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
bioMap2
Conserving the Biodiversity of Massachusetts in a Changing World

for 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.

Components of Core Habitat

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.

BioMap2: One Plan, Two Components

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

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.

<table>
<thead>
<tr>
<th>Taxonomic Group</th>
<th>MESA-listed Species</th>
<th>Non-listed Species of Conservation Concern</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mammals</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Birds</td>
<td>27</td>
<td>23</td>
</tr>
<tr>
<td>Reptiles</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>Amphibians</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Fish</td>
<td>10</td>
<td>17</td>
</tr>
<tr>
<td>Invertebrates</td>
<td>102</td>
<td>9</td>
</tr>
<tr>
<td>Plants</td>
<td>256</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>413</strong></td>
<td><strong>62</strong></td>
</tr>
</tbody>
</table>

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 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

New Marlborough lies on the border of the Lower Berkshire Hills and the Western New England Marble Valleys/Berkshire Valley/Housatonic and Hoosic Valley Ecoregions. The Lower Berkshire Hills Ecoregion is similar to the Berkshire Highlands Ecoregion, with its common northern hardwoods, but lacks spruce-fir and harbors transition hardwoods. Lakes and ponds are relatively abundant. The Western New England Marble Valleys Ecoregion is an area drained by the Hoosic and Housatonic Rivers. This ecoregion harbors farms, evergreen forests, transition and northern hardwood forests, and calcareous fens. The limestone-rich bedrock in the area creates alkaline lakes and streams.

New Marlborough at a Glance

- Total Area: 30,654 acres (47.9 square miles)
- Human Population in 2010: 1,509
- Open space protected in perpetuity: 8,475 acres, or 27.6% percent of total area*
- BioMap2 Core Habitat: 6,088 acres
- BioMap2 Core Habitat Protected: 2,805 acres or 46.1%
- BioMap2 Critical Natural Landscape: 20,649 acres
- BioMap2 Critical Natural Landscape Protected: 6,578 acres or 31.9%.

BioMap2 Components

Core Habitat
- 3 Exemplary or Priority Natural Community Cores
- 2 Forest Cores
- 33 Wetland Cores
- 8 Aquatic Cores
- 2 Vernal Pool Cores
- 19 Species of Conservation Concern Cores**
  - 1 mammal, 1 bird, 2 reptiles, 2 amphibians, 2 fishes, 4 insects, 1 crustacean, 13 plants

Critical Natural Landscape
- 4 Landscape Blocks
- 21 Wetland Core Buffers
- 8 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 New Marlborough

BioMap2 Core Habitat

BioMap2 Critical Natural Landscape

1 Mile

For more information on rare species and natural communities, please see our fact sheets online at www.mass.gov/nhesp.
Species of Conservation Concern, Priority and Exemplary Natural Communities, and Other Elements of Biodiversity in New Marlborough

Crustaceans

Piedmont Groundwater Amphipod, (Stygobromus tenuis tenuis), SC

Insects

Dragonflies

Ocellated Darners, (Boyeria graffiana), SC
Brook Snaketails, (Ophiogomphus aspersus), SC
Riffle Snaketail, (Ophiogomphus carolus), T
Zebra Clubtail, (Stylurus scudderi), Non-listed SWAP species

Amphibians

Jefferson Salamander, (Ambystoma jeffersonianum), SC
Northern Leopard Frog, (Rana pipiens), Non-listed SWAP

Fishes

Longnose Sucker, (Catostomus catostomus), SC
Bridle Shiner, (Notropis bifrenatus), SC

Reptiles

Wood Turtle, (Glyptemys insculpta), SC
Eastern Ribbon Snake, (Thamnophis sauritus), Non-listed SWAP

Birds

American Bittern, (Botaurus lentiginosus), E

Mammals

Rock Shrew, (Sorex dispar), SC

Plants

Climbing Fumitory, (Adlumia fungosa), SC
Hairy Agrimony, (Agrimonia pubescens), T
Dwarf Mistletoe, (Arceuthobium pusillum), SC
Smooth Rock-cress, (Boechera laevigata), SC
Tuckerman’s Sedge, (Carex tuckermanii), E
Hemlock Parsley, (Conioselinum chinense), SC
Large-bracted Tick-trefoil, (Desmodium cuspidatum), T
Intermediate Spike-sedge, (Eleocharis intermedia), T
Dwarf Scouring-rush, (Equisetum scirpoides), SC
Frank’s Lovegrass, (Eragrostis frankii), SC
Small Dropseed, (Sporobolus neglectus), E
Appalachian Bristle-fern, (Trichomanes intricatum), E
Black Maple, (Acer nigrum), recently de-listed

