Committee identified a particular need for recreational resources for teens. Following the findings of the 2017 SCORP youth survey, these might include providing sports equipment for popular teams and activities and dedicating specific local recreation spaces for teen activities. Additional areas and programs for swimming were also mentioned as a specific recreational need in the future, for teens and residents of all ages. More information could be provided using on-line platforms and social media to attract residents to the recreational resources, particularly those younger demographic groups that are accustomed to getting information on-line.

Full accessibility is a key concern of the Park Commission. It has begun to address these needs and implementation of ADA accessibility standards has already begun at Belding Memorial Park. Building on the ADA Self-Evaluation included in Appendix F, the Town should continue to incorporate accessibility into plans for the maintenance and improvement of the Town's active recreation facilities.

C. MANAGEMENT NEEDS

Town Staff and Volunteers

Ashfield has a minimum of professional administrative staff who oversee most of the day-to-day business of the community. Most open space and recreation issues that come before the Town are managed by part-time, volunteer commissions. These including the following:

- Conservation Commission
- Historical Commission
- Ashfield Park Commission
- Agricultural Commission
- Privately owned 18 hole golf course and a public golf course
- The Trustees of Reservations (TTOR)
- Snowmobile Club
- Rod and Gun Club
- Ashfield Trails
- Planning Board
- The Trustees of Sanderson Academy/The Field Board Inc.
- Ashfield Burial Ground Association, Inc.

Local Programs and Non-Profits

- ***The Field Board Inc.*** (a non-profit corporation which shares officers with the Trustees of Sanderson Academy) currently owns and manages "The Field." This area includes two ball fields and a playground area on Buckland Road.

- *Ashfield Trails* continues the detailed planning and design that will be required to turn the town-wide pedestrian and biking system into a reality. Most importantly, the committee continues to solicit public participation and obtain permission from willing landowners before any trails across private land are opened to the public.
- The *Franklin Land Trust* is a non-profit organization that has aided farmers and other property owners with the preservation of their land through a variety of protection strategies. They are also involved in monitoring conservation restrictions.
- The state *Agricultural Preservation Restriction (APR) Program* has preserved over 1800 acres of farmland in Town. Applications can be submitted annually to the program for inclusion of new properties. Existing restrictions are monitored by APR staff to ensure that they follow the terms of the restriction.
- The *Agricultural Commission* developed the Right to Farm Bylaw, and is responsible for educating the public about its provisions. The Commission also assists the Select Board with any grievances or other matters within the scope of the Bylaw, and works to educate the public regarding agricultural and farming practices within the Town of Ashfield.
- The *Mohawk Trail Regional School District* owns and manages the recreational facilities at Sanderson Academy on Route 112, including two playing fields and a playground area.
- *Hilltown Land Trust* protects land and promotes ecological diversity and health, respectful land stewardship, historic character, and natural beauty in our hilltowns. They have developed an affiliation with TTOR to be able to better continue their mission.
- *Massachusetts State Agencies* such as DCR, DFG and MDAR provide cost-share programs to landowners seeking to improve their forest/farm/wildlife resources.
- *Federal agencies* in USDA including Farm Service Agency and Natural Resources Conservation Service provide loans and cost-share to private landowners for agricultural enterprises and resource protection/improvement work.
- The *Community Preservation Act (CPA)* helps communities provide funds for the preservation of open space and historic resources and the creation of affordable housing and recreational facilities. The funds are raised through a property tax surcharge not to exceed 3% and are administered by a local Community Preservation Act Commission. Towns must adopt the CPA by ballot referendum.
- Participation in the *Mohawk Trail Woodlands Partnership* effort to provide additional technical and financial assistance to forest landowners is a potential to meet the challenges of forest management in the future.

D. PLANNING AND ZONING POLICIES AND PROCEDURES

Existing Tools

- The *Ashfield Zoning Bylaws* designate the entire town as a single Rural-Residential and Agriculture zoning district, with a minimum lot size of two acres (87,120 sq. ft.) and 200

feet of frontage. While limiting density somewhat, this only encourages the kind of suburban development that will destroy Ashfield's scenic character and rural quality of life. A backlot development provision provides some relief, allowing some flexibility in layout while encouraging the protection of roadside views. The Senior Housing bylaw allows for increased density in an area by allowing multiple apartments in a single house, or the construction of a denser development for seniors.

- The *Massachusetts Wetlands Protection Act* provides protection for wetlands, and waterbodies, while *the Rivers Protection Act* limits activities within a 200 foot buffer along all perennial rivers and streams. Both depend on the vigilance of the local conservation commission to be effective.
- The *Ashfield Plain National Register District* provides recognition for the historic district, but lacks any authority over design or construction standards. Federal and state tax credits are available for renovation of buildings within the district, under the oversight of the Massachusetts Historical Commission. The Mass. Historical Commission awards matching grants to renovate buildings in the register district. These grants place permanent restrictions on what can be done to any building renovated by these grants. They are only available for buildings owned by a municipality or a non-profit. These buildings must be listed on either the state or federal register.
- The *Ashfield Right to Farm Bylaw* encourages the pursuit of agriculture, promotes agriculture-based economic opportunities, and protects and conserves farmlands within the Town of Ashfield by allowing agricultural uses and related activities to function with minimal conflict with abutters and local agencies. It provides a mechanism for residents to submit grievances and designates the Agricultural Commission to work with the parties to resolve issues.
- *Public water and sewer* is available to a small population in the Ashfield village center.
- *The ANR law (Approval Not Required)* is the main tool used to create new building lots in Ashfield. Barring any change to the law, this allows any landowner with 200 feet of road frontage to create a new lot which can have a significant impact on town development patterns.
- *Natural Heritage Endangered Species Program*

Potential Regulatory Strategies

- A *Demolition delay bylaw* provides a time period in which the town can consider alternatives to demolition of historic buildings and structures. Most demolition delay bylaws apply to structures that were built more than 50 years ago. The most common delay of demolition is six months; however many communities are finding that a one-year delay is more effective.
- *Local Historic Districts* are designated through the adoption of a local ordinance that recognizes special areas within a community where the distinctive characteristics of buildings and places are preserved and protected by the designation. These districts are the strongest form of protection for the preservation of historic resources. They are

adopted by a 2/3 vote of Town Meeting and are administered by a district commission appointed by the Board of Selectmen.

- An ***Agricultural Preservation Overlay District*** can be created that will promote and protect the practice of farming. This can help to preserve lands on which farming is most viable, lands that maintain an adequate agricultural base in town and areas that preserve the culture and landscape of farming. This can be accomplished in several ways including by requiring all new large-scale residential development to be clustered on areas least suitable for agriculture and away from farms and views. An agricultural preservation bylaw can also use the site plan review process to require dedicated open space to remain as farmland and include that new development be located on least suitable soils for agriculture and be integrated into the existing landscape.
- ***River Corridor Mapping***: Create flood overlay districts, especially on the South River in collaboration with the town of Conway. Include the Swift River when creating overlay districts.
- A ***Scenic Roads Bylaw*** allows local roads, owned and maintained by the Town, to be designated as Scenic Roads in order to preserve their rural and/or historic character. Adopted as part of the local zoning bylaws, the scenic roads ordinance requires a public hearing by the planning board before any work is undertaken in a public right-of-way that would involve the cutting of trees or the destruction of stone walls. This bylaw only applies to trees and stone walls within the town-owned right-of-way and to local roads and not state routes.
- A ***Scenic Vista Protection Bylaw*** protects the scenic qualities of mountains, hills and rolling terrain by requiring additional design criteria for new construction in these visually sensitive areas. A scenic vista protection bylaw can be created in the form of a scenic overlay district or address specific portions of a viewshed such as those above a designated elevation and visible from public areas. A scenic protection bylaw is generally administered through site plan review and the development application process.
- Flood mapping update – FEMA/MEMA for improved building design and locations.

For more information see the Massachusetts Historical Commission's report, [Preservation through Bylaws and Ordinances](#), as well as the Massachusetts Smart Growth Tool Kit: www.mass.gov/envir/smart_growth_toolkit.

SECTION 8: GOALS AND OBJECTIVES

The following goals and objectives were identified by participants in a series of meetings held between 2016 and 2018. Over this period, the Ashfield Open Space and Recreation Plan (OSRP) Update Committee held 11 open meetings. In addition, two Public Forums were held on June 23, 2016 (at the initiation of the update process) and on May 24, 2018 to review and provide input into the final draft of the updated plan. The first four goals and associated objectives are closely tied to protection of the natural, cultural and recreational resources. Some of these critical resources enjoy a certain amount of protection through regulations administered by the Conservation Commission, such as development or disturbance of wetlands and waterbodies. Also, thousands of acres in the town are permanently protected either through conservation restrictions or the Agricultural Preservation Restriction Program (APR). The fifth goal emphasizes the importance of the zoning policies and development pressures that, more than anything else, will be responsible for creating the future landscape of Ashfield. All were reviewed and supplemented by the OSRP Update Committee and other town boards and staff as this plan was being prepared.

I. Protect the natural systems that support wildlife and provide clean water and air.

- A. Guide protection of rivers, streams, ponds, wetlands and floodplains.
- B. Develop a comprehensive strategy for protecting Ashfield's public and private drinking water supplies.
- C. Pursue opportunities to link protected land and potential resource areas with greenways along important river and stream networks and other wildlife corridors.
- D. Develop strategies for addressing the effects of climate change, including planning, adaptation and mitigation.

II. Promote active farming and forest management.

- A. Enhance opportunities for viable agricultural enterprises on the land.
- B. Promote long-term forest management and sustainable harvesting of forest resources.
- C. Encourage better management of stone, sand, and gravel mining operations.

III. Protect Ashfield's cultural heritage and scenic resources.

- A. Promote public awareness of Ashfield's significant historic sites and cultural landscapes.
- B. Pursue protection of historic buildings and landscapes.
- C. Promote conservation of historic roads and roadside resources.

IV. Promote recreation that is rooted in the rural landscape.

- A. Support Ashfield Trails in planning, construction, and maintenance of a permanent town wide trail network.
- B. Work with Massachusetts Fish & Wildlife and Ashfield Rod & Gun Club to promote management of and access to private lands for hunting and fishing.
- C. Plan for maintenance and improvement of active recreation facilities.

V. Promote zoning policies and planning procedures that channel growth to locations where it makes the most sense.

- A. Protect critical forest lands from development.
- B. Promote residential growth patterns that preserve roadside open space and scenic vistas and reduce fragmentation of undeveloped areas.
- C. Focus on Ashfield's historic neighborhoods to balance growth and conservation.
- D. Develop sources of revenue to fund conservation and recreation projects.
- E. Improve Town Center infrastructure along Main Street.
- F. Enact regulations for protection from large scale development pressures on open space and rural character.

SECTION 9: SEVEN-YEAR ACTION PLAN

The Seven-Year Action Plan outlines the 2018 Open Space and Recreation Plan Update's objectives. The objectives address both the open space and recreation goals because the quantity and quality of accessible open space relates directly to the availability of recreational opportunities. The objectives are listed in the far-left column of Table 9-1 in the same order as they appear in Section 8, and are followed by recommended actions, start date, responsible board or group, and potential funding source. Objectives identified as top priorities at the May 24, 2018 Public Forum are identified with a check mark in the far-right column. By implementing the recommended actions, each objective will begin to be realized.

Sometimes the objective and the action(s) listed are preliminary measures. Many of the objectives will take much time and effort to implement. Enacting these objectives by developing new programs and pursuing the conservation of the Town's resources are new initiatives even though individual boards have been addressing some of these issues separately for years. The difference comes from having a group of volunteers dedicated specifically to enacting the recommendations of the Open Space and Recreation Plan.

Many towns in Franklin County have established official Open Space Committees to implement their OSRPs. An Open Space Committee is typically an official town committee but with an advisory role. However, as is shown in the third column in Table 9-1, the Select Board, Planning Board, Conservation Commission, Board of Health, Department of Public Works, Historical Commission, Agricultural Commission, and community and regional non-profit organizations are all necessary participants in the implementation of the Open Space and Recreation Plan.

As a result of previous Open Space and Recreation Plans, a number of action steps identified in that plan have been accomplished in the Town of Ashfield. These include: the establishment of an Agricultural Commission in 2005; adoption of a Right-to-Farm Bylaw in 2006; and creation of the Route 112 and Route 116 Scenic Byways in 2004 and 2008, respectively.

This Seven-Year Action Plan in Table 9-1 identifies a series of steps that will help the town achieve its open space goals & objectives. Each action strategy is accompanied by proposed responsible board(s) and group(s) to facilitate completion of the task, though other groups that are not town bodies will be involved in accomplishing many of the goals. Abbreviations used for these responsible boards/groups are as follows:

AB	Ashfield Baseball
AHS	Ashfield Historical Society
ARGC	Ashfield Rod and Gun Club
AWD	Ashfield Water District
AC	Agricultural Commission
AT	Ashfield Trails
BA	Board of Assessors
BOH	Board of Health
CC	Conservation Commission
FC	Finance Committee
FLT	Franklin Land Trust

<i>FMC</i>	Forest Management Committee ¹
GC	Green Communities Committee
HD	Highway Department
HLT	Hilltown Land Trust
HC	Historical Commission
OSRP	Open Space & Recreation Plan Committee
PC	Park Commission
PB	Planning Board
SB	Select Board
TC	Technology Committee
THBC	Town Hall Building Committee
TSA	Trustees of Sanderson Academy/The Field Board, Inc.
ZBA	Zoning Board of Appeals

Other agencies and groups that are not listed here may also be involved in implementing this plan.

The following potential funding sources are also listed in Table 9-1:

604b	MassDEP 604b Grant Program: Water Quality Management Planning
APR	Agricultural Preservation Restriction Program
CISA	Community Involved in Sustaining Agriculture
<i>CPA</i>	Community Preservation Act ²
DWSP	MassDEP Drinking Water Supply Protection Grant
DLTA	District Local Technical Assistance Grants available through the Franklin Regional Council of Governments (FRCOG) with funds from the Massachusetts Department of Housing and Development (DHCD)
LAND	Division of Conservation Services (DCS) Local Acquisitions for Natural Diversity Grant Program
MassDOT	Massachusetts Department of Transportation
MassWorks	MassWorks Infrastructure Program
MHC	Massachusetts Historical Commission
MPPF	MHC Massachusetts Preservation Projects Fund
MVP	Municipal Vulnerability Preparedness Grants from the Massachusetts Department of Energy & Environmental Affairs (EEA)
PARC	Division of Conservation Services (DCS) Parkland Acquisitions and Renovations for Communities Grant Program
RHGP	Massachusetts Department of Conservation and Recreation (DCR) Rivers and Harbors Grant Program
RTP	Massachusetts Department of Conservation and Recreation (DCR) Recreational Trails Program
SPGP	MHC Survey and Planning Grant Program
UME	UMass Extension
VPA-HIP	United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Voluntary Public Access and Habitat Improvement Program

High priority Action Items identified at the May 2018 Public Forum are shown in bold font in the “Top Priority” column to the right of Table 9-1. Medium priorities are identified as such in regular font. The remaining Action Items were not prioritized by the public.

¹ Formation of the Forest Management Committee is a recommendation of this Plan. The acronym is shown in italics.

² These funds would become available only if the Town adopted the Community Preservation Act, as is recommended in this plan. The acronym is shown in italics.

Table 9-1: Recommended Actions of the Ashfield Open Space and Recreation Plan

OBJECTIVE	ACTION STEPS	START DATE	RESPONSIBLE BOARD/GROUP	POTENTIAL FUNDING SOURCE	TOP PRIORITY
Goal I: Protect the natural systems that support wildlife and provide clean water and air.					
A. Guide protection of rivers, streams, ponds, wetlands and floodplains.	1. Pursue town-wide program to certify vernal pools.	2019	CC/SB/FC	Town Meeting	Medium
	2. Identify important natural habitats and prioritize for public acquisition or private conservation.	2018	CC	Volunteers	High
	3. Inventory invasive species on important sites and organize eradication efforts, including Japanese Knotweed, Multiflora Rose and Gout Weed in the Upper Park; and of Bittersweet and Multiflora Rose in the Beach Parking Lot.	Ongoing	CC/PC	Volunteers	Medium
	4. Coordinate with the Franklin Land Trust and the Massachusetts Natural Heritage Program to protect rare species habitat.	Ongoing	CC	Volunteers	Medium
	5. Require developers/builders to certify any vernal pools on any property requiring permits from the town.	Ongoing	CC/PB	Developers	Medium
B. Develop a comprehensive strategy for protecting Ashfield’s public and private drinking water supplies.	1. Work with Mass Highway and local road crews to minimize contaminated road runoff.	2018	SB/BOH/AWD/Mass Highway	Chapter 90	High
	2. Pursue protection of lands surrounding public wells.	2019	AWD	DWSP/CPA	Medium
	3. Secure potential future public well sites and contributing watershed areas.	2020	AWD	DWSP/CPA	

OBJECTIVE	ACTION STEPS	START DATE	RESPONSIBLE BOARD/GROUP	POTENTIAL FUNDING SOURCE	TOP PRIORITY
C. Pursue opportunities to link protected land and potential resource areas with greenways along important river and stream networks and other wildlife corridors.	1. Identify critical “gap” parcels for potential acquisition.	2018	PB/SB/FLT/HLT	Volunteers	Medium
	2. Coordinate with neighboring towns on corridor management plans for Bear River, South River, Swift River, Smith Brook, Chapel Brook, etc.	2018	CC/SB	Volunteers	High
	3. Plan for conservation of important corridors through development review for new house lots and subdivisions.	2020	PB	Volunteers/DLTA	Medium
	4. Explore “adopt a stream” program under Massachusetts Riverways Program.	2021	CC	Volunteers	
	5. Provide a workshop for landowners to learn to identify and control invasive plants.	2019	SB/CC/AC	Volunteers	Medium
D. Develop strategies for addressing the effects of climate change, including planning, adaptation and mitigation.	1. Participate in the effort with Conway in Community Resilience Building.	2018	All/FRCOG	Volunteers/MVP	Medium
	2. Identify species at greatest risk to climate change and strategies to mitigate.	2022	CC/AC	Volunteers/UME	Medium
	3. Protect viable corridors—vertical as well as horizontal—for species migration.	Ongoing	CC/AC/FLT	FLT/CPA	Medium
Goal II: Promote active farming and forest management.					
A. Enhance opportunities for viable agricultural enterprises on the land.	1. Prepare GIS inventory of active farms and agricultural enterprises.	2019	AC	Volunteers	Medium
	2. Inventory current use of prime farmland soils.	2019	AC	Volunteers	
	3. Identify a potential agricultural overlay district to prioritize critical farmland.	2020	AC/SB	Volunteers/DLTA	High

OBJECTIVE	ACTION STEPS	START DATE	RESPONSIBLE BOARD/GROUP	POTENTIAL FUNDING SOURCE	TOP PRIORITY
	<p>4. Provide education to farmers to identify cost share programs and other opportunities to promote sustainable farming.</p> <p>5. Work with Franklin Land Trust and other state and federal partners on conservation and farmland protection.</p>	<p>Ongoing</p> <p>On-going</p>	<p>AC/FLT</p> <p>AC/FLT</p>	<p>Volunteers/UME/CISA</p> <p>CPA/APR/ALE</p>	<p>Medium</p>
B. Promote long-term forest management and sustainable harvesting of forest resources.	<p>1. Establish a forest management committee or combine with agricultural commission oversight on implementation of the Mohawk Trails Woodlands Partnership goals.</p> <p>2. Prepare town-wide inventory of forest resources, including public lands, old growth forest, and identify largest blocks of productive forest land.</p> <p>3. Explore acquiring Deer Park from the current landowner as a town forest.</p> <p>4. Pursue outreach to landowners regarding forest management.</p>	<p>2020</p> <p>2019</p> <p>2018</p> <p>2019</p>	<p>SB/AC</p> <p>AC/FMC</p> <p>AC</p> <p>CC/AC/SB</p>	<p>Pending legislation</p> <p>Volunteers</p> <p>LAND/CPA</p> <p>Volunteers</p>	<p>Medium</p> <p>Medium</p> <p>Medium</p>
C. Encourage better management of stone, sand, and gravel mining operations.	<p>1. Pursue outreach to landowners on planning and management of mining operations, including restoration of gravel pits and other sites after extraction of materials is completed.</p> <p>2. Explore conservation of important stone, sand, and gravel resources.</p>	<p>Ongoing</p> <p>Ongoing</p>	<p>SB/PB</p> <p>SB/PB</p>	<p>Volunteers/CPA</p> <p>CPA</p>	<p>Medium</p>

OBJECTIVE	ACTION STEPS	START DATE	RESPONSIBLE BOARD/GROUP	POTENTIAL FUNDING SOURCE	TOP PRIORITY
Goal III: Protect Ashfield’s cultural heritage and scenic resources.					
A. Promote public awareness of Ashfield’s significant historic sites and cultural landscapes.	<ol style="list-style-type: none"> Publish map of historic sites and cultural landscapes. Provide interpretive materials, guidebooks and self-guided tours to important sites. 	Ongoing	HC/AHS	Volunteers	
B. Pursue protection of historic buildings and landscapes.	<ol style="list-style-type: none"> Update historic structures inventory prepared by Historical Commission. Publicize options for voluntary easements to protect historic structures and scenic resources. Re-consider demolition delay bylaw. Identify additional sites for National Register of Historic Places. Consider creating site plan review criteria for development near historic/archaeological resources or within the Ashfield Plain National Register District. Consider a “1% for open space” optional donation for customers of local businesses. 	Ongoing	HC/AHS	SPGP/Volunteers	
		2019	HC/AHS	MPPF/Volunteers	
		2021	HC/PB	MHC/Volunteers	
		Ongoing	HC/AHS	Volunteers	
		2020	PB	DLTA/Volunteers	
		2019	SB, FLT	Donations	Medium
C. Promote conservation of historic roads and roadside resources.	<ol style="list-style-type: none"> Engage state highway department in context-sensitive design and management, including utilizing Low Impact Development (LID) techniques, eradicating invasive species along the roadsides, adapting to climate change impacts on culverts/bridges, and creating bike lanes and sidewalks. 	2023	HD/SB/MassDOT	MassDOT	High

OBJECTIVE	ACTION STEPS	START DATE	RESPONSIBLE BOARD/GROUP	POTENTIAL FUNDING SOURCE	TOP PRIORITY
	2. Promote historic and scenic corridors by constructing a bike path on the Route 116 Scenic Byway to connect to the bike path on the Route 112 Scenic Byway. without usurping the walkability of Route 116 in the village.	Ongoing	HD/SB/PC/PB/FRCOG	DLTA	Medium
Goal IV: Promote recreation that is rooted in the rural landscape.					
A. Support Ashfield Trails in planning, construction, and maintenance of a permanent town wide trail network.	1. Refine plans for town-wide trail system.	Ongoing	AT	Volunteers	Medium
	2. Establish neighborhood trail committees to help maintain the trails. Encourage local trail stewards and Ashfield scouts and school groups to participate.	2020	AT	Volunteers	Medium
	3. Pursue outreach to and funding for landowners interested in allowing public access and considering easements for trail corridors.	2019	AT/FLT	VPA-HIP	
	4. Pursue grant sources for trail planning and development.	Ongoing	AT	RTP/CPA	
	5. Prepare GPS inventory of current trails.	2018	AT/PB	Volunteers	Medium
	6. Coordinate with neighboring towns, regional planning commissions and state and federal partners on developing regional trail links to Deerfield and Westfield River trail systems.	Ongoing	AT	RTP	Medium
B. Work with Massachusetts Fish & Wildlife and Ashfield Rod & Gun Club to	1. Provide outreach to landowners to encourage preparation of conservation plans for wildlife management.	2019	ARGC/FLT/F&W	Volunteers	

OBJECTIVE	ACTION STEPS	START DATE	RESPONSIBLE BOARD/GROUP	POTENTIAL FUNDING SOURCE	TOP PRIORITY
promote management of and access to private lands for hunting and fishing.	2. Explore funding for public access to private land.	2021	ARGC/FLT	CPA/VPA-HIP	
C. Plan for maintenance and improvement of active recreation facilities.	1. Pursue development of recreation facilities at Belding Memorial Park, including rebuilding the trail to the Boat Landing and constructing an accessible boat dock at the Upper Park.	2024	PC	PARC/RHGP	Medium
	2. Pursue 5-year plan for improvements to town beach and adjoining facilities at Ashfield Lake to increase recreational opportunities.	2018	CC/SB/PC	Buckland Rec. funds/PARC	Medium
	3. Pursue plan for water quality protection of Ashfield Lake.	Ongoing	SB/PC/CC	604b	
	4. Coordinate with the Trustees of Sanderson Academy/The Field Board Inc. on plans for “The Field,” including signage and replacement or repair of the play structure.	2019	SB/PC/CC/Field Board	Fund Raising	
	5. Prepare a consolidated maintenance and capital improvements plan for all public recreation facilities.	2022	SB/PC	CPA/Town Meeting/Fundraising	
Goal V: Promote zoning policies and planning procedures that channel growth to locations where it makes the most sense.					
A. Protect critical forest lands from development.	1. Develop criteria for prioritizing parcels for acquisition, especially any high priority Chapter 61 land as it becomes available to the Town.	Ongoing	PB/SB/AC/FC	CPA/FLT/DCR	Medium

OBJECTIVE	ACTION STEPS	START DATE	RESPONSIBLE BOARD/GROUP	POTENTIAL FUNDING SOURCE	TOP PRIORITY
B. Promote residential growth patterns that preserve roadside open space and scenic vistas and reduce fragmentation of undeveloped areas.	1. Explore green/flexible subdivision bylaw to allow development that fits into neighborhoods surrounded by open space.	2022	PB	Volunteers/DLTA	Medium
	2. Pursue training for town boards in creative growth management, including regulations for tiny houses that may allow aging-in-place, or caretaker residence.	2019	PB/ZBA	CPTC	Medium
	3. Promote awareness of existing zoning, such as the back lot bylaw, that reinforce the town's goals for protection of sensitive resources.	2023	PB/ZBA	Volunteers	Medium
C. Focus on Ashfield's historic neighborhoods to balance growth and conservation.	1. Consider Village Districts to provide both the flexibility and oversight necessary to manage growth.	2020	PB/ZBA	DLTA/Volunteers	Medium
	2. Explore shared services to promote somewhat higher densities in historic neighborhoods.	2021	SB/HD/PB	Volunteers	
	3. Promote adaptive reuse of structures for housing and business use.	2023	PB/ZBA	DLTA/Volunteers	Medium
D. Develop sources of revenue to fund conservation and recreation projects.	1. Consider adoption of the Community Preservation Act.	2020	All Standing Committees	Volunteers/CPA group	High
	2. Pursue state, federal and non-profit grant sources.	Ongoing	PC/SB/PB	PARC/LAND	Medium
E. Improve Town Center infrastructure along Main Street.	1. Extend sidewalk from Main Street to Upper Park.	2020	SB/HD/PC	MassDOT	Medium
	2. Dedicate a bikeway/bike lane to Upper Park on Rt. 116.	2018	PC/AT/MassDOT	MassDOT	Medium
	3. Ask state to designate a No-Salt area to protect trees.	2019	PC/HD/MDOT		Medium

OBJECTIVE	ACTION STEPS	START DATE	RESPONSIBLE BOARD/GROUP	POTENTIAL FUNDING SOURCE	TOP PRIORITY
	4. Improve drainage on Main Street.	2020	HD/SB	MassWorks	Medium
F. Enact regulations for protection from large scale development pressures on open space and rural character.	1. Enact a large scale development bylaw with stringent standards for environmental/land use impacts associated with development and operation of large scale facilities.	2018	PB	Volunteers	Medium
	2. Anticipate the potential impact of technological advances on Town character and quality of life.	2018	PB/GC/TC	MVP/EC	Medium

ACTION PLAN MAP

The Action Plan Map at the end of this section represents Ashfield’s priority actions for protecting critical open spaces and providing recreational access for the community. Any such map is necessarily incomplete. Many of the recommendations included in this report cannot be physically located, such as those related to policy, collaboration with local and state agencies, and further research and education. Those that can be are represented here in a schematic fashion, meaning they are not specific to locations and properties in most cases. They are, however, derived from the various maps in this report, and relate to the five primary goals.

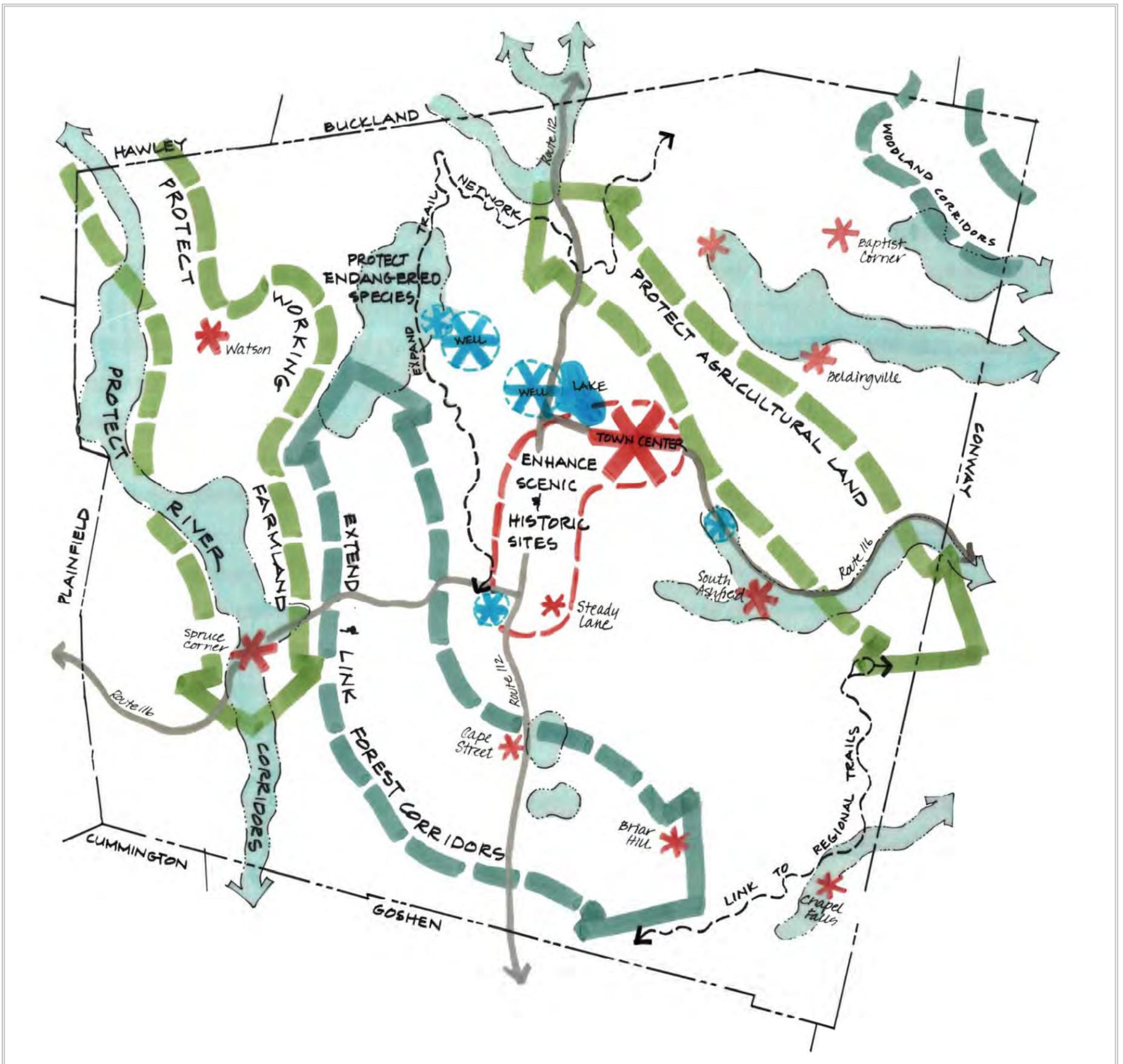
Contiguous forestlands in Ashfield are largely under the temporary protection of Chapter 61 or 61B, and follow a curving northwest to southeast band. Since reducing fragmentation in forests is an important factor in their ecological health, keeping and sustainably managing woodlands will benefit wildlife, water quality, recreational opportunities, and the livelihood of those who manage those lands.

Working farms are also an important component of Ashfield’s economy, its landscape character, and the community’s identity. The band that follows the Swift River valley and one that curves across the northeast quadrant of Ashfield each represent a significant amount of land under Chapter 61A or permanently protected under an Agricultural Preservation Restriction, and reflect the town’s goal to support those farmers and keep that land in production.

Issues with Ashfield’s water are similarly critical. Wells that provide drinking water for town residents—in the town center, at Sanderson Academy, and at Double Edge Theatre—are indicated with blue asterisks. There are also wetlands and streams that provide habitat for rare and endangered species, as well as underlying aquifers and flooding concerns along streams and rivers, which a paler blue represents.

Ashfield is replete with historic sites and scenic vistas. Of those, more fully represented on the Scenic and Unique Resources Map at the end of Section 4, this summary highlights the significant beauty along Route 112 as one approaches the National Register district of the town center, as well as several of the old school district neighborhoods. These settlement areas retain an identity that can shape future land use decisions.

Finally, since ecological systems and natural resources do not conform to political boundaries, many of the symbols extend beyond the town boundaries, implying a need to collaborate with our municipal neighbors on protection measures. The same is true with the growing trail system in town, which aspires to link up with regional trails.



Overall Goal

Prepare Ashfield to address potential effects of climate change on rivers, forests, food production, recreational resources, neighborhood vitality, and quality of life.

Priority Actions

Protect river corridors, floodplains



- Identify and protect important natural habitats
- Collaborate with abutting towns on corridor management plans

Protect public drinking water supplies



- and underground aquifers that supply private wells

Protect and expand contiguous forest corridors



- Identify large blocks of productive woodlands (and gaps)
- Protect critical forestlands from development
- Support sustainable, economically viable management

Support and protect Ashfield's productive agricultural lands



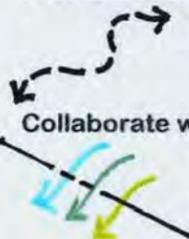
- Inventory active farms and prime farmland
- Identify priorities for permanent protection and productive use

Protect/enhance Ashfield's cultural heritage and scenic corridors



- Promote awareness of historic sites/landscapes, including Ashfield's historic neighborhoods
- Promote future growth patterns to protect productive lands and rural vistas
- Engage state DoT with context-sensitive design/management of historic roadways and roadside resources

Promote recreation that is rooted in the rural landscape



- Prepare inventory of current trails
- Extend town-wide trail system, with links to regional trails

Collaborate with abutting towns



- Think and act regionally for natural resource protection and recreational access

Map Design: Mollie Babize

Town of Ashfield
Open Space &
Recreation Plan 2018

Action Plan



June 27, 2018



Franklin Regional
Council of Governments

SECTION 10: PUBLIC COMMENT

Public feedback was sought during the open space and recreation planning process through the public survey and public forum. In addition the final draft plan was available for review on the Ashfield Town website.

Public feedback provided during the entire planning process is difficult to document because the plan incorporated changes as the planning process moved forward. At the initial Public Forum on June 23, 2016 residents expressed concerns about the following:

- the need for land for senior housing;
- being proactive about things like pipelines, wind power, cell towers;
- the "big picture" of the Ashfield Trails network and the importance of connecting outlying communities via a footpath/trail network;
- how the Community Preservation Act (CPA) works to provide funds for open space, historical preservation and senior housing and how the program could benefit the town with matched funds from the state; and
- the possibility of raising funds privately through a 501c3 organization, thus avoiding a greater tax burden on the taxpayers.

At the May 24, 2018 Public Forum, participants prioritized the Open Space and Recreation objectives, and the top priorities are identified in the Seven-Year Action Plan. Ten people attended (see attached sign-in sheet). Barbara Miller introduced the Open Space and Recreation Plan (OSRP) to the group and summarized the sections, what they included and what input was being solicited from the group. Each person was to be given 10 “dots” to use to prioritize the action items in Section 9 of the OSRP. The goals and objectives were described for context.



Participants at the Public Forum. Photos by Mollie Babize.

Before the group started studying the action items, Mollie Babize presented the maps that were displayed and asked for those present to provide comments on those as well.



Participants at the Public Forum. Photos by Mollie Babize.

The rest of the meeting was more informal, as participants perused the maps and action items to provide input. There were several side discussions going on concurrently. The comments were compiled and assimilated in the plan at a June 13 meeting of the committee.

The letters of support provided in the following pages reflect the broad base of support that the 2018 Ashfield Open Space and Recreation Plan update has received from Town boards and commissions, the regional planning agency, and conservation organizations in the region.



The Commonwealth of Massachusetts
Executive Office of Energy and Environmental Affairs
100 Cambridge Street, Suite 900
Boston, MA 02114

Charles D. Baker
GOVERNOR

Karyn E. Polito
LIEUTENANT GOVERNOR

Matthew A. Beaton
SECRETARY

Tel: (617) 626-1000
Fax: (617) 626-1181
<http://www.mass.gov/eea>

December 7, 2018

Barbara Miller
Open Space Committee
193 Cummington Road
Ashfield, MA 01330

Re: Open Space and Recreation Plan

Dear Ms. Miller:

Thank you for submitting Ashfield's Open Space and Recreation Plan to this office for review for compliance with the current Open Space and Recreation Plan Requirements. I am pleased to write that the plan is approved. This final approval will allow Ashfield to participate in DCS grant rounds through August 2025.

Congratulations on a great job. Please call me at (617) 626-1171 if you have any questions or concerns about the plan.

Sincerely,

Melissa Cryan
Grant Programs Supervisor

cc: Patricia Smith, Franklin Regional Council of Governments



TOWN OF ASHFIELD
OFFICE OF THE SELECT BOARD

412 Main Street
PO Box 560
Ashfield, MA 01330
Phone: 413-628-4441 x7
Fax: 413-628-0228
selectboard@ashfield.org

July 9, 2018

Ms. Melissa Cryan, Grants Manager
Executive Office of Energy and Environmental Affairs
Division of Conservation Services
100 Cambridge Street, Suite 900
Boston MA 02114

Re: Ashfield 2018 Open Space and Recreation Plan

Dear Ms. Cryan:

The Ashfield Select Board is pleased to endorse the Ashfield 2018 Open Space and Recreation Plan developed through the good work of the Open Space and Recreation Plan Committee, many residents, volunteers, and with the assistance of the Franklin Regional Council of Governments Planning Department staff.

This plan builds on years of work to preserve open space, agricultural preservation, and on-going conservation efforts. It sets a clear strategy for our continued recognition of the value of the Town's natural resources and the quality of life they provide.

We hope that you find the Ashfield 2018 Open Space and Recreation Plan meets the criteria for approval by the Commonwealth of Massachusetts. Thank you for your efforts on our behalf.

Sincerely,

A handwritten signature in black ink, appearing to read "Thomas S. Carter".

Thomas S. Carter, Chair
Ashfield Select Board

A handwritten signature in black ink, appearing to read "Todd M. Olanyk".

Todd M. Olanyk, Vice-Chair

A handwritten signature in black ink, appearing to read "Steven Gougeon".

Steven Gougeon

Cc: Ashfield Open Space & Recreation Committee
Patricia Smith, Senior Land Use Planner, Franklin Regional Council of Governments



ASHFIELD PLANNING BOARD

*412 Main Street
PO Box 560
Ashfield, MA 01330
413-628-4441
413-628-0288 (fax)*

June 30, 2018

Melissa Cryan
Executive Office of Energy and Environmental Affairs
Division of Conservation Services
100 Cambridge Street, Suite 900
Boston, MA 02114

Re: Ashfield 2018 Open Space & Recreation Plan

Dear Ms. Cryan,

The Ashfield Planning Board is pleased to endorse Ashfield's 2018 Open Space & Recreation Plan. This plan is an essential planning tool for balancing open space conservation and growth, and will provide opportunities for future Town planning projects while improving the general welfare of our citizenry.

The Board has continued to serve in an advisory role for this project, and congratulates the OSRP Committee for its ongoing effort and completion of the plan.

Sincerely,



Michael Fitzgerald
Chair, Ashfield Planning Board



TOWN OF ASHFIELD

412 Main Street
PO Box 560
Ashfield, MA 01330
Phone: 413-628-4441
Fax: 413-628-0228
www.ashfield.org

Conservation Commission

July 25, 2018

Barb Miller, Chair
Open Space and Recreation Planning Committee
Town of Ashfield
PO Box 560
Ashfield, MA 011330

To the Committee,

It is with great enthusiasm that the Ashfield Conservation Commission endorses the 2018 Ashfield Open Space and Recreation Plan (OSRP). The Commission found the plan to be both desirable and directionally appropriate at our May 9 meeting. The OSRP establishes critical benchmarks in accomplishing many of our goals and objectives.

If you have any questions, feel free to contact the chair at (413) 628-3279, or ashfieldconcomchair@outlook.com. Otherwise, please accept this as our full support for the plan.

Sincerely,

A handwritten signature in cursive script, appearing to read "Phil Lussier", with a horizontal line extending to the right.

Phil Lussier, Chair
Brian Clark
Janet Clark
Lester Garvin
Kate Kerivan



TOWN OF ASHFIELD

412 Main Street
PO Box 560
Ashfield, MA 01330
Phone: 413-628-4441 x7
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www.ashfield.org

Zoning Board of Appeals

Melissa Cryan, Grants Manager
Executive Office of Energy and Environmental Affairs
Division of Conservation Services
100 Cambridge Street. Suite 900
Boston, MA 02114

Re: Town of Ashfield 2018 Open Space and Recreation Plan Update

Dear Ms. Cryan

The Zoning Board of Appeals reviewed the comprehensive Open Space and Recreation Plan update at our meeting of June 28, 2018. The ZBA found the plan to be both well-documented and well-written. We were very impressed with the degree of participation of representatives from a broad number of boards and commissions, who collaborated long and hard with the Franklin Regional Council of Governments to complete this comprehensive plan.

The ZBA believes that this will be a useful tool for future planning, and encourages anyone involved in planning and zoning for the town, in any capacity, to use the goals in a proactive way.

Sincerely,

A handwritten signature in cursive script that reads "Mollie Babize".

Mollie Babize, Chair
Anne Yuryan
Faye Whitney



TOWN OF ASHFIELD

412 Main Street
PO Box 560
Ashfield, MA 01330
Phone: 413-628-4441 x7
Fax: 413-628-0228
www.ashfield.org

June 25, 2018

Ms. Melissa Cryan, Grants Manager
Executive Office of Energy and Environmental Affairs
Division of Conservation Services
100 Cambridge Street, Suite 900
Boston, MA 02114

RE: Ashfield Open Space and Recreation Plan

Dear Ms. Cryan,

The Ashfield Agricultural Commission fully supports Ashfield's 2018 Open Space and Recreation Plan. The plan reflects many hours of thoughtful input by multiple volunteers and public input in order to look to the next 8 years of Ashfield's planning for open space and recreation. We are pleased to see the recognition of the importance of preserving prime farmland as well as inclusion of strategies to promote resiliency in the face of climate change. We trust that you will find that it meets the criteria for approval by the Commonwealth of Massachusetts.

