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
Conserving the Biodiversity of Massachusetts in a Changing World

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/](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

Washington lies on the border of the Berkshire Highlands/Southern Green Mountains and the Western New England Marble Valleys/Berkshire Valley/Housatonic and Hoosic Valley 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 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.

Washington at a Glance

- Total Area: 24,842 acres (38.8 square miles)
- Human Population in 2010: 538
- Open space protected in perpetuity: 16,173 acres, or 65.1% percent of total area*
- BioMap2 Core Habitat: 8,415 acres
- BioMap2 Core Habitat Protected: 6,943 acres or 82.5%
- BioMap2 Critical Natural Landscape: 20,895 acres
- BioMap2 Critical Natural Landscape Protected: 16,063 acres or 76.9%.

BioMap2 Components

Core Habitat
- 4 Exemplary or Priority Natural Community Cores
- 3 Forest Cores
- 19 Wetland Cores
- 6 Aquatic Cores
- 1 Vernal Pool Core
- 11 Species of Conservation Concern Cores**
  - 3 birds, 1 reptile, 3 amphibians, 1 fish, 3 insects

Critical Natural Landscape
- 2 Landscape Blocks
- 15 Wetland Core Buffers
- 6 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 Washington

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](http://www.mass.gov/nhesp).
Species of Conservation Concern, Priority and Exemplary Natural Communities, and Other Elements of Biodiversity in Washington

**Insects**

**Butterflies**
- *Mustard White*, (*Pieris oleracea*), T

**Damselflies**
- *Tule Bluett*, (*Enallagma carunculatum*), SC

**Dragonflies**
- *Ocellated Darner*, (*Boyeria grafiana*), SC

**Amphibians**
- *Jefferson Salamander*, (*Ambystoma jeffersonianum*), SC
- *Four-toed Salamander*, (*Hemidactylium scutatum*), Non-listed SWAP
- *Spring Salamander*, (*Gyrinophilus porphyriticus*), Non-listed SWAP

**Fishes**
- *Bridle Shiner*, (*Notropis bifrenatus*), SC

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

**Birds**
- *American Bittern*, (*Botaurus lentiginosus*), E
- *Common Moorhen*, (*Gallinula chloropus*), SC
- *Least Bittern*, (*Ixobrychus exilis*), E

**Priority Natural Communities**
- *Acidic Graminoid Fen*, S3
- *Level Bog*, S3
- *Spruce-Fir Swamp*, S3

**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 Washington

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

Core 1813
Species of Conservation Concern
Ocellated Darter  
Boyeria grafiana  
SC

Core 1823
Wetland Core

Core 1826
Wetland Core

Core 1827
Species of Conservation Concern
Mustard White  
Pieris oleracea  
T

Core 1832
Wetland Core

Core 1850
Wetland Core

Core 1863
Wetland Core

Core 1882
Forest Core
Wetland Core
Aquatic Core
Priority & Exemplary Natural Communities
Hickory - Hop Hornbeam Forest/Woodland  
S2
Species of Conservation Concern
Jefferson Salamander  
Ambystoma jeffersonianum  
SC
Spring Salamander  
Gyrinophilus porphyriticus  
Non-listed SWAP
American Bittern  
Botaurus lentiginosus  
E
Common Moorhen  
Gallinula chloropus  
SC
Least Bittern  
Ixobrychus exilis  
E
Core 1889

Priority & Exemplary Natural Communities
Acidic Graminoid Fen  S3
Level Bog  S3

Species of Conservation Concern
Tule Bluet  Enallagma carunculatum  SC

Core 1891

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

Core 1892

Species of Conservation Concern
Smooth Green Snake  Opheodrys vernalis  Non-listed SWAP

Core 1910

Vernal Pool Core

Core 1954

Wetland Core

Core 1970

Priority & Exemplary Natural Communities
Spruce-Fir Swamp  S3

Core 1974

Wetland Core

Core 2011

Species of Conservation Concern
Four-toed Salamander  Hemidactylium scutatum  Non-listed SWAP

Core 2033

Forest Core
Wetland Core
Aquatic Core
Vernal Pool Core
Species of Conservation Concern
Large-leaved Sandwort  Moehringia macrophylla  E

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).
### Core 2050

**Aquatic Core**

**Species of Conservation Concern**

<table>
<thead>
<tr>
<th>Species</th>
<th>Status</th>
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<tbody>
<tr>
<td>Dion Skipper</td>
<td>E</td>
</tr>
<tr>
<td>Mustard White</td>
<td>T</td>
</tr>
<tr>
<td>American Bittern</td>
<td>T</td>
</tr>
<tr>
<td>Ocellated Darned</td>
<td>SC</td>
</tr>
<tr>
<td>Wood Turtle</td>
<td>SC</td>
</tr>
<tr>
<td>Lake Chub</td>
<td>E</td>
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</tbody>
</table>

### Core 2081

**Wetland Core**

**Aquatic Core**

**Priority & Exemplary Natural Communities**

<table>
<thead>
<tr>
<th>Community</th>
<th>Status</th>
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<tbody>
<tr>
<td>Spruce-Fir Swamp</td>
<td>S3</td>
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<tr>
<td>Core 2081</td>
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</tbody>
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**Species of Conservation Concern**