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

- **Calcareous Seepage Marsh**, S2
- **Spruce-Fir Swamp**, S3
- **Spruce-Tamarack Bog**, S2

Other BioMap2 Components

- **Forest Core**
- **Aquatic Core**
- **Wetland Core**
- **Vernal Pool 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 New Marlborough

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 New Marlborough. The elements listed here may not occur within the bounds of New Marlborough.

Core 951
Species of Conservation Concern
Appalachian Bristle-fern  *Trichomanes intricatum*  E

Core 999
Wetland Core
Aquatic Core
Priority & Exemplary Natural Communities
Calcareaous Seepage Marsh  S2
Species of Conservation Concern
Hemlock Parsley  *Conioselinum chinense*  SC
Northern Leopard Frog  *Rana pipiens*  Non-listed SWAP
Eastern Ribbon Snake  *Thamnophis sauritus*  Non-listed SWAP
American Bittern  *Botaurus lentiginosus*  E

Core 1007
Wetland Core

Core 1012
Aquatic Core
Species of Conservation Concern
Tuckerman’s Sedge  *Carex tuckermanii*  E

Core 1018
Aquatic Core
Species of Conservation Concern
Piedmont Groundwater Amphipod  *Stygobromus tenuis tenuis*  SC

Core 1023
Wetland Core

Core 1029
Species of Conservation Concern
Hairy Agrimony  *Agrimonia pubescens*  T
Core 1032

Species of Conservation Concern
Hemlock Parsley \textit{Conioselinum chinense} SC

Core 1033

Wetland Core

Core 1044

Vernal Pool Core
Species of Conservation Concern
Climbing Fumitory \textit{Adlumia fungosa} SC
Large-bracted Tick-trefoil \textit{Desmodium cuspidatum} T

Core 1056

Vernal Pool Core

Core 1060

Wetland Core

Core 1068

Forest Core
Wetland Core
Aquatic Core
Priority & Exemplary Natural Communities
Spruce-Fir Swamp S3
Spruce-Tamarack Bog S2
Species of Conservation Concern
Dwarf Mistletoe \textit{Arceuthobium pusillum} SC

Core 1076

Wetland Core

Core 1085

Wetland Core

Core 1101

Wetland Core

Core 1108

Species of Conservation Concern
Smooth Rock-cress \textit{Boechera laevigata} SC
Core 1112
Species of Conservation Concern
Rock Shrew Sorex dispar SC

Core 1135
Species of Conservation Concern
Jefferson Salamander Ambystoma jeffersonianum SC

Core 1137
Wetland Core

Core 1145
Wetland Core

Core 1158
Species of Conservation Concern
Dwarf Scouring-rush Equisetum scirpoides SC

Core 1185
Wetland Core

Core 1190
Wetland Core

Core 1201
Aquatic Core
Species of Conservation Concern
American Bittern Botaurus lentiginosus E

Core 1225
Wetland Core

Core 1226
Wetland Core

Core 1235
Wetland Core

Core 1236
Wetland Core
### Core 1252

Forest Core

### Core 1269

Wetland Core

### Core 1273

Wetland Core

### Core 1275

Wetland Core

### Core 1283

Species of Conservation Concern
- Small Dropseed *Sporobolus neglectus* E

### Core 1301

Species of Conservation Concern
- Jefferson Salamander *Ambystoma jeffersonianum* SC

### Core 1308

Wetland Core
- Aquatic Core

Species of Conservation Concern
- Dwarf Scouring-rush *Equisetum scirpoides* SC
- Frank’s Lovegrass *Eragrostis frankii* SC
- Intermediate Spike-sedge *Eleocharis intermedia* T
- Tuckerman’s Sedge *Carex tuckermanii* E
- Brook Snaketail *Ophiogomphus aspersus* SC
- Riffle Snaketail *Ophiogomphus carolus* T
- Zebra Clubtail *Stylurus scudderi* Non-listed SWAP
- Wood Turtle *Glyptemys insculpta* SC
- Bridle Shiner *Notropis bifrenatus* SC
- Longnose Sucker *Catostomus catostomus* SC