Sincerely,

A handwritten signature in cursive script that reads "Barbara P. Miller".

Barbara P. Miller, Chair
Ashfield Agricultural Commission

ASHFIELD PARK COMMISSION

June, 28, 2018

Ms. Melissa Cryan, Grants Manager
Executive Office of Energy and Environmental Affairs
Division of Conservation Services
100 Cambridge Street Suite 900
Boston, MA 02114

RE: Ashfield Open Space and Recreation Plan

Dear Ms. Cryan,

The Ashfield Park Commission is pleased to endorse Ashfield's Open Space and Recreation Plan. The more than 2 year effort by many standing committees and the town residents will provide guidance for many areas of town planning. The Park Commission specifically has already undertaken many of the ADA projects at the Belding Memorial Park and beach area in order to improve handicap access for our aging residents in Town. We hope that this plan will find approval by the Commonwealth of Massachusetts.

Sincerely,

Ashfield Park Commission

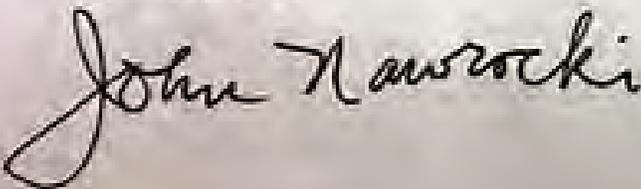
Judy Haupt, Chair



Helene Leue



John Nawrocki





Franklin Regional Council of Governments

June 13, 2018

Ms. Melissa Cryan
Division of Conservation Services
251 Causeway Street, Suite 600
Boston, MA 02114

Dear Ms. Cryan,

The Franklin Regional Council of Governments is pleased to endorse the work of the Ashfield Open Space and Recreation Planning Committee. We enthusiastically support their submission of the 2018 Ashfield Open Space and Recreation Plan (OSRP) to the Massachusetts Division of Conservation Services for final review and approval.

The plan was developed by the Ashfield Open Space and Recreation Planning Committee with technical assistance from the Franklin Regional Council of Governments Planning Department. It represents four years of work to build consensus on the most important natural, recreational, and scenic resources in Town and to gather and analyze data in order to update the text, maps, and action plan from the 2008 plan. In addition, the goals, objectives, and actions in the plan reflect the vision and priorities of Ashfield residents gathered through the public input process for the update. We commend the committee members for their dedication to this project.

The 2018 OSRP will provide Town officials and volunteers with an invaluable resource to help inform decisions regarding land use, recreation, and open space. This plan update, once approved by the State, will make Ashfield eligible for funding to implement land conservation and recreation projects. In addition, the Town will be better able to collaborate with neighboring towns, local land trusts, the Franklin Regional Council of Governments, and others to work towards revitalization and development that is balanced with the protection of Ashfield's significant natural, cultural, and recreational resources. We congratulate the members of the Ashfield Open Space and Recreation Planning Committee for completing this project!

Sincerely,

A handwritten signature in blue ink that reads "Kimberly N. MacPhee".

Kimberly Noake MacPhee
Land Use and Natural Resources Program Manager





P.O. Box 450
Shelburne Falls, MA 01370
phone: (413) 625-9151
fax: (413) 625-9153
www.franklinlandtrust.org

Officers:

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(Hawley)
Thomas Luck, Vice President
(Leyden)
Olie Thorp, Treasurer
(Ashfield)
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Alain Peteroy
Director of Land Conservation
Mary Lynn Sabourin
Director of Development
William Sloan Anderson
Land Steward*

June 25, 2018

Melissa Cryan
Grants Manager
Executive Office of Energy and Environmental Affairs
Division of Conservation Services
100 Cambridge Street, Suite 900
Boston, MA 02114

Re: Town of Ashfield 2018 Open Space and Recreation Plan

Dear Ms. Cryan:

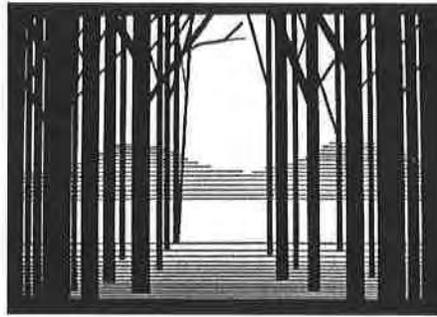
I am writing to voice the Franklin Land Trust's enthusiastic support for the Town of Ashfield's 2018 Open Space and Recreation Plan (OSRP).

I was struck by the thoroughness of this excellent plan. It represents an incredible community effort and resource that will serve Ashfield well as it moves ahead to conserve the town's most critical open space resources.

FLT supports the OSRP's goals, and we look forward to assisting the Town of Ashfield in its implementation.

Sincerely,

Richard K. Hubbard
Executive Director



ASHFIELD TRAILS
P.O. BOX 194 ASHFIELD MA 01330

June 30, 2018

Ms. Melissa Cryan, Grants Manager
Executive Office of Energy and Environmental Affairs
Division of Conservation Services
100 Cambridge Street, Suite 900
Boston, MA 02114

RE: 2018 Ashfield Open Space and Recreation Plan

Dear Ms. Cryan,

Ashfield Trails, a volunteer community based trails committee, is excited to endorse Ashfield's Open Space and Recreation Plan. The plan has been an ongoing effort for 2 years or more thanks to the efforts of many dedicated volunteers, standing committees and town residents. It will provide guidance for many areas of town planning. Ashfield Trails has built and maintained over eighteen miles of footpaths around town for hiking, biking, skiing and other human powered uses. These trails improve the quality of life for our residents, allowing them to venture into the lesser seen parts of town, connect with town historical locations and get good, healthy exercise.

We hope that this plan will find approval by the Commonwealth of Massachusetts.

Sincerely, Tom McCrumm
Ashfield Trails



The Commonwealth of Massachusetts
Executive Office of Energy and Environmental Affairs
100 Cambridge Street, Suite 900
Boston, MA 02114

Charles D. Baker
GOVERNOR

Karyn E. Polito
LIEUTENANT GOVERNOR

Matthew A. Beaton
SECRETARY

Tel: (617) 626-1000
Fax: (617) 626-1181

August 16, 2018

Patricia Smith
Franklin Regional Council of Governments
12 Olive Street, Suite 2
Greenfield, Massachusetts, 01301

Re: Open Space and Recreation Plan

Dear Ms. Smith:

Thank you for submitting the draft Open Space and Recreation Plan for Ashfield to this office for review and compliance with the current Open Space and Recreation Plan Requirements. This plan was particularly thorough and has been conditionally approved through August 2025. Conditional approval will allow the town to participate in DCS grant rounds through August 2025, and a grant award may be offered to the town. However, no final grant payments will be made until the plan is completed.

1. Fisheries and Wildlife – a general inventory must be included, as does a discussion of the wildlife corridors in town.
2. Scenic Resources and Unique Environments – a section on unusual geologic features must be added.
3. Environmental Challenges – missing are sections on hazardous waste sites and landfills. Also, the Environmental Equity section does not identify any areas that are lacking in outdoor resources.
4. Section 5 – Table 5-3, which lists town-owned conservation and recreation areas, must list specifics in the current use and recreation potential columns and the type of grant, if any, column should be filled in. Any Conservation Restrictions must be listed.
5. Analysis of Needs – the Community's Needs section should refer to the 2017 SCORP. The needs of special groups, such as teens, must be discussed.
6. Letters of Review – a letter of review from the planning board is needed.

Congratulations on working on such an important task for your community! Please contact me at (617) 626-1171 or melissa.cryan@state.ma.us if you have any questions or concerns, and I look forward to reviewing your final plan.

Sincerely,

Melissa Cryan
Grant Programs Supervisor

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APPENDIX A:

*BioMap2: Conserving the Biodiversity of Massachusetts in a
Changing World*

Ashfield Report



BioMap2

CONSERVING THE BIODIVERSITY OF
MASSACHUSETTS IN A CHANGING WORLD

Ashfield

Produced in 2012

This report and associated map provide information about important sites for biodiversity conservation in your area.

This information is intended for conservation planning, and is not intended for use in state regulations.





Table of Contents

Introduction

What is *BioMap2* – Purpose and applications

One plan, two components

Understanding Core Habitat and its components

Understanding Critical Natural Landscape and its components

Understanding Core Habitat and Critical Natural Landscape Summaries

Sources of Additional Information

Ashfield Overview

Core Habitat and Critical Natural Landscape Summaries

Elements of *BioMap2* Cores

Core Habitat Summaries

Elements of *BioMap2* Critical Natural Landscapes

Critical Natural Landscape Summaries





Introduction

The Massachusetts Department of Fish & Game, through the Division of Fisheries and Wildlife's Natural Heritage & Endangered Species Program (NHESP), and The Nature Conservancy's Massachusetts Program developed *BioMap2* to protect the state's biodiversity in the context of climate change.

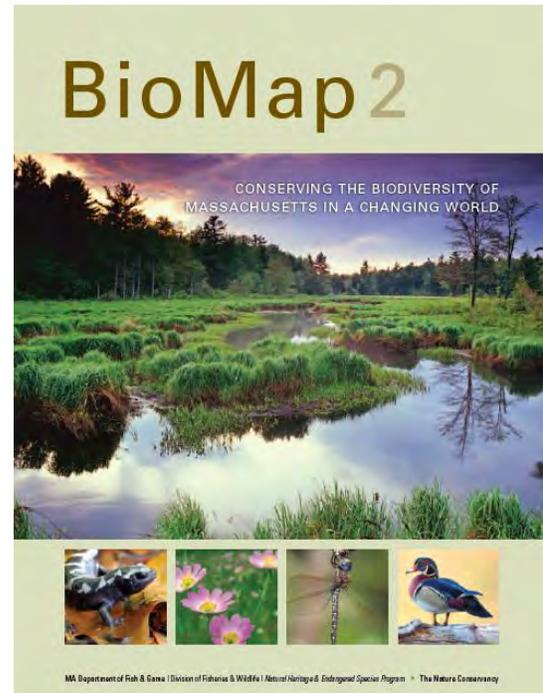
BioMap2 combines NHESP's 30 years of rigorously documented rare species and natural community data with spatial data identifying wildlife species and habitats that were the focus of the Division of Fisheries and Wildlife's 2005 State Wildlife Action Plan (SWAP). *BioMap2* also integrates The Nature Conservancy's assessment of large, well-connected, and intact ecosystems and landscapes across the Commonwealth, incorporating concepts of ecosystem resilience to address anticipated climate change impacts.

Protection and stewardship of *BioMap2* Core Habitat and Critical Natural Landscape is essential to safeguard the diversity of species and their habitats, intact ecosystems, and resilient natural landscapes across Massachusetts.

What Does Status Mean?

The Division of Fisheries and Wildlife determines a status category for each rare species listed under the Massachusetts Endangered Species Act (MESA), M.G.L. c.131A, and its implementing regulations 321 CMR 10.00. Rare species are categorized as Endangered, Threatened or of Special Concern according to the following:

- Endangered species are in danger of extinction throughout all or a significant portion of their range or are in danger of extirpation from Massachusetts.



Get your copy of the *BioMap2* report! Download from www.mass.gov/nhesp or contact Natural Heritage at 508-389-6360 or natural.heritage@state.ma.us.

- Threatened species are likely to become Endangered in Massachusetts in the foreseeable future throughout all or a significant portion of their range.
- Special Concern species have suffered a decline that could threaten the species if allowed to continue unchecked or occur in such small numbers or with such restricted distribution or specialized habitat requirements that they could easily become Threatened in Massachusetts.

In addition NHESP maintains an unofficial watch list of plants that are tracked due to potential conservation interest or concern, but are not regulated under the Massachusetts Endangered Species Act or other laws or regulations. Likewise, described natural communities are not regulated by any law or regulations, but they can help to identify





ecologically important areas that are worthy of protection. The status of natural communities reflects the documented number and acreages of each community type in the state:

- Critically Imperiled communities typically have 5 or fewer documented good sites or have very few remaining acres in the state.
- Imperiled communities typically have 6-20 good sites or few remaining acres in the state.
- Vulnerable communities typically have 21-100 good sites or limited acreage across the state.
- Secure communities typically have over 100 sites or abundant acreage across the state; however, excellent examples are identified as Core Habitats to ensure continued protection.

In 2005 the Massachusetts Division of Fisheries and Wildlife completed a comprehensive State Wildlife Action Plan (SWAP) documenting the status of Massachusetts wildlife and providing recommendations to help guide wildlife conservation decision-making. SWAP includes all the wildlife species listed under the Massachusetts Endangered Species Act (MESA), as well as more than 80 species that need conservation attention but do not meet the requirements for inclusion under MESA. The SWAP document is organized around habitat types in need of conservation within the Commonwealth. While the original BioMap focused primarily on rare species protected under MESA, *BioMap2* also addresses other Species of Conservation Concern, their habitats, and the ecosystems that support them to create a spatial representation of most of the elements of SWAP.

***BioMap2*: One Plan, Two Components**

BioMap2 identifies two complementary spatial layers, Core Habitat and Critical Natural Landscape.

Core Habitat identifies key areas that are critical for the long-term persistence of rare species and other Species of Conservation Concern, as well as a wide diversity of natural communities and intact ecosystems across the Commonwealth. Protection of Core Habitats will contribute to the conservation of specific elements of biodiversity.

Critical Natural Landscape identifies large natural Landscape Blocks that are minimally impacted by development. If protected, these areas will provide habitat for wide-ranging native species, support intact ecological processes, maintain connectivity among habitats, and enhance ecological resilience to natural and anthropogenic disturbances in a rapidly changing world. Areas delineated as Critical Natural Landscape also include buffering upland around wetland, coastal, and aquatic Core Habitats to help ensure their long-term integrity.

The long-term persistence of Massachusetts biological resources requires a determined commitment to land and water conservation. Protection and stewardship of both Critical Natural Landscapes and Core Habitats are needed to realize the biodiversity conservation vision of *BioMap2*.

Components of Core Habitat

Core Habitat identifies specific areas necessary to promote the long-term persistence of rare species, other Species of Conservation Concern, exemplary natural communities, and intact ecosystems.

Rare Species

There are 432 native plant and animal species listed as Endangered, Threatened or Special Concern under the Massachusetts Endangered Species Act (MESA) based on their rarity, population trends, and threats to survival. For





Table 1. Species of Conservation Concern described in the State Wildlife Action Plan and/or included on the MESA List and for which habitat was mapped in *BioMap2*. Note that plants are not included in SWAP, and that marine species such as whales and sea turtles are not included in *BioMap2*.

Taxonomic Group	MESA-listed Species	Non-listed Species of Conservation Concern
Mammals	4	5
Birds	27	23
Reptiles	10	5
Amphibians	4	3
Fish	10	17
Invertebrates	102	9
Plants	256	0
Total	413	62

BioMap2, NHESP staff identified the highest quality habitat sites for each non-marine species based on size, condition, and landscape context.

Other Species of Conservation Concern

In addition to species on the MESA List described previously, the State Wildlife Action Plan (SWAP) identifies 257 wildlife species and 22 natural habitats most in need of conservation within the Commonwealth. *BioMap2* includes species-specific habitat areas for 45 of these species and habitat for 17 additional species which was mapped with other coarse-filter and fine-filter approaches.

Priority Natural Communities

Natural communities are assemblages of plant and animal species that share a common environment and occur together repeatedly on the landscape. *BioMap2* gives conservation

priority to natural communities with limited distribution and to the best examples of more common types.

Vernal Pools

Vernal pools are small, seasonal wetlands that provide important wildlife habitat, especially for amphibians and invertebrate animals that use them to breed. *BioMap2* identifies the top 5 percent most interconnected clusters of Potential Vernal Pools in the state.

Forest Cores

In *BioMap2*, Core Habitat includes the best examples of large, intact forests that are least impacted by roads and development, providing critical habitat for numerous woodland species. For example, the interior forest habitat defined by Forest Cores supports many bird species sensitive to the impacts of roads and development, such as the Black-throated Green Warbler, and helps maintain ecological processes found only in unfragmented forest patches.

Wetland Cores

BioMap2 used an assessment of Ecological Integrity to identify the least disturbed wetlands in the state within undeveloped landscapes—those with intact buffers and little fragmentation or other stressors associated with development. These wetlands are most likely to support critical wetland functions (i.e., natural hydrologic conditions, diverse plant and animal habitats, etc.) and are most likely to maintain these functions into the future.

Aquatic Cores

To delineate integrated and functional ecosystems for fish species and other aquatic





Species of Conservation Concern, beyond the species and exemplary habitats described above, *BioMap2* identifies intact river corridors within which important physical and ecological processes of the river or stream occur.

Components of Critical Natural Landscape

Critical Natural Landscape identifies intact landscapes in Massachusetts that are better able to support ecological processes and disturbance regimes, and a wide array of species and habitats over long time frames.

Landscape Blocks

BioMap2 identifies the most intact large areas of predominately natural vegetation, consisting of contiguous forests, wetlands, rivers, lakes, and ponds, as well as coastal habitats such as barrier beaches and salt marshes.

Upland Buffers of Wetland and Aquatic Cores

A variety of analyses were used to identify protective upland buffers around wetlands and rivers.

Upland Habitat to Support Coastal Adaptation

BioMap2 identifies undeveloped lands adjacent to and up to one and a half meters above existing salt marshes as Critical Natural Landscapes with high potential to support inland migration of salt marsh and other coastal habitats over the coming century.

The conservation areas identified by *BioMap2* are based on breadth and depth of data, scientific expertise, and understanding of Massachusetts' biodiversity. The numerous sources of information and analyses used to

Legal Protection of Biodiversity

BioMap2 presents a powerful vision of what Massachusetts would look like with full protection of the land most important for supporting the Commonwealth's biodiversity. While *BioMap2* is a planning tool with *no regulatory function*, all state-listed species enjoy legal protection under the [Massachusetts Endangered Species Act \(M.G.L. c.131A\)](#) and its implementing regulations ([321 CMR 10.00](#)). Wetland habitat of state-listed wildlife is also protected under the [Wetlands Protection Act Regulations \(310 CMR 10.00\)](#). The *Natural Heritage Atlas* contains maps of [Priority Habitats and Estimated Habitats](#), which are used, respectively, for regulation under the Massachusetts Endangered Species Act and the Wetlands Protection Act. For more information on rare species regulations, and to view Priority and Estimated Habitat maps, please see the [Regulatory Review](#) page at <http://www.mass.gov/eea/agencies/dfg/dfw/natural-heritage/regulatory-review/>.

***BioMap2* is a conservation planning tool that does not, in any way, supplant the Estimated and Priority Habitat Maps which have regulatory significance. Unless and until the *BioMap2* vision is fully realized, we must continue to protect our most imperiled species and their habitats.**

create Core Habitat and Critical Natural Landscape are complementary, and outline a comprehensive conservation vision for Massachusetts, from rare species to intact landscapes. In total, these robust analyses define a suite of priority lands and waters that, if permanently protected, will support Massachusetts' natural systems for generations to come.





Understanding Core Habitat Summaries

Following the Town Overview, there is a descriptive summary of each Core Habitat and Critical Natural Landscape that occurs in your city or town. These summaries highlight some of the outstanding characteristics of each Core Habitat and Critical Natural Landscape, and will help you learn more about your city or town's biodiversity. You can find out more information about many of these species and natural communities by looking at specific fact sheets at www.mass.gov/nhosp.

Additional Information

For copies of the full *BioMap2* report, the Technical Report, and an [interactive mapping tool](#), visit the [BioMap2 website](#) via the Land Protection and Planning tab at www.mass.gov/nhosp. If you have any questions about this report, or if you need help protecting land for biodiversity in your community, the Natural Heritage & Endangered Species Program staff looks forward to working with you.

Contact the Natural Heritage & Endangered Species Program

By phone 508-389-6360
By fax 508-389-7890
By email natural.heritage@state.ma.us
By Mail 100 Hartwell Street, Suite 230
West Boylston, MA 01583

The GIS datalayers of *BioMap2* are available for download from MassGIS at www.mass.gov/mgis.



**Natural Heritage
& Endangered
Species Program**

Massachusetts Division of Fisheries and Wildlife
1 Rabbit Hill Road, Westborough, MA 01581
phone: 508-389-6360 fax: 508-389-7890

For more information on rare species and natural communities, please see our fact sheets online at www.mass.gov/nhosp.



Town Overview

Ashfield lies on the border of the Berkshire Highlands/Southern Green Mountains, the Berkshire Transition, and the Vermont Piedmont Ecoregions. The Berkshire Highlands Ecoregion is an area drained by the Deerfield, upper Westfield, Hoosic, and Housatonic Rivers. Lakes and ponds are relatively abundant. This ecoregion has deep soils that support northern hardwoods and spruce-fir forests. The Berkshire Transition Ecoregion shares characteristics with the Berkshire ecoregions and the Connecticut River Valley Ecoregion. Forests are transition hardwoods and northern hardwoods. This area drains to the Westfield and Connecticut River basins. The Vermont Piedmont Ecoregion contains transition hardwood and northern hardwood forests. Hills are sometimes quite steep. Surface waters are highly alkaline. This area drains to the Deerfield and Connecticut River basins.



Ashfield at a Glance

- Total Area: 25,756 acres (40.2 square miles)
- Human Population in 2010: 1,737
- Open space protected in perpetuity: 4,288 acres, or 16.6% percent of total area*
- BioMap2 Core Habitat: 4,643 acres
- BioMap2 Core Habitat Protected: 800 acres or 17.2%
- BioMap2 Critical Natural Landscape: 8,074 acres
- BioMap2 Critical Natural Landscape Protected: 1,425 acres or 17.7%.

BioMap2 Components

Core Habitat

- 3 Exemplary or Priority Natural Community Cores
- 12 Wetland Cores
- 8 Aquatic Cores
- 14 Species of Conservation Concern Cores**
 - 1 bird, 2 reptiles, 2 amphibians, 1 fish, 1 insect, 3 plants

Critical Natural Landscape

- 3 Landscape Blocks
- 14 Wetland Core Buffers
- 7 Aquatic Core Buffers

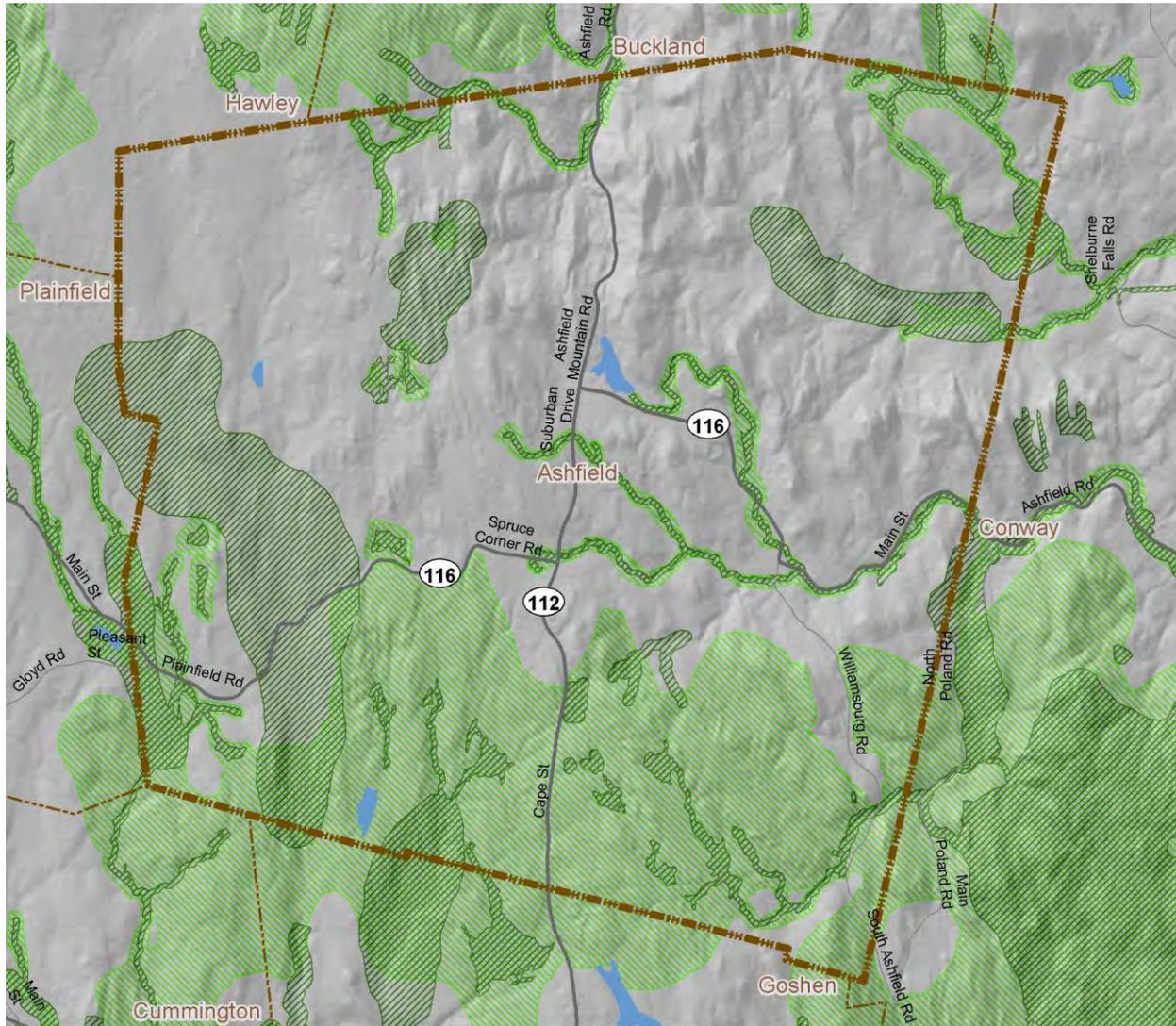
* Calculated using MassGIS data layer "Protected and Recreational Open Space—March, 2012".

** See next pages for complete list of species, natural communities and other biodiversity elements.

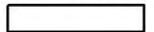




BioMap2 Core Habitat and Critical Natural Landscape in Ashfield



-  BioMap2 Core Habitat
-  BioMap2 Critical Natural Landscape

1 Mile






**Species of Conservation Concern, Priority and Exemplary Natural Communities,
and Other Elements of Biodiversity in Ashfield**

Insects

Dragonflies

[Zebra Clubtail](#), (*Stylurus scudderi*), Non-listed SWAP species

Amphibians

[Jefferson Salamander](#), (*Ambystoma jeffersonianum*), SC

[Spring Salamander](#), (*Gyrinophilus porphyriticus*), Non-listed SWAP

Fishes

[Longnose Sucker](#), (*Catostomus catostomus*), SC

Reptiles

[Wood Turtle](#), (*Glyptemys insculpta*), SC

Smooth Green Snake, (*Opheodrys vernalis*), Non-listed SWAP

Birds

[American Bittern](#), (*Botaurus lentiginosus*), E

Plants

[Dwarf Mistletoe](#), (*Arceuthobium pusillum*), SC

[Dwarf Scouring-rush](#), (*Equisetum scirpoides*), SC

[Bristly Black Currant](#), (*Ribes lacustre*), SC

Priority Natural Communities

[Acidic Graminoid Fen](#), S3

[Rich, Mesic Forest Community](#), S3

[Spruce-Fir Swamp](#), S3

Other BioMap2 Components

[Aquatic Core](#)

[Wetland Core](#)

[Landscape Block](#)

[Aquatic Core Buffer](#)

[Wetland Core Buffer](#)

E = Endangered

T = Threatened

SC = Special Concern

S1 = Critically Imperiled communities, typically 5 or fewer documented sites or very few remaining acres in the state.

S2 = Imperiled communities, typically 6-20 sites or few remaining acres in the state.

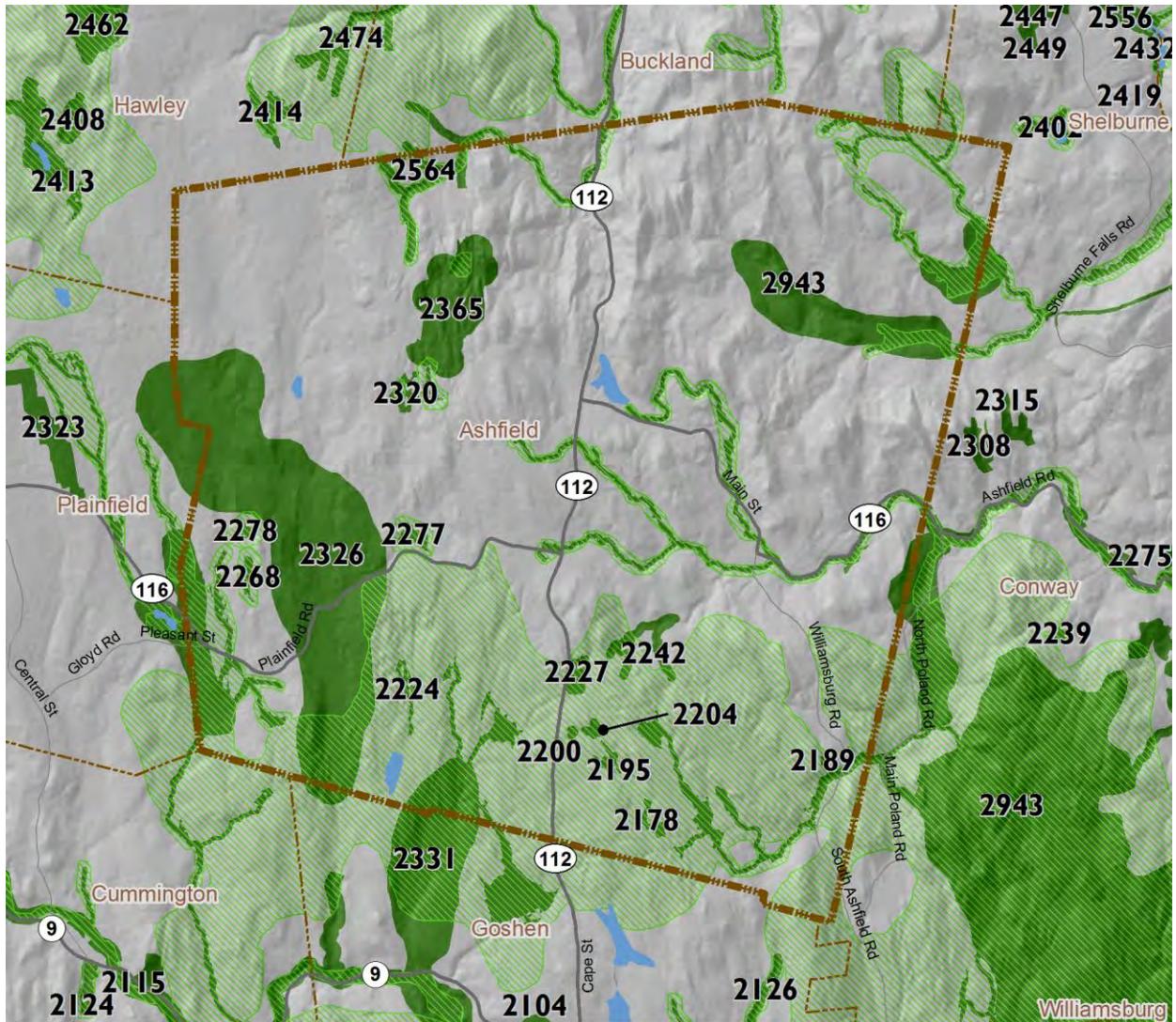
S3 = Vulnerable communities, typically have 21-100 sites or limited acreage across the state.



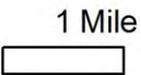


BioMap2 Core Habitat in Ashfield

Core IDs correspond with the following element lists and summaries.



-  BioMap2 Core Habitat
-  BioMap2 Critical Natural Landscape





Elements of BioMap2 Cores

This section lists all elements of BioMap2 Cores that fall *entirely or partially* within Ashfield. The elements listed here may not occur within the bounds of Ashfield.

Core 2178

Wetland Core

Core 2189

Priority & Exemplary Natural Communities

Rich, Mesic Forest Community

S3

Core 2195

Wetland Core

Core 2200

Aquatic Core

Species of Conservation Concern

American Bittern

Botaurus lentiginosus

E

Core 2204

Aquatic Core

Species of Conservation Concern

American Bittern

Botaurus lentiginosus

E

Core 2224

Wetland Core

Core 2227

Aquatic Core

Species of Conservation Concern

American Bittern

Botaurus lentiginosus

E

Core 2242

Species of Conservation Concern

Spring Salamander

Gyrinophilus porphyriticus

Non-listed SWAP

Core 2268

Wetland Core





Core 2277

Wetland Core

Core 2278

Wetland Core

Core 2320

Priority & Exemplary Natural Communities

Spruce-Fir Swamp S3

Species of Conservation Concern

Dwarf Mistletoe *Arceuthobium pusillum* SC

Core 2326

Species of Conservation Concern

Smooth Green Snake *Ophedrys vernalis* Non-listed SWAP

Wood Turtle *Glyptemys insculpta* SC

Core 2331

Forest Core

Wetland Core

Aquatic Core

Priority & Exemplary Natural Communities

Forest Seep Community

Hemlock Ravine Community

Hickory - Hop Hornbeam Forest/Woodland S2

High-energy Riverbank S3

High-terrace Floodplain Forest S2

Rich, Mesic Forest Community S3

Species of Conservation Concern

Barren Strawberry *Geum fragarioides* SC

Dwarf Scouring-rush *Equisetum scirpoides* SC

Foxtail Sedge *Carex alopecoidea* T

Hitchcock's Sedge *Carex hitchcockiana* SC

Muskflower *Mimulus moschatus* E

Purple Giant Hyssop *Agastache scrophulariifolia* E

Wild Senna *Senna hebecarpa* E

Woodland Millet *Milium effusum* T

Appalachian Coronet *Hadena ectypa* Non-listed SWAP

Ostrich Fern Borer Moth *Papaipema* sp. 2 nr. *pterisii* SC

Twelve-spotted Tiger Beetle *Cicindela duodecimguttata* SC

Harpoon Clubtail *Gomphus desertus* E

Ocellated Darner *Boyeria grafiana* SC





Riffle Snaketail	<i>Ophiogomphus carolus</i>	T
Ski-tipped Emerald	<i>Somatochlora elongata</i>	SC
Zebra Clubtail	<i>Stylurus scudderi</i>	Non-listed SWAP
Four-toed Salamander	<i>Hemidactylium scutatum</i>	Non-listed SWAP
Spring Salamander	<i>Gyrinophilus porphyriticus</i>	Non-listed SWAP
Smooth Green Snake	<i>Opheodrys vernalis</i>	Non-listed SWAP
Wood Turtle	<i>Glyptemys insculpta</i>	SC
Bridle Shiner	<i>Notropis bifrenatus</i>	SC
Lake Chub	<i>Couesius plumbeus</i>	E
Longnose Sucker	<i>Catostomus catostomus</i>	SC
Water Shrew	<i>Sorex palustris</i>	SC

Core 2365

Wetland Core

Priority & Exemplary Natural Communities

Acidic Graminoid Fen S3

Species of Conservation Concern

Bristly Black Currant *Ribes lacustre* SCJefferson Salamander *Ambystoma jeffersonianum* SC**Core 2564**

Aquatic Core

Species of Conservation Concern

Early Hairstreak *Erora laeta* TOcellated Darner *Boyeria grafiana* SCJefferson Salamander *Ambystoma jeffersonianum* SCSpring Salamander *Gyrinophilus porphyriticus* Non-listed SWAPLongnose Sucker *Catostomus catostomus* SC**Core 2943F**

Forest Core

Wetland Core

Aquatic Core

Priority & Exemplary Natural Communities

High-energy Riverbank S3

Major-river Floodplain Forest S2

Rich, Mesic Forest Community S3

Riverside Rock Outcrop Community S3

Species of Conservation Concern

Broad Waterleaf *Hydrophyllum canadense* EDwarf Scouring-rush *Equisetum scirpoides* SCGiant St. John's-wort *Hypericum ascyron* EGreen Dragon *Arisaema dracontium* T**Natural Heritage
& Endangered
Species Program****Massachusetts Division of Fisheries and Wildlife**

1 Rabbit Hill Road, Westborough, MA 01581

phone: 508-389-6360 fax: 508-389-7890



Hitchcock's Sedge	<i>Carex hitchcockiana</i>	SC
Mountain Alder	<i>Alnus viridis</i> ssp. <i>crispa</i>	T
Purple Clematis	<i>Clematis occidentalis</i>	SC
Shore Sedge	<i>Carex lenticularis</i>	T
Spiked False Oats	<i>Trisetum spicatum</i>	E
Tradescant's Aster	<i>Symphotrichum tradescantii</i>	T
Arrow Clubtail	<i>Stylurus spiniceps</i>	Non-listed SWAP
Cobra Clubtail	<i>Gomphus vastus</i>	SC
Ocellated Darner	<i>Boyeria grafiana</i>	SC
Riffle Snaketail	<i>Ophiogomphus carolus</i>	T
Riverine Clubtail	<i>Stylurus amnicola</i>	E
Stygian Shadowdragon	<i>Neurocordulia yamaskanensis</i>	SC
Zebra Clubtail	<i>Stylurus scudderi</i>	Non-listed SWAP
Jefferson Salamander	<i>Ambystoma jeffersonianum</i>	SC
Spring Salamander	<i>Gyrinophilus porphyriticus</i>	Non-listed SWAP
Wood Turtle	<i>Glyptemys insculpta</i>	SC
Longnose Sucker	<i>Catostomus catostomus</i>	SC
Shortnose Sturgeon	<i>Acipenser brevirostrum</i>	E
Bald Eagle	<i>Haliaeetus leucocephalus</i>	T
Vesper Sparrow	<i>Pooecetes gramineus</i>	T





Core Habitat Summaries

Core 2178

A 20-acre Core Habitat featuring Wetland Core.

Wetland Cores are the least disturbed wetlands in the state within undeveloped landscapes—those with intact buffers and little fragmentation or other stressors associated with development. These wetlands are most likely to support critical wetland functions (i.e., natural hydrologic conditions, diverse plant and animal habitats, etc.) and are most likely to maintain these functions into the future.

The Wetland Core occurs on mid elevation Slate, one of the least common ecological settings for Wetland Cores in the state.

Core 2189

A 2-acre Core Habitat featuring a Priority Natural Community.

Rich, Mesic Forests are a variant of northern hardwood forests, dominated by sugar maple with a diverse herbaceous layer that includes many spring wild flowers, in a moist, nutrient-rich environment. This small patch of Rich, Mesic Forest is a regional variant lacking the full species diversity of this community type. However it is in very good condition, with no exotic species, and is found within a very large naturally vegetated area.

Core 2195

An 18-acre Core Habitat featuring Wetland Core.

Wetland Cores are the least disturbed wetlands in the state within undeveloped landscapes—those with intact buffers and little fragmentation or other stressors associated with development. These wetlands are most likely to support critical wetland functions (i.e., natural hydrologic conditions, diverse plant and animal habitats, etc.) and are most likely to maintain these functions into the future.

Core 2200

A 6-acre Core Habitat featuring Aquatic Core and a Species of Conservation Concern.

Aquatic Cores are intact river corridors within which important physical and ecological processes of the river or stream occur. They delineate integrated and functional ecosystems for fish species and other aquatic Species of Conservation Concern.

American Bitterns are heron-like birds that nest primarily in large cattail, tussock or shrub marshes and are very sensitive to disturbance.





Core 2204

A 13-acre Core Habitat featuring Aquatic Core and a Species of Conservation Concern.

Aquatic Cores are intact river corridors within which important physical and ecological processes of the river or stream occur. They delineate integrated and functional ecosystems for fish species and other aquatic Species of Conservation Concern.

American Bitterns are heron-like birds that nest primarily in large cattail, tussock or shrub marshes and are very sensitive to disturbance.

Core 2224

A 24-acre Core Habitat featuring Wetland Core.

Wetland Cores are the least disturbed wetlands in the state within undeveloped landscapes—those with intact buffers and little fragmentation or other stressors associated with development. These wetlands are most likely to support critical wetland functions (i.e., natural hydrologic conditions, diverse plant and animal habitats, etc.) and are most likely to maintain these functions into the future.

The Wetland Core occurs on mid elevation Slate, one of the least common ecological settings for Wetland Cores in the state.

Core 2227

A 35-acre Core Habitat featuring Aquatic Core and a Species of Conservation Concern.

Aquatic Cores are intact river corridors within which important physical and ecological processes of the river or stream occur. They delineate integrated and functional ecosystems for fish species and other aquatic Species of Conservation Concern.

American Bitterns are heron-like birds that nest primarily in large cattail, tussock or shrub marshes and are very sensitive to disturbance.

Core 2242

An 87-acre Core Habitat featuring a Species of Conservation Concern.

Spring Salamander adults inhabit clean, cold, high-gradient brooks and headwater seeps in forest habitat, usually at elevation >100 m. Larvae are entirely aquatic and largely nocturnal, spending daylight hours buried below the streambed or hidden under stones. Adults are semi-aquatic and spend most of their time under cover objects along the margins of brooks, springs, and seeps; however, they will venture into upland forest during rainy weather.

Core 2268

A 13-acre Core Habitat featuring Wetland Core.

Wetland Cores are the least disturbed wetlands in the state within undeveloped landscapes—those with intact buffers and little fragmentation or other stressors associated with development. These wetlands are most likely to support critical wetland functions (i.e., natural hydrologic conditions, diverse plant and animal habitats, etc.) and are most likely to maintain these functions into the future.





Core 2277

A 21-acre Core Habitat featuring Wetland Core.

Wetland Cores are the least disturbed wetlands in the state within undeveloped landscapes—those with intact buffers and little fragmentation or other stressors associated with development. These wetlands are most likely to support critical wetland functions (i.e., natural hydrologic conditions, diverse plant and animal habitats, etc.) and are most likely to maintain these functions into the future.

The Wetland Core occurs on mid elevation Slate, one of the least common ecological settings for Wetland Cores in the state.

Core 2278

A 11-acre Core Habitat featuring Wetland Core.

Wetland Cores are the least disturbed wetlands in the state within undeveloped landscapes—those with intact buffers and little fragmentation or other stressors associated with development. These wetlands are most likely to support critical wetland functions (i.e., natural hydrologic conditions, diverse plant and animal habitats, etc.) and are most likely to maintain these functions into the future.

