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.
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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.

- 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 Habit 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
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 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.

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.
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/nhesp.

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/nhesp. 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.
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

![Map of 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.
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
Species of Conservation Concern
Dwarf Mistletoe Arceuthobium pusillum

Core 2326
Species of Conservation Concern
Smooth Green Snake Opheodrys 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 ecypta Non-listed SWAP
Ostrich Fern Borer Moth Papaipena sp. 2 nr. pterisii SC
Twelve-spotted Tiger Beetle Cicindela duodecimguttata SC
Harpoon Clubtail Gomphus descriptus E
Ocellated Darter Boyeria grafiana SC

For more information on rare species and natural communities, please see our fact sheets online at www.mass.gov/nhesp.
### BioMap2
Conserving the Biodiversity of Massachusetts in a Changing World

<table>
<thead>
<tr>
<th>Species</th>
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<td>Ski-tipped Emerald</td>
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<td>Zebra Clubtail</td>
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<td>Smooth Green Snake</td>
<td>Ophiodrys vernalis</td>
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<td>Bridle Shiner</td>
<td>Notropis bifrenatus</td>
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<td>Lake Chub</td>
<td>Couesius plumbeus</td>
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<td>Longnose Sucker</td>
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<td>Water Shrew</td>
<td>Sorex palustris</td>
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### Core 2365

#### Wetland Core

**Priority & Exemplary Natural Communities**

- **Acidic Graminoid Fen**

**Species of Conservation Concern**

- Bristly Black Currant: Ribes lacustre (SC)
- Jefferson Salamander: Ambystoma jeffersonianum (SC)

### Core 2564

**Aquatic Core**

**Species of Conservation Concern**

- Early Hairstreak: Erora laeta (T)
- Ocelled Darner: Boyeria grafiana (SC)
- Jefferson Salamander: Ambystoma jeffersonianum (SC)
- Spring Salamander: Gyrinophilus porphyriticus (Non-listed SWAP)
- Longnose Sucker: Catostomus catostomus (SC)

### Core 2943F

**Forest Core**

**Wetland Core**

**Aquatic Core**

**Priority & Exemplary Natural Communities**

- High-energy Riverbank: Hydrophyllum canadense (E)
- Major-river Floodplain Forest: Equisetum scirpoides (SC)
- Rich, Mesic Forest Community: Hypericum ascyron (E)
- Riverside Rock Outcrop Community: Arisaema dracontium (T)

### Natural Heritage & Endangered Species Program

For more information on rare species and natural communities, please see our fact sheets online at [www.mass.gov/nhesp](http://www.mass.gov/nhesp).
<table>
<thead>
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<th>Species</th>
<th>Scientific Name</th>
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<td>Hitchcock's Sedge</td>
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<td>Clematis occidentalis</td>
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<td>Shore Sedge</td>
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<td>Spiked False Oats</td>
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<td>Cobra Clubtail</td>
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<td>Riverine Clubtail</td>
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<td>Bald Eagle</td>
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<td>Vesper Sparrow</td>
<td>Poecetes gramineus</td>
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</table>
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 successional 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 a 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.

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.
**BioMap2 Critical Natural Landscape in Ashfield**

Critical Natural Landscape IDs correspond with the following element lists and summaries.
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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Endangered Species Fund

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