### Core 1331

Species of Conservation Concern
- Jefferson Salamander *Ambystoma jeffersonianum* SC

### Core 1381

Wetland Core
Aquatic Core
Species of Conservation Concern
    Ocellated Darter  Boyeria grafiana  SC
    Wood Turtle     Glyptemys insculpta  SC
    American Bittern Botaurus lentiginosus  E

Core 1558C
Forest Core
Wetland Core
Aquatic Core
Priority & Exemplary Natural Communities
    Calcareous Pondshore/Lakeshore  S2
    Hemlock-Hardwood Swamp
    Northern Hardwoods - Hemlock - White Pine Forest
Species of Conservation Concern
    Bristly Buttercup  Ranunculus pensylvanicus  SC
    Jefferson Salamander  Ambystoma jeffersonianum  SC
    Spring Salamander  Gyrinophilus porphyriticus  Non-listed SWAP
Core Habitat Summaries

Core 951
A 4-acre Core Habitat featuring a Species of Conservation Concern.

Appalachian Bristle-fern exists only in the gametophyte phase of the fern life cycle, never producing a sporophyte, the leafy spore-producing phase that is most familiar to us. Consequently, it is small and made of dense entangled filaments that resemble steel wool. It grows in moist, deeply-shaded crevices in many kinds of rocky substrates.

Core 999
A 568-acre Core Habitat featuring Wetland Core, Aquatic 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.

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.

Calcareous Seepage Marshes are marshy wetlands enriched by calcareous groundwater seepage. Of the three types of calcareous fen communities described in Massachusetts, they are intermediate in richness and in botanical rarities. This example of Calcareous Seepage Marsh is the largest and best example of this uncommon community type described in the state.

In Massachusetts, Hemlock Parsley is usually found in swamps, wet meadows, bogs or fens, and marshy forests. It can tolerate shady environments and wet, acidic soils, although it is usually found in less acidic (circumneutral to limy) wetlands.

Adult Northern Leopard Frogs are found in marshes, wet meadows, and peatlands in the narrow transition zone between open water and uplands; they retreat to the water of ponds and small streams when threatened. The herbivorous tadpoles require open water of sufficient permanence for their development.

Eastern Ribbon Snakes are a medium-sized, very thin snake ranging from 7 to 34 inches long at maturity. They are active during the day and live in wetlands and edges of open water being comfortable in water and on land, eating amphibians, insects, and occasional fish. This species hibernates in ant mounds, rodent burrows, crayfish burrows, and bank burrows.

American Bitterns are heron-like birds that nest primarily in large cattail, tussock or shrub marshes and are very sensitive to disturbance.
Core 1007
A 25-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 Mafic bedrock (rich in minerals like iron and magnesium), one of the least common ecological settings for Wetland Cores in the state.

Core 1012
A 4-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.
In Massachusetts, Tuckerman’s Sedge inhabits the rich soils of lowland river floodplain habitats such as oxbows, low depressions, forests, meadows, swales, and vernal pools.

Core 1018
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.
The Piedmont Groundwater Amphipod is found in springs in upland limestone areas.

Core 1023
A 36-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 Mafic bedrock (rich in minerals like iron and magnesium), one of the least common ecological settings for Wetland Cores in the state.

Core 1029
A 46-acre Core Habitat featuring a Species of Conservation Concern.
Hairy Agrimony inhabits edges and openings within rich, rocky woodlands on steep slopes or ledges, often over circumneutral or calcareous bedrock. Interestingly, populations are present not only in the marble and traprock regions of the state, but also on Martha’s Vineyard and Nantucket, indicating that...
this plant is not a strict calciphile. Its affinity for openings suggests that habitat conditions are most favorable when there is periodic disturbance.

Core 1032
An 8-acre Core Habitat featuring a Species of Conservation Concern.