Core 2320

A 34-acre Core Habitat featuring a Priority Natural Community and a Species of Conservation Concern.

Spruce-Fir Boreal Swamps are forested wetlands dominated by red spruce and balsam fir. These swamps are typically found at stream headwaters or in poorly drained basins in the higher, western and north-central parts of the state. This example of Spruce-Fir Swamp, though quite small, is a mature uneven-aged forest with good species diversity and little signs of human disturbance. It is located within a larger wetland complex in a large roadless area.

A member of the Christmas Mistletoe family, Dwarf Mistletoe is a very small fleshy shrub, usually no more than 0.8 inch tall, that parasitizes conifer trees. In Massachusetts, Dwarf Mistletoe occurs in peatlands varying from kettlehole peat bogs to spruce-fir-birch headwater swamps, generally on the branches of black spruce (*Picea mariana*).

Core 2326

A 2,275-acre Core Habitat featuring Species of Conservation Concern.

A small to medium-sized snake, adult Smooth Green Snakes are 14-20 inches long with a uniform light green back and yellow to white venter. The Smooth Green Snake is found in moist open or lightly forested habitat where grasses and shrubs are abundant (edges of marshes, wet meadows, fields, and forest edges or open forests, grasslands, blueberry barrens, pine barrens) and prefers to forage on the ground with activity in the daytime. Smooth Green Snake overwinter in rodent burrows, ant mounds and rock crevices, either singly or communally.

Wood Turtle habitat is streams and rivers, preferably with long corridors of undeveloped, connected uplands. They also use fields and early succesional habitat extending up to 500 meters on both sides of the waterways. Mowing and roads are the primary causes of mortality. Collection is also a conservation concern.





Core 2331

A 12,656-acre Core Habitat featuring Forest Core, Wetland Core, Aquatic Core, Priority Natural Communities, and Species of Conservation Concern.

The East Branch of the Westfield River, a National Wild and Scenic River, runs southeastward through Cummington and then turns southward at the confluence with the Swift River and flows through the dramatic and narrow Chesterfield Gorge. This free-flowing river and its tributaries support 22 rare and uncommon species, including the Endangered Lake Chub and Harpoon Clubtail dragonfly.

Forest Seeps are in areas on wet slopes in hardwood forests where groundwater seeps out of the earth. The overstory is similar to that of the surrounding forest, but many typical wetland ferns, herbs, and shrubs occur as well. This example of Forest Seep runs parallel to the Westfield River, and is home to healthy population of a very unusual plant species. It is in good condition, and is relatively inaccessible.

Hemlock Ravine Communities are evergreen forests made up primarily of hemlocks, with dense, nearly closed canopies that cast deep shade so that very few plants grow below. They occur on moist, north-facing slopes, or along north-facing ravines. This small Hemlock Ravine is in good condition, with good size and age structure, although it has hiking trails and a small population of volunteer Norway Spruce is present.

Hickory-Hop Hornbeam Forests are open, hardwood forests dominated by various hickory species with significant hop hornbeam in the subcanopy. This community is characterized by a sparse shrub layer, and a nearly continuous cover of grasses and sedges. This mature example of Hickory-Hop Hornbeam Forest has high species diversity and little sign of anthropogenic disturbance. It is part of a larger mosaic of natural communities that provide it with a good buffer to human impacts.

High-Energy Riverbank communities are sparse, open graminoid communities found on cobble and sand deposits along fast-flowing rivers that experience severe flooding and ice scour. This example of High-Energy Riverbank is in excellent condition, with high species diversity, intact natural processes of flood and scour, and is well buffered by natural vegetation.

High-Terrace Floodplain Forests are deciduous hardwood forests that occur along riverbanks, above the zone of annual flooding. Although they do not flood annually, they flood often enough for the soil to be moderately enriched. This example of High-Terrace Floodplain Forest is small and in somewhat degraded condition, with two exotic invasive species present.

Rich, Mesic Forests are a variant of northern hardwood forests, dominated by sugar maple with a diverse herbaceous layer that includes many spring wild flowers, in a moist, nutrient-rich environment. Three examples of Rich, Mesic Forest including a large one that has great structural and age diversity, with areas recovering from past disturbances. It is generally in good condition, largely buffered by naturally vegetated areas, and with few exotic invasive species.

Forest Cores are the best examples of large, intact forests that are least impacted by roads and development. Forest Cores support many bird species sensitive to the impacts of roads and development and help maintain ecological processes found only in unfragmented forest patches.

Wetlands Cores are the least disturbed wetlands in the state within undeveloped landscapes—those with intact buffers and little fragmentation or other stressors associated with development. These wetlands are





most likely to support critical wetland functions (i.e., natural hydrologic conditions, diverse plant and animal habitats, etc.) and are most likely to maintain these functions into the future.

Aquatic Cores are intact river corridors within which important physical and ecological processes of the river or stream occur. They delineate integrated and functional ecosystems for fish species and other aquatic Species of Conservation Concern.

Core 2365

A 397-acre Core Habitat featuring Wetland Core, a Priority Natural Community, and Species of Conservation Concern.

Wetland Cores are the least disturbed wetlands in the state within undeveloped landscapes—those with intact buffers and little fragmentation or other stressors associated with development. These wetlands are most likely to support critical wetland functions (i.e., natural hydrologic conditions, diverse plant and animal habitats, etc.) and are most likely to maintain these functions into the future.

The Wetland Core occurs on mid elevation Slate, one of the least common ecological settings for Wetland Cores in the state.

Acidic Graminoid Fens are sedge- and sphagnum-dominated acidic peatlands that experience some groundwater and/or surface water flow but no calcareous seepage. Standing water is often present throughout much of the growing season. This small, fairly diverse example of Acidic Graminoid Fen is found within a series of marsh and swamp habitats along the upper reach of Smith Brook, and is of moderate quality.

Bristly Black Currant is a low, bristly to spiny, straggling shrub measuring up to 3 feet in height. Bristly Black Currant is usually found in cool ravines and borders of swamps in upland regions of Massachusetts.

Adult and juvenile Jefferson Salamanders inhabit upland forests during most of the year, where they reside in small-mammal burrows and other subsurface retreats. Adults migrate during late winter or early spring to breed in vernal pools and fish-free areas of swamps, marshes, or similar wetlands. Larvae metamorphose in late summer or early fall, whereupon they disperse into upland forest.

Core 2564

A 1,007-acre Core Habitat featuring Aquatic Core and Species of Conservation Concern.

Aquatic Cores are intact river corridors within which important physical and ecological processes of the river or stream occur. They delineate integrated and functional ecosystems for fish species and other aquatic Species of Conservation Concern.

The Early Hairstreak butterfly inhabits mature northern hardwood forest and associated openings. Larvae feed on the developing fruits and leaves of beech trees.

Ocellated Darners are dragonflies whose nymphs inhabit clear, shallow, rocky, swift-flowing streams and large, rocky, poorly vegetated lakes. Adults also inhabit nearby uplands, often forests with mixed coniferous and deciduous trees.





Adult and juvenile Jefferson Salamanders inhabit upland forests during most of the year, where they reside in small-mammal burrows and other subsurface retreats. Adults migrate during late winter or early spring to breed in vernal pools and fish-free areas of swamps, marshes, or similar wetlands. Larvae metamorphose in late summer or early fall, whereupon they disperse into upland forest.

Spring Salamander adults inhabit clean, cold, high-gradient brooks and headwater seeps in forest habitat, usually at elevation >100 m. Larvae are entirely aquatic and largely nocturnal, spending daylight hours buried below the streambed or hidden under stones. Adults are semi-aquatic and spend most of their time under cover objects along the margins of brooks, springs, and seeps; however, they will venture into upland forest during rainy weather.

In Massachusetts, the torpedo-shaped Longnose Sucker is found mainly in cool upper sections of streams and rivers with rocky to gravel substrates. These fish may swim miles to deposit their eggs on clean and well-oxygenated gravel substrates.

Core 2943F

A 4,980-acre section of a larger 93,990-acre Core Habitat featuring Forest Core, Wetland Core, Aquatic Core, Priority Natural Communities, and Species of Conservation Concern.

The lower Deerfield River and many of its tributaries are part of the extensive Connecticut River Core Habitat. This part of the Core supports 30 rare and uncommon species, from Longnose Suckers in Poland Brook to the Green Dragon (a relative of Jack-in-the-pulpit) in the wetland near the Deerfield's mouth. Many rare plants cling to the banks of the Deerfield in its steeper stretches, including Mountain Alder, Purple Clematis, and Tradescant's Aster.

High-Energy Riverbank communities are sparse, open graminoid communities found on cobble and sand deposits along fast-flowing rivers that experience severe flooding and ice scour. This example of High-Energy Riverbank is in good condition, but is threatened by upstream manipulations of water flow.

Major-River Floodplain Forests are dominated by silver maple. This community is found along the floodplains of large rivers. The soils here are enriched with nutrients brought by annual floods, resulting in a diversity of plants and insects. This Core has six examples of Major-river Floodplain Forest occurring in patches along the Deerfield River. At least one of these patches is very large, of high-quality, and is free of exotic species and human disturbances.

Rich, Mesic Forests are a variant of northern hardwood forests, dominated by sugar maple with a diverse herbaceous layer that includes many spring wild flowers, in a moist, nutrient-rich environment. This mature example of Rich, Mesic Forest is a regional variant lacking the full species diversity of its community type. It is structurally and topographically diverse, despite past logging, and exotic invasive species are established.

Riverside Rock Outcrop communities are sparsely vegetated areas in crevices on riverside rock outcrops where soil accumulates. The community occurs on flood-scoured bedrock along rivers. This example of Riverside Rock Outcrop occurs in conjunction with other important riverine communities along the Deerfield. The presence of several such communities near each other enhances the habitat value of each.





Forest Cores are the best examples of large, intact forests that are least impacted by roads and development. Forest Cores support many bird species sensitive to the impacts of roads and development and help maintain ecological processes found only in unfragmented forest patches.

Wetlands Cores are the least disturbed wetlands in the state within undeveloped landscapes – those with intact buffers and little fragmentation or other stressors associated with development. These wetlands are most likely to support critical wetland functions (i.e., natural hydrologic conditions, diverse plant and animal habitats, etc.) and are most likely to maintain these functions into the future.

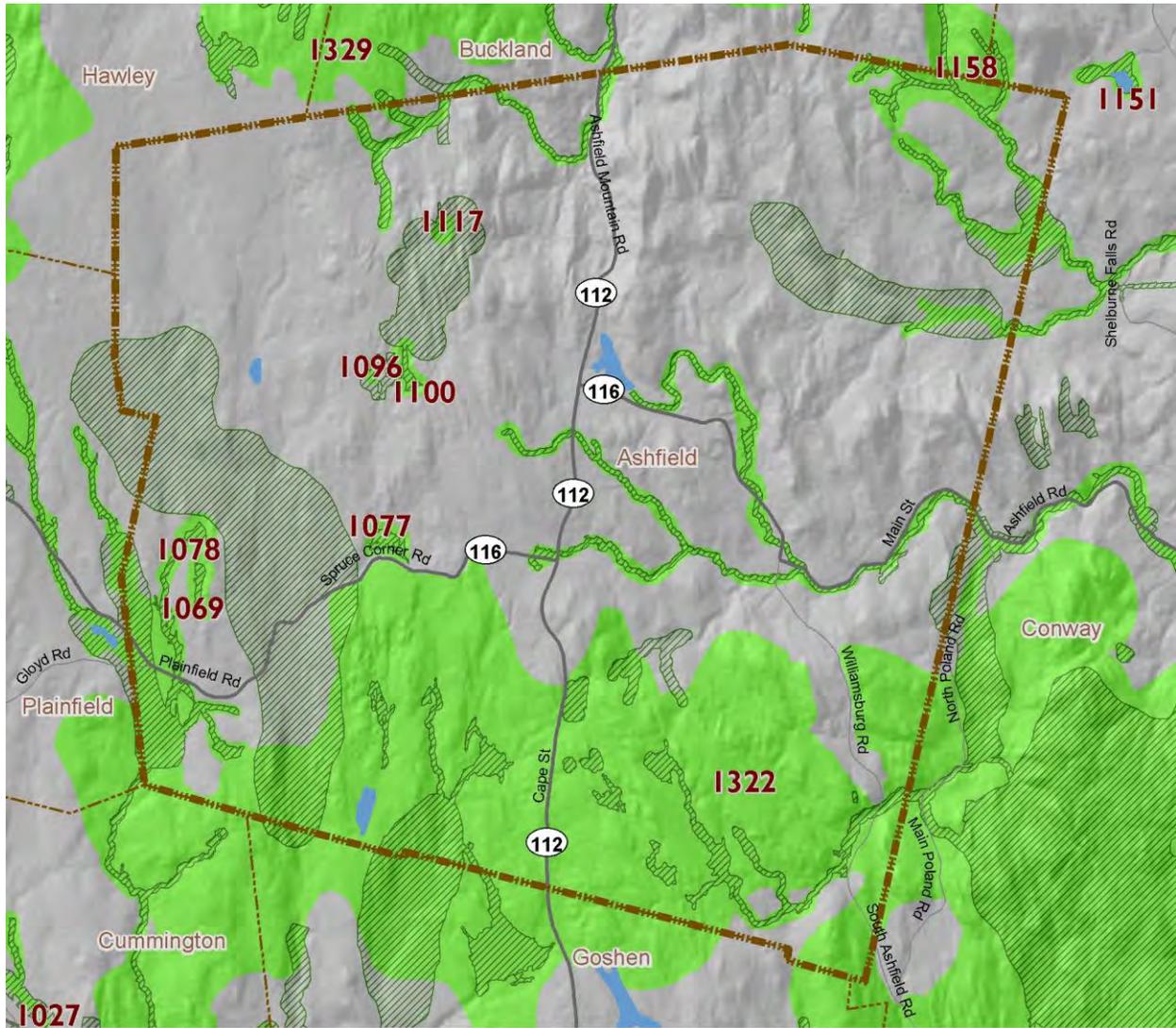
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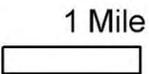


BioMap2 Critical Natural Landscape in Ashfield

Critical Natural Landscape IDs correspond with the following element lists and summaries.



-  BioMap2 Core Habitat
-  BioMap2 Critical Natural Landscape





Elements of BioMap2 Critical Natural Landscapes

This section lists all elements of BioMap2 Critical Natural Landscapes that fall *entirely or partially* within Ashfield. The elements listed here may not occur within the bounds of Ashfield.

CNL 1069

Wetland Core Buffer

CNL 1077

Wetland Core Buffer

CNL 1078

Wetland Core Buffer

CNL 1096

Wetland Core Buffer

CNL 1100

Wetland Core Buffer

CNL 1117

Wetland Core Buffer

CNL 1158

Aquatic Core Buffer

Wetland Core Buffer

CNL 1322

Aquatic Core Buffer

Landscape Block

Wetland Core Buffer

CNL 1329

Aquatic Core Buffer

Landscape Block

Wetland Core Buffer





Critical Natural Landscape Summaries

CNL 1069

A 54-acre Critical Natural Landscape featuring Wetland Core Buffer.

A variety of analyses were used to identify protective upland buffers around wetlands and rivers. One, the variable width buffers methodology, included the most intact areas around each wetland and river, by extending deeper into surrounding unfragmented habitats than into developed areas adjacent to each wetland. Other upland buffers were identified through the rare species habitat analysis. In this way, the conservation of wetland buffers will support the habitats and functionality of each wetland, and also include adjacent uplands that are important for many species that move between habitat types.

CNL 1077

A 61-acre Critical Natural Landscape featuring Wetland Core Buffer.

A variety of analyses were used to identify protective upland buffers around wetlands and rivers. One, the variable width buffers methodology, included the most intact areas around each wetland and river, by extending deeper into surrounding unfragmented habitats than into developed areas adjacent to each wetland. Other upland buffers were identified through the rare species habitat analysis. In this way, the conservation of wetland buffers will support the habitats and functionality of each wetland, and also include adjacent uplands that are important for many species that move between habitat types.

CNL 1078

A 52-acre Critical Natural Landscape featuring Wetland Core Buffer.

A variety of analyses were used to identify protective upland buffers around wetlands and rivers. One, the variable width buffers methodology, included the most intact areas around each wetland and river, by extending deeper into surrounding unfragmented habitats than into developed areas adjacent to each wetland. Other upland buffers were identified through the rare species habitat analysis. In this way, the conservation of wetland buffers will support the habitats and functionality of each wetland, and also include adjacent uplands that are important for many species that move between habitat types.

CNL 1096

A 9-acre Critical Natural Landscape featuring Wetland Core Buffer.

A variety of analyses were used to identify protective upland buffers around wetlands and rivers. One, the variable width buffers methodology, included the most intact areas around each wetland and river, by extending deeper into surrounding unfragmented habitats than into developed areas adjacent to each wetland. Other upland buffers were identified through the rare species habitat analysis. In this way, the conservation of wetland buffers will support the habitats and functionality of each wetland, and also include adjacent uplands that are important for many species that move between habitat types.





CNL 1100

A 52-acre Critical Natural Landscape featuring Wetland Core Buffer.

A variety of analyses were used to identify protective upland buffers around wetlands and rivers. One, the variable width buffers methodology, included the most intact areas around each wetland and river, by extending deeper into surrounding unfragmented habitats than into developed areas adjacent to each wetland. Other upland buffers were identified through the rare species habitat analysis. In this way, the conservation of wetland buffers will support the habitats and functionality of each wetland, and also include adjacent uplands that are important for many species that move between habitat types.

CNL 1117

A 20-acre Critical Natural Landscape featuring Wetland Core Buffer.

A variety of analyses were used to identify protective upland buffers around wetlands and rivers. One, the variable width buffers methodology, included the most intact areas around each wetland and river, by extending deeper into surrounding unfragmented habitats than into developed areas adjacent to each wetland. Other upland buffers were identified through the rare species habitat analysis. In this way, the conservation of wetland buffers will support the habitats and functionality of each wetland, and also include adjacent uplands that are important for many species that move between habitat types.

CNL 1158

A 1,099-acre Critical Natural Landscape featuring Aquatic Core Buffer and Wetland Core Buffer.

A variety of analyses were used to identify protective upland buffers around wetlands and rivers. One, the variable width buffers methodology, included the most intact areas around each wetland and river, by extending deeper into surrounding unfragmented habitats than into developed areas adjacent to each wetland. Other upland buffers were identified through the rare species habitat analysis. In this way, the conservation of wetland buffers will support the habitats and functionality of each wetland, and also include adjacent uplands that are important for many species that move between habitat types.

CNL 1322

A 288,370-acre Critical Natural Landscape featuring Aquatic Core Buffer, Wetland Core Buffer and Landscape Block.

A variety of analyses were used to identify protective upland buffers around wetlands and rivers. One, the variable width buffers methodology, included the most intact areas around each wetland and river, by extending deeper into surrounding unfragmented habitats than into developed areas adjacent to each wetland. Other upland buffers were identified through the rare species habitat analysis. In this way, the conservation of wetland buffers will support the habitats and functionality of each wetland, and also include adjacent uplands that are important for many species that move between habitat types.

Landscape Blocks, the primary component of Critical Natural Landscapes, are large areas of intact predominately natural vegetation, consisting of contiguous forests, wetlands, rivers, lakes, and ponds, as well as coastal habitats such as barrier beaches and salt marshes. Pastures and power-line rights-of-way, which are less intensively altered than most developed areas, were also included since they provide





habitat and connectivity for many species. Collectively, these natural cover types total 3.6 million acres across the state. An Ecological Integrity assessment was used to identify the most intact and least fragmented areas. These large Landscape Blocks are most likely to maintain dynamic ecological processes such as buffering, connectivity, natural disturbance, and hydrological regimes, all of which help to support wide-ranging wildlife species and many other elements of biodiversity.

In order to identify critical Landscape Blocks in each ecoregion, different Ecological Integrity thresholds were used to select the largest intact landscape patches in each ecoregion while avoiding altered habitat as much as possible. This ecoregional representation accomplishes a key goal of *BioMap2* to protect the ecological stages that support a broad suite of biodiversity in the context of climate change. Blocks were defined by major roads, and minimum size thresholds differed among ecoregions to ensure that *BioMap2* includes the best of the best in each ecoregion.

CNL 1329

A 111,531-acre Critical Natural Landscape featuring Aquatic Core Buffer, Wetland Core Buffer and Landscape Block.

A variety of analyses were used to identify protective upland buffers around wetlands and rivers. One, the variable width buffers methodology, included the most intact areas around each wetland and river, by extending deeper into surrounding unfragmented habitats than into developed areas adjacent to each wetland. Other upland buffers were identified through the rare species habitat analysis. In this way, the conservation of wetland buffers will support the habitats and functionality of each wetland, and also include adjacent uplands that are important for many species that move between habitat types.

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Help Save Endangered Wildlife!

Please contribute on your Massachusetts income tax form or directly to the



Natural Heritage &
Endangered Species Fund

To learn more about the Natural Heritage & Endangered Species Program and the Commonwealth's rare species, visit our web site at www.mass.gov/nhesp.

APPENDIX B:
NHESP Letter Re Ashfield Open Space and Recreation Plan



MASSWILDLIFE

DIVISION OF FISHERIES & WILDLIFE

1 Rabbit Hill Road, Westborough, MA 01581

p: (508) 389-6300 | f: (508) 389-7890

MASS.GOV/MASSWILDLIFE

Jack Buckley, *Director*

September 12, 2016

Pat Smith
Franklin Regional Council of Governments
12 Olive St., Suite 2
Greenfield, MA 01301

RE: Ashfield Open Space and Recreation Plan

Dear Ms. Smith:

Thank you for contacting the Massachusetts Natural Heritage and Endangered Species Program (NHESP) regarding the Open Space and Recreation Plan for the Town of Ashfield. Enclosed is information on species listed under the Massachusetts Endangered Species Act (MESA), as well as on Priority Natural Communities, Certified and Potential Vernal Pools, Coldwater Fishery Resource streams and rivers, and other aspects of biodiversity documented in our database for the Town of Ashfield. The Town is encouraged to include this letter and associated materials in the Open Space and Recreation Plan.

MESA-listed Species

According to the NHESP database, the Town of Ashfield currently has habitat for the following rare species listed under MESA:

- American Bittern (*Botaurus lentiginosus*, Endangered)
- Lake Chub (*Couesius plumbeus*, Endangered)
- Jefferson Salamander (*Ambystoma jeffersonianum*, Special Concern)
- Dwarf Mistletoe (*Arceuthobium pusillum*, Special Concern)
- Ocellated Darner (*Boyeria grafiana*, Special Concern)
- Longnose Sucker (*Catostomus catostomus*, Special Concern)
- Dwarf Scouring-rush (*Equisetum scirpoides*, Special Concern)
- Wood Turtle (*Glyptemys insculpta*, Special Concern)
- Bristly Black Currant (*Ribes lacustre*, Special Concern)
- Name not released (NHESP does not release the names of species deemed particularly sensitive to collection)

Fact sheets on each of these species may be downloaded from our website at <http://www.mass.gov/eea/agencies/dfg/dfw/natural-heritage/species-information-and->

MASSWILDLIFE

[conservation/mesa-list/list-of-rare-species-in-massachusetts.html](http://www.mass.gov/eea/agencies/dfg/dfw/natural-heritage/natural-communities/natural-community-fact-sheets.html). The Town is encouraged to include these fact sheets in its Plan.

Priority Natural Communities

There are 5 examples of Priority Natural Communities documented to NHESP from Ashfield:

- 1 Acidic Graminoid Fen
- 1 Rich Conifer Swamp
- 3 Rich Mesic Forests

Fact sheets on these communities may be downloaded from our website at <http://www.mass.gov/eea/agencies/dfg/dfw/natural-heritage/natural-communities/natural-community-fact-sheets.html>. The Town is encouraged to include these fact sheets in its Plan.

Vernal Pools

As of this date, there are 10 Certified and 39 Potential Vernal Pools documented from Ashfield. Most of the Potential Vernal Pools are likely able to be certified; the Town is encouraged to certify vernal pools on its own properties and to require developers in town to certify pools on any property requiring permits from the town.

Coldwater Fishery Resources

There are 26 Coldwater Fisheries Resource streams in Ashfield: Bear River, Billings Brook, Bradford Brook, Chapel Brook, the Upper Branch of Clesson Brook, Drakes Brook, East Brook, Ford Brook, Sids Brook, Smith Brook, the South River, Stones Brook, the Swift River, including the North Branch, and 13 small, unnamed tributaries to these brooks and rivers.

BioMap2

Seventeen areas within Ashfield are *BioMap2* Core Habitat. They include 8 Aquatic Cores, 12 Wetland Cores, 3 Priority Natural Community Cores, and areas for 11 Species of Conservation Concern (some of which have disappeared, been de-listed, or gone Historic since *BioMap2* was published in 2010). Some of these areas overlap.

Adjacent to some of these Core Habitats in Ashfield are 9 areas of *BioMap2* Critical Natural Landscape, including 7 Aquatic Buffers, 14 Wetland Buffers, and 3 Landscape Blocks, some of which overlap. For an explanation of *BioMap2* and the Core Habitats within Ashfield, please see the attached *BioMap2* Town Report.

Discussion

In a town like Ashfield, where much of the land is undeveloped and large areas of town are *BioMap2* areas and/or habitat for MESA-listed species, it can be hard to decide where the highest priorities for

land protection should be. The Town should consider carefully these suggestions for inclusion in its Open Space and Recreation Plan:

- **Land Protection:** The Town of Ashfield does not, apparently, own any parcels set aside for conservation (it does own property for recreation and water supply). Should the Town decide to conserve land itself, or if it wishes to partner with land trusts or encourage private landowners to conserve their land, we recommend making the Swift River and its watershed the highest priority
- **Habitat Management:** The Town should assess conservation, recreation, and water supply areas for the presence of invasive species. If invasives are present in substantial numbers or areas, consider removing them. (Note that the Division of Fisheries and Wildlife has offered grants to fund such activities in the past and is hoping to do so again in the future).
- **Regulation:** The Town should support and encourage its Conservation Commission to enforce the provisions of the Massachusetts Wetlands Act. While there is no local board or official charged with enforcing the provisions of the Massachusetts Endangered Species Act, the Town could consider having the Conservation Commission and the Building Inspector notify development applicants of the presence/absence of Priority Habitat of Rare Species on the applicant's property.
- **Education and Outreach:** Developing community support for conservation of biodiversity is essential for successful efforts at land protection, habitat management, and regulation. Offering field trips on Town conservation areas, writing articles on conservation for local websites and newspapers, and encouraging local students to conduct biological surveys and observations on conservation areas are a few of the low-cost ways to build support that will pay off in the future.

The Town of Ashfield is to be commended for undertaking production of an Open Space and Recreation Plan. Please do not hesitate to call me at 508-389-6351 if you have any further questions.

Sincerely,



Lynn C. Harper
Habitat Protection Specialist
Massachusetts Natural Heritage & Endangered Species Program

APPENDIX C:

**Fact Sheets for Endangered, Threatened and Special
Concern Species in Ashfield**



Natural Heritage & Endangered Species Program

www.mass.gov/nhesp

Massachusetts Division of Fisheries & Wildlife

Jefferson Salamander *Ambystoma jeffersonianum*

State Status: **Special Concern**
Federal Status: **None**

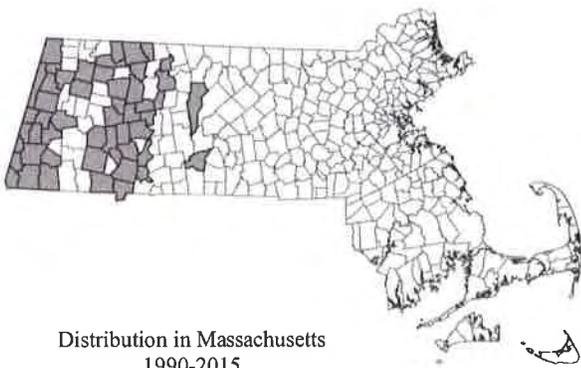
DESCRIPTION: Jefferson Salamander is a large, gray to brownish-gray salamander with fine markings of light blue to silvery flecks on the limbs, lowers sides, and tail. Adults measure 4–7 inches (10–18 cm) in total length. The tail is laterally compressed (especially in sexually active males) and is approximately the length of the body. Jefferson Salamander is in the family of mole salamanders, and so it has distinctively long toes and a stockier build relative to other groups of salamanders in our region. Males tend to be smaller than females and have conspicuously swollen vents during the breeding season.

Larvae have bushy, external gills, a wide head, and a broad caudal fin that extends well onto the back. Young larvae are not easily distinguished from those of other *Ambystoma* species, but they do appear to have more prominent markings of golden yellow on the sides of the head, neck, and dorsum contrasting with a dark, olive-green to brownish base color. Older larvae can still be difficult to identify, but they are generally characterized as having grayish bodies, whitish/unpigmented undersides, and a heavily dark-mottled caudal fin.



Jefferson Salamander
Photo by Bill Byrne

SIMILAR SPECIES: Jefferson Salamander is a member of an intricate group of salamanders known as the *Ambystoma jeffersonianum* complex. The complex consists of two bisexual species, Jefferson Salamander and Blue-spotted Salamander (*A. laterale*), and a group of unisexual *Ambystoma* of a hybrid lineage. Unisexual *Ambystoma* in this complex have variable nuclear genomes consisting of complements of both Jefferson Salamander and Blue-spotted Salamander, and a mitochondrial genome derived from Streamside Salamander (*A. barbouri*), a species currently occurring in Kentucky, Ohio, Indiana, Tennessee and West Virginia. The original species pairing that led to the hybrid unisexual lineage is not yet known, but recent studies suggest that today's unisexual *Ambystoma* and *A. barbouri* from western Kentucky share a maternal ancestor from ~5 million years ago. The unisexual *Ambystoma*, whose populations almost always consist entirely of females, co-occur with local populations of true Jefferson Salamanders and Blue-spotted Salamanders and are able to perpetuate through complicated reproductive mechanisms involving the use of sperm from males of the two species. The resulting offspring are unisexuals having varying ploidy levels (usually 3-4 sets of chromosomes, but occasionally 2 or



Distribution in Massachusetts
1990-2015

Based on records in Natural Heritage Database
Map updated 2015

A Species of Greatest Conservation Need in the Massachusetts State Wildlife Action Plan

Massachusetts Division of Fisheries & Wildlife

1 Rabbit Hill Rd., Westborough, MA; tel: 508-389-6300; fax: 508-389-7890; www.mass.gov/dfw

Please allow the Natural Heritage & Endangered Species Program to continue to conserve the biodiversity of Massachusetts with a contribution for 'endangered wildlife conservation' on your state income tax form, as these donations comprise a significant portion of our operating budget.

www.mass.gov/nhesp

5) and varying complements of *A. jeffersonianum* vs. *A. laterale* nuclear genomes (depending on which of the species is present at a given site, and which reproductive mechanism plays out for a given egg).

The unisexual *Ambystoma* are very similar in appearance to Jefferson Salamander and Blue-spotted Salamander, forming a continuum from the grayish-brown coloration, diffuse blue flecks, and wide snout of Jefferson Salamander, to the black base color, prominent blue spots/blotches, and narrow snout of Blue-spotted Salamander. Unlike Blue-spotted Salamander, Jefferson Salamander cannot usually be distinguished from unisexual *Ambystoma* in the field by size and coloration.



A male Jefferson Salamander captured from the bottom of a vernal pool in Sunderland, Massachusetts during the breeding season.
Photo by Jacob E. Kubel

However, one can assume with high probability that any male specimen observed in most parts of the Jefferson Salamander range is, indeed, a Jefferson Salamander (rather than unisexual *Ambystoma*).

Some people confuse the lead/gray color phase of Eastern Red-backed Salamander (*Plethodon cinereus*) for Jefferson Salamander, as the two species have a grayish base color peppered with light-colored flecks along the lower sides. However, Eastern Red-backed Salamander is much smaller and leaner in overall appearance. Perhaps the easiest way to tell the two species apart is to examine the toes. They are very short and stubby in Eastern Red-backed Salamander, but long and fingerlike in Jefferson Salamander.

RANGE: Jefferson Salamander ranges from southern Ontario through New York and western New England south and west to northern Virginia, West Virginia, Kentucky, and eastern Illinois. Within Massachusetts, Jefferson Salamander is distributed throughout parts of Berkshire, Hampden, Hampshire, and Franklin counties. Several populations east of the Connecticut River have been confirmed, and approximately a dozen others are suspected. All populations of Jefferson Salamander in Massachusetts are presumed to contain unisexual *Ambystoma*.

The precise distribution of Jefferson Salamander between the Connecticut River and western Worcester County is not completely understood. Observation data from that region are based largely on egg masses and adult unisexuals, which cannot always be assigned reliably to a particular taxon within the *A. jeffersonianum* complex by appearance alone. Planned genetic investigations throughout the region will eventually confirm whether each previously observed population contains Jefferson Salamanders, Blue-spotted Salamanders, or both species.

HABITAT: Adult and juvenile Jefferson Salamanders inhabit relatively mature deciduous and mixed deciduous-coniferous forests and woodlands. Circumneutral to calcareous sites at higher elevations seem to be preferred, with many known populations being associated with rich hillsides and ridges. Jefferson Salamander is somewhat selective with its breeding habitat in Massachusetts, as the species breeds almost exclusively in isolated vernal pools and shrub swamps. Abandoned agricultural ponds and other man-made

A Species of Greatest Conservation Need in the Massachusetts State Wildlife Action Plan

Please allow the Natural Heritage & Endangered Species Program to continue to conserve the biodiversity of Massachusetts with a contribution for 'endangered wildlife conservation' on your state income tax form, as these donations comprise a significant portion of our operating budget.

impoundments are used in some situations, but Jefferson Salamanders tend to avoid other wetland types (e.g., red-maple swamps, floodplain marshes, beaver impoundments) used frequently by other mole salamander species. Vernal pools and shrub swamps nested between upland ridges (“saddle pools”) are used often. The most productive breeding pools appear to be those that are relatively large (0.2–0.5 acres), are deep (3–5 ft), and have patches of multi-stemmed shrubs (e.g., *Cephalanthus occidentalis*, *Cornus* spp.) Abundant detritus and absence of predatory fish are additional characteristics of typical breeding habitat. Water clarity seems unimportant, as Jefferson Salamander does not exhibit a strong preference for pools with dark, tannic water as does Blue-spotted Salamander.



A classic saddle pool used for breeding by Jefferson Salamander.
Photo by Jacob E. Kubel

In the terrestrial environment, thick leaf litter, abundant coarse woody debris, loose soils, predominantly closed-canopy tree cover, and abundant rodent tunnels are trademarks of good-quality microhabitat for adult and juvenile Jefferson Salamanders. Most adult individuals reside within several hundred meters of their breeding wetland. Research suggests that local salamander distribution around a breeding site may be influenced by habitat integrity, with salamanders residing closer to a wetland (on average) in intact forest, but occupying areas farther from the wetland when a forest patch is fragmented (e.g., by development). Of course, variability in the distribution of high-quality microhabitat around a breeding site is also likely to influence the distribution of individual salamanders around the wetland, as is the

availability of other suitable wetlands within the patch of upland habitat.

LIFE CYCLE/BEHAVIOR: As the family name “mole salamander” implies, adult and juvenile Jefferson Salamanders spend the majority of their time underground or hidden beneath rocks, logs, leaf litter, or other debris. During rainy or otherwise humid nights in the warmer months of the year, individuals may occur on the ground surface for purposes of foraging, dispersal, or migration to breeding sites. However, most hours of the year are spent under leaf litter, in rodent tunnels, or in other subsurface cavities. Winters are spent below the frost line, presumably in vertical rodent tunnels or root channels.

During March or early April (depending on the timing of winter thaw and warm rains), adult Jefferson Salamanders emerge from their underground retreats and migrate en masse to their breeding pools. Migrations are typically triggered by a steady rain with ambient air temperature holding above 40°F. Given those conditions, salamander movement may begin shortly after sunset and continue through the night, with peak activity occurring between an hour after sunset and midnight. Not all individuals can complete their journey in a single evening. Therefore, migrations may occur over the course of several nights to a couple of weeks, depending on the timing, duration, and frequency of suitable weather conditions. If nocturnal rains are slow to materialize during the normal migratory period, the salamanders may settle for drizzle or a low fog, or even migrate beneath the cover of leaf litter (still moist from snowmelt or ground thaw).

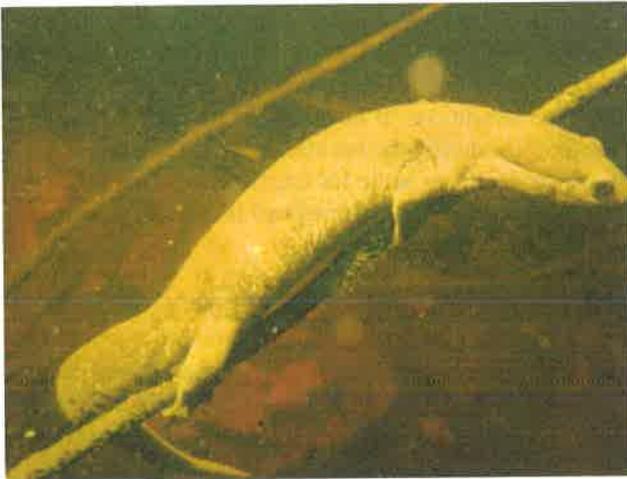
Once in their breeding pool, Jefferson Salamanders engage in an elaborate courtship similar to that of Blue-spotted Salamander. Various stages may be repeated or abandoned multiple times when a female is not receptive to a male, or when competing males disrupt or otherwise interfere with one another, but courtship generally proceeds as follows. The male Jefferson Salamander approaches a female, swims over her female, clasps her body behind her forelegs (with his own), and holds her for several minutes. During that time, the two salamanders may swim about as a clasped pair or just rest on the pool bottom. Eventually, the male (while clasping the female) begins rubbing his snout over her head, undulates his tail, and rubs his body and cloaca over her body in an increasingly vigorous manner. He

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then releases the female, moves forward while undulating his tail, and deposits one to several spermatophores on the bottom substrate of the wetland. The female follows him and noses his cloaca, eventually moving over the spermatophores and picking up their seminal fluid with her cloacal lips, drawing it into her body.

In the pairing of male and female Jefferson Salamanders, reproduction then proceeds via normal fertilization of the eggs by sperm obtained from the spermatophore(s) (i.e., syngamy of haploid gametes). However, in the pairing of male Jefferson Salamanders with female unisexual *Ambystoma*, reproduction proceeds via any of several possible mechanisms (collectively termed kleptogenesis) that do not involve traditional syngamy. In the most common mechanism, the female produces unreduced, polyploid ova, and the male's sperm merely activates embryonic development in the eggs without contributing any genetic material, thereby resulting in offspring that are genetic clones of the unisexual mother. This is one reason why unisexual *Ambystoma* are believed to greatly outnumber true Jefferson Salamanders in most local populations.



Jefferson Salamander ovipositing along a submerged twig.
Photo by Jacob E. Kubel

After mating, a female Jefferson Salamander (or unisexual *Ambystoma*) deposits her eggs in one to several variably-sized clusters, each nested within a loose, clear, gelatinous matrix (egg mass). The egg masses typically contain 15–60 eggs each, but further research is needed to differentiate between egg masses

of Jefferson Salamander and unisexual *Ambystoma* in Massachusetts. Egg masses of both groups are usually attached to the twigs of fallen tree branches or submerged shrubs, but grasses, forbs, or the pool bottom may be used when twigs are unavailable.

Hatching occurs in 3–4 weeks, whereupon the bushy-gilled, fully-aquatic larvae spend the next 2–3 months in the wetland. The salamander larvae feed voraciously on zooplankton, insect larvae (e.g., mosquitoes), and other aquatic organisms, increasing in body size and developing front and hind limbs as spring advances into



Jefferson Salamander egg mass attached to a submerged twig.
Photo by Jacob E. Kubel

summer. Metamorphosis then occurs in July or August, depending on when the wetland begins to dry, when food resources become limited, or on other factors. At this time, the larvae develop lungs, resorb their gills, and seek cover beneath stones, woody debris, leaf litter, or other detritus in moist or saturated portions of the wetland basin. There, the juvenile salamanders will wait for an opportunity to leave the basin and disperse into the surrounding forest (typically during an evening rain).

Following dispersal from natal wetlands, juvenile salamanders will reside in the forest, feeding on snails, earthworms, beetles, and other small invertebrates. Upon reaching sexual maturity in approximately 3 years, most individuals will return to their natal wetland to breed, starting the cycle anew. Others will have sought out new ground, joining another segment of the local breeding population, or pioneering a new one of their own.

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Maximum life expectancy of Jefferson Salamander is unknown. Mark-recapture studies of other mole salamanders indicate that adult survivorship is relatively high, and individuals may live for several years or more with regularity. Accounts of salamanders held in captivity suggest a possible lifespan greater than 10 years.

POPULATION STATUS IN MASSACHUSETTS:

Jefferson Salamander (including its unisexual associates) is legally protected and listed as Special Concern pursuant to the Massachusetts Endangered Species Act (M.G.L. c. 131A) and implementing regulations (321 CMR 10.00). As of January 2015, approximately 131 local populations have been documented among 51 towns since 1990. Primary threats to Jefferson Salamander in Massachusetts are habitat loss, habitat degradation, road mortality, and emerging infectious disease. The most common types of habitat loss are the clearing of forests and the filling (or draining) of vernal pools during residential, commercial, industrial, mining, or agricultural development.



Illegal clearing of forest and filling of vernal pools is an ongoing threat to pool-breeding salamanders in Massachusetts.

Photo by Jacob E. Kubel

Habitat degradation typically occurs when development fragments habitat (e.g., creates gaps between forest habitat and breeding wetlands), chemical applications (e.g., pesticides, deicing salts, fertilizers) pollute breeding wetlands, or commercial logging operations disrupt forest ecology (e.g., compact soils, reduce leaf litter, introduce or increase growth of non-native,

invasive vegetation). High road densities and traffic volumes tend to result in increased levels of adult salamander mortality; in extreme cases, road mortality functions as a barrier between upland and breeding habitats. Known and potential impacts of several pathogens/emerging infectious diseases (e.g., ranavirus, *Batrachochytrium salamandrivorans*) are not completely understood, but outbreaks could result in severe and widespread salamander mortality.

MANAGEMENT RECOMMENDATIONS: At a local scale, sites of known occurrence of Jefferson Salamander should be managed to develop or maintain mature forest conditions within approximately 1,000 feet of confirmed and potential breeding wetlands. Such management should aim to minimize forest loss/fragmentation, road traffic, soil compaction, and introduction/growth of invasive, non-native vegetation. Forest type should be maintained as deciduous or mixed deciduous-coniferous. Fallen trees, branches, leaves, and other detritus should be allowed to accumulate on the forest floor. Hydrology of breeding wetlands should not be altered in ways that might reduce hydroperiod within the March through August time period. Breeding wetlands should be protected from chemical pollution, and basin structure should not be altered without special permits from the Massachusetts Division of Fisheries and Wildlife and/or the Department of Environmental Protection. Breeding wetlands should not be filled or used for dumping of yard waste or refuse.

At the landscape scale, area of mature upland forest between local populations of Jefferson Salamander should be maximized to maintain dispersal corridors and, therefore, genetic exchange between populations. Land acquisition/protection efforts for maintaining habitat connectivity should prioritize areas with low road densities and traffic volumes. A land-protection strategy may best serve long-term persistence of local populations where they occupy relatively large, connected areas containing abundant breeding habitats. However, lands supporting small, peripheral, or isolated populations are also worth protecting for maintenance of genetic diversity at the state level.

“Pure” populations of Jefferson Salamander that do not contain unisexual *Ambystoma* are not known to occur in Massachusetts nor anywhere else in New England. Long-term viability of populations with a low Jefferson Salamander to unisexual *Ambystoma* ratio is not well

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understood. Therefore, identification and protection of populations with relatively high ratios of Jefferson Salamanders to unisexuals is considered an important precaution in a changing environment. Biological inventory, research, land acquisition, and environmental regulation are several actions that should be utilized to help meet that goal.

Stronger controls are necessary to guard against the introduction and spread of amphibian pathogens and infectious disease. For example, national policy and enforcement regarding importation of exotic wildlife in the global pet trade should be improved to reduce and minimize the volume of diseased animals entering the country. Within Massachusetts, field biologists, anglers, and other outdoor enthusiasts should adopt and promote appropriate equipment-sanitation procedures when outdoor activities span wide geographic areas. A statewide amphibian monitoring program that includes sampling for pathogens and disease outbreaks is needed.

Active management of Jefferson Salamanders and their habitats is a developing interest. For example, construction of vernal pools to enhance breeding opportunities at sites where wetland habitats are scarce is a continuing line of research. Citizens play an active role in conservation by helping adult salamanders cross roads safely during their breeding migrations, thereby increasing survivorship and reproductive output.

Citizens are encouraged to assist with conservation of Jefferson Salamanders in additional ways. For example, observations of Jefferson Salamanders (or associated unisexual *Ambystoma*) should be reported to the NHESP, as land-protection efforts for the species are dependent on knowing where local populations occur. Collection and submission of data for the certification of vernal pool habitat is another beneficial action, as it will afford certain legal protections to salamander habitats.

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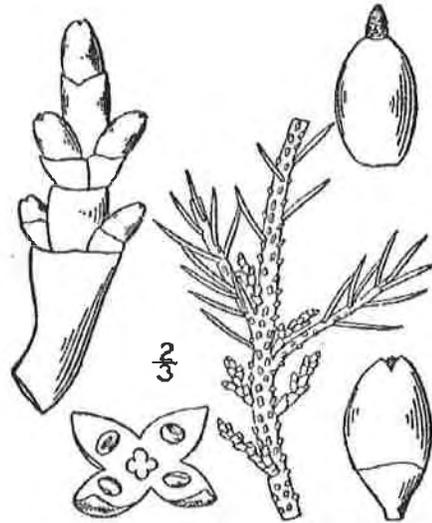
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Description: A member of the Christmas Mistletoe family (Viscaceae), dwarf mistletoe is a very small fleshy shrub, usually no more than 2 cm (0.8 in.) tall that parasitizes conifer trees. Its generic name reflects this parasitic habit, coming from the Greek words for juniper (*arkeuthos*) and life (*bios*). This simple or sparingly branched plant has greenish to chestnut-colored, or even purplish, stems that are circular when fresh and four-angled when dry. The opposite leaves are reduced to thin, connate, obtuse (blunt-tipped) scales with a width of only 1 mm (0.04 in.). Dwarf mistletoe spreads beneath the bark of its host by means of a haustoria, an organ used to obtain nutrients from the host. The formation of globose clumps of swollen, infected branches--or "witches' brooms"--saps the trees' strength, and, eventually, a tree covered with them may weaken and die. Dwarf mistletoe is a dioecious plant (a plant with unisexual flowers in which the individual plants are either male or female). Mistletoes reproduce by means of seeds expelled from explosive fruits. The sticky seeds cling to needles, eventually sliding down the needles to germinate on twigs. During the first year, the parasite penetrates the wood with a root-like structure and develops food and water transport systems. An aerial fruiting structure arises in the early spring of the second year. The structure is green and about as long as the spruce needles.. Male and female plants are located on separate branches or on separate trees. During the third year, pollen and flowers are produced. Male (pollen-producing) structures, which survive only a short time, are large and orange-yellow. Pollen is spread to the tiny flowers by wind, insects, and birds. Each flower then bears one barrel-shaped fruit. The fruit, which matures in the fall, is a hard seed covered with a sticky substance. The seed is shot out of the coat for a distance of up to 30 feet. The fruiting structure then withers and falls off, leaving only the cup-shaped base. Seeds may also be carried on the feathers of birds and the fur of mammals. Dwarf mistletoe will only germinate on live host branches.

Dwarf Mistletoe

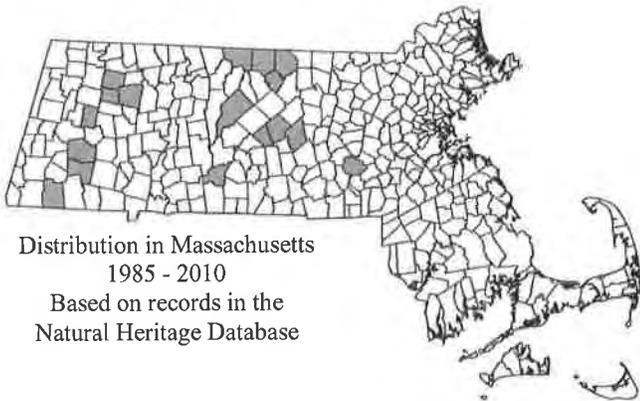
Arceuthobium pusillum Peck
State Status: Special Concern
Federal Status: None



Top: USDA-NRCS PLANTS Database / Britton, N.L., and A. Brown. 1913. *An illustrated flora of the northern United States, Canada and the British Possessions*. 3 vols. Charles Scribner's Sons, New York. Vol. 1: 638.

Bottom: Black Spruce shoot with Eastern Dwarf Mistletoe. Photo by and courtesy of Thomas J. Rawinski.

Range: Dwarf mistletoe, one of the most widespread of the New World species of *Arceuthobium*, is found throughout most of the range of its hosts. The documented range of dwarf mistletoe extends from Newfoundland and Quebec to Minnesota and Saskatchewan and south to northern New Jersey, Pennsylvania and Michigan.



Distribution in Massachusetts
1985 - 2010
Based on records in the
Natural Heritage Database

Habitat In Massachusetts: In Massachusetts, dwarf mistletoe occurs in peatlands varying from kettlehole peat bogs to spruce-fir-birch headwater swamps, generally on the branches of black spruce (*Picea mariana*). Elsewhere in its range, this plant occasionally occurs on red spruce (*Picea rubens*), white spruce (*Picea glauca*) and tamarack (*Larix laricina*). Throughout its range, it favors wetland communities dominated by conifer trees and influenced by acidic water. Specific habitats in Massachusetts include acidic conifer swamps, bog forests, and headwater swamps, including a headwater seepage swamp with both acidic and calciphilic plants. In addition to black spruce, associated species include larch (*Larix laricina*), balsam fir (*Abies balsamea*), yellow birch (*Betula alleghaniensis*), hemlock (*Tsuga canadensis*), red maple (*Acer rubrum*), bog laurel (*Kalmia polifolia*) and Labrador tea (*Ledum groenlandicum*).

Population Status in Massachusetts: Dwarf mistletoe is currently listed as a "Species of Special Concern" in Massachusetts. All listed species are protected from killing, collecting, possessing, or sale and from activities

that would destroy habitat and thus directly or indirectly cause mortality or disrupt critical behaviors. There are 20 current stations (1985-2010) and 11 historical stations (unverified since 1978). The distribution of dwarf mistletoe is determined by the presence of its hosts, frequently spruces, which themselves are limited in distribution in Massachusetts. Due to its inconspicuous size, it is likely that some occurrences have as yet gone undiscovered. Dwarf mistletoe is also considered rare in Vermont, Rhode Island, Connecticut, New Jersey and Pennsylvania.

Management Recommendations: Various species of *Arceuthobium* are the only flowering plants that produce the phenomenon known as "witch's broom." Also caused by other parasites, such as fungi and mites, this deformity can eventually kill the affected branches and, later, the entire tree. While dwarf mistletoe is considered to be a serious threat by foresters--particularly in eastern Canada and the Lake states--it is not a problem in Massachusetts, where its rarity has resulted in its being placed on the state's rare species list. The vast majority of "witch's brooms" seen in Massachusetts are caused by other parasites.

The distribution of dwarf mistletoe is limited by that of its host species--in Massachusetts, primarily black spruce. Hence, in order to preserve a local population, it may become necessary to ensure that its host persists in the immediate vicinity. All active management of rare plant populations (including invasive species removal) is subject to review under the Massachusetts Endangered Species Act, and should be planned in close consultation with the Massachusetts Natural Heritage & Endangered Species Program.

For more information see:

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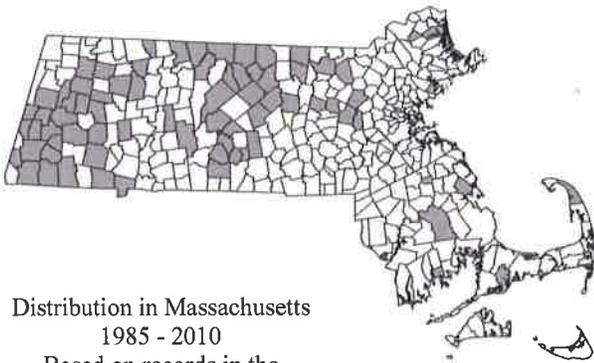
Massachusetts Division of Fisheries & Wildlife

American Bittern *Botaurus lentiginosus*

State Status: Endangered
Federal Status: None

DESCRIPTION: The American Bittern is a medium-sized (23-34 inches [58-68 cm] long) brown, streaked, ground-dwelling heron that spends most of its time hidden among marshland vegetation. Its upper parts are mottled with brown and buff, while the under parts are streaked with brown and white. The short thick neck has a black stripe or patch on each side, and the throat is white with thick black streaks. The top of the head is usually darker than the body, or sometimes rusty. There is a buffy stripe over each of the yellow eyes. The bill, legs, and feet are pale yellow or yellowish-green. Wingspread is from 32 to 50 inches (80-106 cm) and the black wingtips are conspicuous in flight. The relatively short tail is rounded and mottled brown.

SIMILAR SPECIES: Immature Night Herons are grayer and more spotted than the American Bittern and frequently perch in trees. The Least Bittern is small with buffy wing patches.



Distribution in Massachusetts
1985 - 2010
Based on records in the
Natural Heritage Database



Photo: Bill Fournier

HABITAT IN MASSACHUSETTS: The American Bittern inhabits freshwater marshes, meadows, fens and bogs dominated by emergent vegetation such as cattails, bulrushes, sedges, and grasses. It may also occur in brackish wetlands.

BEHAVIOR: The American Bittern spends most of its time hidden among marshland vegetation. It walks slowly and stealthily. When startled, the bittern assumes what is perhaps its most characteristic stance: standing

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Massachusetts Division of Fisheries & Wildlife

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frozen with the bill pointed skywards, in order to camouflage itself among the reeds, occasionally swaying from side to side with the vegetation as if blown by the wind. When flushed from a marsh, it gives “kok kok kok” call or a nasal “haink,” its wings flap loosely, feet dangle, and it flies off slowly, but with rapid wing beats. The distinctive call is loud and guttural; the notes sound like an old-fashioned pump, usually in three syllables, the middle one sharply accented; “oonk-a-lunk” or “oong-ka-chook”. Pumping calls are usually heard at dusk, or dawn in spring or early summer.

MATING/BREEDING HABITS: Courtship behavior is not well understood, but is known to include aerial and ground chases. Males slowly stalk females as they display a pair of white fanlike plumes raised over the back and shoulders. Usually, bitterns nest in marshes, but may also nest in grassy upland fields adjacent to wetlands. Males appear to be territorial throughout the breeding season, and remain in the nest-site vicinity. Males may be polygynous. The female builds the nest and cares for the young. The nest, about a foot (30 cm) in diameter, is located either on the ground in dense vegetation or on a platform about a foot above the water. Nest material includes dead reeds, cattails, grasses, and sedges. The 3 to 5 buff-brown to olive-brown eggs are laid at 1-day intervals with incubation beginning with the laying of the first egg. An egg hatches about 24 days after it was laid. Young are fed by regurgitation at the nest for about 2 weeks. The female continues to tend the young for an undetermined length of time after they leave the nest. There is one clutch per year.

FEEDING HABITS: Preferred foods include frogs, small snakes and eels, salamanders, crayfish, fish, and occasionally mice and grasshoppers caught on visits to open fields. The American Bittern feeds in marshes, meadows, and along edges of shallow ponds, standing motionless with neck outstretched and level bill, eyes focused down into the water, slowly aiming its bill before suddenly darting downward to seize the prey.

RANGE: The breeding range of the American Bittern extends from Newfoundland west to Manitoba and British Columbia; south to Maryland and west through Oklahoma and Kansas to southern California. This bittern also breeds very rarely in the Gulf States. It winters from the Carolinas south to the Bahamas, Cuba, and Panama, and occasionally as far north as along the east coast of Massachusetts. American Bitterns return to Massachusetts marshes in April.

POPULATION STATUS: The American Bittern is listed as Endangered under the Massachusetts Endangered Species Act. All listed species are protected from killing, collecting, possessing, or sale and from activities that would destroy habitat and thus directly or indirectly cause mortality or disrupt critical behaviors. Population trends in Massachusetts are not known although the global population is thought to be declining.

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Massachusetts Division of Fisheries & Wildlife

Michaux's Sedge *Carex michauxiana* Boeckeler

State Status: **Endangered**
Federal Status: **None**

GENERAL DESCRIPTION: Michaux's Sedge is a perennial member of the Sedge family (Cyperaceae) that occurs in boggy areas. It has narrow (1.5–4 mm), yellowish green leaves that are shorter than the 15 to 70 cm (6–28 in.) flowering stems. It is named for the French botanist and explorer André Michaux (1746–1802).

AIDS TO IDENTIFICATION: To identify Michaux's Sedge and other members of the genus *Carex*, a technical manual should be consulted. Species in this genus have tiny, wind-pollinated flowers that are borne in spikes. Michaux's Sedge is one of only two members of *Carex* section *Rostrales* found in New England. Species in this section have long, slender perigynia (8–15 mm long and 1.5–3 mm wide) that gradually taper to a beak with two erect to spreading teeth. The perigynia are borne on two to five stalked, lateral spikes, with the staminate flowers in a small terminal spike. Of these two species, Michaux's Sedge can be recognized by its smaller size, generally erect spikes, shorter pistillate scales, and upper leaf sheaths that are concave at the mouth.



Michaux's Sedge is a wetland species that has long, slender perigynia that taper gradually to a toothed beak.
Photo by Russ Schipper.

SIMILAR SPECIES: The other member of *Carex* section *Rostrales* in New England is the common and widespread Long-culmed Sedge (*C. folliculata*), which can be found in similar wetland habitats. This species differs from Michaux's Sedge in its wider leaves (4–18 mm), taller stems (up to 1.75 m), and drooping lower spikes. Unusually small individuals of Long-culmed Sedge can be distinguished from Michaux's Sedge by the combination of pistillate scales that are more than two-thirds the length of the perigynia and upper leaf sheaths that are convex. Collins' Sedge (*C. collinsii*), which is rare in Connecticut and New York and has not been recorded from Massachusetts, also appears similar to Michaux's Sedge but has reflexed rather than spreading perigynia, with reflexed beak teeth.

HABITAT: The known sites for Michaux's Sedge in Massachusetts are boggy habitats with *Sphagnum*. One population occurs along the margins of a sluggish stream and the pond that it feeds, with Tawny Cotton-grass (*Eriophorum virginicum*), Threeway Sedge (*Dulichium arundinaceum*), and several orchid species. The other is a shrubby wet meadow with Shrubby Cinquefoil

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Massachusetts Division of Fisheries & Wildlife

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(*Dasiphora floribunda*) and Large Cranberry (*Vaccinium macrocarpon*).

RANGE: Michaux's Sedge occurs from Saskatchewan to Newfoundland, south to Minnesota and Maryland.

POPULATION STATUS IN MASSACHUSETTS: Michaux's Sedge is listed under the Massachusetts Endangered Species Act as Endangered. All listed species are protected from killing, collecting, possessing, or sale, and from activities that would destroy habitat and thus directly or indirectly cause mortality or disrupt critical behaviors. Michaux's Sedge occurs in Berkshire and Hampshire Counties, and was found historically in Franklin County.

MANAGEMENT RECOMMENDATIONS: As for many rare species, exact management requirements for Michaux's Sedge are not known. Caution is needed at sites with extant populations to prevent disturbance of hydrological conditions. Management may be required at some sites to prevent establishment of dense woody vegetation that may shade or compete with Michaux's Sedge. All active management of rare plant populations (including invasive species removal) is subject to review under the Massachusetts Endangered Species Act, and should be planned in close consultation with the Massachusetts Natural Heritage & Endangered Species Program.

MATURE PERIGYNIA PRESENT:

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

REFERENCES:

Gleason, H. A., and A. Cronquist. 1991. *Manual of Vascular Plants of Northeastern United States and Adjacent Canada*, 2nd edition. The New York Botanical Garden, Bronx, NY.

Haines, A. 2011. *Flora Novae Angliae – a Manual for the Identification of Native and Naturalized Higher Vascular Plants of New England*. New England Wildflower Society, Yale Univ. Press, New Haven, CT.

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Few-flowered Sedge *Carex pauciflora* Lightf.

State Status: Endangered
Federal Status: None

GENERAL DESCRIPTION: Few-flowered Sedge is a perennial member of the Sedge family (Cyperaceae) found in sphagnum bogs. It has narrow leaves (1–2 mm) and single or loosely clustered flowering stems that are 10 to 40 cm (4–16 in.) tall. Both the common and scientific names of this species refer to its sparse inflorescence.

AIDS TO IDENTIFICATION: To identify Few-flowered Sedge and other members of the genus *Carex*, a technical manual should be consulted. Species in this genus have tiny, wind-pollinated flowers that are borne in spikes. Few-flowered Sedge is one of relatively few *Carex* species with just one spike at the top of each stem. The spike consists of a staminate portion above one to six slender, gradually tapering perigynia. The perigynia are 6 to 8 mm long and 1 to 1.5 mm wide, and are typically spreading or bent downward (deflexed).



Distribution in Massachusetts
1985 - 2012
Based on records in
Natural Heritage Database



Few-flowered Sedge has one to six slender, tapering perigynia that are spreading (left) or deflexed (right). Photos by Jennifer Garrett

SIMILAR SPECIES: Few-flowered Sedge is among the most easily recognized sedges. The perigynia of other species with single spikes in our area are not slender and tapering, are generally more numerous, and point upward rather than outward or downward. Perhaps the most similar species is Collins' Sedge (*C. collinsii*), which also has slender, spreading or reflexed, and fairly sparse perigynia. However, Collins' Sedge is a more robust plant, with wider leaves (2 to 4 mm) and longer perigynia (8 to 12 mm) that are borne in two to four separate, stalked spikes. Collins' Sedge is not known from Massachusetts and is rare in Connecticut and New York.

HABITAT: Few-flowered Sedge occurs in acidic sphagnum bogs, along with characteristic bog plants such as Leatherleaf (*Chamaedaphne calyculata*), Bog Laurel (*Kalmia polifolia*), Labrador Tea (*Rhododendron groenlandicum*), and Large Cranberry (*Vaccinium macrocarpon*). In New England, populations of Few-flowered Sedge typically occur on open bog mats where woody vegetation is short and sparse.

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RANGE: Few-flowered Sedge occurs from Alaska and Washington east to Newfoundland and West Virginia. It also occurs in Eurasia. This species is listed as Endangered in Massachusetts and Pennsylvania, Special Concern in Connecticut, and Sensitive in Washington.

POPULATION STATUS IN MASSACHUSETTS: Few-flowered Sedge is listed under the Massachusetts Endangered Species Act as Endangered. All listed species are protected from killing, collecting, possessing, or sale, and from activities that would destroy habitat and thus directly or indirectly cause mortality or disrupt critical behaviors. Few-flowered Sedge is currently known from Franklin County, and it also occurred historically in Berkshire County.

THREATS AND MANAGEMENT

RECOMMENDATIONS: As for many rare species, the exact management needs of Few-flowered Sedge are not known. Human or beaver activities that alter hydrological conditions may threaten existing populations. Populations may also be threatened by increased shading or competition from woody species. All active management of rare plant populations (including invasive species removal) is subject to review under the Massachusetts Endangered Species Act, and should be planned in close consultation with the Massachusetts Natural Heritage & Endangered Species Program.

MATURE PERIGYNIA PRESENT:

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

REFERENCES:

Gleason, H.A., and A. Cronquist. 1991. *Manual of Vascular Plants of Northeastern United States and Adjacent Canada*, 2nd edition. The New York Botanical Garden, Bronx, NY.

Haines, A. 2011. *Flora Novae Angliae – a Manual for the Identification of Native and Naturalized Higher Vascular Plants of New England*. New England Wildflower Society, Yale Univ. Press, New Haven, CT.

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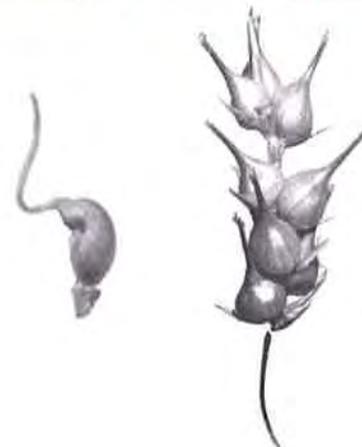
Massachusetts Division of Fisheries & Wildlife

Tuckerman's Sedge *Carex tuckermanii* Dewey

State Status: **Endangered**
Federal Status: **None**

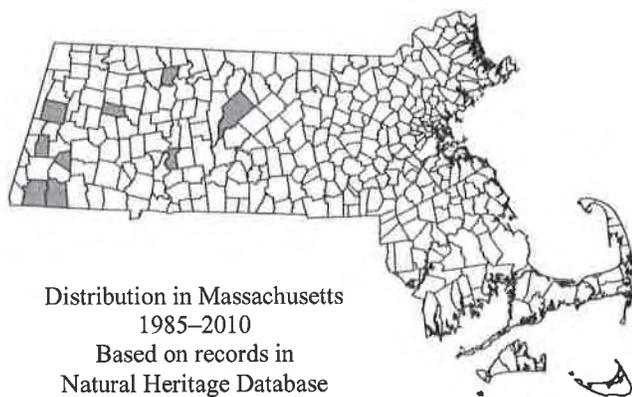
GENERAL DESCRIPTION: Tuckerman's Sedge (*Carex tuckermanii*) is a perennial wetland sedge (family Cyperaceae), named for American lichenologist and botanist Edward Tuckerman (1817–1886). It grows in loose clumps, with erect to arching stems and linear leaves up to a meter in height in habitats such as river and lake shores, swamps, and vernal pools. This species, a member of the *Carex* section Vesicariae, has particularly distinctive female flowering spikes; the clusters of pendulous, inflated teardrop-shaped perigynia (sing., perigynium) are its most recognizable feature.

AIDS TO IDENTIFICATION: Sedges of the genus *Carex* have small unisexual wind-pollinated flowers borne in spikes. The staminate (male, pollen-bearing) flowers are subtended by a single flat scale; the pistillate (female, ovule-bearing) flowers are subtended by one flat scale (the pistillate scale) and are enclosed by a second sac-like modified scale, the perigynium. Following flowering, the achene (a dry, indehiscent, one-seeded fruit) develops within the perigynium. The morphological characters of these reproductive structures are important in identifying plants of the



Top photo: Norman Melvin @ USGS, downloaded from USDA-NRCS PLANTS Database.

Lower photos: Achene and perigynia of Tuckerman's Sedge
Marybeth Hanley



Distribution in Massachusetts
1985–2010
Based on records in
Natural Heritage Database

genus *Carex* to species. A technical key is required to ensure correct identification. Tuckerman's Sedge is a clump-forming plant with short rhizomes and triangular culms (reproductive stems). The leaves are typically flat and slender, usually 2 to 5 mm; the basal sheaths are reddish purple. Like other sedges in *Carex* section Vesicariae, Tuckerman's Sedge has staminate and pistillate spikes borne on separate spikes of each culm;

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the staminate spikes in this species are terminal. The pistillate spikes comprise cylindrical rows of ascending perigynia that often droop from slender stalks in a pendulous fashion. The perigynia (mostly 4.5–7 mm wide), are broadly elliptic with prominent veins at the base, tapering to a double-toothed beak; and in flower are yellowish-green, later becoming straw-colored at maturity.

The pistillate scale is narrowly egg-shaped with a pointed tip and smooth margins. The achenes of this species are asymmetrical in shape with an indentation on one surface. The pistillate spike is subtended by a leaf-like bract (25–70 cm long) that significantly exceeds the inflorescence. Mature perigynia are present throughout much of the summer.

SIMILAR SPECIES: Blister Sedge (*Carex vesicaria*), another wetland species of section Vesicariae with ascending perigynia is similar to Tuckerman's Sedge but is more common; this species has smaller perigynia (shorter and narrower) than the rare species, and has a symmetrical achene, lacking an indentation. Several other species of *Carex* have inflated perigynia (including some of section Lupulinae and other species of section Vesicariae) and may superficially resemble Tuckerman's Sedge; thus numerous defining characters must be examined closely using a botanical key.

HABITAT: In Massachusetts, Tuckerman's Sedge inhabits the rich soils of lowland river floodplain habitats such as oxbows (C-shaped wetlands adjacent to river channels), low depressions, forests, meadows, swales, and vernal pools. Associated species include Fringed Sedge (*Carex crinita*), Hop-sedge (*Carex lupulina*), and Sensitive Fern (*Onoclea sensibilis*). The non-native plant Moneywort (*Lysimachia nummularia*), an invasive, is sometimes associated with Tuckerman's Sedge.

RANGE: Tuckerman's Sedge is known from eastern and central Canada (New Brunswick, Nova Scotia, Quebec, Ontario), most of the northeastern and mid-Atlantic states south to Maryland and West Virginia; and into the Midwest (primarily the Great Lakes region) as far as Minnesota. It has been possibly extirpated in Iowa.

POPULATION STATUS IN MASSACHUSETTS: Tuckerman's Sedge is listed under the Massachusetts Endangered Species Act (MESA) as Endangered. All

listed species under MESA are protected from killing, collecting, possessing, or sale and from activities that would destroy habitat and thus directly or indirectly cause mortality or disrupt critical behaviors. This species is known from the western part of the state in Berkshire, Franklin, and Hampshire Counties, and in Worcester County in central Massachusetts.

MANAGEMENT RECOMMENDATIONS: The exact management needs of Tuckerman's Sedge are not known. As with all species, however, maintaining habitat quality is essential. The Massachusetts populations that have persisted over time are found in low depressions or swales within forested river floodplains; the species apparently thrives despite periodic inundation, and flooding is an important dispersal mechanism. Thus, changes to the hydrologic regime due to local land use change could threaten the viability of a Tuckerman's Sedge population. Further, water quality should be preserved; water quality degradation due to inputs of nutrients from fertilizers or animal waste could change the water and soil chemistry, and favor establishment of exotic or aggressive generalist species. Tuckerman's Sedge habitat should be monitored for exotic invasive species. Invasive plants can out-compete native plants for nutrients and light, excluding them over time. Some invasive plants, such as Garlic Mustard (*Alliaria petiolata*) are allelopathic, meaning they can change the soil chemistry to inhibit the viability of native plants. Exotic species of concern in flood plain communities include Common Reed (*Phragmites australis* ssp. *australis*), Garlic Mustard, Purple Loosestrife (*Lythrum salicaria*), Moneywort, and Reed Canary Grass (*Phalaris arundinacea*). If exotic plants are invading Tuckerman's Sedge habitat, a plan for control should be constructed. All active management within the habitat of a rare plant population (including invasive species removal) is subject to review under MESA, and should be planned in close consultation with the Massachusetts Natural Heritage & Endangered Species Program.

MATURE PERIGYNIA PRESENT:

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

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Massachusetts Division of Fisheries & Wildlife

Longnose Sucker *Catostomus catostomus*

State Status: **Special Concern**
Federal Status: **None**

GENERAL DESCRIPTION: Longnose Suckers are torpedo-shaped fish with a snout that extends beyond the subterminal mouth. They can grow to over 500 mm (~20 in.); however in New England they are generally smaller. They are silvery-gray to yellowish in color and sometimes have darker blotches or saddles along their sides. During the breeding season they will have a red lateral stripe and tubercles (pimple-like bumps) on their head and fins.

SIMILAR SPECIES: Longnose Suckers and White Suckers (*Catostomus commersoni*) can be easily confused. Longnose Suckers have finer scales and have 85 lateral line scales, compared to 75 for White Suckers. The lateral line pores can sometimes be easily seen in the Longnose Sucker whereas in the White Sucker the pores are not visible. In the Longnose Sucker, the lower lips look like two square flaps, whereas in the White Sucker the lower lips are more tapered.

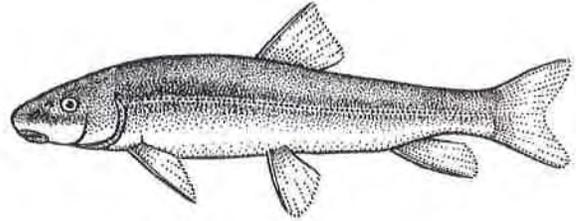
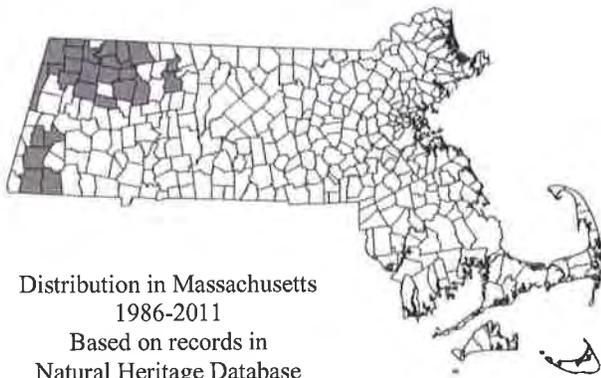


Illustration by Laszlo Meszoly, from Hartel et al. 2002.
Inland Fishes of Massachusetts.

HABITAT: In Massachusetts, Longnose Suckers are found mainly in cool upper sections of streams and rivers with rocky substrates. They are only found in the western part of the State, specifically in the Deerfield, Housatonic, Hoosic, and Westfield watersheds. In other parts of their range they are found in lakes and have been found as deep as 600 ft.

LIFE HISTORY: Longnose Suckers reach maturity at around 5 to 7 years of age, or 130-400 mm (~5 to ~16 in.) in length. They can live up to 20 years and can spawn multiple times during their life. Upstream spawning migrations occur from mid-April through July. They may migrate many kilometers to reach spawning grounds. Their peak spawning activity is relatively short lasting, between 5 and 10 days, and only occurs during daylight hours. Spawning occurs in areas that have moderate to fast stream currents and gravel substrates. Longnose Suckers do not build nests but release adhesive, sinking eggs and show no territoriality.

Young-of-the-year can be found in midwater feeding on plankton. Adult Longnose Suckers feed primarily on benthic invertebrates, specifically *Gammarus*, *Daphnia*, and a variety of insect larvae as well as algae. Longnose Suckers are vulnerable to predation during spawning by



Distribution in Massachusetts
1986-2011
Based on records in
Natural Heritage Database

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a variety of animals, such as Northern Pike, Black Bears and other mammals, and Ospreys.

THREATS: Habitat alteration is a major threat especially through erosion and sedimentation, flow alterations, and increased water temperatures. This species relies on clean, well oxygenated gravel substrates for their eggs to develop and all of these threats can severely decrease their reproductive success. In addition, dams can prevent their migration to preferred spawning habitats.

BREEDING SEASON:

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

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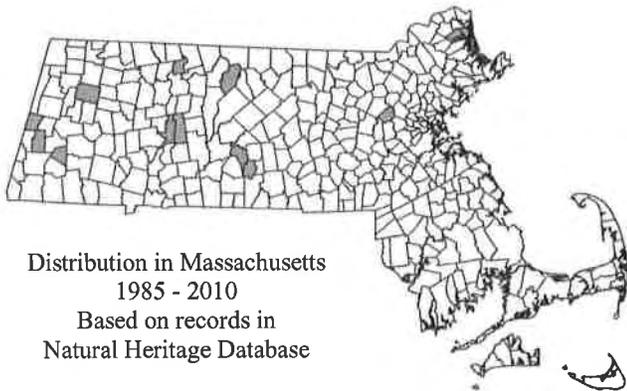
Massachusetts Division of Fisheries & Wildlife

Sedge Wren *Cistothorus platensis*

State Status: **Endangered**
Federal Status: **None**

GENERAL DESCRIPTION: The Sedge Wren is a small, secretive passerine (Passeriformes) bird that inhabits shallow wetlands dominated by short grasses and sedges. Sedge wrens have both short tails and short bills and are approximately 4.5 inches (11.4 cm) long with a wingspan of 5.5 inches (14 cm) and a weight of 0.32 oz (7-10 g). Sexes are similar in appearance, though the male is slightly larger. They are generally buff colored (described variously as sandy buffy, cinnamon, or light brown) on the breast and sides, and can have a whitish belly and throat. The rump and upper tail-coverts are barred with black. The primaries are dark, slaty brown and the outer webs are irregularly marked with dark brown. The tail is plain brown-banded with black. The song starts with sharp, spaced *chips* followed by rapid *chaps*, also like a quick, descending chatter (Sibley 2000, Feith 2003, Forster 2003). The call is a short staccato *chadt* or *chep* along with a buzz *krrt* (Sibley 2000). Males will sing from a low bush or on a grass stalk and may sing throughout the day, but mostly in the morning and evening (Forster 2003).

SIMILAR SPECIES: Sedge Wrens have a striped crown and back that distinguishes them from other wrens, such as the House Wren, Winter Wren, and Carolina Wren. Marsh Wrens also occur in wetlands, but have a streaked crown, a white strip over the eye, paler



Sedge Wren in wetland grasses. Photo by Chris Buelow, NHESP

coloration and a shorter bill (Kroodsma et al. 1997, Sibley 2000). They also tend to nest in wetlands or portions of wetlands with deeper waters than do Sedge Wren (Walton 2003). The Marsh Wren call has been described as both musical and mechanical or a dry, reedy rattle (Sibley 2000, Feith 2003). In addition, they may also vocalize while flying over the nest site (Walton 2003). Sedge Wrens spend most of their time on the ground and may flutter short distances when flushed (Forbush 1929).

HABITAT: Sedge Wrens inhabit wet meadows dominated by tall grasses and sedges, generally at the drier margins of wetlands and avoid flooded areas or areas of short, sparse, or open vegetation (DeGraaf and Yamaski 2001, Herkert et al. 2001). This habitat is found along the tidal marshes of the Middle Atlantic States, along the upland margins of freshwater ponds and

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marshes, and among the grasses in wet meadows and hayfields. Shrubs are generally sparse (Herkert et al. 2001). In New England, sedge wrens may colonize wet meadows early in the nesting season but, following summer drying, move to permanently wet, tussock marshland in July to raise a second brood. In the MANHESP records, wet hayfields or margins of wetlands with sedges and grasses are the most common habitat characteristics. Sedge Wrens are opportunistic in their use and occupation of preferred habitat and may nest in an area one year and not the next (Gibbs and Melvin 1992). Nesting sites must be moist, and are readily abandoned if flooding or drying occurs. Sedge Wren habitat is ephemeral because it is maintained by highly variable moisture regimes occurring in areas susceptible to drying or flooding due to annual and seasonal variation in rainfall. Vegetative succession and the effects of grazing, haying, planting, and other forms of disturbance also affect habitat structure and composition (Veit and Peterson 1993).

RANGE: Sedge Wrens breed from portions of Canada east of the Rocky Mountains to southern Quebec into the central St. Lawrence lowlands and the upper Mississippi Valley in the United States. They may also breed or spend portions of the summer from the Atlantic Coast of Canada south along the eastern US. Sedge Wrens are also known to breed in Central and South America. They winter along the Atlantic Coast from southern New Jersey south to Florida and then west to Alabama (Sibley 2000, Herkert et al. 2001).

LIFE CYCLE/BEHAVIOR: Sedge Wrens begin to migrate from their southern wintering areas in early April with most birds having left southern wintering areas by late April or early May. They arrive at nesting areas within a few weeks, generally in the third week in May and begin nesting within two weeks of arrival (Forster 2003). Eggs have been observed in nests in Massachusetts from May 25th to July 7th (Forbush 1929). MANHESP records indicate most observations in July and August, with some in June and just a few in May. In some cases, there may be a second wave of migrants arriving in June or July (Forster 2003). Late nesting at certain sites could represent renesting attempts by birds arriving from elsewhere. Alternatively, birds that arrived in May might delay nesting until appropriate conditions are available (Gibbs and Melvin 1992, Herkert et al. 2001).

Males choose nest locations in dense sedges and grasses and construct the outer structure. The material is woven together to form a round ball, 8-13 cm in diameter with a small (1.5-2.5 cm) side entrance. The nests are concealed within growing vegetation, 2-3 ft (0.6-0.9 m) above the water line (Harrison 1975). They may nest on tussocks in wetlands (Forster 2003). Females line the nests with grasses, sedges, feathers, and/or fur (Harrison 1975). Males may construct multiple nests to fool predators, but females line only those nests within which they lay eggs (Herkert et al. 2001). Territory sizes are highly variable approximately 1200 to 3500 m² (DeGraaf and Yamasaki 2001). In addition, males may shift territories. Clutch size ranges from two to eight. Only females incubate eggs, and incubation ranges from 12-14 days (Forster 2003). Young fledge in 12-14 days. Females primarily take care of young, though males may occasionally help with feeding (Forster 2003). Two broods are typical and some nesting into late summer has been observed (Harrison 1975, Herkert et al. 2001). Sedge Wrens appear to migrate from mid-September to early October (Forster 2003).

LIMITING FACTORS: In Massachusetts, threats to Sedge Wren include loss of open, wet meadow habitat due to hydrologic changes, incompatible agricultural activities, and encroachment by invasive species. Preferred wetlands, such as sedge/grass meadows with moist or saturated soils, are the most easily drained and filled and are the wetland type most frequently lost to agriculture and urbanization. Local or regional reductions of the water table due to urbanization in the Northeast may reduce moisture in fields, which would otherwise create the preferred wet-meadow habitat (Herkert et al. 2001). Wetland loss often leads to drying processes on adjacent upland habitats, reducing the quality of nesting habitat in moist upland margins of wetland patches. The timing of hay cutting can degrade Sedge Wren habitats because of impacts on nests, young birds, and even possibly adults (Gibbs and Melvin 1992).

POPULATION STATUS IN MASSACHUSETTS: Sedge Wrens are extremely rare breeders in Massachusetts. They are listed as possible, probably or confirmed breeding in six breeding bird atlas blocks in the current (2007-2011) Massachusetts Breeding Bird Atlas project compared to three in the 1975-1979 atlas (Mass Audubon 2003-2010, USGS 2011). The MANHESP has recorded 12 occurrences since 1989.

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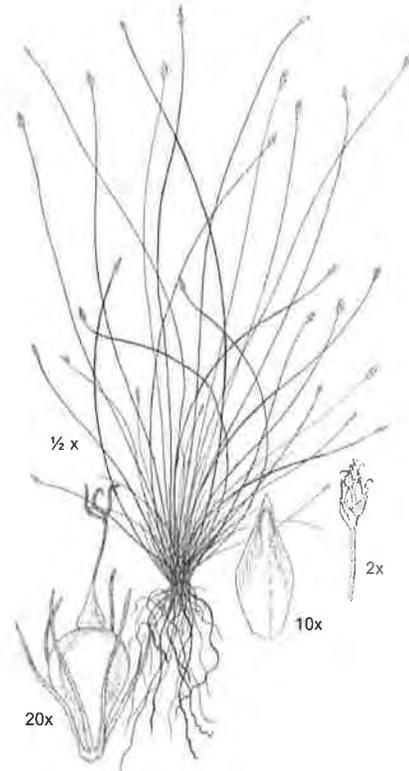
Intermediate Spike-sedge *Eleocharis intermedia* J.A. Schultes

State Status: **Threatened**

Federal Status: **None**

Description: The Intermediate Spike-sedge (*Eleocharis intermedia*) is a small (from about 2 to 10 inches tall or 5-25 cm), densely tufted, annual herb with thin, wiry stems. Although the Intermediate Spike-sedge and the other spike-sedges (also called spike-rushes) superficially resemble the group of plants called “rushes,” they do not belong to the Rush Family, and are actually members of the Sedge Family. The spike-sedges have a single, tight cluster of inconspicuous flowers (a “spike”) at the apex of each stem. The stems of spike-sedges appear leafless, and in fact these plants do not have leaf blades (the expanded part of the leaf), only leaf sheaths (the part which surrounds the stem). The Intermediate Spike-sedge has very slender, round stems with a groove running up them. The stems are usually all clumped together in somewhat of a mat, with some stems reclining horizontally and some standing erect. The stems within a mat are typically of different lengths.

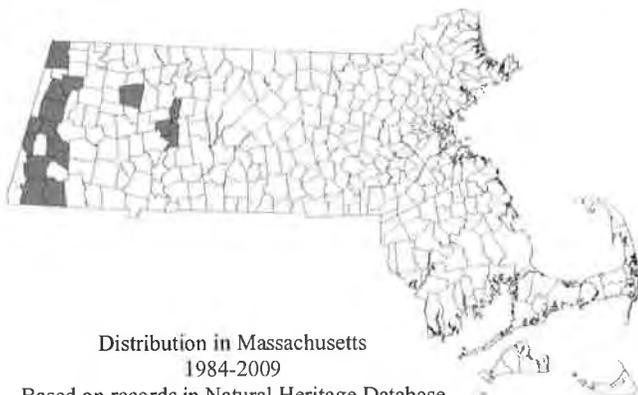
Aids to Identification: To positively identify the Intermediate Spike-sedge and other spike-sedges (genus *Eleocharis*), a technical manual should be consulted. It is usually necessary to look at the tiny fruits of the plant under magnification to distinguish the species of spike-sedge. Members of this genus possess a type of fruit called an



Holmgren, Noel H. *The Illustrated Companion to Gleason and Cronquist's Manual*. New York Botanical Garden.