In Massachusetts, Hemlock Parsley is usually found in swamps, wet meadows, bogs or fens, and marshy forests. It can tolerate shady environments and wet, acidic soils, although it is usually found in less acidic (circumneutral to limy) wetlands.

Core 1033
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.

The Wetland Core occurs on mid-elevation mafic bedrock (rich in minerals like iron and magnesium), one of the least common ecological settings for Wetland Cores in the state.

Core 1044
A 289-acre Core Habitat featuring Vernal Pool Core and Species of Conservation Concern.

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.

Climbing Fumitory is an herbaceous biennial vine that can reach lengths of 10 feet. It is usually found in the shade climbing over talus at the base of cliffs.

Large-bracted Tick-trefoil generally inhabits dry, rocky, open areas such as forest edges, rocky ridges, and embankments. It is often found in scrubby, shrub-dominated landscapes with circumneutral or alkaline bedrock.

Core 1056
A 65-acre Core Habitat featuring Vernal Pool Core.

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.

Core 1060
A 105-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 105-acre Wetland Core is among the largest 20% of Wetland Cores statewide and in this ecoregion. It occurs on mid-elevation mafic bedrock (rich in minerals like iron and magnesium), one of the least common ecological settings for Wetland Cores in th*

**Core 1068**

A 3,942-acre Core Habitat featuring Forest Core, Wetland Core, Aquatic Core, Priority Natural Communities, and a Species of Conservation Concern.

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.

This 3,424-acre Forest Core is among the largest 20% of Forest Cores in the state and provides important forest interior habitat. It is partially protected, primarily through Cookson State Forest.

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.

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.

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 exemplary Spruce-Fir Swamp is part of an extensive wetland complex, in a wooded landscape with little evidence of human disturbance.

Spruce-Tamarack Bog communities are acidic forested peatlands with an overstory of black spruce and tamarack and an understory of heath shrubs on sphagnum moss. They occur in kettlehole depressions, watershed divides, and along pond margins. This large Spruce-Tamarack Bog Forest occurs along a stream and is underlain by sphagnum moss. The tree canopy is open, shrubs dense, and an herb layer that exhibits high cover and diversity. Beaver occasionally flood parts of the community.

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 1076**

A 15-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 1085**
A 14-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 mafic bedrock (rich in minerals like iron and magnesium), one of the least common ecological settings for Wetland Cores in the state.

**Core 1101**
A 17-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 1108**
A 6-acre Core Habitat featuring a Species of Conservation Concern.

In Massachusetts, Smooth Rock-cress, a biennial mustard, inhabits rich, rocky deciduous woods, rich rocky hillsides, ledges, talus slopes, and floodplain thickets and woodlands. It occupies open to shaded sites on dry to mesic soils.

**Core 1112**
A 35-acre Core Habitat featuring a Species of Conservation Concern.

The Rock Shrew inhabits crevices of large mossy rock piles such as talus just beneath low, shaded cliffs, in cold, deep, damp coniferous forests.

**Core 1135**
A 262-acre Core Habitat featuring a Species of Conservation Concern.

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 1137**
A 27-acre Core Habitat featuring Wetland Core.

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**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).
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 1145**
A 44-acre Core Habitat featuring Wetland Core.

**Core 1158**
A 5-acre Core Habitat featuring a Species of Conservation Concern.

Dwarf Scouring-rush, a member of the Horsetail family, is 4-8 inches tall, evergreen, and grows as a dark green tuft of wiry stems. Dwarf Scouring-rush is found on moist banks and seepy wooded slopes and hillsides with springs and streams, often in ecotones between upland and wetland sites.

**Core 1185**
A 30-acre Core Habitat featuring Wetland Core.

**Core 1190**
A 24-acre Core Habitat featuring Wetland Core.

**Core 1201**
A 36-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 1225
A 19-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 1226
A 19-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 1235
A 10-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 1236
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 1252
A 687-acre Core Habitat featuring Forest Core.

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.

Though small from a statewide perspective, this almost completely unprotected 687-acre Forest Core provides important habitat in the otherwise fragmented Berkshire Valleys ecoregion.

Core 1269
A 58-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 1273
A <1-acre Core Habitat featuring Wetland Core.

Core 1275
A 21-acre Core Habitat featuring Wetland Core.