“achene,” which is hard and nut-like and does not split open to release its single seed. Achenes in the spike-sedges are topped by a protuberance (called a “tubercle”), which varies in shape, size, and texture among species.

The tiny achene (only about 1 mm wide) of the Intermediate Spike-sedge matures in mid- to late summer, and is light brown to pale olive or yellow in color. It is three-sided, and appears smooth under a hand lens (slightly bumpy under a microscope). The tubercle is relatively narrow in this species and looks something like a small dunce’s cap on top of the achene.



Distribution in Massachusetts
1984-2009

Based on records in Natural Heritage Database

Similar Species: There are many common spike-sedges or spike-rushes that could be confused with the Intermediate Spike-sedge. A common spike-sedge with very slender stems that forms mats or carpets is the Needle Spike-rush (*Eleocharis acicularis*). It is distinguished from the Intermediate Spike-sedge by having a long, gray achene that is roundish in cross-section, rather than strongly triangular. The Slender Spike-rush (*Eleocharis tenuis*) is thin-stemmed, but the stems are usually 4- to 8-angled (instead of round) and are scattered or only loosely clustered. The achenes of the Slender Spike-rush are rough or pitted in appearance when observed under a hand-lens. The Soft-stemmed Spike-rush (*Eleocharis obtusa*), a common associate, is another tufted annual that differs from the Intermediate Spike-sedge in having lens-shaped achenes (instead of triangular) and in its more robust appearance. Its stems are usually taller and thicker than the delicate, thread-like stems of the Intermediate Spike-sedge.

Range: The Intermediate Spike-sedge can be found from Quebec to Minnesota, south to West Virginia, Tennessee, and Iowa.

Habitat: The Intermediate Spike-sedge is typically found in marshes, fresh water mudflats, or in other wet areas with muddy substrates. In Massachusetts, this plant is found on muddy, alkaline river banks and pond shores, usually during periods of low water when mud is exposed. Plants found in association with the Intermediate Spike-sedge in Massachusetts include False Pimpernel (*Lindernia dubia*), Nodding Bur-marigold (*Bidens cernua*), Rice Cut-grass (*Leersia oryzoides*) and Soft-stemmed Spike-rush (*Eleocharis obtusa*).

Population Status in Massachusetts: The Intermediate Spike-sedge is listed under the Massachusetts Endangered Species Act as Threatened. All listed species are protected from killing, collecting, possessing, or sale and from activities that would destroy habitat and thus directly or indirectly cause mortality or disrupt critical behaviors. This species is reported from the western half of the State in Berkshire, Franklin, and Hampshire counties.

Management Recommendations: As for many rare species, exact needs for management of Intermediate Spike-sedge are not known. The following comments are based primarily on observations of populations in Massachusetts. Because this plant occurs in freshwater marsh mudflats or muddy soils, proximity to a freshwater source such as a river, pond, or stream is necessary. Regular fluctuation in water level appears to benefit the species, which can be found on exposed mud during low-water years. Low-level disturbance provided by gentle wave action and/or regular flooding is important to maintain the relatively open, muddy conditions in which the Intermediate Spike-sedge thrives.

Mature Fruit Present

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

Updated 11 February 2009

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Natural Heritage & Endangered Species Program

Massachusetts Division of Fisheries & Wildlife
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www.nhesp.org

Dwarf Scouring-rush

Equisetum scirpoides Michx.

State Status: Special Concern

Federal Status: None

Description: This member of the Horsetail family is 4-8 inches (10-20 cm.) tall, evergreen and appears as a dark green tuft of wiry stems. Dwarf Scouring-rush has slender stems which may curve upward or lie flat along the ground and widely branching rhizomes. The stem has 3 to 4 broad and deeply concave ridges. Triangular sheaths surrounding the stems are less than an inch (3-4 mm.) long and have 3 or 4 teeth. Small (3-5mm), dark cones develop in late summer.

Habitat in Massachusetts: Dwarf Scouring-rush is found on moist banks and seepy wooded slopes and hillsides with springs and streams: they are often in ecotones between upland and wetland sites. Dwarf Scouring-rush is known to grow in subacidic and acid glacially derived soil. Associated species often include tree elements of the Northern Hardwoods forest including Red Maple (*Acer rubrum*), Sugar Maple (*A. saccharum*), White Ash (*Fraxinus americana*), Eastern Hemlock (*Tsuga canadensis*), and Yellow Birch (*Betula alleghaniensis*). The hemlock provides shade and a cool habitat. Shrubs may include Striped Maple (*Acer pensylvanica*), Spicebush (*Lindera benzoin*), and Low Raspberry (*Rubus pubescens*). The herbaceous layer may be sparse. However, a variety of species, including repeated occurrences of non-natives, have been reported in the area of Dwarf Scouring-rush populations: including Cinnamon Fern (*Osmunda cinnamomea*), Small Enchanter's Nightshade (*Circaea alpina*), Colt's-foot (*Tussilago farfara*), tree seedlings, other horsetails, and liverworts and mosses.

POPULATION STATUS: Dwarf Scouring-rush is listed under the Massachusetts Endangered Species Act as a Species of Special Concern. All listed species are protected from killing, collecting, possessing, or sale and from activities that would destroy habitat and thus directly or indirectly cause mortality or disrupt critical behaviors. Twenty-three current (1985-2010) occurrences have been reported and fourteen historical occurrences recorded. One reason for its rarity in Massachusetts is because it is



Dwarf Scouring-rush: The photo on top shows a typical mass of plant stems. Photo: Jennifer Garrett, NHESP.

Illustration: USDA-NRCS PLANTS Database / Britton, N.L., and A. Brown. 1913. An illustrated flora of the northern United States, Canada and the British Possessions. 3 vols. Charles Scribner's Sons, New York. Vol. 1: 42.

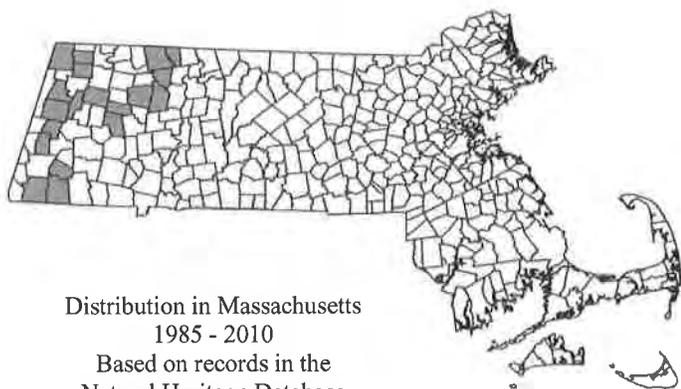
near the southern edge of its range. It is considered rare in most of the states on the southern edge of its distribution. Globally, Nature Serve ranks Dwarf Scouring-rush as G5, Secure.

RANGE: Dwarf Scouring-rush has a circumboreal distribution. In North America, it extends across Canada and south into Connecticut and west through Illinois, Iowa, South Dakota, and Wyoming and then into Washington.

For More Information See

NatureServe. 2010. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed: December 10, 2010).

USDA, NRCS. 2010. The PLANTS Database (<http://plants.usda.gov>, 10 December 2010). National Plant Data Center, Baton Rouge, LA 70874-4490 USA.



Distribution in Massachusetts
1985 - 2010
Based on records in the
Natural Heritage Database

Management and Threats: Most of the occurrences of Dwarf Scouring-rush have invasive species near the population. Competition from non-native invasive species can be a threat through shading and loss of space for the native species. Monitoring and removal of competing vegetation should be considered as a management strategy where appropriate. An additional likely problem in many populations is that the hemlock overstory may be damaged and thinned by Woolly Adelgids, another invasive species that infects and kills hemlock trees. All active management of rare plant populations (including invasive species removal) is subject to review under the Massachusetts Endangered Species Act, and should be planned in close consultation with the Massachusetts Natural Heritage & Endangered Species Program.

Several of the populations of Dwarf Scouring-rush are near roads: widening of roads and creation, formal and informal, of pull-off sites should be reviewed with regard to the effects on the Dwarf Scouring-rush.

1985
Updated: 2010



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Massachusetts Division of Fisheries & Wildlife

Wood Turtle *Glyptemys insculpta*

State Status: **Special Concern**
Federal Status: **None**

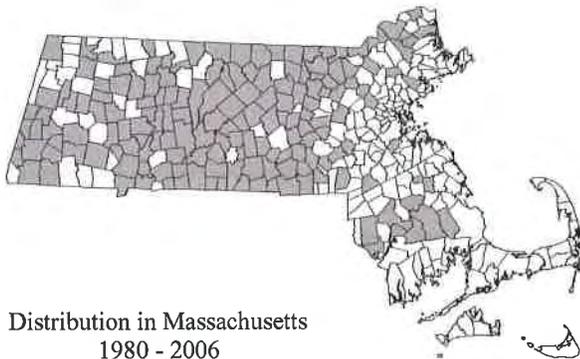
DESCRIPTION: The Wood Turtle is a medium-sized turtle (14-20 cm; 5.5-8 in) that can be recognized by its sculpted shell and orange coloration on the legs and neck. The carapace (upper shell) is rough and each scale (scute) rises upwards in an irregularly shaped pyramid of grooves and ridges. The carapace is tan, grayish-brown or brown, has a mid-line ridge (keel) and often has a pattern of black or yellow lines on the larger scutes. The plastron (lower shell) is yellow with oblong dark patches on the outer, posterior corner of each scute. The head is black, but may be speckled with faint yellow spots. The legs, neck, and chin can have orange to reddish coloration. Males have a concave plastron, thick tail, long front claws, and a wider and more robust head than females. Hatchlings have a dull-colored shell that is broad and low and a tail that is almost as long as their carapace, and they lack orange coloration on the neck and legs.



Photo by Mike Jones

SIMILAR SPECIES: The habitat of the Eastern Box Turtle (*Terrapene carolina*) and the Blanding's Turtle (*Emydoidea blandingii*) may overlap that of the Wood Turtle, but neither has the Wood Turtle's pyramidal shell segments. Unlike the Wood Turtle, the Box and Blanding's turtles have hinged plastrons into which they can withdraw or partially withdraw if threatened. The Northern Diamond-backed Terrapin (*Malaclemys terrapin*) has a shell similar to that of the Wood Turtle. However, its skin is grey and it lives only near brackish water, which the Wood Turtle avoids.

RANGE: The Wood Turtle can be found throughout New England, north to Nova Scotia, west to eastern Minnesota, and south to northern Virginia. The Wood Turtle appears to be widespread in Massachusetts. However, it should be kept in mind that little is known about the status of local populations associated with the majority of these sightings. Most of the towns have fewer than 5 known occurrences.



Distribution in Massachusetts
1980 - 2006
Based on records in
Natural Heritage Database

A Species of Greatest Conservation Need in the Massachusetts State Wildlife Action Plan

Massachusetts Division of Fisheries & Wildlife

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HABITAT IN MASSACHUSETTS: The preferred habitat of the Wood Turtle is riparian areas. Slower moving mid-sized streams are favored, with sandy bottoms and heavily vegetated stream banks. The stream bottom and muddy banks provide hibernating sites for overwintering, and open areas with sand or gravel substrate near the streams edge are used for nesting. Wood Turtles spend most of the spring and summer in mixed or deciduous forests, fields, hay fields, and riparian wetlands, including wet meadows, bogs, and beaver ponds. Then they return to the streams in late summer or early fall to their favored overwintering location.

LIFE CYCLE & BEHAVIOR: The Wood Turtle typically spends the winter in flowing rivers and perennial streams. Full-time submersion in the water begins in November, once freezing occurs regularly overnight, and continues until temperatures begin to increase in spring. It may hibernate alone or in large groups in community burrows in muddy banks, stream bottoms, deep pools, instream woody debris, and abandoned muskrat burrows. The Wood Turtle may make underwater movements in the stream during the winter; however, extended periods of activity and emergence from the water do not occur until mid-March or early April.

In spring, Wood Turtles are active during the day and are usually encountered within a few hundred meters from the stream banks. They have relatively linear home ranges that can be a half mile in length in Massachusetts (M. Jones, unpubl data). They will use emergent logs or grassy, sandy, and muddy banks to soak up the spring sun. During the summer months they feed in early successional fields, hayfields, and forests.

Wood Turtles are opportunistic omnivores; their diet consists of both plant and animal matter that is consumed on land and in the water. The Wood Turtle occasionally exhibits an unusual feeding behavior referred to as “stomping.” In its search for food, this species will stomp on the ground alternating its front feet, creating vibrations in the ground resembling rainfall. Earthworms respond, rising to the ground’s surface to keep from drowning. Instead of rain, the earthworm is met by the Wood Turtle, and is promptly devoured.

Although the peaks in mating activity occur in the spring and fall, Wood Turtles are known to mate opportunistically throughout their activity period. Males have been observed exhibiting aggressive behavior such as chasing, biting, and butting both during the mating season and at other times. A courtship ritual “dance” typically takes place at the edge of a stream or brook for several hours prior to mating. The dance involves the male and female approaching each other slowly with necks extended and their heads up. Before they actually touch noses, they lower their heads, and swing them from side to side. Copulation usually takes place in the water. Courting adults may produce a very subdued whistle that is rarely heard by observers. A female may mate with multiple individuals over the course of the active season.

In Massachusetts, most nesting occurs over a four-week period, primarily in June. Nesting sites may be a limited resource for Wood Turtles. Females are known to travel long distances in search of appropriate nesting habitat (average straight line distance of 244 m/800 ft). Once they have arrived at a suitable nesting area, there may be multiple nesting attempts or false nests that occur over the course of several days, prior to laying eggs. They abort attempts when disturbed (e.g., by human activities) early in the process or they hit a large rock while digging. Female Wood Turtles lay one clutch a year and often congregate in a good nesting area. Clutch size in Massachusetts averages 7 eggs (Jones, 2004, pers. comm.). Hatchling emergence occurs from August through September. The life span of the adult Wood Turtle is easily 46 years and may reach as much as 100 years.

THREATS: Hatchling and juvenile survival is very low and the time to sexual maturity is long. These characteristics are compensated by adults living a long time and reproducing for many years. Adult survivorship must be very high to sustain a viable population. These characteristics make Wood Turtles vulnerable to human disturbances. Population declines of Wood Turtles have likely been caused by hay-mowing operations, development of wooded stream banks, roadway casualties, incidental collection of specimens for pets, unnaturally inflated rates of predation in suburban and urban areas, forestry and agricultural activities, and pollution of streams.

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MANAGEMENT RECOMMENDATIONS: Using a turtle habitat model developed by UMass and NHESP records, Wood Turtle habitat needs to be assessed and prioritized for protection based on the extent, quality, and juxtaposition of habitats and their predicted ability to support self-sustaining populations of Wood Turtles. Other considerations should include the size and lack of fragmentation of both riverine and upland habitats and proximity and connectivity to other relatively unfragmented habitats, especially within existing protected open space. This information will be used to direct land acquisition and to target areas for Conservation Restrictions (CRs), Agricultural Preservation Restrictions (APRs), and Landowner Incentive Program (LIP) projects.

Mowing and nest site creation guidelines developed by NHESP should be followed on properties managed for Wood Turtles. These practices will be most practical on state-owned conservation lands. However, these materials are also available to town land managers and private landowners.

Alternative wildlife corridor structures should be considered at strategic sites on existing roads. In particular, appropriate wildlife corridor structures should be considered for bridge and culvert upgrades and road-widening projects within or near Wood Turtle habitat. Efforts should be made to inform local regulatory agencies of key locations where these measures would be most effective for Wood Turtle conservation.

Educational materials are being developed and distributed to the public in reference to the detrimental effects of keeping our native Wood Turtles as pets (an illegal activity that reduces reproduction in the population), releasing pet store turtles (which could spread disease), leaving cats and dogs outdoors unattended (particularly during the nesting season), mowing of fields and shrubby areas, feeding suburban wildlife (which increases the number of natural predators on turtles), and driving ATVs in nesting areas from June-October. People should be encouraged, when safe to do so, to help Wood Turtles cross roads (always in the direction the animal was heading); however, turtles should never be transported to “better” locations. They will naturally want to return to their original location and likely need to traverse roads to do so.

Increased law enforcement is needed to protect our wild turtles, particularly during the nesting season when poaching is most frequent and ATV use is common and most damaging.

Forestry Conservation Management Practices should be applied on state and private lands to avoid direct turtle mortality. Seasonal timber harvesting restrictions apply to Wood Turtle habitat and to upland habitat that occurs up to 600 ft (183 m) beyond the stream edge. Motorized vehicle access to timber harvesting sites in Wood Turtle habitat is restricted to times when the Wood Turtle is overwintering. Bridges should be laid down across streams prior to any motorized equipment crossing the stream in order to maintain the structural integrity of overwintering sites.

Finally, a statewide monitoring program is needed to track long-term population trends in Wood Turtles.

ACTIVE PERIOD

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

REFERENCES:

Compton, B. 2006. Personal Communication. University of Massachusetts, Dept of Natural Resources Conservation, Amherst, MA

DeGraaf, R.M., and D.D. Rudis. 1983. *Amphibians and Reptiles of New England*. Amherst, Massachusetts: The University of Massachusetts.

Ernst, C.H., J.E. Lovich, and R.W. Barbour. 1994. *Turtles of the United States and Canada*. Smithsonian Institution Press, Washington and London.

Jones, M. 2006. Personal Communication. University of Massachusetts, Dept. of Natural Resources Conservation, Amherst, MA.

Kaufmann, J.H. 1986. Stomping for earthworms by Wood Turtles, *Clemmys insculpta*: A newly discovered foraging technique. *Copeia* 1986(4), pp.1001-1004.

Updated 2015

A Species of Greatest Conservation Need in the Massachusetts State Wildlife Action Plan

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Giant St. John's-wort *Hypericum ascyron* L.

State Status: Endangered
Federal Status: None

General description: Giant St. John's-wort (*Hypericum ascyron*) is a tall herbaceous perennial wildflower of the St. John's-wort family (Clusiaceae) that usually grows in alluvial soils within floodplain habitats. Plants are robust with multiple branches arising from stems that can grow up to 2 meters in height. The sessile leaves are arranged opposite one another on stems. The large, conspicuous yellow flowers and the large conical-shaped fruits are the plant's most recognizable features.

Aids to identification: Giant St. John's-wort emerges on stout stems give rise to compound branches. The sessile opposite leaves are lanceolate to elliptic in shape, 4 to 10 cm (~ 1.5 to 4 in.) long, and clasping at the base. The leaves and stems are often glaucous (covered with a whitish waxy bloom). The showy yellow flowers are borne on long pedicels at the ends of branches, and have five large petals (25–30 mm long), five smaller sepals, and a dense cluster of stamens united into five basal sets. The flowers have five united, spreading styles at the apex of fruit. As the flower matures the petals curl lengthwise into one another. The fruit is a distinctive pyramid-shaped capsule (15–30 mm tall) with five chambers (locules). Giant St. John's-wort flowers in midsummer and fruits late summer into autumn.

Similar species: When Giant St. John's-wort is found in flower in the appropriate habitat, the likelihood of confusing this plant with another species in its genus is small. However, if the plant is vegetative it is possible that it could be confused with plants with similar. One possibility is Indian Hemp (*Apocynum cannabinum*), though the opposite leaves of this plant are short-stalked and mucronate (tipped with a short, sharp, abrupt point), and its stems and leaves contain a milky sap.



Giant St. John's-wort: close up flower and fruit, and growth form in habitat. Photos: Marybeth Hanley.

Habitat in Massachusetts: In Massachusetts, Giant St. John's-wort occupies habitats that are proximate to flowing water, including riverside ledges, cobble and gravel river shores, wet meadows, fields, moist thickets of streams and rivers, and power line rights-of-way. Populations tend to favor open areas. Associated species include a mix of herbaceous plants and vines such as Late Goldenrod (*Solidago gigantea*),

Rough-stemmed Goldenrod (*Solidago rugosa*), Stinging Nettle (*Urtica dioica*), Calico Aster (*Symphotrichum lateriflorum*), Blue Heart-leaf Aster (*Symphotrichum cordifolium*) and Wild Morning-glory (*Calystegia sepium*), Groundnut (*Apios americana*), and Wild Cucumber (*Echinocystis lobata*). Possible woody associates include Silver Maple (*Acer saccharinum*), Green Ash (*Fraxinus pennsylvanica*), and Silky Dogwood (*Swida amomum*). The non-native herbaceous grass Reed Canary Grass (*Phalaris arundinacea*), an invasive, is also sometimes associated with Giant St. John's-wort.

Flowering time in Massachusetts

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

Fruiting time in Massachusetts

Jan	Feb	Ma	Apr	Ma	Jun	Jul	Aug	Sep	Oct	Nov	Dec



Distribution in Massachusetts
1985 - 2010
Based on records in the
Natural Heritage Database

Range: Giant St. John's-wort is known from eastern-central Canada (Ontario and Quebec) and possibly Manitoba, most of the New England States, south to West Virginia and into the Midwest as far west as Nebraska and Kansas. This species is sporadic and rare in all New England states.

Population status in Massachusetts: Giant St. John's-wort is listed under the Massachusetts Endangered Species Act (MESA) as Endangered. All listed species under MESA are protected from killing, collecting, possessing, or sale and from activities that would destroy habitat and thus directly or indirectly cause mortality or disrupt critical behaviors. This species is currently known from Franklin and Berkshire County, and is historically known from Hampden and Hampshire Counties.

Management recommendations: The exact management needs of Giant St. John's-wort are not known. As with all species, however, maintaining habitat quality is essential. Changes in flooding regime due to anthropogenic land use could elicit changes in habitat quality (e.g., less flooding could allow colonization by competing and over-shading woody plants). Giant St. John's-wort habitat should be monitored for invasive exotic species. Invasive plants can out-compete native plants for nutrients and block light, excluding them over time. Exotic species of concern in flood plain communities include Common Reed (*Phragmites australis* ssp. *australis*), Garlic Mustard (*Alliaria petiolata*), Purple Loosestrife (*Lythrum salicaria*), Moneywort (*Lysimachia nummularia*), Reed Canary Grass (*Phalaris arundinacea*), and Japanese Knotweed (*Fallopia japonica*). If exotic plants are invading Giant St. John's-wort's habitat, a plan for control should be constructed. All active management within the habitat of a rare plant population (including invasive species removal) is subject to review under MESA, and should be planned in close consultation with the Massachusetts Natural Heritage & Endangered Species Program.

Updated 2010

Partially funded through the Natural Resource Damage Assessment and Restoration Programs of the MA Executive Office of Energy & Environmental Affairs and the U.S. Fish and Wildlife Service

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Adder's Tongue Fern

Ophioglossum pusillum Raf.

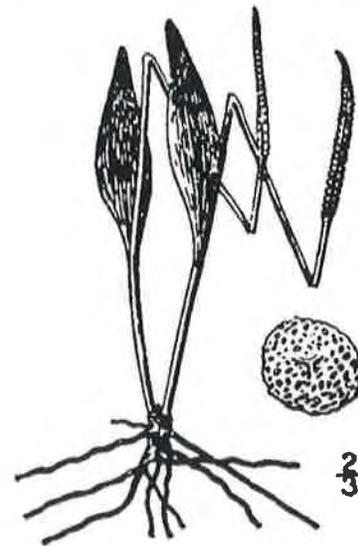
State Status: Threatened

Federal Status: None

Description: Adder's-tongue is a small terrestrial fern, up to 30 cm (12 in) high, consisting of a single fleshy green stalk (stipe) bearing a simple leaf and a fertile spike. The stipe arises from fleshy, cod-like rhizomes and roots. About midway up the stipe is the pale green leaf, approximately 15 cm (6 in), narrowly oval to oblong. In var. *pseudopodium* (false foot), the widespread form, the blade gradually tapers for about 1/3 to 2/3 of its length to a narrow, 1-2 cm base that continues to run down the lower stipe. There is a finely indented network of interconnecting veins. The stipe extends well beyond the leaf blade and is terminated by a short, pale green, narrow fertile spike from 1-4 cm long and up to 5 mm wide, which consists of 2 tightly packed rows of rounded sporangia (spore cases) on the margins of the spike axis. There can be a large variation in the size, shape, and position of the blade, as well as of the fertile spike; occurrences of two fronds (leaves) per rootstalk have been observed. The plant appears anytime after early June.

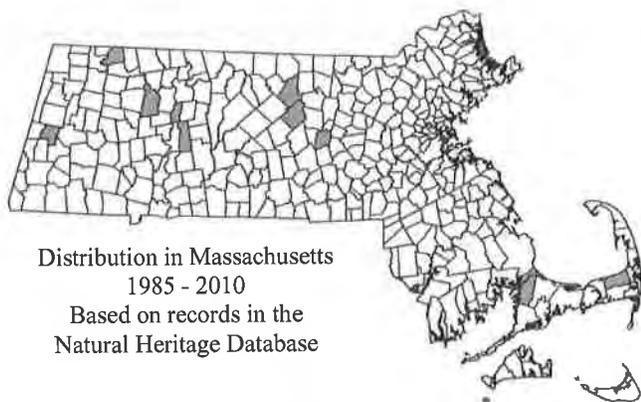
Similar Species: No other fern looks like the Adder's-tongue. Its closest relatives, the Grape Ferns (*Botrychium*) have dissected or lobed leaves. Several orchids and lilies may have similarly shaped fleshy basal leaves, such that non-flowering or juvenile individuals may at first glance be mistaken for Adder's-tongue Fern. However, all have parallel-veined leaves.

Habitat in Massachusetts: Boggy meadows, acidic fens (sphagnum areas with seeping groundwater), borders of marshes, wet fields, and moist woodland clearings provide suitable open and sunny habitat for Adder's-tongue Fern. Vegetation in these habitats is varied, composed predominantly of common grasses, bulrushes (*Scirpus*), sedges (*Carex*), and broadleaved herbs including Ragged, Small Purple Fringed, and White Fringed Orchis (*Platanthera lacera*, *P. psycodes*, and *P. blephariglottis*), and Swamp Milkweed (*Asclepias incarnata*). No common associate or indicator species particularly point to the presence of Adder's-tongue Fern.



Northern Adder's tongue: Photo: B. Legler, USDA Forest Service. Drawing: USDA-NRCS PLANTS Database / Britton, N.L., and A. Brown. 1913. An illustrated flora of the northern United States, Canada and the British Possessions. 3 vols. Charles Scribner's Sons, New York. Vol. 1: 2.

Range: Adder's-tongue Fern (var. pseudopodium) is a very widespread, primarily northern fern occurring across North America from Prince Edward Island and southern Quebec to Washington; south to Virginia and west to Indiana, Nebraska, Arizona and Mexico.



Population Status: Adder's-tongue Fern s listed as Threatened under the Massachusetts Endangered Species Act. All listed species are protected from killing, collecting, possessing, or sale and from activities that would destroy habitat and thus directly or indirectly cause mortality or disrupt critical behaviors. It was once a widespread species in Massachusetts during the century of extensive agricultural clearing. Records prior to 1978 are from over 90 locations! At present there are only 8 known occurrences. This elusive and easily overlooked species makes it difficult to determine whether individual populations are in decline or stable. Possibly, undiscovered populations may still exist in Massachusetts, but the increasing rarity of appropriate open habitat appears to be a major factor in its decline in this state as well as most of its range. It is listed as rare in 20 states, including most of New England (except Vermont) and several provinces of Canada.. NatureServe ranks it as G5-Secure globally because of the widespread distribution.

Management Recommendations: Adder's-tongue Fern appears to need the increased light from canopy opening or forest clearing. Reports from most of the current sites mention threats from succession. Invasive species are impinging on several of the populations; removal of invasive plants would leave space and less shade for the fern.

Several of the sites are mowed fields, recommendations in those cases are for singly yearly mowings to take place in the spring to allow the plant to grow and produce spores. All active management of rare plant populations (including invasive species removal) is subject to review under the Massachusetts Endangered Species Act, and should be planned in close consultation with the Massachusetts Natural Heritage and Endangered Species Program.

For More Information See:

NatureServe. 2010. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed: December 13, 2010).

USDA, NRCS. 2010. The PLANTS Database (<http://plants.usda.gov>, 13 December 2010). National Plant Data Center, Baton Rouge, LA 70874-4490 USA.

1990
Updated 2010



Natural Heritage & Endangered Species Program

Massachusetts Division of Fisheries & Wildlife

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Hairy Beardtongue

Penstemon hirsutus (L.) Willd.

State Status: Threatened

Federal Status: None

Description: Hairy Beardtongue is a light green, erect, herbaceous perennial in the Snapdragon or Figwort family (Scrophulariaceae). The stem is hairy or “hirsute” – hence, the species name *hirsutus*. Hairy Beardtongue’s stem grows from 4 to 8 dm (1–3 ft.) high and is covered with long, whitish hairs. Its stem-borne leaves are 5 to 12.5 cm (2–5 in.) long, oblong to lanceolate, opposite, stalkless, and finely toothed. A rosette of stalked leaves surrounds the base of the stem. The dull pink, purplish or violet flowers have petals that are partially fused into a narrow, five-lobed floral tube with two upper lobes and three lower lobes. The corolla is about 2.5 cm (1 in.) long and ends in white lips. Hairy Beardtongue’s flowers occur in loose, stalked cluster. The fruit is an 8 to 9 mm long capsule (a dry fruit derived from a compound pistil that contains many seeds). At maturity, this capsule is more than half covered by the five-parted calyx. Like all members of the genus *Penstemon*, Hairy Beardtongue has five stamens one of which is sterile and topped by a tuft of hairs in place of an anther. Hairy Beardtongue blooms from Late May to early July.

Similar Species: Several non-native species of *Penstemon* occur in Massachusetts and could be confused with Hairy Beardtongue. Foxglove Beardtongue (*P. digitalis*), unlike Hairy Beardtongue, has a smooth stem. Tube Beardtongue (*P. tubiflorus*) has both a smooth stem and white flowers. Pale Beardtongue (*P. pallidus*) has leaves that are hairy on both surfaces, while Hairy Beardtongue may have a few hairs only on the midvein on the leaf under-side.

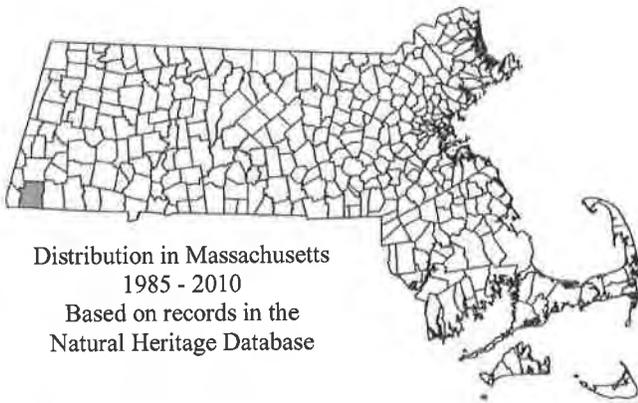
HABITAT IN MASSACHUSETTS: Hairy Beardtongue is a plant of dry or rocky ground in woods, fields, and on hillsides. In Massachusetts, current habitats (1985–2010) include a dry, open but shaded area near limestone quarries; dry, dolomitic lower slopes and walls of two abandoned quarries; and a dolomitic limestone cobble rising abruptly from a river floodplain.



Top: Hairy Beardtongue’s light purple flowers. Photo: Bruce Sorrie, NHESP. Bottom: Stem with opposite, stalkless leaves and hairy stem. Photo by and courtesy of Pamela Weatherbee.

Historical habitats in Massachusetts (unverified since 1978) include dry slopes, dry open woods, and dry roadside banks. Associated plant species include various junipers (*Juniperus* spp.), violets (*Viola* spp.) and dogwoods (*Cornus* spp.). Yellow Oak (*Quercus muehlenbergii*) and Narrow-leaved Vervain (*Verbena simplex*) are two rare Massachusetts species that have been found with Hairy Beardtongue.

Range: The range of Hairy Beardtongue extends throughout northeastern North America from Quebec and Maine to Wisconsin, and south to Virginia and Kentucky.



Population Status: There are four current locations (1985-2010) in one town in Berkshire County and the species was known historically (unverified since 1978) from Franklin, Hampshire, and Worcester Counties. Three of the current stations have fewer than 15 plants; at the other site numbers vary from year to year but are usually in the tens to several hundred plants. Hairy Beardtongue is also considered rare in Vermont, Quebec, Wisconsin, and Virginia; it was present historically in Delaware. NatureServe ranks Hairy Beardtongue as globally Apparently Secure, G4.

Hairy Beardtongue is listed under the Massachusetts Endangered Species Act as Endangered. All listed species are protected from killing, collecting, possessing, or sale and from activities that would destroy habitat and thus directly or indirectly cause mortality or disrupt critical behaviors.

Management and Threats: Threats include succession and lack of disturbance to rocky slopes and ledges. Two of the current sites are old disturbed areas with many shrubby and non-native invasive species. Populations should be monitored for invasions of exotic plants; if exotic plants are crowding and out-competing Hairy Beardtongue, a plan should be developed, in consultation with the Massachusetts Natural Heritage & Endangered Species Program, to remove the invaders.

All active management of rare plant populations (including invasive species removal) is subject to review under the Massachusetts Endangered Species Act, and should be planned in close consultation with the Massachusetts Natural Heritage & Endangered Species Program.

FOR MORE INFORMATION:

NatureServe. 2010. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed: December 17, 2010).

USDA, NRCS. 2010. The PLANTS Database (<http://plants.usda.gov>, 17 December 2010). National Plant Data Center, Baton Rouge, LA



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Massachusetts Division of Fisheries & Wildlife

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Leafy White Orchis *Platanthera dilatata* (Pursh) Lindl. ex Beck

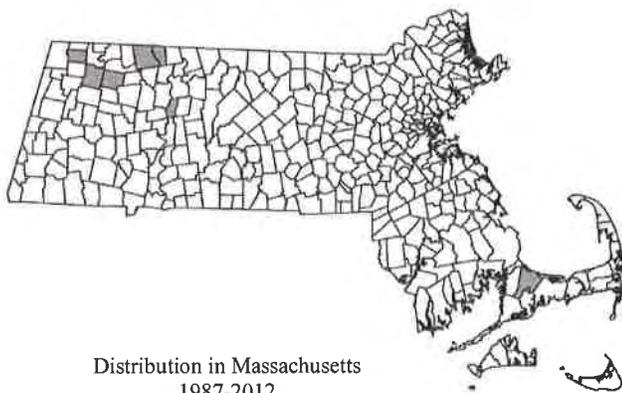
State Status: **Threatened**
Federal Status: **None**

Description: Leafy White Orchis, or Bog Candles, is a tall, leafy-stemmed, stout or slender perennial in the Orchid family (Orchidaceae) that rises from fleshy roots and ends in a slender spike of white flowers. It is erect, hairless, and reaches up to 1 m (3 1/3 ft.) in height. The lanceolate leaves number about twelve and become progressively smaller toward the top of the plant. Leafy White Orchis's small flowers are generally bright white and are arranged in a 1-3 dm (1/3 to 1 ft.) long spike. Their delightful fragrance has been likened to cloves. The 5-10 mm (0.2 - 0.4 in.) long lip, or lowermost petal, widens near the base and has five to seven prominent veins. The spur (a hollow extension of the flower) is about as long as the lip. Leafy White Orchis's fruit is a 12 x 6 mm (0.47 - 0.24 in.) ellipsoid capsule (a fruit that is formed from a compound pistil and that contains many seeds). In Massachusetts, the plant blooms from mid-June through July.

Range: The North American range of Leafy White Orchis has been documented as extending across Labrador to Alaska and south to New Jersey, Wisconsin, South Dakota, New Mexico, and California.



Photo: Jennifer Garrett, NHESP



Distribution in Massachusetts
1987-2012

Based on records in Natural Heritage Database

Similar Species: The White-fringed Orchis (*Platanthera blephariglottis*) and the Clubspur Orchis (*Platanthera clavellata*), two white to whitish-flowered orchids of somewhat similar habitats, could be confused with Leafy White Orchis. However, in our area, the lip of White-fringed Orchis is deeply fringed. The Clubspur Orchis is both shorter, 1-4 dm (1/3 to 1 1/3 ft.), than the Leafy White Orchis and, generally, has only one well-developed leaf on its stem. Finally, Northern Green Orchis (*Platanthera hyperborea*) is extremely hard to distinguish from Leafy White Orchis and often hybridizes with it. In contrast to Leafy White Orchis, it has green or greenish-white flowers. (Some authorities consider *Platanthera hyperborea* to be a green-flowered form of *Platanthera dilatata*.)

Habitat in Massachusetts: Leafy White Orchis is a plant of sunny, wet areas, including bogs, seepage slopes and wet woods, especially where cold water surfaces to form springs. It prefers non-acid soil conditions. In Massachusetts, habitats include a cold, muddy and springy seep; a wet spot near a road; an area of sphagnum and rich muck, with springs and streamlets; a wet, sedgey open area; and an open, springy seep adjacent to a tributary. Plant species associated with Leafy White Orchis include sphagnum moss (*Sphagnum* spp.), various horsetails (*Equisetum* spp.), willows (*Salix* spp.), alders (*Alnus* spp.), Marsh Fern (*Thelypteris palustris*), Royal Fern (*Osmunda regalis*), and Yellow Sedge (*Carex flava*).

Population Status: Leafy White Orchis is currently listed as Threatened in Massachusetts. There are nine current stations (discovered or relocated since 1984) in seven towns and 15 historical stations (unverified since 1984) in 14 towns. Reasons for the plant's rarity in Massachusetts include loss of habitat, due both to development and forest succession, and scarcity of suitable habitat. Leafy White Orchis is also considered rare in Illinois, Indiana, New Mexico, Pennsylvania, and Wisconsin. It was present historically in Connecticut. The species is quite common in the far North, but becomes rare in the southern portions of its range.

Updated March 2012

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Bristly Black Currant *Ribes lacustre* (Pers.) Poir.

State Status: **Special Concern**
Federal Status: **None**

DESCRIPTION: Bristly Black Currant (*Ribes lacustre*) is a low, bristly to spiny, straggling shrub measuring up to 1 meter (3 feet) in height. Its leaves are alternate and are deeply cut with 3 to 5 lobes. Flowers are yellowish-green to pinkish, have fan-shaped to semicircular petal lobes, and are about 1/2 cm (less than 0.25 inches) in diameter. It is a northern plant of cool, moist forest slopes, usually in dappled shade.

AIDS TO IDENTIFICATION: The Bristly Black Currant is one of several members of the genus *Ribes* found in Massachusetts. A combination of characters must be used to distinguish it: 1) It has a “skunky” odor when the leaves, twigs, and fruits are crushed; 2) Its flowers and fruits are arranged in a raceme (which has a central stalk) which usually bears four or more flowers; 3) It has stipitate (stalked) glands on the ovaries of the flowers, and later on the (purple to black) fruits, giving them a “bristly” appearance; and 4) Its stems are armed with thin, bristly prickles, as its common name implies.



Ribes lacustre

Holmgren, N. 1998. *The Illustrated Companion to Gleason and Cronquist's Manual*. New York Botanical Garden.



Distribution in Massachusetts
1985 - 2011
Based on records in the
Natural Heritage Database

SIMILAR SPECIES: It can be difficult to distinguish between species in the genus *Ribes* in the vegetative state; flowers and fruits make identification much simpler. Swamp Red Currant (*R. triste*) co-occurs with the Bristly Black Currant at a few streamside locations; however, it has smooth, red fruits and unarmed stems. Smooth Gooseberry (*R. hirtellum*) is similar to Bristly Black Currant; however, the broken twigs and fruit do not have a foul odor, the fruits are not bristly, and leaves are never as deeply cut as those of *R. lacustre*. Skunk Currant (*R. glandulosum*) may grow in the same places as Bristly Black Currant, but has spineless stems.

RANGE: Bristly Black Currant is found from Labrador to Alaska, south to the mountains of Pennsylvania, West Virginia, Virginia, Minnesota, and California.

A Species of Greatest Conservation Need in the Massachusetts State Wildlife Action Plan

Massachusetts Division of Fisheries & Wildlife

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HABITAT: Bristly Black Currant is usually found in cool ravines and borders of swamps in upland regions of Massachusetts. It often occurs close to mountain streams, seepy ledges, or in steep rocky ravines, but it is also found in high-elevation swamps. The shrub prefers shaded to filtered light and wet soil, although one occurrence is in a mesic-dry region. It is found in association with northern hardwoods-hemlock forest. Surrounding vegetation may include Yellow Birch (*Betula alleghaniensis*), Red Spruce (*Picea rubens*), American Mountain-ash (*Sorbus americana*), Striped Maple (*Acer pensylvanicum*), and Hobblebush (*Viburnum lantanoides*). Associated rare species are Braun’s Holly Fern (*Polystichum braunii*) and Hemlock Parsley (*Conioselinum chinense*).

POPULATION STATUS IN MASSACHUSETTS:

The Bristly Black Currant is a Species of Special Concern in Massachusetts. It is rare here in the Commonwealth because it is a cool-climate plant with limited appropriate areas of moist, montane habitat. There are 11 current populations, all concentrated in northwestern Massachusetts in areas of relatively high elevation or high latitude, or both. As with all species listed in Massachusetts, individuals of the species are protected from take (picking, collecting, killing) or sale under the Massachusetts Endangered Species Act.

THREATS: Drastic alterations to the habitat supporting the Bristly Black Currant could threaten populations. Large-scale logging, conversion of forest to developed land use, or alterations to stream or swamp hydrology could negatively impact habitat conditions for this species by altering its cool, moist, and shaded character. The invasive species Multiflora Rosa (*Rosa multiflora*) and barberry (*Berberis* spp.) have been documented at one station, and may out-compete the Bristly Black Currant. Direct impact to individual plants of Bristly Black Currant could occur from off-trail hiker trampling or trail-widening activities.

MANAGEMENT RECOMMENDATIONS: As with most rare plants, exact needs for management of Bristly Black Currant are not known. The following advice comes from observations of the populations in Massachusetts. Excessive off-trail foot traffic on steep, unstable slopes may cause erosion, or may damage populations through direct trampling; hikers should be strongly encouraged to stay on trails near populations of Bristly Black Currant. Any future trail construction should take into account locations of this rare species to avoid direct impacts. Forestry activities should be avoided or very carefully planned and executed in areas near Bristly Black Currant, since drastic canopy opening could alter the cool, moist nature of its habitat and open areas up to early successional competitors. Alterations to stream and swamp hydrology should be carefully avoided, since this species usually does not tolerate dry conditions. Stations for Bristly Black Currant should be monitored for invasive exotic species such as barberry (*Berberis* spp.) which can also thrive in cool, moist forest conditions; if found, invasive species should be controlled.

Flowers or Fruit Present

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

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**Canadian Sanicle
Sanicula canadensis L.**

State Status: **Threatened**
Federal Status: **None**

DESCRIPTION: Canadian Sanicle is a fibrous-rooted, herbaceous biennial in the Parsley family (Apiaceae). The plants grow up to 7.5 dm (29 in.) in height. Longer branches fork two to three times. The doubly serrate, palmately compound (with leaflets radiating out from a central point) leaves are three-parted, but may appear five-parted due to deep lobing on the two lateral leaflets. Inconspicuous greenish or whitish flowers are arranged in umbels (rather flat-topped groups of flowers in which all the flowers arise from a single point) with rays of differing lengths. The small, approximately globe-shaped fruits are borne in groups of three on 1-1.5 mm long pedicels. The styles (usually slender, stalk-like portions of the pistils) are shorter than the hooked bristles that cover the fruit, suggesting the plant's alternative common name of Short-styled Snakeroot. The plant's anthers (uppermost portions of the stamens) are white. Canadian Sanicle fruits from June through September.



Canadian Sanicle or Short-styled Snakeroot. Photo: B.A. Sorrie, NHESP. Illustration: USDA-NRCS PLANTS Database / Britton, N.L., and A. Brown. 1913. An illustrated flora of the northern United States, Canada and the British Possessions. 3 vols. Charles Scribner's Sons, New York. Vol. 2: 624.



Distribution in Massachusetts
1985 - 2010
Based on records in the
Natural Heritage Database

SIMILAR SPECIES: Similar species include the other snakeroots that occur in our area: Black Snakeroot (*Sanicula marilandica*), Clustered Snakeroot (*S. odorata*), and Trefoil Sanicle (*S. trifoliata*). Clustered Snakeroot differs in its bright yellow anthers, yellowish-green flowers, and the fact that its style exceeds its fruit bristles in length. Black Snakeroot also has styles that are longer than the fruit bristles. The pistillate, or female, flowers of Trefoil Sanicle differ from those of Canadian Snakeroot in having no stalks. In addition, the sepals of Trefoil Sanicle form a conspicuous beak at the top of the fruit.

HABITAT IN MASSACHUSETTS: Canadian Sanicle is a plant of moist, open woods and openings in them such as trail edges and tree falls. Sites in Massachusetts are nutrient rich, somewhat wet areas; sites include low knolls and mesic slopes in and along paths through extensive red maple swamp, a seepy area wet in winter-

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spring and mesic in summer to fall, and rich northern hardwood forests. The forests it grows in have canopies of northern and central hardwoods, often mixed, and usually mixed with successional species. The trees at the Canadian Sanicle sites include most hardwoods in the state, reflecting the wide distribution of the species and a predilection for second-growth forests in fairly moist, rich conditions: Sugar and Red Maple (*Acer saccharum* and *A. rubrum*), oaks (*Quercus* spp.), White Ash (*Fraxinus americana*), Tulip Tree (*Liriodendron tulipifera*), Sassafras (*Sassafras albidum*), various hickories (*Carya* spp.), Beech (*Fagus grandifolia*), White Pine (*Pinus strobus*) and birches (*Betula alleghaniensis* and *B. papyrifera*). A subcanopy of Hop-hornbeam (*Ostrya virginiana*), Hornbeam (*Carpinus caroliniana*) and/or Witch Hazel (*Hamamelis virginiana*) is common.

The shrub layer tends to be sparse although it may have dense patches of Spicebush (*Lindera benzoin*), Highbush Blueberry (*Vaccinium corymbosum*), Northern Arrow-wood (*Viburnum dentatum* var. *lucidum*), Winterberry (*Ilex* spp.), or elderberries (*Sambucus canadensis* and *S. racemosa* ssp.)

The herbaceous layer is rich and varied; many of the species are known to grow in nutrient-rich moist conditions in northern hardwoods forests and others are more widespread. Included at many sites are Wild Geranium (*Geranium maculatum*), Indian Cucumber Root (*Medeola virginiana*), White Avena (*Geum canadense*), Hog Peanut (*Amphicarpaea bracteata*), Jack-in-the-Pulpit (*Arisaema triphyllum*), Wild Sarsaparilla (*Aralia nudicaulis*), Wild Ginger (*Asarum canadense*), Virginia Waterleaf (*Hydrophyllum virginianum*), Christmas Fern (*Polystichum acrostichoides*), Elliptic Shinleaf (*Pyrola elliptica*), Poison Ivy (*Toxicodendron radicans*), Virginia Creeper (*Parthenocissus quinquefolia*), Dewberries (*Rubus* spp.), and many members of the Asteraceae.

RANGE: The range of Canadian Sanicle is from southern Ontario, New Hampshire and Massachusetts to southern Minnesota and South Dakota, and south to Florida and Texas. NatureServe ranks it as Globally Secure. Canadian Sanicle is considered rare in New Hampshire, Vermont, and Quebec.

POPULATION STATUS IN MASSACHUSETTS:

Canadian Sanicle is listed under the Massachusetts Endangered Species Act as Threatened. All listed species are protected from killing, collecting, possessing, or sale and from activities that would destroy habitat and thus directly or indirectly cause mortality or disrupt critical behaviors. It is currently known from Berkshire, Dukes, Bristol, Nantucket and Plymouth Counties and is historically known from Franklin County, as well as Bristol, Plymouth, Nantucket and Dukes Counties. There are eleven current sites in ten towns and nine historical locations (unverified since 1985) in the Commonwealth.

MANAGEMENT AND THREATS: Several of the populations occur with non-native invasive associates including Common Buckthorn (*Rhamnus cathartica*), Multiflora Rose (*Rosa multiflora*), Asian Bittersweet (*Celastrus orbiculata*), Japanese Barberry (*Berberis thunbergii*) and shrub honeysuckles (*Lonicera* spp.). Sites should be monitored for invasions of exotic plants; if exotic plants are crowding and out-competing this species, a plan should be developed, in consultation with the Massachusetts Natural Heritage & Endangered Species Program, to remove the invaders. All active management of rare plant populations (including invasive species removal) is subject to review under the Massachusetts Endangered Species Act, and should be planned in close consultation with the Massachusetts Natural Heritage & Endangered Species Program.

REFERENCES:

- NatureServe. 2010. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed: January 27, 2011).
- USDA, NRCS. 2011. The PLANTS Database (<http://plants.usda.gov>, 27 January 2011). National Plant Data Center, Baton Rouge, LA 70874-4490 USA. http://plants.usda.gov/java/profile?symbol=SACA15&photoID=saca15_001_avd.tif

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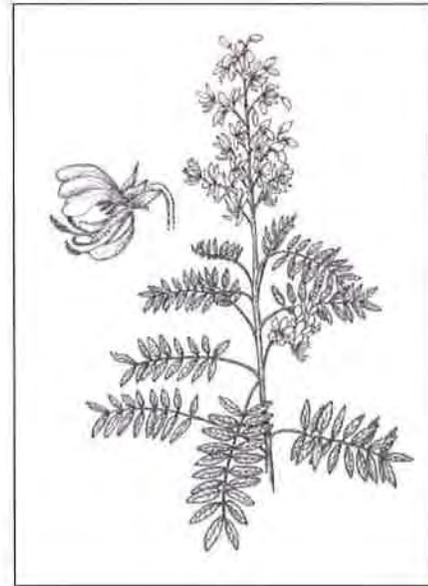
Wild Senna *Senna hebecarpa* (Fern.) Irwin & Barneby

State Status: **Endangered**
Federal Status: **None**

DESCRIPTION: Wild Senna is a robust, herbaceous perennial in the Pea family (Fabaceae), growing 0.9 to 2 m (3–6.5 ft.) tall. The compound leaves have 6 to 10 pairs of simple (*i.e.*, without lobes or teeth) leaflets. Racemes of showy, five-petaled, yellow flowers about 2 cm across are present from late July through August and occasionally into mid-September. The fruits are flattened, pea-like pods, 7 to 12 cm long, each containing up to 12 flat, roundish seeds with a depressed center. Fruits are produced from mid August through late September, and may persist into October. Plants spread vegetatively by rhizomes and may form dense clonal patches.

AIDS TO IDENTIFICATION: Wild Senna has compound leaves and pods similar to those of other species in the Pea family. It is distinguished by:

- Club-shaped or obovoid petiole glands
- Joints of pods are about as long as wide
- Yellow flowers have five distinct petals that are not fused



Wild Senna has compound leaves with distinct petiolar glands, flowers with petals that are not fused, and seed pods with nearly square joints. Illustration by Elizabeth Farnsworth.

SIMILAR SPECIES: Wild Senna is the only native *Senna* species known from Massachusetts. Partridge Pea (*Chamaecrista fasciculata*) might be mistaken for Wild Senna but it is smaller, rarely reaching 80 cm (30 inches) in height, and has larger flowers (> 2.5 cm).

POPULATION STATUS IN MASSACHUSETTS: Wild Senna is listed under the Massachusetts Endangered Species Act as Endangered. All listed species are protected from killing, collecting, possessing, or sale, and from activities that would destroy habitat and thus directly or indirectly cause mortality or disrupt critical behaviors. Wild Senna is currently known from Hampshire and Middlesex Counties and was documented historically from Berkshire, Franklin, Hampden, Worcester, Essex, Suffolk, Norfolk, and



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Plymouth Counties. Wild Senna was never common in Massachusetts and population declines during the 20th century have left it in a precarious position. A total of 25 populations were documented in Massachusetts during the 19th and 20th centuries; as of 2000, only two extant populations were known. Succession following agricultural abandonment and development are probably the primary causes for this decline.

RANGE: Wild Senna is found from Maine to Ontario south to Georgia.

HABITAT: Wild Senna often occurs in areas with a history of disturbance, such as roadsides, fields, agricultural lands, utility rights-of-way, and the scour zone along stream edges. It may occur in both wetland and moist upland contexts; areas with rich alluvial soil are especially favorable. It is not typically found in areas with a forest canopy, but it does well in thickets in association with coarse herbs and shrubs.

THREATS AND MANAGEMENT

RECOMMENDATIONS:

Extant populations of Wild Senna are on land owned or managed by the Massachusetts Division of Fisheries and Wildlife, affording good potential for protection and management. One population on a power line right-of-way is potentially threatened by infrastructure maintenance, and vegetation management is needed to maintain early successional habitats in and around remaining populations. All active management of rare plant populations (including invasive species removal) is subject to review under the Massachusetts Endangered Species Act, and should be planned in close consultation with the Massachusetts Natural Heritage & Endangered Species Program.

Flowering in Massachusetts

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

Fruiting in Massachusetts

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

REFERENCES:

Clark, F. H. 2001. *Senna hebecarpa* (Northern Wild Senna) Conservation and Research Plan for New England. New England Plant Conservation Program, Framingham, MA.

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APPENDIX D:

Fact Sheets for Natural Communities in Ashfield

Acidic Graminoid Fen

State Rank: S3 - Vulnerable



Acidic Graminoid Fen, sedges, shrub patches on peat. Photo: Patricia Swain, NHESP.

Description: Acidic Graminoid Fens (AGE) are acidic peatlands dominated by mixed sedges and other graminoids with herbaceous species. Shrubs occur in clumps but are not dominant. Peat mats may be quaking and unstable and often have pools of standing water. Sphagnum usually covers the surface below the sedges and forms the peat.

Characteristic Species: Species of Sphagnum moss are the most common plants in all acidic peatlands. Acidic Graminoid Fens are the most species-rich of the acidic peatland communities. Typical graminoids include cotton-grasses and other sedges such as beaked sedge, slender woolly-fruited sedge, white-beaked sedge, and twig-sedge. Threeway sedge and buckbean are characteristic of wet, nutrient enriched edges. Associated herbaceous species include St. John's-wort, arrow-arum, and rose pogonia. Large cranberry can be abundant. There is

Acidic Graminoid Fens are sedge and sphagnum-dominated acidic peatlands that experience some groundwater and/or surface water flow but no calcareous seepage. Standing water is often present throughout much of the growing season.

patchy tree and shrub cover, including red maple saplings, swamp azalea, highbush blueberry, sweet pepper-bush, poison sumac, leatherleaf, and water-willow.



Acidic Graminoid Fen with large area of buckbean and threeway sedge. Photo: Patricia Swain, NHESP.

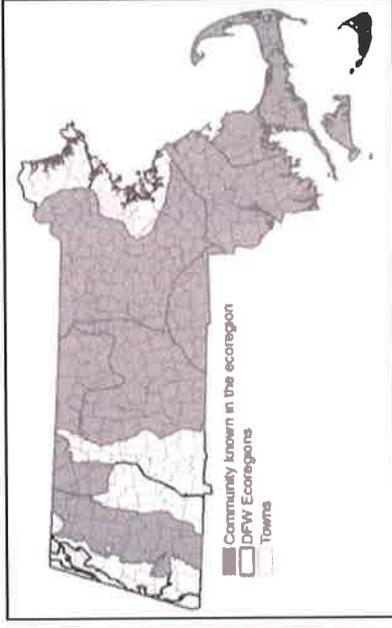
Differentiating from Related Communities: Acidic Graminoid Fens are dominated by sedges or other graminoids such as cottongrass and lack extensive shrubs. Acidic Shrub Fens have extensive low shrubs and are not dominated by graminoids. Dense water-willow and sweet gale are indicative and



Buckbean flowers. Photo: Patricia Swain, NHESP.

characteristic. Level Bogs and Kettlehole Level Bogs have deep and well developed sphagnum peat. Graminoids are present but not dominant, and shrubs are dominated by leatherleaf. Sea-level Fens occur between estuarine marshes and upland seepage slopes. Diagnostic species include saltmarsh straw-sedge, saltmarsh spike-sedge, and Olney's threesquare. Twig-sedge at the edges of salt marshes is also an indicator of Sea-level Fens.

Habitat for Associated Fauna: Due to the extended periods of saturation, lack of nutrients, and the high acidity and low oxygen content of the water, acidic peatlands are inhospitable to many animal species. Winged animals and large terrestrial animals can use peatlands as part of their habitat and then move on when conditions are unfavorable. Moose and white-tailed deer browse in acidic peatlands; their trails are often evident across the peat mat. Bears are attracted to the cranberries and blueberries in season. Many bird species use peatlands for part of the year as nesting or foraging habitat. Many dragonflies and damselflies inhabit



acidic peatlands, especially where there is adjacent open water.

Examples with Public Access: Tully Lake property (USACE), Royalston; Quaboag WMA, Brookfield; Noquochoke WMA, Dartmouth; Hockomock Swamp WMA, Bridgewater; Grassy Pond, Acton.



Acidic Graminoid Fen with white-beaked sedge. Photo: Patricia Swain, NHESP.



From: *Classification of Natural Communities of Massachusetts* <http://www.mass.gov/nhesp/>
Natural Heritage & Endangered Species Program, Division of Fisheries & Wildlife, 1 Rabbit Hill Rd., Westborough, MA 01581

Updated: 2016
(508) 389-6360

Northern Hardwoods - Hemlock - White Pine Forest

State Rank: S5 - Secure



Young NHHWP Forest with scattered evergreen ferns. Photo: Patricia Swain, NHESP.

Description: The Northern Hardwoods - Hemlock - White Pine Forest (NHHWPF) is the prevailing forest in higher elevations of western and north-central Massachusetts, with smaller occurrences throughout on north facing slopes and in ravines. It is an uneven aged forest with a closed canopy dominated by a mix of long lived deciduous and evergreen trees, with sparse shrub and herbaceous layers. The forest structure is dominated by single tree fall and replacement with occasional small to medium blowdown events; stand replacement events are uncommon. The neutral to moderately acidic soils have moderate levels of nutrients and retain some moisture except during extreme droughts. Leaf litter decomposes rapidly resulting in a shallow layer of leaf litter.

The closed canopies of Northern Hardwoods - Hemlock - White Pine Forests are generally deciduous with a mix of conifers. The shrub and herbaceous layers are sparse. NHHWPF occur in cool areas

Characteristic Species: NHHWPF are generally deciduous with scattered hemlocks and white pines that may have internal patches of nearly pure conifers. Canopies include variable combinations of sugar maple, white ash, yellow birch, American beech, black cherry, red oak, and bitternut hickory with eastern hemlock and usually emergent white pine. Red maple, paper birch, and aspen are occasional. A subcanopy includes any of the tree species, as well as hop-hornbeam or striped maple. The shrub layer is usually open, but often has scattered clumps of hobblebush, red-berryed elderberry, fly-honeysuckle, or tree saplings. The herbaceous layer is sparse, but fairly diverse, with intermediate woodfern, Christmas fern, clubmosses, Canada mayflower, white wood aster, and wild oats. Occasional spring herbaceous species include trilliums, early yellow violet, broad-leaved spring beauty, and trout-lily.

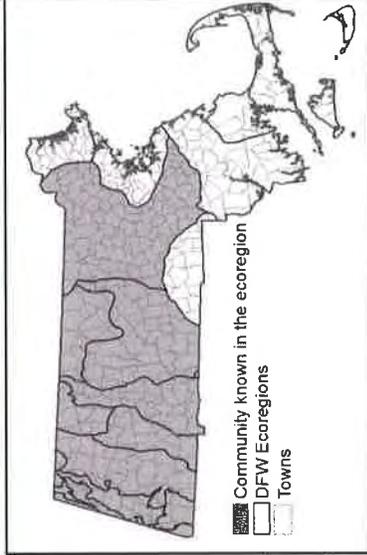
Differentiating from Related Communities: To the north and upslope of NHHWPF are Spruce - Fir - Northern Hardwoods Forests (SFNHF). Red spruce is abundant in SFNHF, and white pine uncommon. NHHWPF has 25-50% of hemlock plus white pine overall:



Striped maple in flower, typical shrub of NHHWPF. Photo: Patricia Swain, NHESP.

red spruce are uncommon if present. Within the matrix of NHHWPF, subtypes with distinct species assemblages are named separately. All types of northern hardwood forests, including NHHWPF are dominated by northern hardwoods. In Successional Northern Hardwood Forests northern hardwoods are generally in the subcanopy or shrub layer with an abundance of white birch and/or aspens in the canopy. Rich. Mesic Forest (RMF) is nutrient- and species-rich, usually within the NHHWPF area: RMF lack conifers, beech, and red oak. The understory has dense spring ephemerals and lacks intermediate wood fern, Christmas fern, and wild sarsaparilla. Red Oak - Sugar Maple Transition Forest has red oak as a dominant, with sugar maple, American beech, and black birch. Other northern hardwoods are occasional associates. Spring ephemerals are not abundant. Oak - Hemlock - White Pine Forests occur to the south and in warmer areas; they are dominated by a mix of oak species and lack sugar maple. The shrub layer is dominated by blueberries and huckleberries.

Habitat for Associated Fauna: NHHWPF are the common type of forest in the cooler parts of the state. They provide habitat for common wide ranging species. The best occurrences of NHHWPF are large and incorporate variation in species and structure including multiple layers of vegetation, snags, tree cavity den sites (used by a variety of bird and mammal species) and fallen large woody material (used by



various amphibian, reptile, and invertebrate species). Covering large areas means inclusion of variation such as interior forest, dense conifer stands, beech seed production, seeps, pockets of wetland, and small patches of dense, earlier successional shrub species.

Examples with Public Access: Chalet WMA, Cheshire; Mohawk Trail SF, Charlemont; Three Mile Pond WMA, Sheffield; Tully Mtn. WMA, Orange.



Light flecks in young NHHWP Forest. Photo: Patricia Swain, NHESP.



From: *Classification of Natural Communities of Massachusetts* <http://www.mass.gov/nhesp/>
Natural Heritage & Endangered Species Program, Division of Fisheries & Wildlife, 1 Rabbit Hill Rd., Westborough, MA 01581

Updated: 2016
(508) 389-6360



Rich Conifer Swamp with patchy moss on hummock likely created by a fallen tree, now rotted away. Photo: Glenn Motzkin.

Description: The generally closed canopies of Rich Conifer Swamps are dominated by mixed conifers with a high proportion of deciduous trees. Mineral-enriched water flows or seeps into the community and supports a high diversity of species in all strata. The surface is hummocky with areas of moss on the hummocks where most woody plants grow. The hollows may have water, bare ground, or herbaceous plant cover. Although the surface of the substrate may be dry by late summer, many hollows remain wet and mucky.

Characteristic Species: The vegetation of Rich Conifer Swamps is variable. The canopy is dominated by conifers (eastern hemlock, balsam fir, or red spruce, alone or together) mixed with red maple, yellow birch, American elm, and black ash. Species indicative of mineral enriched conditions are typical in the understory. Dense patches in the shrub

Rich Conifer Swamps are species- and nutrient-rich swamps dominated by hemlock, balsam fir, or red spruce mixed with hardwoods including black ash. They usually have pockets of moss rather than sphagnum lawns.

layer may include spicebush, witch hazel, or hornbeam with saplings of the canopy trees. The variable and diverse herbaceous layer may include jack-in-the-pulpit, foamflower, lesser mitrewort, wild oats, oak-fern, delicate sedge, swamp-saxifrage, northern horse-balm, golden ragwort, golden saxifrage, rough-leaved goldenrod, and purple avens.

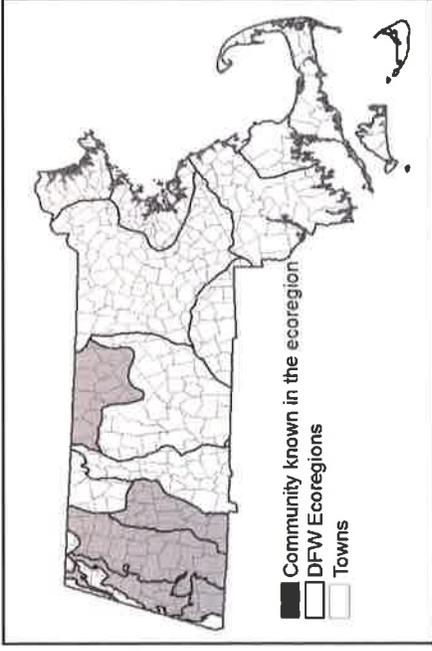


Spicebush leaves and ripe fruit, often found in Rich Conifer Swamps. Photo: Chris Evans, University of Illinois, Bugwood.org.

Differentiating from Related Communities: All the following may have scattered patches of eastern hemlock. Rich Conifer Swamps are characterized by a canopy of mixed red spruce, hemlock, balsam fir and deciduous trees

including black ash, and species such as spicebush that indicate less acidic conditions with greater nutrient availability, and pockets of moss rather than sphagnum lawns. The canopy in Red Spruce Swamps is dominated by red spruce: lower strata are sparse. Sphagnum often forms a continuous ground cover. In Hemlock Swamps eastern hemlock is the dominant canopy species throughout the community. Lower strata are sparse. Sphagnum often forms a continuous ground cover. Red Maple Swamps and named variants such as Red Maple - Black Gum Swamps are dominated by deciduous trees, particularly red maple. Atlantic White Cedar Swamps are dominated by Atlantic white cedar.

Habitat for Associated Fauna: Rich Conifer Swamps are part of the habitat of large mobile animals. Ground level browsers, including white tail deer, snow shoe hare, and New England cottontail, use shrubby areas in the community. Conifer swamps tend to have dense shade and are relatively cool in the summer, making them preferred areas for animals that get hot, such as moose. Areas of Rich Conifer Swamps where water stands through the spring can function as amphibian breeding habitat.



Examples with Public Access: Appalachian Trail Corridor, Sheffield; Agawam Lake WMA, Great Barrington; Hinsdale Flats WMA, Hinsdale; Savoy WMA and Notchview Reservation (TTOR), Windsor; Hiram H. Fox WMA, Chester; Otis SF, Sandisfield; Orange WCE (MGLT), Orange.



Rich Conifer Swamp with mixed species and a denser shrub layer than in other types of conifer swamps. Photo: Glenn Motzkin.





Rich, Mesic Forest with maidenhair fern in dense understory. Photo: Charlie Eiseman.

Description: Rich, Mesic Forests (RMF) are restricted to elevations below 2,400 ft. (~650 m), usually on east or southeast-facing, concave, mid- to lower slopes with downslope movement of nutrients and organic matter. Rich refers to rich in nutrients; they are also rich in species. Mesic is the moderate moisture regime. Soils are usually deep, with leaves and other plant litter quickly incorporated into the soil, so that there is rarely more than one year's accumulation of leaves on the forest floor. The dominant trees of RMF are very shade-tolerant and able to establish and grow under low-light conditions of a full canopy. Species of lower layers are also shade tolerant and can make use of transient light patches from small canopy gaps. RMF are noted for having abundant herbaceous species:

Rich, Mesic Forest is a western Massachusetts variant of northern hardwood forest. Sugar maple dominates the canopy. The diverse herbaceous layer includes many spring wild flowers on moist, nutrient rich slopes.

spring ephemerals (plants that flower before tree leaf out and have foliage that disappears in late spring) are characteristic, along with slightly later bloomers that keep their leaves into summer and others that flower later.

Characteristic Species: Rich Mesic Forests are dominated by sugar maple, with white ash, bitternut hickory, elm species, and basswood. Hop hornbeam is commonly in the subcanopy. The often sparse shrub layer may have pagoda dogwood, leatherwood, or red-berried Elderberry. The herbaceous layer usually has a dense mix of species starting in early spring. Typical species include bloodroot, Dutchman's breeches, squirrel corn, toothwort, maidenhair fern, late blue cohosh, sweet cicely, wild leek, plantain-leaf sedge Goldie's fern, glade-fern, and/or zigzag goldenrod.



Bloodroot (L) and Dutchman's breeches (R). Spring ephemerals typical of, but not limited to, Rich, Mesic Forests. Photos: P. Swain, NHESP.

Differentiating from Related Communities: Rich, Mesic Forest is usually within the Northern Hardwoods - Hemlock - White Pine Forest (NHHWPF) or in the transition between it and the oak dominated forests to the south: RMF lacks conifers, beech, and oaks. The understory has dense spring ephemerals with late blue cohosh and/or wild leek, and lacks

abundant evergreen wood fern and wild sarsaparilla found in NHHWPF. NHHWPF has abundant eastern hemlock, white pine, American beech, and red oak. Enriched NHHWPF may have scattered spring ephemerals, but also early yellow violet and broad-leaved spring beauty that usually indicate lower nutrient availability. Red Oak - Sugar Maple Transition Forest has red oak as a dominant, with sugar maple, American beech, and black birch. Spring ephemerals are uncommon. Most occurrences of RMF in Massachusetts are west of the Connecticut River Valley, Sugar Maple - Oak - Hickory Forest (SMOHF) is to the east. The presence of multiple species of hickories and oaks in SMOHF is a main difference between these two types. Broad-leaved woodland-sedge is close to being an indicator of SMOHF. RMF has semi-evergreen plantain-leaf sedge instead. RMF is characterized by very dense herbaceous growth of spring ephemerals; SMOHF shares some of the species but with fewer individuals of fewer species. SMOHF has evergreen wood ferns that RMF lacks.

Rich, Mesic Forest with mixed tree sizes and almost continuous herbaceous layer in mid summer Photo: Patricia Swain, NHESP.

Examples with Public Access: Day Mountain WMA, Dalton; Maple Hill WMA, West Stockbridge; The Hopper - Mt. Greylock SR, Williamstown; Knightville and Hiram Fox WMAs, Cheshire; Appalachian Trail, Tyringham.



Rich, Mesic Forest with mixed tree sizes and almost continuous herbaceous layer in mid summer Photo: Patricia Swain, NHESP.

Habitat for Associated Fauna: All upland forest types provide valuable structural attributes such as tree cavity den sites (used by a variety of bird and mammal species) and large woody material (used by various amphibian, reptile, and invertebrate species). Very few animal species are strongly associated with Rich, Mesic Forests to the exclusion of other community types. Species such as mole salamanders that breed in vernal

pools use the surrounding upland, deciduous forests for foraging and hibernation. Most of the small mammals of forests occur in RMFs, although some are limited to their geographical distribution. Large mammals include RMFs as parts of their habitat, but are usually more dependent on size of undisturbed forest than on the precise type.



APPENDIX E:
Public Participation Materials

Open Space & Recreation Plan Committee Meeting Notice

Thursday, April 28, 2016

7:00pm-8:30pm

Ashfield Town Hall

412 Main Street, Ashfield MA 01330

Contact: Alan Rice – (413) 628-4613

Agenda

- 1. Open the meeting**
- 2. Introductions**
- 3. Overview of Ashfield Open Space & Recreation Plan (OSRP) update process (Pat Smith, Franklin Regional Council of Governments)**
- 4. Review draft revised maps for OSRP update (Pat Smith and Committee)**
- 5. Identify priorities for updates using 2016 DLTA grant funds (Pat Smith and Committee)**
- 6. Determine specific areas of interest/timeframes from Committee members**
- 7. Establish project schedule and set next meeting date**
- 8. Adjourn the meeting**



Ashfield Open Space and Recreation Planning Committee

April 28, 2016

Sign-in Sheet

Please Print Clearly

Name	Affiliation	Mailing Address/ Email	Phone Number
Kayce Warren	Ashfield Interim Town Admin	P 560 PO Box 560 Ashfield MA 01330 kbbpmiller@yahoo.com	413-628-4441 x7
Barbara Miller	Ashfield resident	193 Cummington Rd 73 Bow River Rd (SFs zip) miller.balize@gmail.com	413-628-4568
Muriel Balize	ZBA	68 Plainfield Road annecapra447@gmail.com	413-625-6005
Anne Capra Madocks	Conservation Commission	755 Wilson Spruce Cr. Rd. 01330	413-628-4546
Judith Haupt	Chair Park Commission	judy@southfacetfarm.com 230 South St. RICEFIELD@VERIZON.NET	413-628-3268
ALAN RICE	PLANNING BOARD	Box 234 01330 nancy.garvin@star.net	413-628-4613
Nancy Garvin	Hist. Soc.	Box 25 01330 makana95@verizon.net	625-6234
Duncan Colter	BOH		628-3326

PUBLIC FORUM

ASHFIELD OPEN SPACE & RECREATION PLAN COMMITTEE

JUNE 23, 2016 AT 7:00 PM

ASHFIELD TOWN HALL

Public Information Meeting Goals:

- Develop Community Awareness of OSRP Goals
- Invite Public Comment and Suggestions
- Awareness of Action Plan and Timeline



PLEASE JOIN US AND SHARE YOUR INPUT AS WE BEGIN THE UPDATES TO THE OPEN SPACE & RECREATION PLAN. WE LOOK FORWARD TO HEARING FROM YOU!

Committee Charge:

- Update the Open Space & Recreation Plan as required and to better position the Town of Ashfield to receive state and federal grant consideration
- Review of Critical Sections – Community Setting, Environmental Inventory & Analysis, Inventory of Lands & Conservation/Recreational Interests
- Determine scenic and environmental issues facing the Town



AGENDA AND MEETING NOTICE

Ashfield Open Space and Recreation Plan Update Meeting

Thursday, June 23, 2016

7:00 p.m. – 8:30 p.m.

Ashfield Town Hall

412 Main Street

Ashfield, MA 01330

1. 7:00 p.m. – Introductions (Alan Rice, Ashfield OSRP Update Committee Chair)
2. 7:10 p.m. – Public Forum
 - a. Overview of the Ashfield Open Space and Recreation Plan update process (Pat Smith, Franklin Regional Council of Governments)
 - b. 2008 Open Space and Recreation Plan Action Plan Status Update
 - c. Review of 2013 Ashfield Open Space Survey Results
 - d. Public discussion of Open Space and Recreation priorities for Ashfield
3. 7:50 p.m. – Initial Review of Draft Section 3: Community Setting (Pat Smith, FRCOG, and Committee)
4. 8:10 p.m. – Review of draft revised maps for Ashfield Open Space and Recreation Plan update (Pat Smith, FRCOG, and Committee)
5. 8:25 p.m. – Review project schedule and set next meeting date (Pat Smith, FRCOG, and Committee)
6. 8:30 p.m. – Adjourn meeting

Ashfield Open Space Recreation Plan Committee Meeting

When: Thu, 10 November, 2016 7:00 PM – 8:00 PM

Where: Ashfield Town Hall, 412 Main Street, Ashfield MA 01330 ([map](#))

Description:

1. 7:00 p.m. – Introductions (Alan Rice, Ashfield OSRP Update Committee Chair)
2. 7:10 p.m. – Review of Minutes of 6/23/16 meeting and Public Forum
3. 7:20 p.m. – Final Review of Second Draft of Section 3: Community Setting (Pat Smith, FRCOG, and Committee)
4. 7:50 p.m. – Initial Review of Draft Section 4: Environmental Inventory and Analysis (Pat Smith, FRCOG, and Committee)
5. 8:15 p.m. – Open Space Mapping
6. 8:20 p.m. – Review project accomplishments and discuss future plans (Pat Smith, FRCOG, and Committee)
7. Items not reasonably anticipated by the Chair 48 hours in advance of the meeting
8. 8:30 p.m. – Adjourn meeting

The listing of matters are those reasonably anticipated by the Chair which may be discussed at the meeting. Not all items listed may in fact be discussed, and other items not listed may also be brought up for discussion to the extent permitted by law.



Ashfield Open Space and Recreation Planning Committee

MEETING

November 10, 2016

Sign-in Sheet

Please Print Clearly

Name	Affiliation	Mailing Address/ Email	Phone Number
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Anne Capra	Conservation Commission	annecapra447@gmail.com	
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Barb Miller	Ag Commission	kbbpmiller@yahoo.com	628-4596
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Ann Rice	PLANNING BOARD	RICEP@EVERIZAL.NET	628-4613
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Nancy Garvin		nancy.garvin@star.net	625- ⁶²³⁴
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Anne Yuryan	ZBA		
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Morie Dabize	ZBA	morie.dabize@man.com	413-625-6005
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Kayce Warren	Interim Administrator	(you've got it! :))	
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Pat Small	FRCOG		
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Duncan Colter	BOH		628-3326
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Open Space & Recreation Plan Update Committee Meeting Notice

Thursday, March 23, 2017

7:00pm

Ashfield Town Hall

412 Main Street, Ashfield MA 01330

Contact: Alan Rice – (413) 628-4613

Agenda

- 1. Open the meeting**
- 2. Introductions**
- 3. Review of grant funding for 2017 calendar year**
- 4. Review of work-in-progress (calendar year 2016)**
- 5. Identify priorities for updates for 2017, using DLTA grant funds**
- 6. Establish project schedule and set next meeting date(s)**
- 7. Items not reasonably anticipated by the Chair 48 hours in advance of the meeting**
- 8. Adjourn the meeting**

Open Space Plan Minutes
5/11/2017

Present: Alan Rice, Chair, Planning Board (AR)
Kayce Warren, Town Admin. (KW)
Nancy Garvin, Historical Commission (NG)
Anne Yuryan, Zoning Board of Appeals (AY)
Duncan Colter, Board of Health (DC)
Judy Haupt, Park Commission (JH)

Absent: Anne Capra, Conservation Commission
Mollie Babize, Zoning Board of Appeals
Barbara Miller, Ag Commission
Susan Todd, Ashfield Trails

Meeting opens at 7:08PM.

Minutes of 3/23/ 2017 approved as amended. 5-0-1

MVP – KW opens the meeting with requests of letters of support for the Municipal Vulnerability Preparedness (MVP) grant program from the OSP/Planning Board, Park Commission, Trails Committee, Con Comm, Ag Committee, Board of Health and Highway Dept. A sample letter has been provided and will be forwarded to Board of Health, Ag Commission and Ashfield Trails. This grant is in concert with the Town Of Conway and is designed to)1 Identify climate change affected hazards in the shared South River Corridor,)2 Identify those hazardous impacts on farms, water health, recreation, roads and bridges, etc. and)3 put into place a mitigation plan to deal with those predicted impacts. This grant will be administered by the FRCOG who will do a 2 part series of workshops to structure the effects on the impacts as above. If this grant is approved, it will give the Towns access to other grants available for disaster mitigation.

Chapter 3 – Add Mollie’s introduction (AR with MB)

Chapter 4 - Revisions review (AR) and send to (AY)

Chapter 5 – Find Field land, Bullitt Reservation on the recreation inventory, Find South Face Farm on Chapter 61 inventory.(NG)

ADA - (JH) discusses the enormity of the ADA requirements in light of the time /\$ involved in adhering to measurement guidelines for all our recreation lands and facilities and creating a plan to provide handicap accessibility for same. Also discussed was Ashfield’s portion of the DAR for ADA accessibility and whether we include Ashfield Rod and Gun whose facility is actually in Plainfield but is a big part of recreation for Ashfield. Those facilities are not handicap accessible. A call to Pat Smith for clarification has not been returned. (AR) will ask (KW) about this process as she has experience with Deerfield’s OSP. (JH) will get the ADA requirements to Ashfield Trails for their participation.

Map Database – (AR) will get update from (BM).

Next Meeting: June 1st, 7PM with Patricia Smith, FRCOG

Respectfully Submitted,
Judy Haupt

Open Space Plan Minutes
6/27/2017

Present: Alan Rice, Chair, Planning Board (AR)
Anne Capra, Conservation Commission (AC)
Mollie Babize, Zoning Board of Appeals (MB)
Barbara Miller, Ag Commission (BM)
Nancy Garvin, Historical Commission (NG)
Anne Yuryan, Zoning Board of Appeals (AY)
Duncan Colter, Board of Health (DC)
Judy Haupt, Park Commission (JH)

Absent: Kayce Warren, Town Admin. (KW)
Susan Todd, Ashfield Trails

Meeting opens at 7:05PM.

Minutes of 5/11/ 2017 approved as amended. 5-0-3. JH moved to approve, AY seconded

Pat's email of today – (email attached to the end of the minutes) – AR focused on the notes that Pat Smith had made for the committee to concentrate on. The first comments were drawing attention to what information was in each table. She suggested that we consider organizing the data by map and parcel number rather than alphabetically by owner name. The group concurred that this would be appropriate. BM can re-organize the tables to reflect this.

Pat highlighted that there are several columns in the publicly owned lands that need completing, including the current use and condition, and the recreational value. AC noted that this should reflect the recreational *potential* of the parcel in the future, i.e., is it underutilized, are there trails planned, etc. Group members will fill in what they know about, and if there are gaps, the job will be distributed for people to go and take a look at the parcel.

AR indicated the steps after section 6, 7, and 8, which is section 9 – the 7 year action plan. Each board and commission needs to weigh in on what their priorities are. The discussion around this indicated that the boards and commissions need to see what is in the previous drafts in order to do this. Want to avoid stovepiping the process.

AC asked to look at the budget to see how much money is involved with FRCOG. She felt that for the amount indicated, they should be providing more complete documents that pull the information from one section to the next, and the committee should not have to fill in so many blanks. She commented on this from her experience in writing these plans for other towns and what it cost. AR indicated that he would talk to Pat about this.

AR asked that the committee review the draft Section 5 that was provided by Pat and get comments to him by 7/11.

ADA considerations – JH and AC will work on this part. The group identified the parcels that should be evaluated and they include:

Belding Park
Arnold Brewers Park
Stroheker Rd (stone bridge)

Town Hall and Parking lot
Properties around the ball field on Bronson Ave. and Buckland Rd.
Town Common

Inventory Map – AR unrolled the map that reflects the Section 5 lands that was prepared by FRCOG from the table that NG and BM prepared. Committee members identified some corrections with just a casual glance. NG and BM will take in corrections to the table and deliver them to FRCOG. MB thought that the map should have a narrative to help understand the status of land protection and working land in the town. Other suggestions included overlays of the trails, waters/wetlands, Native American information, soils, etc. The map can be used to identify gaps in protection, as well as threats to the landscape. AY commented that protection does not need to be the ultimate goal of an open space plan, as this diminishes the tax base. There was consensus on this point, but there are other ways to encourage open space benefits without permanent protection.

There were other technical considerations concerning the cartography of the map. Permanent protection should be identified as to CR or APR, maybe not with different colors, but with different patterns. AY noted that some of the lands that are private are combined with town lands on the legend, which is misleading.

Action Steps –

- Section 5 comments to AR by 7/11
- Finalize Section 3 – AR and MB, soon, and distribute to the committee
- Mapping corrections – BM and NG
- Map with additional overlays – ask Pat to have for next meeting (7/18/2017)
- Acquire shape files for Ashfield Trails – NG to ask her husband, Phil Pless may also have (should snowmobile trails be included?)
- Next meeting – 7/18/2017 at 7:00 pm

Next Meeting: July 18th, 7PM

Respectfully Submitted,
Barbara Miller

Pat's email of 6/27/2017:

Folks,

I just finished meeting with Alan in preparation for tonight's Ashfield OSRP Update Committee meeting. I apologize that I am unable to attend tonight's meeting, as I have been appointed to an Elementary School Building Committee in my own Town of Orange that is having its first meeting tonight.

I am attaching for your information the following documents related to the draft *Section 5: Inventory of Lands of Conservation and Recreation Interest*:

- Word document of First Draft of Section 5 dated 6-27-17 with updated text and tables inserted (Alan has hard copies to distribute tonight)
- Copy of Section 5 from 2008 OSRP for comparison (PDF) (Alan has hard copies to distribute tonight)
- Revised copy of master property list (version 2_PAS) including some new tabs that I created
- New working Excel version of Table 5-4 that I created
- New working Excel version of Table 5-6

I want to thank everyone who worked on pulling together the property data for this section, particularly Barb and Nancy. It was incredible to have all the information in one master Excel file to work with. Great job! Because so much work was done on updating the information and there have been so many new parcels protected since 2008, I did not go back to review the specific data included in the 2008 tables.

Alan also has a revised large-scale working Open Space map based on the new data. I should note that Ryan created the working map based on the first master property list, before the version 2 arrived in my inbox, so there may be some anomalies that result from that. Please feel free to mark up the map and note any corrections, additions, etc.

Here are a couple of notes on the draft that may help you to figure out what I did in creating this draft, since I cannot be there to respond to questions (I have highlighted areas in yellow that I would particularly appreciate your input on):

- Table 5-1 (p. 5-5) has changed in the way that some of the categories are organized and the numbers and percentages have been adjusted both here and in the feeder tables.
- I have added subtotals on all the tables where I thought they would be helpful (e.g., Chapter lands on Table 5-1 and specific state agencies on Table 5-2).
- Table 5-4: Privately-Owned Land Permanently Protected from Development in Ashfield has been re-organized so that it breaks out Conservation Organizations, Other Private Organizations, CRs, and APRs.
- Table 5-6 (Chapter 61, 61A and 61B Lands) has been revised to add property owner data. The sample tables that I sent out had not included that column, but I thought it would be helpful.
- The data in the tables are currently organized alphabetically by Owner Name. Another approach would be to put them in numeric order based on the Assessor's Map/Lot ID numbers. We can make the change fairly easily if the Committee feels strongly that it would be better to do it differently.