Core 1283
A <1-acre Core Habitat featuring a Species of Conservation Concern.

Small Dropseed is an annual grass that grows in calcareous seeps, flat rocks, riverside outcrops, and river shores. It is also found occasionally along roadsides and other disturbed open sites.

Core 1301
A 112-acre Core Habitat featuring a Species of Conservation Concern.

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 1308
A 931-acre Core Habitat featuring Wetland Core, 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.
Dwarf Scouring-rush, a member of the Horsetail family, is 4-8 inches tall, evergreen, and grows as a dark green tuft of wiry stems. Dwarf Scouring-rush is found on moist banks and seepy wooded slopes and hillsides with springs and streams, often in ecotones between upland and wetland sites.

An annual, Frank’s Lovegrass inhabits sandy riverbanks and sandbars.

In Massachusetts, Intermediate Spike-sedge, a small, densely tufted annual, is found on muddy, alkaline river banks and pond shores, usually during periods of low water when mud is exposed.

In Massachusetts, Tuckerman’s Sedge inhabits the rich soils of lowland river floodplain habitats such as oxbows, low depressions, forests, meadows, swales, and vernal pools.

Brook Snaketail are dragonflies whose nymphs can be found in clear, sand-bottomed streams with intermittent rapids, often flowing through dense woodland.

Riffle Snaketail are dragonflies whose larvae inhabit clear, cold, and rocky streams that are fast-flowing with relatively few pools.

The Zebra Clubtail dragonfly inhabits sand-bottomed streams and small rivers with riffles as larvae. Adults feed over the same streams. Surrounding upland forests provide protection while adults reach sexual maturity.

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.

Bridle Shiners are small (<5 cm) minnows that are found in clear water in slack areas of streams and rivers and are also found in lakes and ponds.

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 1331
A 46-acre Core Habitat featuring a Species of Conservation Concern.

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 1381
A 1,197-acre Core Habitat featuring Wetland Core, Aquatic Core, 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.

For more information on rare species and natural communities, please see our fact sheets online at www.mass.gov/nhesp.
The 98-acre Wetland Core is among the largest 20% of Wetland Cores statewide.

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.

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.

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.

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

Core 1558C

A 3,346-acre section of a larger 35,802-acre Core Habitat featuring Forest Core, Wetland Core, Aquatic Core, Priority Natural Communities, and Species of Conservation Concern.

East Mountain and nearby areas are part of a very large and complicated Core Habitat in southwestern Massachusetts. This part of the Core is mostly a Forest Core, but there are two rare species known from this area, including a population of the vernal pool obligate, Jefferson Salamander, that covers a large area within this part of the Core.

Calcareous Pondshore/Lakeshores are sparsely vegetated communities found on exposed shores of calcareous inland ponds. These areas are saturated for a significant part of the year. Plants of the community emerge during low water periods. This is the largest example of Calcareous Pondshore/Lakeshore in Massachusetts, and despite the presence of an exotic invasive species, it is in relatively good condition.

Hemlock-Hardwood Swamps are acidic forested swamps that have hemlock as the dominant canopy species. These forested wetlands occur on saturated soils in poorly drained basins throughout the state. This example of Hemlock-Hardwood Swamp is moderate sized, but in good condition and within a very large naturally vegetated landscape.

Northern Hardwoods-Hemlock-White Pine Forests have a mix of evergreen and deciduous trees, with a closed, full canopy, and sparse shrub and herbaceous layers. It commonly occurs on north facing slopes and ravines with moderately acidic soils. This example of Northern Hardwoods-Hemlock-White Pine Forest is very large and in excellent condition. It has good species and habitat diversity and is embedded within a large, roadless, naturally vegetated area.

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 New Marlborough

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 New Marlborough. The elements listed here may not occur within the bounds of New Marlborough.

**CNL 543**
Aquatic Core Buffer

**CNL 605**
Wetland Core Buffer

**CNL 622**
Wetland Core Buffer

**CNL 883**
Aquatic Core Buffer
Landscape Block
Wetland Core Buffer
Critical Natural Landscape Summaries

CNL 543
A 4-acre Critical Natural Landscape featuring Aquatic 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 605
A 48-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 622
A 59-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 883
A 179,293-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.
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.