I look forward to hearing back from you all with comments and suggestions on how to improve this first draft of Section 5. Please note that there are several tables that require significant Committee input to identify key characteristics of State and Town-owned parcels:

- Table 5-2: State-Owned Land Managed by State Conservation Agencies in Ashfield
- Table 5-3: Town-Owned Land Permanently Protected from Development in Ashfield
- Table 5-5: Town-Owned Parcels of Land with Limited Protection from Development

Also, *Section D. Inventory of Recreational Resources* (p. 5-25) would benefit from the addition of more details and a review of information inserted from the 2008 Plan that may be outdated or incorrect.

I will look forward to meeting with you all later this summer, perhaps in mid- to late August, depending on everyone's schedules. I will be working on preparing the following materials for you to review at that time:

- First Draft Section 6: Community Goals
- First Draft Section 7: Analysis of Needs
- First Draft Section 8: Goals and Objectives
- Second Draft Section 5
- Revised maps

I will be in the office tomorrow and Thursday if any questions come up tonight that I help with.

Hope everyone has a wonderful 4th of July!

Thanks,

Patricia A. Smith

Senior Land Use Planner

Event: Open Space & Recreation Plan Update Committee Meeting

When: Tue, Jul 18 2017 07:00 pm

Where: Ashfield Town Hall,412 Main Street,Ashfield MA 01330

Status:

- Agenda:**
1. **Open the Meeting (Chair)**
 2. **Review and approval of minutes from previous meeting(s)**
 3. **Review of Section 5/open space mapping**
 4. **Review of other mapping, as available**
 5. **Update on ADA requirements section**
 6. **Update on finalization of Section 3**
 7. **Revisit budget/FRCOG contributions moving forward**
 8. **Upcoming meeting(s)/timeline**
 9. **Items not reasonably anticipated by the chair 48 hours in advance of the meeting**
 10. **Adjourn the Meeting**



Ashfield Open Space and Recreation Planning Committee

MEETING

July 18, 2017

Sign-in Sheet

Please Print Clearly

Name	Affiliation	Mailing Address/ Email	Phone Number
K. Warren	Town Administrator	townadmin@ashfield.org	628-4441 x7
Judy Haupt	Park Commission	judy@southforefarm.com	628-3268
Mollie Babize	ZBA	mollie.babize@gmail.com	625-6005
Anne Capra	Conservation Commission	annecapra447@gmail.com	628-4546 625-6234
Nancy Garvin	Ag Comm	nancy.garvin@star.net	
Arl Rice	PLANNING BOARD	RICEPIPER@VERIZON.NET	628-4613
Anne Guryan	ZBA + CoA		628-3322
PAT SMITH	FUCOG		
Duncan Colter	B.O. Health		628-3326

Event: Open Space & Recreation Plan Update Committee Meeting

When: Thursday, October 19 2017 07:00 pm

Where: Ashfield Town Hall,412 Main Street,Ashfield MA 01330

Status:

- Agenda:**
1. **Open the Meeting (Chair)**
 2. **Review and approval of minutes from previous meeting(s)**
 3. **Final Review of Section 5/open space mapping**
 4. **Discussion of Sections 6: Community Goals; 7: Analysis of Needs; and 8: Goals and Objectives**
 5. **Review of Section 9: 7-Year Action Plan including status updates and proposed new Action Items**
 6. **Update on ADA requirements section**
 7. **Upcoming meeting(s)/timeline, including planning for Public Forum**
 8. **Items not reasonably anticipated by the chair 48 hours in advance of the meeting**
 9. **Adjourn the Meeting**



Ashfield Open Space and Recreation Planning Committee
MEETING
October 19, 2017
Sign-in Sheet

Please Print Clearly

Name	Affiliation	Mailing Address/ Email	Phone Number
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ALAN RICE	PLANNING BOARD	RICEPIPER@VERIZON.NET	628-4613
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Nancy GARVIN	AHS	nancep.garvin@star.net	625-6234
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Barbara Miller	Ag Com	kbbpmiller@yahoo.com	628-4596
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Judy Hays	PARKS	judy@southfreefarm.com	628-3268
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PAT SMITH	ENCOC		
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ANNE YURYAN	ZBA + CoA		628-3222
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Duncan Colten	BOH		628-3326
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**APPENDIX F:
ADA Self-Evaluation And Transition Plan**



TOWN OF ASHFIELD
OFFICE OF THE SELECT BOARD

412 Main Street
PO Box 560
Ashfield, MA 01330
Phone: 413-628-4441 x7
Fax: 413-628-0228
selectboard@ashfield.org

Select Board Policy: 17-01

Date Adopted: 08-21-2017

DISABILITY DISCRIMINATION GRIEVANCE POLICY

It is the policy of the Town of Ashfield not to discriminate on the basis of disability. This Grievance Procedure has been established to meet the requirements of the American with Disabilities Act of 1990 (ADA). It may be used by anyone who wishes to file a complaint alleging discrimination on the basis of disability in the provision of services, activities, programs, or benefits by the Town of Ashfield. The Ashfield Personnel Policy governs employment-related complaints of disability discrimination. Every opportunity will be made available to receive citizen comments, complaints, and to resolve grievances or inquiries.

Complaints should be submitted by the grievant and/or his/her designee as soon as possible, but no later than sixty (60) calendar days after the alleged violation to:

ADA Coordinator

412 Main Street

P.O. Box 560

Ashfield MA 01330

Telephone: 413-628-4441 ext. 7

Email: townadmin@ashfield.org

Office Hours: Monday-Thursday, 9:00 am to 4:00 pm, Fridays by Appointment

STEP 1

The Town ADA Coordinator will be available to meet with citizens and employees during regular business hours to receive complaints. The ADA Coordinator is responsible for coordinating the efforts of the Town of Ashfield to comply and investigate any complaints.

When a complaint, grievance, request for program policy interpretation, or clarification is received either in writing, through a meeting, or telephone call, a record will be created which shall include the name, address, telephone number of the person complainant and the nature of their request or complaint. Anonymous complaints or requests for information will be accepted and a record created with available information.

If the person, making the complaint or request for information is identified, the complaint, grievance, request for program policy interpretation, or clarification will be responded to within fifteen (15)

calendar days in a format that is sensitive to the needs of the recipient (i.e. verbally, enlarge type, etc.). There will be an automatic extension of fifteen (15) calendar days if the ADA Coordinator is on vacation, out of the office, or for other reasonable cause. The written response from the ADA Coordinator will include position of the Town of Ashfield and substantive resolution of the complaint.

If the grievance is not resolved at this level, it will progress to Step 2.

STEP 2

If the grievance is not resolved in Step 1, then a written grievance will be submitted to the ADA coordinator. Assistance in writing the grievance will be available if requested. All written grievances will be responded to within fifteen (15) calendar days by the ADA Coordinator in a format that is sensitive to the needs of the recipient. There will be an automatic extension of fifteen (15) calendar days if the ADA Coordinator is on vacation, out of the office, or for other reasonable cause.

If the grievance is not resolved at this level, it will progress to Step 3.

STEP 3

If the grievance is not satisfactorily resolved in Step 2, complainants will have the opportunity to appeal to the Select Board, pursuant to the provisions of the Open Meeting Law. The Select Board shall issue a written decision to the complainant, and others as qualified by the law, no later than fifteen (15) calendar days after the meeting.

Decisions of the Select Board will be final. Appeals may be made to the Massachusetts Commission Against Discrimination (MCAD) and/or Equal Employment Opportunity Commission (EEOC). All written complaints received by the ADA Coordinator, appeals to the Selectboard and responses, will be held by the Town of Ashfield for a period of at least three years.

Massachusetts Commission Against Discrimination (MCAD)

436 Dwight Street, Suite 220

Springfield MA 01103-1317

Telephone: 413-739-2145

Equal Employment Opportunity Commission (EEOC)

475 J.F.K Federal Building

Government Center

Boston MA 02203-0506

Telephone: 617-565-3200



TOWN OF ASHFIELD
OFFICE OF THE SELECT BOARD

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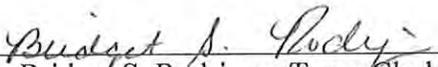
July 31, 2017

Re: Appointment of Americans with Disabilities Act Coordinator

At a meeting held on Monday, July 31, 2017, the Select Board completed the following vote:

Select Board Member Coler made a motion to appoint Kayce D. Warren, Town Administrator, as the Town of Ashfield Americans with Disabilities Act Coordinator, motion seconded by Select Board Member Olanyk. VOTE (2-0-0), unanimous.

A True Attestation of Vote


Bridget S. Rodrigue, Town Clerk

Thank you very much for your consideration. If you have any further question, please don't hesitate to contact me either by telephone or via email at townadmin@ashfield.org.

Sincerely,



Kayce D. Warren
Interim Town Administrator

**ADA Self-Evaluation Report
Town of Ashfield - Open Space and Recreation Plan
June 30, 2017**

Table of Contents

Section 1 Transition Plan

Section 2 Facility Inventories

- Belding Memorial Park – Lower
- Belding Memorial Park – Upper
- Brewer Tatro Memorial Woods
- Stroheker Road Trailhead
- Town Common
- Town Hall
- 44 Buckland Road and Bronson Avenue Parking Lot

Section 3 Administrative Policies

Section 1: Transition Plan

On June 29 and 30, 2017, Anne Capra (Conservation Commission) and Judy Haupt (Parks Commission) assessed town-owned parks and recreation facilities for Americans with Disability Act (ADA) compliance, and Naomi Clark (representative from the disabled community) provided review of the plan and recommendations. In addition to the facilities inventoried in this plan, other private or publicly owned recreation facilities exist in town that are not included in this survey because they are not under the care and control of the Town of Ashfield.

The following plan provides a summary of each of the town-owned recreation and conservation areas, recommended actions for improving accessibility, and a Facility Inventory Worksheet with a detailed assessment of each of the features present and comments regarding the accessibility of the feature.

Belding Memorial Park – Lower Buckland Road

Existing Conditions:

Belding Memorial Park is a 12.5-acre parcel that wraps around the southeast corner of Ashfield Lake, including frontage on Main Street and Buckland Road. Upper Park is accessed from Main Street; Lower Park is accessed from Buckland Road. A park master plan was completed in 2010 by Dodson and Flinker Associates, however much of the plan has not been implemented.



Entrance to Town Beach

Lower Belding Memorial Park is on the east end of Ashfield Lake and consists of two parking lot, the town beach with a floating dock for swimmers, bathrooms and changing rooms, grassy field and picnic area, tennis courts, swings, and a gravel surface trail along the eastern lake shoreline, across the outlet stream, connecting to Upper Park. The picnic area, beach, tennis courts and trail are not handicapped accessible. The bathrooms and parking lot do have accessible features, as noted in the attached worksheet. It is possible for a vehicle to drive across the grassy field up to the picnic area at the top of the hill, although this access is not posted or promoted. It is possible to drive to the “kiddie pool” area to access the water.

Recommendations for Improved Accessibility:

1. Install grab bars in the handicap bathroom stall in the men’s and women’s bathrooms.
2. Position trash/recycle containers so there is no impediment to bathrooms.
3. Consider purchase of a floating beach wheelchair to provide access across the soft beach sand into the water. (e.g. Mobi Chair www.mobi-chair.com)
4. Consider installation of a removable beach access mat to provide a hard surfaced path across soft sand (e.g. AccessMat www.accessrec.com/ada-access-mats)
5. Designate handicapped parking spot in front of tennis courts, and install sign.
6. Provide accessible gate entrance to tennis courts including accessible path from parking lots and gate lever that can be opened with a closed fist.

Schedule: 2018-2024

Responsible Entity: Parks Commission



Soft sand on beach approach to water and floating dock at Town Beach



Grassed approach to tennis courts from Buckland Road, and double 10' swing gates with chain and carabeener lock (with broom!)



Grill facility on top of hill at picnic area.



Steps from picnic area on top of hill to beach.



Entrance to men's bathroom. Trash and recycling receptacles obstructing clear path.



Entrance to women's bathroom and water fountain.

**Belding Memorial Park - Lower
Buckland Road, Ashfield, MA**

Facility Inventory

LOCATION:

ACTIVITY	EQUIPMENT	NOTES	
Picnic Facilities Not accessible; see comments below.	Tables & Benches	Picnic area at top of hill. Grassed	
		Located adjacent to accessible paths access road, not accessible by wheelchair.	
		Access to Open Spaces	
		Back and Arm Rests No; picnic table open ended for wheelchair	
	Grills	Adequate number	
		Height of Cooking Surface	
		Located adjacent to accessible paths	
Trash Cans	Located adjacent to accessible paths		
Picnic Shelters	Located adjacent to accessible paths		
Trails Not accessible		Located near accessible water fountains, trash can, restroom, parking, etc.	
		Surface material gravel, greater than 3/8" minus in some places, dirt	
		Dimensions in others. No ramp to bridge at dam, and 12" lip.	
		Rails	
Swimming Facilities	Pools N/A Soft sand from parking lot to water. Swimming dock non-slip surface and ladder has two railings	Signage (for visually impaired)	
		Entrance	
		Location from accessible parking	
	Beaches		Safety features i.e. warning for visually impaired
			Location from accessible path into water
			Handrails
			Location from accessible parking
Play Areas (tot lots) Not accessible	All Play Equipment i.e. swings, slides	Shade provided	
		Same experience provided to all	
		Access Routes	
Game Areas: *tennis	Access Routes	Located adjacent to accessible paths Approach is grass; single door not accessible; double 10' swing gate with chain and carabeener lock.	
		Berm cuts onto courts	
	Equipment	Height	
		Dimensions	
		Spectator Seating	
Boat Docks N/A	Access Routes	Located adjacent to accessible paths	
		Handrails	
Fishing Facilities N/A - people fish off the dam and shore; approach not accessible	Access Routes	Located adjacent to accessible paths	
		Handrails	
	Equipment	Arm Rests	
		Bait Shelves	
		Handrails	
Programming	Are special programs at your facilities accessible?	Fish Cleaning Tables	
		Learn-to-Swim Approach to water not accessible. Ladder on dock has two railings.	
		Guided Hikes	
Services and Technical Assistance	Information available in alternative formats i.e. for visually impaired	No	
		Process to request interpretive services (i.e. sign language interpreter) for meetings	
		No	

Lower Belding Memorial Park is on the west end of Ashfield Lake and consists of the town beach with a floating dock for swimmers, bathrooms and changing rooms, grassy field and picnic area, tennis courts, playground, and gravel surface trail connecting to Upper Park on the west end of the lake.

The picnic area, beach, tennis courts, and trail are not handicapped accessible. The bathrooms and parking lot do have accessible features, described under the respective sections below.

LOCATION Belding Memorial Park - Lower

PARKING			
Total Spaces	Required Accessible Spaces		
Up to 25	1 space	X	
26-50	2 spaces		
51-75	3 spaces		
76-100	4 spaces		
101-150	5 spaces		
151-200	6 spaces		
201-300	7 spaces		
301-400	8 spaces		
401-500	9 spaces		
Specification for Accessible Spaces	Yes	No	Comments/Transition Notes
Accessible space located closest to accessible entrance			No Accessible entrances
Where spaces cannot be located within 200 ft of accessible entrance, drop-off area is provided within 100 ft.			N/A
Minimum width of 13 ft includes 8 ft space plus 5 ft access aisle	X		
Van space – minimum of 1 van space for every accessible space, 8 ft wide plus 8 ft aisle. Alternative is to make all accessible spaces 11 ft wide with 5 ft aisle.	X		The one accessible space would accommodate a van. One signed space at entrance to beach.
Sign with international symbol of accessibility at each space or pair of spaces	X		
Sign minimum 5 ft, maximum 8 ft to top of sign		X	
Surface evenly paved or hard-packed (no cracks)		X	Hard-packed gravel/dirt parking lot; generally level but subject to ponding water in spots.
Surface slope less than 1:20, 5%	X		
Curbcut to pathway from parking lot at each space or pair of spaces, if sidewalk (curb) is present			N/A
Curbcut is a minimum width of 3 ft, excluding sloped sides, has sloped sides, all slopes not to exceed 1:12, and textured or painted yellow			N/A
RAMPS			
Specification	Yes	No	Comments/Transition Notes
Slope Maximum 1:12			No ramps / N/A
Minimum width 4 ft between handrails			
Handrails on both sides if ramp is longer than 6 ft			
Handrails at 34" and 19" from ramp surface			
Handrails extend 12" beyond top and bottom			
Handgrip oval or round			
Handgrip smooth surface			
Handgrip diameter between 1¼" and 2"			
Clearance of 1½" between wall and wall rail			
Non-slip surface			
Level platforms (4ft x 4 ft) at every 30 ft, at top, at bottom, at change of direction			

LOCATION Belding Memorial Park - Lower

SITE ACCESS, PATH OF TRAVEL, ENTRANCES			
<i>Specification</i>	<i>Yes</i>	<i>No</i>	<i>Comments/Transition Notes</i>
Site Access			
Accessible path of travel from passenger disembarking area and parking area to accessible entrance			See previous comments.
Disembarking area at accessible entrance			
Surface evenly paved or hard-packed			
No ponding of water			
Path of Travel			
Path does not require the use of stairs			See previous comments.
Path is stable, firm and slip resistant			
3 ft wide minimum			
Slope maximum 1:20 (5%) and maximum cross pitch is 2% (1:50).			
Continuous common surface, no changes in level greater than 1/2 inch			
Any objects protruding onto the pathway must be detected by a person with a visual disability using a cane			
Objects protruding more than 4" from the wall must be within 27" of the ground, or higher than 80"			
Curb on the pathway must have curb cuts at drives, parking and drop-offs			
Entrances			
Primary public entrances accessible to person using wheelchair, must be signed, gotten to independently, and <i>not</i> be the service entrance			The public restroom is the only building on the facility. See restrooms for accessibility assessment.
Level space extending 5 ft. from the door, interior and exterior of entrance doors			
Minimum 32" clear width opening (i.e. 36" door with standard hinge)			
At least 18" clear floor area on latch, pull side of door			
Door handle no higher than 48" and operable with a closed fist			
Vestibule is 4 ft plus the width of the door swinging into the space			
Entrance(s) on a level that makes elevators accessible			
Door mats less than 1/2" thick are securely fastened			
Door mats more than 1/2" thick are recessed			
Grates in path of travel have openings of 1/2" maximum			
Signs at non-accessible entrance(s) indicate direction to accessible entrance			
Emergency egress – alarms with flashing lights and audible signals, sufficiently lighted			

LOCATION Belding Memorial Park - Lower

STAIRS and DOORS			
<i>Specification</i>	<i>Yes</i>	<i>No</i>	<i>Comments/Transition Notes</i>
Stairs Cement stairs, no handrails from grassed picnic area on top of hill to beach - not accessible.			
No open risers			
Nosings not projecting			
Treads no less than 11" wide			
Handrails on both sides			
Handrails 34"-38" above tread			
Handrail extends a minimum of 1 ft beyond top and bottom riser (if no safety hazard and space permits)			
Handgrip oval or round			
Handgrip has a smooth surface			
Handgrip diameter between 1 1/4" and 1 1/2"			
1 1/2" clearance between wall and handrail			
Doors Only doors are to restroom facility.			
Minimum 32" clear opening	X		
At least 18" clear floor space on pull side of door	X		
Closing speed minimum 3 seconds to within 3" of the latch	X		
Maximum pressure 5 pounds interior doors	X		
Threshold maximum 1/2" high, beveled on both sides	X		
Hardware operable with a closed fist (no conventional door knobs or thumb latch devices)		X	
Hardware minimum 36", maximum 48" above the floor	X		
Clear, level floor space extends out 5 ft from both sides of the door	X		Inside bathroom, not outside.
Door adjacent to revolving door is accessible and unlocked			N/A
Doors opening into hazardous area have hardware that is knurled or roughened			N/A

LOCATION Belding Memorial Park - Lower

RESTROOMS – also see Doors and Vestibules			
<i>Specification</i>	Yes	No	<i>Comments/Transition Notes</i>
5 ft turning space measured 12" from the floor	X		
At least one Sink:			
Clear floor space of 30" by 48" to allow a forward approach	X		
Mounted without pedestal or legs, height 34" to top of rim	X		Two sinks - lower sink is 26" from floor; higher sink is 35" from floor.
Extends at least 22" from the wall	X		
Open knee space a minimum 19" deep, 30" width, and 27" high			Lower sink is 22" wide; higher sink is 33" wide
Cover exposed pipes with insulation		X	
Faucets operable with closed fist (lever or spring activated handle)		X	
At least one Stall: one accessible stall in mens and womens rooms			
Accessible to person using wheelchair at 60" wide by 72" deep	X		
Stall door is 36" wide	X		
Stall door swings out	X		
Stall door is self closing	X		
Stall door has a pull latch	X		
Lock on stall door is operable with a closed fist, and 32" above the floor	X		
Coat hook is 54" high			
Toilet			
18" from center to nearest side wall	X		
42" minimum clear space from center to farthest wall or fixture	X		
Top of seat 17"-19" above the floor	X		
Grab Bars			
On back and side wall closest to toilet		X	
1 1/4" diameter			
1 1/2" clearance to wall			
Located 30" above and parallel to the floor			
Acid-etched or roughened surface			
42" long			
Fixtures			
Toilet paper dispenser is 24" above floor	X		
One mirror set a maximum 38" to bottom (if tilted, 42")	X		
Dispensers (towel, soap, etc) at least one of each a maximum 42" above the floor	X		

Concrete walkway around bathroom building is 3-4' wide. A trash can is also stored along the pathway making it impassable for someone in a wheelchair (if they could even get to the bathrooms since the approach is soft sand.

Belding Memorial Park - Lower

LOCATION

FLOORS, DRINKING FOUNTAINS, TELEPHONES			
<i>Specification</i>	Yes	No	<i>Comments/Transition Notes</i>
Floors N/A			
Non-slip surface			
Carpeting is high-density, low pile, non-absorbent, stretched taut, securely anchored			
Corridor width minimum is 3 ft			
Objects (signs, ceiling lights, fixtures) can only protrude 4" into the path of travel from a height of 27" to 80" above the floor			
Drinking Fountains			
Spouts no higher than 36" from floor to outlet		X	
Hand operated push button or level controls		X	
Spouts located near front with stream of water as parallel to front as possible		X	
If recessed, recess a minimum 30" width, and no deeper than depth of fountain		X	
If no clear knee space underneath, clear floor space 30" x 48" to allow parallel approach		X	
Telephones No public telephones			
Highest operating part a maximum 54" above the floor			
Access within 12" of phone, 30" high by 30" wide			
Adjustable volume control on headset so identified			
SIGNS, SIGNALS, AND SWITCHES			
<i>Specification</i>	Yes	No	<i>Comments/Transition Notes</i>
Switches, Controls and Signs No electricity, no switches, no fire alarms, no public accessible outlets			
Switches and controls for light, heat, ventilation, windows, fire alarms, thermostats, etc, must be a minimum of 36" and a maximum of 48" above the floor for a forward reach, a maximum of 54" for a side reach	X		
Electrical outlets centered no lower than 18" above the floor			
Warning signals must be visual as well as audible			Not tested
Signs Bathrooms are not signed as accessible.			
Mounting height must be 60" to centerline of the sign			
Within 18" of door jamb or recessed			
Letters and numbers at least 1/4" high			
Letters and numbers raised .03"			
Letters and numbers contrast with the background color			

Belding Memorial Park - Lower

LOCATION

SWIMMING POOLS – accessibility can be via ramp, lifting device, or transfer area			
<i>Specification</i>	Yes	No	<i>Comments/Transition Notes</i>
Ramp at least 34" wide with a non-slip surface extending into the shallow end, slope not exceeding 1:6 with handrails on both sides			N/A
Lifting device			
Transfer area 18" above the path of travel and a minimum of 18" wide			
Unobstructed path of travel not less than 48" wide around pool			
Non-slip surface			

LOCATION

SHOWER ROOMS - Showers must accommodate both wheel-in and transfer use			
<i>Specification</i>	Yes	No	<i>Comments/Transition Notes</i>
Stalls 36" by 60" minimum, with a 36" door opening			N/A
Floors are pitched to drain the stall at the corner farthest from entrance			
Floors are non-slip surface			
Controls operate by a single lever with a pressure balance mixing valve			
Controls are located on the center wall adjacent to the hinged seat			
Shower heads attached to a flexible metal hose			
Shower heads attached to wall mounting adjustable from 42" to 72" above the floor			
Seat is hinged and padded and at least 16" deep, folds upward, securely attached to side wall, height is 18" to the top of the seat, and at least 24" long			
Soap trays without handhold features unless they can support 250 pounds			
2 grab bars are provided, one 30" and one 48" long, or one continuous L shaped bar			
Grab bars are placed horizontally at 36" above the floor line			

LOCATION

PICNICKING			
<i>Specification</i>	Yes	No	<i>Comments/Transition Notes</i>
A minimum of 5% of the total tables must be accessible with clear space under the table top not less than 30" wide and 19" deep per seating space and not less than 27" clear from the ground to the underside of the table. An additional 29" clear space (totaling 48") must extend beyond the 19" clear space under the table to provide access			Not accessible - on top of grassed hill. Grassed driveway to the site.
For tables without toe clearance, the knee space under the table must be at least 28" high, 30" wide and 24" deep.			
Top of table no higher than 32" above ground			
Surface of the clear ground space under and around the table must be stable, firm and slip-resistant, and evenly graded with a maximum slope of 2% in all directions			
Accessible tables, grills and fire rings must have clear ground space of at least 36" around the perimeter			

Belding Memorial Park – Upper Main Street

Existing Conditions:

Access to Upper Park is from Main Street at a large dirt parking lot. There is one signed handicapped parking spot next to a concrete walkway and picnic area that accommodates wheelchairs. No other areas/facilities at the park are ADA accessible. A gravel access road to the boat launch does exist, however there is no level pad for a wheelchair, or accessible dock at the water's edge.



Accessible picnic area at Upper Park

Recommendations for Improved Accessibility:

1. Develop an accessible boat launch and dock at Ashfield Lake.
2. Develop an accessible viewing area. Vista pruning of the forested lake edge will be performed in 2017. A mowed lawn abuts this area, and is currently not accessible.

Schedule: 2018-2024

Responsible Entity: Parks Commission



Gravel access road to boat launch



Grassed walkway to lake

Belding Memorial Park - Upper
Main Street, Ashfield, MA

Facility Inventory

LOCATION:

ACTIVITY	EQUIPMENT	NOTES
Picnic Facilities	Tables & Benches	Located adjacent to accessible paths YES
		Access to Open Spaces YES
		Back and Arm Rests NO - back only
		Adequate number YES
	Grills	Height of Cooking Surface 17"
		Located adjacent to accessible paths YES
	Trash Cans	Located adjacent to accessible paths NO
		Located adjacent to accessible paths N/A
Picnic Shelters	Located near accessible water fountains, trash can, restroom, parking, etc. N/A	
Trails	Not accessible	Surface material grass/gravel
		Dimensions
		Rails
		Signage (for visually impaired)
Swimming Facilities N/A	Pools	Entrance
		Location from accessible parking
		Safety features i.e. warning for visually impaired
	Beaches	Location from accessible path into water
		Handrails
		Location from accessible parking
Play Areas (tot lots) N/A	All Play Equipment i.e. swings, slides	Shade provided
		Same experience provided to all
		Located adjacent to accessible paths
Game Areas: N/A *ballfield *basketball *tennis	Access Routes	Enough space between equipment for wheelchair
		Located adjacent to accessible paths
		Berm cuts onto courts
Boat Docks N/A	Equipment	Height
		Dimensions
		Spectator Seating
Fishing Facilities	Access Routes	Located adjacent to accessible paths
		Handrails
	Equipment	Arm Rests
		Bait Shelves
		Handrails
Programming N/A	Are special programs at your facilities accessible?	Fish Cleaning Tables
		Learn-to-Swim
		Guided Hikes
Services and Technical Assistance	Information available in alternative formats i.e. for visually impaired	Interpretive Programs
		Process to request interpretive services (i.e. sign language interpreter) for meetings

Belding Memorial Park consists of the Upper Park on Main Street on the south side of the lake, and Lower Park on the east end of the lake, including the town beach and tennis courts. The Lower Park has been assessed separately. The park is managed by the Parks Commission.

Upper Park is a large open field overlooking Ashfield Lake. Trails and wide mowed paths provide access by foot to the lake in several areas. A dry oak forest provides a woodland buffer between the mowed park fields and the lake. A section of the woodland buffer is scheduled for vista pruning in 2017 to provide more open views of the lake from within the park.

LOCATION Belding Memorial Park - Upper

PARKING			
<i>Total Spaces</i>		<i>Required Accessible Spaces</i>	
Up to 25		1 space X	
26-50		2 spaces	
51-75		3 spaces	
76-100		4 spaces	
101-150		5 spaces	
151-200		6 spaces	
201-300		7 spaces	
301-400		8 spaces	
401-500		9 spaces	
<i>Specification for Accessible Spaces</i>	Yes	No	<i>Comments/Transition Notes</i>
Accessible space located closest to accessible entrance	X		There is a large gravel lot adjacent to Route 116. A spot closest to the concrete walkway leading to the accessible picnic table and grill is signed for handicapped parking.
Where spaces cannot be located within 200 ft of accessible entrance, drop-off area is provided within 100 ft.			
Minimum width of 13 ft includes 8 ft space plus 5 ft access aisle	X		
Van space – minimum of 1 van space for every accessible space, 8 ft wide plus 8 ft aisle. Alternative is to make all accessible spaces 11 ft wide with 5 ft aisle.	X		
Sign with international symbol of accessibility at each space or pair of spaces	X		
Sign minimum 5 ft, maximum 8 ft to top of sign	X		
Surface evenly paved or hard-packed (no cracks)		X	
Surface slope less than 1:20, 5%	X		
Curbcut to pathway from parking lot at each space or pair of spaces, if sidewalk (curb) is present			N/A
Curbcut is a minimum width of 3 ft, excluding sloped sides, has sloped sides, all slopes not to exceed 1:12, and textured or painted yellow			N/A
RAMPS			
<i>Specification</i>	Yes	No	<i>Comments/Transition Notes</i>
Slope Maximum 1:12			N/A
Minimum width 4 ft between handrails			
Handrails on both sides if ramp is longer than 6 ft			
Handrails at 34" and 19" from ramp surface			
Handrails extend 12" beyond top and bottom			
Handgrip oval or round			
Handgrip smooth surface			
Handgrip diameter between 1¼" and 2"			
Clearance of 1½" between wall and wall rail			
Non-slip surface			
Level platforms (4ft x 4 ft) at every 30 ft, at top, at bottom, at change of direction			

Brewer Tatro Memorial Woods

Hawley Road

Existing Conditions:

The Brewer Tatro Memorial Woods is under the care and control of the Conservation Commission, and was donated to the town in 1977 by Esther D. and Phillip H. Steinmetz. This property is hilly and forested without any trails or other recreational facilities. The local Girl Scouts troop has expressed interest in developing a trail here in the near future.

Non-accessible parking is available at the pullout on the north side of Hawley Road. This area is maintained through the courtesy of The Trustees of Reservations as it also provides parking for their Bear Swamp Reservation located to the south and west.

Recommendations for Improved Accessibility:

Due to the hilly landscape, this site may not be appropriate for the development of ADA compliant accessible facilities.

Schedule: N/A

Responsible Entity: Conservation Commission



Sign on Hawley Road at parking area



Parking area on Hawley Road, across the street from entrance to Bear Swamp Reservation



Large vernal pool adjacent to parking area on Hawley Road

Brewer Tatro Memorial Woods
Hawley Road, Ashfield, MA

Facility Inventory

LOCATION:

ACTIVITY	EQUIPMENT	NOTES
Picnic Facilities N/A	Tables & Benches	Located adjacent to accessible paths
		Access to Open Spaces
		Back and Arm Rests
		Adequate number
	Grills	Height of Cooking Surface
	Trash Cans	Located adjacent to accessible paths
		Located adjacent to accessible paths
Picnic Shelters	Located adjacent to accessible paths	
	Located near accessible water fountains, trash can, restroom, parking, etc.	
Trails N/A		Surface material
		Dimensions
		Rails
		Signage (for visually impaired)
Swimming Facilities N/A	Pools	Entrance
		Location from accessible parking
		Safety features i.e. warning for visually impaired
	Beaches	Location from accessible path into water
		Handrails
		Shade provided
Play Areas (tot lots) N/A	All Play Equipment i.e. swings, slides	Same experience provided to all
	Access Routes	Located adjacent to accessible paths
		Enough space between equipment for wheelchair
Game Areas: N/A *ballfield *basketball *tennis	Access Routes	Located adjacent to accessible paths
		Berm cuts onto courts
	Equipment	Height
		Dimensions
		Spectator Seating
Boat Docks N/A	Access Routes	Located adjacent to accessible paths
		Handrails
Fishing Facilities N/A	Access Routes	Located adjacent to accessible paths
		Handrails
	Equipment	Arm Rests
		Bait Shelves
		Fish Cleaning Tables
Programming N/A	Are special programs at your facilities accessible?	Learn-to-Swim
		Guided Hikes
		Interpretive Programs
Services and Technical Assistance N/A		Information available in alternative formats i.e. for visually impaired
		Process to request interpretive services (i.e. sign language interpreter) for meetings

NOTE: The Brewer Tatro Memorial Woods is under the care and control of the Conservation Commission, and was donated to the town in 1977 by Esther D. and Phillip H. Steinmetz. This property currently functions as forested open space. There are no recreational facilities, including trails, at this site. The local Girl Scouts troop has expressed interest in developing a trail here in the near future.

Non-ADA accessible parking is available at a pullout on the side of the road, maintained by The Trustees of Reservations, which also provides parking for their Bear Swamp Reservation, located to the south and west of the Brewer Tatro property.

Stroheker Road Trailhead

Stroheker Road

Existing Conditions:

The trailhead to the Stroheker Road – TTOR Overlook Trail is located on a small parcel of town owned land at the intersection of Stroheker Road and Route 112. There are no facilities at this location other than a kiosk. Non-accessible parking is available on the east side of Route 112 in a grassy area at the mile 35.0 sign.

Recommendations for Improved Accessibility:

This is a single track trail, traversing a steep, forested landscape. It is not appropriate for accessibility improvements. Only the trailhead is on town-owned property. The remainder of the trail crosses private property through the permission of landowners.

Schedule: N/A

Responsible Entity: Ashfield Trails Committee



Trailhead kiosk



Stroheker Road street sign at Route 112. Trailhead to Ashfield Mountain trail on east side of Route 112, across the street from the kiosk.



Stroheker Road trailhead

Stroheker Road Trailhead
Stroheker Road, Ashfield, MA

Facility Inventory

LOCATION:

ACTIVITY	EQUIPMENT	NOTES
Picnic Facilities N/A	Tables & Benches	Located adjacent to accessible paths
		Access to Open Spaces
		Back and Arm Rests
		Adequate number
	Grills	Height of Cooking Surface
	Trash Cans	Located adjacent to accessible paths
		Located adjacent to accessible paths
Picnic Shelters	Located adjacent to accessible paths	
	Located near accessible water fountains, trash can, restroom, parking, etc.	
Trails N/A		Surface material
		Dimensions
		Rails
		Signage (for visually impaired)
Swimming Facilities N/A	Pools	Entrance
		Location from accessible parking
		Safety features i.e. warning for visually impaired
	Beaches	Location from accessible path into water
		Handrails
		Shade provided
Play Areas (tot lots) N/A	All Play Equipment i.e. swings, slides	Same experience provided to all
	Access Routes	Located adjacent to accessible paths
		Enough space between equipment for wheelchair
Game Areas: N/A *ballfield *basketball *tennis	Access Routes	Located adjacent to accessible paths
		Berm cuts onto courts
	Equipment	Height
		Dimensions
		Spectator Seating
Boat Docks N/A	Access Routes	Located adjacent to accessible paths
		Handrails
Fishing Facilities N/A	Access Routes	Located adjacent to accessible paths
		Handrails
	Equipment	Arm Rests
		Bait Shelves
		Fish Cleaning Tables
Programming N/A	Are special programs at your facilities accessible?	Learn-to-Swim
		Guided Hikes
		Interpretive Programs
Services and Technical Assistance N/A		Information available in alternative formats i.e. for visually impaired
		Process to request interpretive services (i.e. sign language interpreter) for meetings

NOTE: The trailhead to the Stroheker Road - TTOR Overlook Trail is located on a small parcel of town owned land at the intersection of Stroheker Road and Route 112. There are no facilities at this location other than a kiosk. Non-ADA accessible parking is available on the east side of Route 112 in grassy area at mile 35.0 sign.

Town Common

Main Street

Existing Conditions:

The Town Common is located next door to the Fire Station on Main Street, which is also Route 116. This is 4.5 acre parcel consists of 1.2 acres of mowed lawn with the remainder forested. A paved sidewalk parallels the site along Main Street. Cars also informally parallel park along the road. The property is protected from development by a Conservation Restriction, and therefore, no “facilities” are located at this location. Town sponsored events occur here throughout the year. Additional parking is available across the street at the First Congregational Church, however this is not town-owned parking.

Parking at the First Congregational Church consists of two handicapped accessible parking spots: 1) at the front of the building at the top of the driveway at Main Street; and, 2) east of the church at the rear door. The spot at the top of the driveway is next to a concrete sidewalk and approximately 30’ from a crosswalk with curb cuts that lead to the Town Common.

Recommendations for Improved Accessibility:

Due to the Conservation Restriction’s prohibition on new structures, no improvements are recommended for this site.

Schedule: N/A

Responsible Entity: Selectboard



Curb cut at crosswalk across Main Street / Route 116 to sidewalk adjacent to Town Common lawn



Parking spot at First Congregational Church, crosswalk, and curb cuts to sidewalk on both sides of Main Street/Route 116

Facility Inventory

LOCATION: Town Common, Main Street, Ashfield, MA

ACTIVITY	EQUIPMENT	NOTES
Picnic Facilities N/A	Tables & Benches	Located adjacent to accessible paths
		Access to Open Spaces
		Back and Arm Rests
		Adequate number
	Grills	Height of Cooking Surface
	Trash Cans	Located adjacent to accessible paths
		Located adjacent to accessible paths
Picnic Shelters	Located adjacent to accessible paths	
	Located near accessible water fountains, trash can, restroom, parking, etc.	
Trails N/A		Surface material
		Dimensions
		Rails
		Signage (for visually impaired)
Swimming Facilities N/A	Pools	Entrance
		Location from accessible parking
		Safety features i.e. warning for visually impaired
	Beaches	Location from accessible path into water
		Handrails
		Shade provided
Play Areas (tot lots) N/A	All Play Equipment i.e. swings, slides	Same experience provided to all
	Access Routes	Located adjacent to accessible paths
		Enough space between equipment for wheelchair
Game Areas: N/A *ballfield *basketball *tennis	Access Routes	Located adjacent to accessible paths
		Berm cuts onto courts
	Equipment	Height
		Dimensions
		Spectator Seating
Boat Docks N/A	Access Routes	Located adjacent to accessible paths
		Handrails
Fishing Facilities N/A	Access Routes	Located adjacent to accessible paths
		Handrails
	Equipment	Arm Rests
		Bait Shelves
		Fish Cleaning Tables
Programming N/A	Are special programs at your facilities accessible?	Learn-to-Swim
		Guided Hikes
		Interpretive Programs
Services and Technical Assistance N/A		Information available in alternative formats i.e. for visually impaired
		Process to request interpretive services (i.e. sign language interpreter) for meetings

NOTE: The Town Common is located next door to the Fire Station. The property is protected from development by a Conservation Restriction, therefore there are no "facilities" at this location. Town sponsored events occur here throughout the year. Parking is available across the street at the First Congregational Church, and assessed as part of this report.

LOCATION Town Common

PARKING		SEE COMMENTS		
<i>Total Spaces</i>		<i>Required Accessible Spaces</i>		
Up to 25		1 space		
26-50		2 spaces		
51-75		3 spaces		
76-100		4 spaces		
101-150		5 spaces		
151-200		6 spaces		
201-300		7 spaces		
301-400		8 spaces		
401-500		9 spaces		
<i>Specification for Accessible Spaces</i>	Yes	No	<i>Comments/Transition Notes</i>	
Accessible space located closest to accessible entrance			There is no designated parking at the Town Common. On street parking is technically	
Where spaces cannot be located within 200 ft of accessible entrance, drop-off area is provided within 100 ft.			illegal along a state highway, and Main Street is also Route 116. The First Congregational Church, located across the street, allows	
Minimum width of 13 ft includes 8 ft space plus 5 ft access aisle			their parking lot to be used for activities on the Common. There are two handicapped	
Van space – minimum of 1 van space for every accessible space, 8 ft wide plus 8 ft aisle. Alternative is to make all accessible spaces 11 ft wide with 5 ft aisle.			accessible parking spots: at the front of the building at the top of the driveway, and behind the church at the rear door. Both	
Sign with international symbol of accessibility at each space or pair of spaces			spots are signed. The spot at the front of the building is next to a concrete sidewalk, and	
Sign minimum 5 ft, maximum 8 ft to top of sign			approximately 30' from a crosswalk with	
Surface evenly paved or hard-packed (no cracks)			adequate curbs.	
Surface slope less than 1:20, 5%				
Curbscut to pathway from parking lot at each space or pair of spaces, if sidewalk (curb) is present				
Curbscut is a minimum width of 3 ft, excluding sloped sides, has sloped sides, all slopes not to exceed 1:12, and textured or painted yellow				
RAMPS		N/A		
<i>Specification</i>	Yes	No	<i>Comments/Transition Notes</i>	
Slope Maximum 1:12				
Minimum width 4 ft between handrails				
Handrails on both sides if ramp is longer than 6 ft				
Handrails at 34" and 19" from ramp surface				
Handrails extend 12" beyond top and bottom				
Handgrip oval or round				
Handgrip smooth surface				
Handgrip diameter between 1¼" and 2"				
Clearance of 1½" between wall and wall rail				
Non-slip surface				
Level platforms (4ft x 4 ft) at every 30 ft, at top, at bottom, at change of direction				

LOCATION Town Common

SITE ACCESS, PATH OF TRAVEL, ENTRANCES		SEE COMMENTS	
<i>Specification</i>	Yes	No	<i>Comments/Transition Notes</i>
Site Access			
Accessible path of travel from passenger disembarking area and parking area to accessible entrance			See notes above about access from parking across the street at the church, sidewalk and curbscuts. A concrete sidewalk runs along the north side of the Common. There are no curb cuts or resting spots/pullouts for persons in a wheelchair.
Disembarking area at accessible entrance			
Surface evenly paved or hard-packed			
No ponding of water			The entire site is grass and not accessible.
Path of Travel			
Path does not require the use of stairs			
Path is stable, firm and slip resistant			
3 ft wide minimum			
Slope maximum 1:20 (5%) and maximum cross pitch is 2% (1:50).			
Continuous common surface, no changes in level greater than 1/2 inch			
Any objects protruding onto the pathway must be detected by a person with a visual disability using a cane			
Objects protruding more than 4" from the wall must be within 27" of the ground, or higher than 80"			
Curb on the pathway must have curb cuts at drives, parking and drop-offs			
Entrances			
Primary public entrances accessible to person using wheelchair, must be signed, gotten to independently, and <i>not</i> be the service entrance			
Level space extending 5 ft. from the door, interior and exterior of entrance doors			
Minimum 32" clear width opening (i.e. 36" door with standard hinge)			
At least 18" clear floor area on latch, pull side of door			
Door handle no higher than 48" and operable with a closed fist			
Vestibule is 4 ft plus the width of the door swinging into the space			
Entrance(s) on a level that makes elevators accessible			
Door mats less than 1/2" thick are securely fastened			
Door mats more than 1/2" thick are recessed			
Grates in path of travel have openings of 1/2" maximum			
Signs at non-accessible entrance(s) indicate direction to accessible entrance			
Emergency egress – alarms with flashing lights and audible signals, sufficiently lighted			

Town Hall

412 Main Street

Existing Conditions:

Town Hall is a historic town-owned building. Community events and occasional recreational events occur here. Thus, the building has been included in the ADA assessment as a town-owned recreation facility.

There is one accessible parking spot in front of Town Hall. The sign is on a removable chain across the front of the spot which also serves as access to the side and back of the Fire Station and Town Hall. The parking space and access path to the building have changes in level measuring $\frac{1}{4}$ to $\frac{1}{2}$ " , and there is a $\frac{1}{2}$ to 1" lip between the pavement and the stone path.

A ramp on the west side of the building is recognized as an emergency exit from inside the building. The ramp is not accessible due to a 2" change in level from the pavement to the ramp, and the screw latch on the interior of the door at 5' high.

Doors, mats and stairways on the first floor are accessible. An elevator provides transport between floors. The bathrooms are located in the basement and are accessible.

Recommendations for Improved Accessibility:

The Massachusetts Office of Disability conducted an Accessibility Site Survey at Town Hall on November 6, 2009. The Ashfield Building Committee has recently revisited this document and will be preparing a Municipal ADA Improvement Grant application for FY18. The Committee has not yet identified a scope of work for the grant application.

1. Improve access at front door and from ramp by leveling walkways and transition between surfaces.
2. Consider recommendations to be developed by the Town Hall building Committee.

Schedule: 2018-2024

Responsible Entity: Town Hall Building Committee, Selectboard



Handicapped parking spot at Town Hall



Walkway and ramp on west side of Town Hall.

Facility Inventory

LOCATION: Town Hall, 412 Main Street, Ashfield, MA

ACTIVITY	EQUIPMENT	NOTES
Picnic Facilities N/A	Tables & Benches	Located adjacent to accessible paths
		Access to Open Spaces
		Back and Arm Rests
		Adequate number
	Grills	Height of Cooking Surface
	Trash Cans	Located adjacent to accessible paths
		Located adjacent to accessible paths
Picnic Shelters	Located adjacent to accessible paths	
	Located near accessible water fountains, trash can, restroom, parking, etc.	
Trails N/A		Surface material
		Dimensions
		Rails
		Signage (for visually impaired)
Swimming Facilities N/A	Pools	Entrance
		Location from accessible parking
		Safety features i.e. warning for visually impaired
	Beaches	Location from accessible path into water
		Handrails
		Shade provided
Play Areas (tot lots) N/A	All Play Equipment i.e. swings, slides	Same experience provided to all
	Access Routes	Located adjacent to accessible paths
		Enough space between equipment for wheelchair
Game Areas: N/A *ballfield *basketball *tennis	Access Routes	Located adjacent to accessible paths
		Berm cuts onto courts
	Equipment	Height
		Dimensions
		Spectator Seating
Boat Docks N/A	Access Routes	Located adjacent to accessible paths
		Handrails
Fishing Facilities N/A	Access Routes	Located adjacent to accessible paths
		Handrails
	Equipment	Arm Rests
		Bait Shelves
		Fish Cleaning Tables
Programming N/A	Are special programs at your facilities accessible?	Learn-to-Swim
		Guided Hikes
		Interpretive Programs
Services and Technical Assistance	Information available in alternative formats i.e. for visually impaired	
		Process to request interpretive services (i.e. sign language interpreter) for meetings

Town Hall is a historic town-owned building. Community events and occasional recreational events occur here. Thus, the building has been included in the ADA assessment as a town-owned recreational facility.

The Massachusetts Office of Disability conducted an Accessibility Site Survey at Town Hall on November 6, 2009. The Ashfield Building Committee has recently re-visited this document and will be preparing a Municipal ADA Improvement Grant application for FY18. The Committee has not yet identified a scope of work for the grant application.

LOCATION Town Hall

PARKING			
<i>Total Spaces</i>	<i>Required Accessible Spaces</i>		
Up to 25	1 space	X	
26-50	2 spaces		
51-75	3 spaces		
76-100	4 spaces		
101-150	5 spaces		
151-200	6 spaces		
201-300	7 spaces		
301-400	8 spaces		
401-500	9 spaces		
<i>Specification for Accessible Spaces</i>	Yes	No	<i>Comments/Transition Notes</i>
Accessible space located closest to accessible entrance	X		
Where spaces cannot be located within 200 ft of accessible entrance, drop-off area is provided within 100 ft.			N/A
Minimum width of 13 ft includes 8 ft space plus 5 ft access aisle	X		
Van space – minimum of 1 van space for every accessible space, 8 ft wide plus 8 ft aisle. Alternative is to make all accessible spaces 11 ft wide with 5 ft aisle.	X		The one accessible space would accommodate a van.
Sign with international symbol of accessibility at each space or pair of spaces	X		The sign hangs on a chain across the front of the space, approximately 3' high. The chain is removable to allow vehicular access behind Town Hall and the adjacent Fire Station.
Sign minimum 5 ft, maximum 8 ft to top of sign		X	The parking space is paved, with some cracks. A stone pathway leading from the parking to the entrance has changes in level measuring 1/4-1/2". There is a 1/2-1" lip between the pavement and the stone path.
Surface evenly paved or hard-packed (no cracks)		X	
Surface slope less than 1:20, 5%	X		
Curbcut to pathway from parking lot at each space or pair of spaces, if sidewalk (curb) is present			N/A
Curbcut is a minimum width of 3 ft, excluding sloped sides, has sloped sides, all slopes not to exceed 1:12, and textured or painted yellow			N/A
RAMPS			
<i>Specification</i>	Yes	No	<i>Comments/Transition Notes</i>
Slope Maximum 1:12	X		A ramp is provided on the west side of the building, recognized as an emergency exit from the interior of the building. the approach to the ramp is over pavement that is in severe disrepair, which creates changes in level over 1/2 inch. There is a two inch change from the pavement to the ramp.
Minimum width 4 ft between handrails	X		
Handrails on both sides if ramp is longer than 6 ft	X		
Handrails at 34" and 19" from ramp surface	X		
Handrails extend 12" beyond top and bottom	X		
Handgrip oval or round	X		
Handgrip smooth surface	X		
Handgrip diameter between 1 1/4" and 2"	X		
Clearance of 1 1/2" between wall and wall rail			N/A
Non-slip surface	X		
Level platforms (4ft x 4 ft) at every 30 ft, at top, at bottom, at change of direction		X	

LOCATION Town Hall

SITE ACCESS, PATH OF TRAVEL, ENTRANCES			
<i>Specification</i>	Yes	No	<i>Comments/Transition Notes</i>
Site Access			
Accessible path of travel from passenger disembarking area and parking area to accessible entrance	X		See previous comments under parking.
Disembarking area at accessible entrance	X		
Surface evenly paved or hard-packed	X		
No ponding of water	X		
Path of Travel			
Path does not require the use of stairs	X		See previous comments under parking.
Path is stable, firm and slip resistant	X		
3 ft wide minimum	X		
Slope maximum 1:20 (5%) and maximum cross pitch is 2% (1:50).	X		
Continuous common surface, no changes in level greater than 1/2 inch		X	
Any objects protruding onto the pathway must be detected by a person with a visual disability using a cane	X		
Objects protruding more than 4" from the wall must be within 27" of the ground, or higher than 80"	X		
Curb on the pathway must have curb cuts at drives, parking and drop-offs			N/A
Entrances			
Primary public entrances accessible to person using wheelchair, must be signed, gotten to independently, and <i>not</i> be the service entrance		X	Not signed.
Level space extending 5 ft. from the door, interior and exterior of entrance doors	X		
Minimum 32" clear width opening (i.e. 36" door with standard hinge)	X		
At least 18" clear floor area on latch, pull side of door	X		
Door handle no higher than 48" and operable with a closed fist	X		
Vestibule is 4 ft plus the width of the door swinging into the space			N/A
Entrance(s) on a level that makes elevators accessible	X		
Door mats less than 1/2" thick are securely fastened		X	Less than 1/2" but not securely fastened.
Door mats more than 1/2" thick are recessed	X		
Grates in path of travel have openings of 1/2" maximum			N/A
Signs at non-accessible entrance(s) indicate direction to accessible entrance		X	
Emergency egress – alarms with flashing lights and audible signals, sufficiently lighted			Located at ramp on west side of building. Emergency alarm not tested.

LOCATION Town Hall

STAIRS and DOORS			
Specification	Yes	No	Comments/Transition Notes
Stairs Stairs from entrance to first floor.			
No open risers	X		
Nosings not projecting	X		
Treads no less than 11" wide	X		
Handrails on both sides	X		
Handrails 34"-38" above tread	X		33"
Handrail extends a minimum of 1 ft beyond top and bottom riser (if no safety hazard and space permits)	X		
Handgrip oval or round	X		
Handgrip has a smooth surface	X		
Handgrip diameter between 1 1/4" and 1 1/2"	X		
1 1/2" clearance between wall and handrail	X		
Doors			
Minimum 32" clear opening	X		
At least 18" clear floor space on pull side of door	X		
Closing speed minimum 3 seconds to within 3" of the latch	X		
Maximum pressure 5 pounds interior doors	X		
Threshold maximum 1/2" high, beveled on both sides	X		
Hardware operable with a closed fist (no conventional door knobs or thumb latch devices)		X	
Hardware minimum 36", maximum 48" above the floor	X		
Clear, level floor space extends out 5 ft from both sides of the door	X		Varies room to room; 3-5' or more generally.
Door adjacent to revolving door is accessible and unlocked			N/A
Doors opening into hazardous area have hardware that is knurled or roughened			N/A

NOTES

Doors on the first floor were assessed. The second floor auditorium space was not assessed. First floor space for classes (yoga, Tai Chi, etc.).

Mats on first floor at lift not secured to floor, but less than 1/2" (essentially flat, not pile).

Screen door at emergency exit (ramped exterior) - Handle is not for closed grip. Sign on door notes "Door to be held open when building occupancy exceeds 50 people". Screw latch on emergency door at 5' high.

LOCATION Town Hall

RESTROOMS – also see Doors and Vestibules			
<i>Specification</i>	Yes	No	<i>Comments/Transition Notes</i>
5 ft turning space measured 12" from the floor	X		
At least one Sink:			
Clear floor space of 30" by 48" to allow a forward approach	X		
Mounted without pedestal or legs, height 34" to top of rim	X		
Extends at least 22" from the wall	X		
Open knee space a minimum 19" deep, 30" width, and 27" high	X		
Cover exposed pipes with insulation			N/A
Faucets operable with closed fist (lever or spring activated handle)	X		
At least one Stall:			
Accessible to person using wheelchair at 60" wide by 72" deep	X		
Stall door is 36" wide	X		
Stall door swings out	X		
Stall door is self closing	X		
Stall door has a pull latch	X		
Lock on stall door is operable with a closed fist, and 32" above the floor	X		
Coat hook is 54" high			
Toilet			
18" from center to nearest side wall	X		
42" minimum clear space from center to farthest wall or fixture	X		
Top of seat 17"-19" above the floor	X		
Grab Bars			
On back and side wall closest to toilet		X	on side wall
1¼" diameter	X		
1½" clearance to wall	X		
Located 30" above and parallel to the floor	X		
Acid-etched or roughened surface	X		
42" long	X		
Fixtures			
Toilet paper dispenser is 24" above floor	X		
One mirror set a maximum 38" to bottom (if tilted, 42")	X		
Dispensers (towel, soap, etc) at least one of each a maximum 42" above the floor	X		

LOCATION Town Hall

FLOORS, DRINKING FOUNTAINS, TELEPHONES			
<i>Specification</i>	Yes	No	<i>Comments/Transition Notes</i>
Floors			
Non-slip surface			
Carpeting is high-density, low pile, non-absorbent, stretched taut, securely anchored	X		Old wood floors throughout the building, may be slippery when wet. At main entrance, no slip, weather resistance flooring. Linoleum tiles in basement and bathrooms.
Corridor width minimum is 3 ft	X		
Objects (signs, ceiling lights, fixtures) can only protrude 4" into the path of travel from a height of 27" to 80" above the floor	X		
Drinking Fountains N/A			
Spouts no higher than 36" from floor to outlet			
Hand operated push button or level controls			
Spouts located near front with stream of water as parallel to front as possible			
If recessed, recess a minimum 30" width, and no deeper than depth of fountain			
If no clear knee space underneath, clear floor space 30" x 48" to allow parallel approach			
Telephones No public telephones			
Highest operating part a maximum 54" above the floor			
Access within 12" of phone, 30" high by 30" wide			
Adjustable volume control on headset so identified			
SIGNS, SIGNALS, AND SWITCHES			
<i>Specification</i>	Yes	No	<i>Comments/Transition Notes</i>
Switches, Controls and Signs			
Switches and controls for light, heat, ventilation, windows, fire alarms, thermostats, etc, must be a minimum of 36" and a maximum of 48" above the floor for a forward reach, a maximum of 54" for a side reach	X		
Electrical outlets centered no lower than 18" above the floor	X		
Warning signals must be visual as well as audible			Not tested
Signs			
Mounting height must be 60" to centerline of the sign	X		
Within 18" of door jamb or recessed	X		
Letters and numbers at least 1/4" high	X		
Letters and numbers raised .03"	X		On "Exit" and handicapped signs
Letters and numbers contrast with the background color	X		

Town Hall

LOCATION

SWIMMING POOLS – accessibility can be via ramp, lifting device, or transfer area			
<i>Specification</i>	Yes	No	<i>Comments/Transition Notes</i>
Ramp at least 34" wide with a non-slip surface extending into the shallow end, slope not exceeding 1:6 with handrails on both sides			N/A
Lifting device			
Transfer area 18" above the path of travel and a minimum of 18" wide			
Unobstructed path of travel not less than 48" wide around pool			
Non-slip surface			

LOCATION

SHOWER ROOMS - Showers must accommodate both wheel-in and transfer use			
<i>Specification</i>	Yes	No	<i>Comments/Transition Notes</i>
Stalls 36" by 60" minimum, with a 36" door opening			N/A
Floors are pitched to drain the stall at the corner farthest from entrance			
Floors are non-slip surface			
Controls operate by a single lever with a pressure balance mixing valve			
Controls are located on the center wall adjacent to the hinged seat			
Shower heads attached to a flexible metal hose			
Shower heads attached to wall mounting adjustable from 42" to 72" above the floor			
Seat is hinged and padded and at least 16" deep, folds upward, securely attached to side wall, height is 18" to the top of the seat, and at least 24" long			
Soap trays without handhold features unless they can support 250 pounds			
2 grab bars are provided, one 30" and one 48" long, or one continuous L shaped bar			
Grab bars are placed horizontally at 36" above the floor line			

LOCATION

PICNICKING			
<i>Specification</i>	Yes	No	<i>Comments/Transition Notes</i>
A minimum of 5% of the total tables must be accessible with clear space under the table top not less than 30" wide and 19" deep per seating space and not less than 27" clear from the ground to the underside of the table. An additional 29" clear space (totaling 48") must extend beyond the 19" clear space under the table to provide access			N/A
For tables without toe clearance, the knee space under the table must be at least 28" high, 30" wide and 24" deep.			
Top of table no higher than 32" above ground			
Surface of the clear ground space under and around the table must be stable, firm and slip-resistant, and evenly graded with a maximum slope of 2% in all directions			
Accessible tables, grills and fire rings must have clear ground space of at least 36" around the perimeter			

44 Buckland Road and Bronson Avenue Parking Lot

Existing Conditions:

The Town owns two small parcels at 44 Buckland Road and on Bronson Avenue adjacent to and associated with the ballfields owned and operated by the Trustees of Smith Academy. Therefore, the ballfields and playground were not assessed as part of this report, just the parking and access as provided on town-owned property.

44 Buckland Road – A steeply sloped, 100-foot long paved driveway from Buckland Road terminates at a parking lot adjacent to the ballfield. Some overflow parking is accommodated on the adjacent lawn. There are no signed handicapped parking spots in this lot. There is a port-o-potty at the northern end of the parking lot that is not accessible.

Bronson Avenue Parking Lot – This is an unpaved parking lot for approximately 15 cars. There is no signed handicapped parking spot. Across the street from the lot is an uneven asphalt walkway and concrete steps approximately 70' long, with hand railings.

Recommendations for Improved Accessibility:

Due to the distance and grade change from Bronson Ave to the ballfields, no accessibility improvements to the Bronson Avenue parking lot are recommended. The following recommendations are for the parking lot at Buckland Road:

1. Provide a signed handicapped parking spot close to the ballfield.
2. Consider providing a handicapped accessible port-o-potty at this facility.

Schedule: 2018-2024

Responsible Entity: Selectboard



Driveway from Buckland Road and adjacent lawn for overflow parking



Buckland Road parking lot adjacent to ballfield



Parking lot on Bronson Avenue



Unpaved walkway from Bronson Avenue parking lot to ballfields



Steps and unpaved walkway from Bronson Avenue to ballfields

44 Buckland Road and Bronson Ave Parking Lot
Ashfield, MA

Facility Inventory

LOCATION:

ACTIVITY	EQUIPMENT	NOTES
Picnic Facilities N/A	Tables & Benches	Located adjacent to accessible paths
		Access to Open Spaces
		Back and Arm Rests
		Adequate number
	Grills	Height of Cooking Surface
	Trash Cans	Located adjacent to accessible paths
		Located adjacent to accessible paths
Picnic Shelters	Located adjacent to accessible paths	
	Located near accessible water fountains, trash can, restroom, parking, etc.	
Trails N/A		Surface material
		Dimensions
		Rails
		Signage (for visually impaired)
Swimming Facilities N/A	Pools	Entrance
		Location from accessible parking
		Safety features i.e. warning for visually impaired
	Beaches	Location from accessible path into water
		Handrails
		Shade provided
Play Areas (tot lots) N/A	All Play Equipment i.e. swings, slides	Same experience provided to all
	Access Routes	Located adjacent to accessible paths
		Enough space between equipment for wheelchair
Game Areas: N/A *ballfield *basketball *tennis	Access Routes	Located adjacent to accessible paths
		Berm cuts onto courts
	Equipment	Height
		Dimensions
		Spectator Seating
Boat Docks N/A	Access Routes	Located adjacent to accessible paths
		Handrails
Fishing Facilities N/A	Access Routes	Located adjacent to accessible paths
		Handrails
	Equipment	Arm Rests
		Bait Shelves
		Fish Cleaning Tables
Programming N/A	Are special programs at your facilities accessible?	Learn-to-Swim
		Guided Hikes
		Interpretive Programs
Services and Technical Assistance N/A		Information available in alternative formats i.e. for visually impaired
		Process to request interpretive services (i.e. sign language interpreter) for meetings

NOTE: The Town owns two small parcels at 44 Buckland Road and on Bronson Avenue adjacent to and associated with the ballfields owned and operated by the Trustees of Smith Academy. Therefore, the ballfields and playground were not assessed as part of this report, just the parking and access as provided on town-owned property. There was no designated handicapped parking at either location. The parking lot on Bronson Avenue is immediately adjacent to one of the ballfields.



TOWN OF ASHFIELD
OFFICE OF THE SELECT BOARD

412 Main Street
PO Box 560
Ashfield, MA 01330
Phone: 413-628-4441 x7
Fax: 413-628-0228
selectboard@ashfield.org

Select Board Policy: 17-01

Date Adopted: 08-21-2017

DISABILITY DISCRIMINATION GRIEVANCE POLICY

It is the policy of the Town of Ashfield not to discriminate on the basis of disability. This Grievance Procedure has been established to meet the requirements of the American with Disabilities Act of 1990 (ADA). It may be used by anyone who wishes to file a complaint alleging discrimination on the basis of disability in the provision of services, activities, programs, or benefits by the Town of Ashfield. The Ashfield Personnel Policy governs employment-related complaints of disability discrimination. Every opportunity will be made available to receive citizen comments, complaints, and to resolve grievances or inquiries.

Complaints should be submitted by the grievant and/or his/her designee as soon as possible, but no later than sixty (60) calendar days after the alleged violation to:

ADA Coordinator

412 Main Street

P.O. Box 560

Ashfield MA 01330

Telephone: 413-628-4441 ext. 7

Email: townadmin@ashfield.org

Office Hours: Monday-Thursday, 9:00 am to 4:00 pm, Fridays by Appointment

STEP 1

The Town ADA Coordinator will be available to meet with citizens and employees during regular business hours to receive complaints. The ADA Coordinator is responsible for coordinating the efforts of the Town of Ashfield to comply and investigate any complaints.

When a complaint, grievance, request for program policy interpretation, or clarification is received either in writing, through a meeting, or telephone call, a record will be created which shall include the name, address, telephone number of the person complainant and the nature of their request or complaint. Anonymous complaints or requests for information will be accepted and a record created with available information.

If the person, making the complaint or request for information is identified, the complaint, grievance, request for program policy interpretation, or clarification will be responded to within fifteen (15)

calendar days in a format that is sensitive to the needs of the recipient (i.e. verbally, enlarge type, etc.). There will be an automatic extension of fifteen (15) calendar days if the ADA Coordinator is on vacation, out of the office, or for other reasonable cause. The written response from the ADA Coordinator will include position of the Town of Ashfield and substantive resolution of the complaint.

If the grievance is not resolved at this level, it will progress to Step 2.

STEP 2

If the grievance is not resolved in Step 1, then a written grievance will be submitted to the ADA coordinator. Assistance in writing the grievance will be available if requested. All written grievances will be responded to within fifteen (15) calendar days by the ADA Coordinator in a format that is sensitive to the needs of the recipient. There will be an automatic extension of fifteen (15) calendar days if the ADA Coordinator is on vacation, out of the office, or for other reasonable cause.

If the grievance is not resolved at this level, it will progress to Step 3.

STEP 3

If the grievance is not satisfactorily resolved in Step 2, complainants will have the opportunity to appeal to the Select Board, pursuant to the provisions of the Open Meeting Law. The Select Board shall issue a written decision to the complainant, and others as qualified by the law, no later than fifteen (15) calendar days after the meeting.

Decisions of the Select Board will be final. Appeals may be made to the Massachusetts Commission Against Discrimination (MCAD) and/or Equal Employment Opportunity Commission (EEOC). All written complaints received by the ADA Coordinator, appeals to the Selectboard and responses, will be held by the Town of Ashfield for a period of at least three years.

Massachusetts Commission Against Discrimination (MCAD)

436 Dwight Street, Suite 220

Springfield MA 01103-1317

Telephone: 413-739-2145

Equal Employment Opportunity Commission (EEOC)

475 J.F.K Federal Building

Government Center

Boston MA 02203-0506

Telephone: 617-565-3200

APPENDIX G: Lists of Wildlife Species in Ashfield

Source: DeGraaf, Richard M and Yamasaki, Mariko. 2001. *New England Wildlife: Habitat, Natural History, and Distribution.*

Mammal Species

ORDER		Southern red-backed vole (<i>Clethrionomys gapperi</i>)	330	
Family		Meadow vole (<i>Microtus pennsylvanicus</i>)	331	
Common name (<i>Scientific name</i>)		Rock vole (<i>Microtus chrotorrhinus</i>)	332	
DIDELPHIMORPHIA (FORMERLY MARSUPIALIA)		Woodland vole (<i>Microtus pinetorum</i>)	333	
Didelphidae		Muskrat (<i>Ondatra zibethicus</i>)	333	
Virginia opossum (<i>Didelphis virginiana</i>)		301	Southern bog lemming (<i>Synaptomys cooperi</i>)	334
INSECTIVORA		Northern bog lemming (<i>Synaptomys borealis</i>)	335	
Soricidae		Norway rat (<i>Rattus norvegicus</i>)	336	
Masked shrew (<i>Sorex cinereus</i>)		302	House mouse (<i>Mus musculus</i>)	337
Water shrew (<i>Sorex palustris</i>)		303	Zapodidae	
Smoky shrew (<i>Sorex fumeus</i>)		303	Meadow jumping mouse (<i>Zapus hudsonius</i>)	337
Long-tailed shrew (<i>Sorex dispar</i>)		304	Woodland jumping mouse (<i>Napaeozapus insignis</i>)	338
Pygmy shrew (<i>Sorex boylii</i>)		305	Erethizontidae	
Northern short-tailed shrew (<i>Blarina brevicauda</i>)		306	Porcupine (<i>Erethizon dorsatum</i>)	339
Least shrew (<i>Cryptotis parva</i>)		307	CARNIVORA	
Talpidae			Canidae	
Hairy-tailed mole (<i>Parascalops breweri</i>)		307	Coyote (<i>Canis latrans</i>)	340
Eastern mole (<i>Scalopus aquaticus</i>)		308	Gray wolf (<i>Canis lupus</i>)	341
Star-nosed mole (<i>Condylura cristata</i>)		308	Red fox (<i>Vulpes vulpes</i>)	342
CHIROPTERA			Gray fox (<i>Urocyon cinereoargenteus</i>)	343
Vespertilionidae			Ursidae	
Little brown myotis (<i>Myotis lucifugus</i>)		309	Black Bear (<i>Ursus americanus</i>)	344
Northern long-eared bat (<i>Myotis septentrionalis</i>)		311	Procyonidae	
Indiana myotis (<i>Myotis sodalis</i>)		312	Raccoon (<i>Procyon lotor</i>)	346
Eastern small-footed myotis (<i>Myotis leibii</i>)		313	Mustelidae	
Silver-haired bat (<i>Lasionycteris noctivagans</i>)		313	American marten (<i>Martes americana</i>)	347
Eastern pipistrelle (<i>Pipistrellus subflavus</i>)		314	Fisher (<i>Martes pennanti</i>)	348
Big brown bat (<i>Eptesicus fuscus</i>)		315	Ermine (<i>Mustela erminea</i>)	349
Red bat (<i>Lasiurus borealis</i>)		316	Long-tailed weasel (<i>Mustela frenata</i>)	350
Hoary bat (<i>Lasiurus cinereus</i>)		317	Mink (<i>Mustela vison</i>)	351
LAGOMORPHA			Striped skunk (<i>Mephitis mephitis</i>)	351
Leporidae			River otter (<i>Lontra canadensis</i>)	352
Eastern cottontail (<i>Sylvilagus floridanus</i>)		318	Felidae	
New England cottontail (<i>Sylvilagus transitionalis</i>)		319	Mountain lion (<i>Puma concolor</i>)	353
Snowshoe hare (<i>Lepus americanus</i>)		320	Lynx (<i>Lynx canadensis</i>)	354
European hare (<i>Lepus europaeus</i>)		321	Bobcat (<i>Lynx rufus</i>)	356
Black-tailed jackrabbit (<i>Lepus californicus</i>)		322	ARTIODACTYLA	
RODENTIA			Cervidae	
Sciuridae			White-tailed deer (<i>Odocoileus virginianus</i>)	357
Eastern chipmunk (<i>Tamias striatus</i>)		323	Moose (<i>Alces alces</i>)	358
Woodchuck (<i>Marmota monax</i>)		324		
Gray squirrel (<i>Sciurus carolinensis</i>)		324		
Red squirrel (<i>Tamiasciurus hudsonicus</i>)		325		
Southern flying squirrel (<i>Glaucomys volans</i>)		326		
Northern flying squirrel (<i>Glaucomys sabrinus</i>)		327		
Castoridae				
Beaver (<i>Castor canadensis</i>)		327		
Muridae				
Deer mouse (<i>Peromyscus maniculatus</i>)		328		
White-footed mouse (<i>Peromyscus leucopus</i>)		329		

The following lists the references on mammals for further reading on life histories and distribution.

Citations by Region

North America

- Chapman, J. A.; Feldhamer, G. A. 1982. *Wild mammals of North America, biology, management, and economics*. Baltimore, Md.: Johns Hopkins University Press. 1,168 pp.
- Hall, E. R.; Kelson, K. R. 1959. *The mammals of North America*. 2 volumes. New York: Ronald Press.
- Whitaker, J. O., Jr.; Hamilton, W. J., Jr. 1998. *Mammals of the eastern*

Amphibian and Reptile Species

ORDER

Family

Common name (*Scientific name*)

CAUDATA

Necturidae

Mudpuppy (*Necturus maculosus*) 26

Ambystomatidae

Marbled salamander (*Ambystoma opacum*) 26

Jefferson salamander (*Ambystoma jeffersonianum*) 27

~~Blue-spotted salamander (*Ambystoma laterale*) 29~~

Spotted salamander (*Ambystoma maculatum*) 30

Salamandridae

Red-spotted newt (*Notophthalmus v. viridescens*) 31

Plethodontidae

Northern dusky salamander (*Desmognathus fuscus*) 32

Northern redback salamander (*Plethodon cinereus*) 33

~~Northern slimy salamander (*Plethodon glutinosus*) 34~~

Four-toed salamander (*Hemidactylium scutatum*) 35

Northern spring salamander (*Gyrinophilus p. porphyriticus*) 35

Northern two-lined salamander (*Eurycea bislineata*) 36

ANURA

Pelobatidae

~~Eastern spadefoot (*Scaphiopus holbrookii*) 37~~

Bufonidae

Eastern American toad (*Bufo a. americanus*) 38

~~Fowler's toad (*Bufo fowleri*) 39~~

Hylidae

Northern spring peeper (*Pseudacris c. crucifer*) 40

Gray treefrog (*Hyla versicolor*) 40

Ranidae

Bullfrog (*Rana catesbeiana*) 41

Green frog (*Rana clamitans melanota*) 42

~~Mink frog (*Rana septentrionalis*) 43~~

Wood frog (*Rana sylvatica*) 43

Northern leopard frog (*Rana pipiens*) 44

Pickerel frog (*Rana palustris*) 45

TESTUDINES

Chelydridae

Common snapping turtle (*Chelydra s. serpentina*) 46

Emydidae

Spotted turtle (*Clemmys guttata*) 47

~~Bog turtle (*Clemmys muhlenbergii*) 47~~

Wood turtle (*Clemmys insculpta*) 48

~~Eastern box turtle (*Ferrapene c. carolina*) 49~~

~~Map turtle (*Graptemys geographica*) 50~~

~~Plymouth redbelly turtle (*Pseudemys rubriventris bangsi*) 51~~

Painted turtle (*Chrysemys picta*),

Eastern painted turtle (*Chrysemys p. picta*), and

Midland painted turtle (*Chrysemys picta marginata*) 52

~~Blanding's turtle (*Emydoidea blandingii*) 53~~

Kinosternidae

Common musk turtle (*Sternotherus odoratus*) 53

Trionychidae

Eastern spiny softshell (*Apalone s. spiniferus*) 54

SQUAMATA—SUBORDER SAURIA

Scincidae

Five-lined skink (*Eumeces fasciatus*) 55

SQUAMATA—SUBORDER SERPENTES

Colubridae

Northern water snake (*Nerodia s. sipedon*) 56

Northern brown snake (*Storeria d. dekayi*) 56

Northern redbelly snake (*Storeria o. occipitamaculata*) 57

Common garter snake (*Thamnophis sirtalis*),

Eastern garter snake (*Thamnophis s. pallidulus*), and

Maritime garter snake (*Thamnophis s. sauritus*) 58

Ribbon snake (*Thamnophis sauritus*),

Eastern ribbon snake (*Thamnophis s. sauritus*), and

Northern ribbon snake (*Thamnophis s. septentrionalis*) 59

Eastern hognose snake (*Heterodon platyrhinos*) 60

Northern ringneck snake (*Diadophis punctatus*

edwardsii) 60

Eastern worm snake (*Carphophis a. amoenus*) 61

Northern black racer (*Coluber c. constrictor*) 62

Eastern smooth green snake (*Liochlorophis vernalis*) 62

Black rat snake (*Elaphe o. obsoleta*) 63

Eastern milk snake (*Lampropeltis t. triangulum*) 64

Viperidae

~~Northern copperhead (*Agkistrodon contortrix*~~

~~*moenkseii*) 64~~

~~Timber rattlesnake (*Crotalus horridus*) 65~~

The following lists references on amphibian and reptiles for further reading on life histories and distribution.

Citations by Region

Eastern North America

Carr, A. 1995. *Handbook of turtles: The turtles of the United States, Canada, and Baja California*. 9th ed. Ithaca, N.Y.: Cornell University Press. 542 pp.

Dickerson, M. C. 1969. *The frog book*. New York: Dover Publications. 253 pp.

Ernst, C. H.; Barbour, R. W. 1972. *Turtles of the United States*. Lexington: University Press of Kentucky. 347 pp.

Ernst, C. H.; Barbour, R. W. 1989. *Snakes of eastern North America*. Fairfax, Va.: George Mason University Press. 282 pp.

Petranka, J. W. 1998. *Salamanders of the United States and Canada*. Washington, D.C.: Smithsonian Institution Press. 587 pp.

Wright, A. H.; Wright, A. A. 1949. *Handbook of frogs, amphibians and toads of the United States and Canada*. 3rd ed. Ithaca, N.Y.: Comstock. 640 pp.

Bird Species

ORDER

Family

Subfamily

Common name (Scientific name)

~~GAVIIFORMES~~

Gaviidae

~~Common loon (*Gavia immer*)~~ 80

PODICIPEDIFORMES

Podicipedidae

Pied-billed grebe (*Podilymbus podiceps*) 81

PELIGANIFORMES

Phalacrocoracidae

~~Double-crested cormorant (*Phalacrocorax auritus*)~~ 82

CICONIIFORMES

Ardeidae

American bittern (*Botaurus lentiginosus*) 83

Least bittern (*Ixobrychus exilis*) 84

Great blue heron (*Ardea herodias*) 85

Great egret (*Ardea alba*) 86

Snowy egret (*Egretta thula*) 86

~~Little blue heron (*Egretta caerulea*)~~ 87

~~Cattle egret (*Bubulcus ibis*)~~ 88

Green heron (*Butorides virescens*) 89

Black-crowned night-heron (*Nycticorax nycticorax*) 90

Yellow-crowned night-heron (*Nyctanassa violacea*) 91

Threskiornithidae

Glossy ibis (*Plegadis falcinellus*) 91

Cathartidae

Turkey vulture (*Cathartes aura*) 92

ANSERIFORMES

Anatidae

Anserinae

Canada goose (*Branta canadensis*) 93

~~Mute swan (*Cygnus olor*)~~ 94

Anatinae

Wood duck (*Aix sponsa*) 95

~~Gadwall (*Anas strepera*)~~ 96

American wigeon (*Anas americana*) 97

American black duck (*Anas rubripes*) 98

Mallard (*Anas platyrhynchos*) 99

Blue-winged teal (*Anas discors*) 100

~~Northern shoveler (*Anas clypeata*)~~ 100

~~Northern pintail (*Anas acuta*)~~ 101

Green-winged teal (*Anas crecca*) 102

~~Canvasback (*Aythya valisineria*)~~ 103

~~Ring-necked duck (*Aythya collaris*)~~ 104

Bufflehead (*Bucephala albeola*) 105

~~Common goldeneye (*Bucephala clang*)~~

~~Hooded merganser (*Lophodytes cucull*)~~

~~Common merganser (*Mergus merganse*)~~

~~Red-breasted merganser (*Mergus serrat*)~~

FALCONIFORMES

Accipitridae

Pandioninae

Osprey (*Pandion haliaetus*)

Accipitrinae

Bald eagle (*Haliaeetus leucocephalus*)

Northern harrier (*Circus cyaneus*)

Sharp-shinned hawk (*Accipiter striatus*)

Cooper's hawk (*Accipiter cooperii*)

Northern goshawk (*Accipiter gentilis*)

Red-Shouldered hawk (*Buteo lineatus*)

Broad-winged hawk (*Buteo platypterus*)

Red-tailed hawk (*Buteo jamaicensis*)

Rough-legged hawk (*Buteo lagopus*)

Golden eagle (*Aquila chrysaetos*)

Falconidae

Falconinae

American kestrel (*Falco sparverius*)

~~Merlin (*Falco columbarius*)~~

Peregrine falcon (*Falco peregrinus*)

GALLIFORMES

Phasianidae

Phasianinae

Gray partridge (*Perdix perdix*)

Ring-necked pheasant (*Phasianus colchic*)

Tetraoninae

Ruffed grouse (*Bonasa umbellus*)

~~Spruce grouse (*Falcapennis canadensis*)~~

Meleagridinae

Wild turkey (*Meleagris gallopavo*)

Odontophoridae

Northern bobwhite (*Colinus virginianus*)

GRUIFORMES

Rallidae

~~King rail (*Rallus elegans*)~~

Virginia rail (*Rallus limicola*)

Sora (*Porzana carolina*)

Common moorhen (*Gallinula chloropus*)

~~American coot (*Fulica americana*)~~

CHARADRIIFORMES

Charadriidae

Killdeer (*Charadrius vociferus*)

Scolopacidae

Willet (*Catoptrophorus semipalmatus*)

Spotted sandpiper (*Actitis macularia*)

Upland sandpiper (*Bartramia longicauda*)

Common snipe (*Gallinago gallinago*)

American woodcock (*Scolopax minor*)

LARIDAE			
<i>Larinae</i>			
Ring-billed gull (<i>Larus delawarensis</i>)	138		
Herring gull (<i>Larus argentatus</i>)	139		
Great black-backed gull (<i>Larus marinus</i>)	140		
<i>Sterninae</i>			
Common tern (<i>Sterna hirundo</i>)	140		
Black tern (<i>Chlidonias niger</i>)	141		
COLUMBIFORMES			
Columbidae			
Rock dove (<i>Columba livia</i>)	142		
Mourning dove (<i>Zenaida macroura</i>)	142		
CUCULIFORMES			
Cuculidae			
<i>Coccyzinae</i>			
Black-billed cuckoo (<i>Coccyzus erythrophthalmus</i>)	143		
Yellow-billed cuckoo (<i>Coccyzus americanus</i>)	144		
STRIGIFORMES			
Tytonidae			
Barn owl (<i>Tyto alba</i>)	145		
Strigidae			
Eastern screech-owl (<i>Otus asio</i>)	146		
Great horned owl (<i>Bubo virginianus</i>)	147		
Snowy owl (<i>Nyctea scandiaca</i>)	148		
Northern Hawk owl (<i>Surnia ulula</i>)	148		
Barred owl (<i>Strix varia</i>)	149		
Great gray owl (<i>Strix nebulosa</i>)	150		
Long-eared owl (<i>Asio otus</i>)	151		
Short-eared owl (<i>Asio flammeus</i>)	152		
Boreal owl (<i>Aegolius funereus</i>)	153		
Northern saw-whet owl (<i>Aegolius acadicus</i>)	153		
CAPRIMULGIFORMES			
Caprimulgidae			
<i>Chordeilinae</i>			
Common nighthawk (<i>Chordeiles minor</i>)	154		
<i>Caprimulginae</i>			
Whip-poor-will (<i>Caprimulgus vociferus</i>)	155		
APODIFORMES			
Apodidae			
<i>Chaeturinae</i>			
Chimney swift (<i>Chaetura pelagica</i>)	156		
Trochilidae			
<i>Trochilinae</i>			
Ruby-throated hummingbird (<i>Archilochus colubris</i>)	156		
CORACIFORMES			
Alcedinidae			
<i>Cerylinae</i>			
Belted kingfisher (<i>Ceryle alcyon</i>)	157		
		Picidae	
		<i>Picinae</i>	
		Red-headed woodpecker (<i>Melanerpes erythrocephalus</i>)	158
		Red-bellied woodpecker (<i>Melanerpes carolinus</i>)	159
		Yellow-bellied sapsucker (<i>Sphyrapicus varius</i>)	160
		Downy woodpecker (<i>Picoides pubescens</i>)	161
		Hairy woodpecker (<i>Picoides villosus</i>)	162
		Three-toed woodpecker (<i>Picoides tridactylus</i>)	162
		Black-backed woodpecker (<i>Picoides arcticus</i>)	163
		Northern flicker (<i>Colaptes auratus</i>)	164
		Pileated woodpecker (<i>Dryocopus pileatus</i>)	165
		PASSERIFORMES	
		Tyrannidae	
		<i>Fluvicolinae</i>	
		Olive-sided flycatcher (<i>Contopus cooperi</i>)	166
		Eastern wood-pewee (<i>Contopus virens</i>)	167
		Yellow-bellied flycatcher (<i>Empidonax flaviventris</i>)	168
		Acadian flycatcher (<i>Empidonax virescens</i>)	168
		Alder flycatcher (<i>Empidonax alnorum</i>)	169
		Willow flycatcher (<i>Empidonax traillii</i>)	170
		Least flycatcher (<i>Empidonax minimus</i>)	170
		Eastern phoebe (<i>Sayornis phoebe</i>)	171
		<i>Tyranninae</i>	
		Great Crested flycatcher (<i>Myiarchus crinitus</i>)	172
		Eastern kingbird (<i>Tyrannus tyrannus</i>)	173
		Laniidae	
		Loggerhead shrike (<i>Lanius ludovicianus</i>)	174
		Northern shrike (<i>Lanius excubitor</i>)	175
		Vireonidae	
		White-eyed vireo (<i>Vireo griseus</i>)	175
		Yellow-throated vireo (<i>Vireo flavifrons</i>)	176
		Blue-headed vireo (<i>Vireo solitarius</i>)	177
		Warbling vireo (<i>Vireo gilvus</i>)	178
		Philadelphia vireo (<i>Vireo philadelphicus</i>)	179
		Red-eyed vireo (<i>Vireo olivaceus</i>)	179
		Corvidae	
		Gray jay (<i>Perisoreus canadensis</i>)	180
		Blue jay (<i>Cyanocitta cristata</i>)	181
		American crow (<i>Corvus brachyrhynchos</i>)	182
		Fish crow (<i>Corvus ossifragus</i>)	182
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