<table>
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<th>Species</th>
<th>Status</th>
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</thead>
<tbody>
<tr>
<td>Dion Skipper</td>
<td>E</td>
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<tr>
<td>Mustard White</td>
<td>T</td>
</tr>
<tr>
<td>American Bittern</td>
<td>T</td>
</tr>
<tr>
<td>Ocellated Darned</td>
<td>SC</td>
</tr>
<tr>
<td>Wood Turtle</td>
<td>SC</td>
</tr>
<tr>
<td>Lake Chub</td>
<td>E</td>
</tr>
</tbody>
</table>

### Core 2146

**Forest Core**

**Wetland Core**

**Aquatic Core**

**Vernal Pool Core**

**Priority & Exemplary Natural Communities**

<table>
<thead>
<tr>
<th>Community</th>
<th>Status</th>
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</thead>
<tbody>
<tr>
<td>Alluvial Red Maple Swamp</td>
<td>S3</td>
</tr>
<tr>
<td>Hemlock-Hardwood Swamp</td>
<td>S2</td>
</tr>
<tr>
<td>High-terrace Floodplain Forest</td>
<td>S3</td>
</tr>
<tr>
<td>Level Bog</td>
<td>S3</td>
</tr>
<tr>
<td>Major-river Floodplain Forest</td>
<td>S2</td>
</tr>
<tr>
<td>Red Maple - Black Ash - Bur Oak Swamp</td>
<td>S2</td>
</tr>
<tr>
<td>Transitional Floodplain Forest</td>
<td>S2</td>
</tr>
</tbody>
</table>

**Species of Conservation Concern**

<table>
<thead>
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<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barren Strawberry</td>
<td>SC</td>
</tr>
<tr>
<td>Bristly Buttercup</td>
<td>SC</td>
</tr>
<tr>
<td>Hemlock Parsley</td>
<td>SC</td>
</tr>
<tr>
<td>Woodland Millet</td>
<td>T</td>
</tr>
<tr>
<td>Dion Skipper</td>
<td>T</td>
</tr>
<tr>
<td>Four-toed Salamander</td>
<td>SC</td>
</tr>
<tr>
<td>Smooth Green Snake</td>
<td>SC</td>
</tr>
<tr>
<td>Wood Turtle</td>
<td>SC</td>
</tr>
<tr>
<td>Bridle Shiner</td>
<td>SC</td>
</tr>
<tr>
<td>American Bittern</td>
<td>E</td>
</tr>
<tr>
<td>Least Bittern</td>
<td>E</td>
</tr>
</tbody>
</table>

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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).
### BioMap2
**Conserving the Biodiversity of Massachusetts in a Changing World**

<table>
<thead>
<tr>
<th>Species Program</th>
<th>Scientific Name</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bur Oak</td>
<td><em>Quercus macrocarpa</em></td>
<td>SC</td>
</tr>
<tr>
<td>Crooked-stem Aster</td>
<td><em>Symphyotrichum prenanthoides</em></td>
<td>SC</td>
</tr>
<tr>
<td>Culver's-root</td>
<td><em>Veronicastrum virginicum</em></td>
<td>T</td>
</tr>
<tr>
<td>Fen Cuckoo Flower</td>
<td><em>Cardamine dentata</em></td>
<td>T</td>
</tr>
<tr>
<td>Foxtail Sedge</td>
<td><em>Carex alopecoidea</em></td>
<td>T</td>
</tr>
<tr>
<td>Gray's Sedge</td>
<td><em>Carex grayi</em></td>
<td>T</td>
</tr>
<tr>
<td>Hairy Wild Rye</td>
<td><em>Elymus villosus</em></td>
<td>E</td>
</tr>
<tr>
<td>Hemlock Parsley</td>
<td><em>Conioselinum chinense</em></td>
<td>SC</td>
</tr>
<tr>
<td>Intermediate Spike-sedge</td>
<td><em>Eleocharis intermedia</em></td>
<td>T</td>
</tr>
<tr>
<td>Long-styled Sanicle</td>
<td><em>Sanicula odorata</em></td>
<td>T</td>
</tr>
<tr>
<td>Narrow-leaved Spring Beauty</td>
<td><em>Claytonia virginica</em></td>
<td>E</td>
</tr>
<tr>
<td>Straight-leaved Pondweed</td>
<td><em>Potamogeton strictifolius</em></td>
<td>E</td>
</tr>
<tr>
<td>Tuckerman's Sedge</td>
<td><em>Carex tuckermanii</em></td>
<td>E</td>
</tr>
<tr>
<td>Wapato</td>
<td><em>Sagittaria cuneata</em></td>
<td>T</td>
</tr>
<tr>
<td>White Adder's-mouth</td>
<td><em>Malaxis monophyllos var. brachypoda</em></td>
<td>E</td>
</tr>
<tr>
<td>Triangle Floater</td>
<td><em>Alasmidonta undulata</em></td>
<td>Non-listed SWAP</td>
</tr>
<tr>
<td>Ostrich Fern Borer Moth</td>
<td><em>Papaipema sp. 2 nr. pterisii</em></td>
<td>SC</td>
</tr>
<tr>
<td>Mustard White</td>
<td><em>Pieris oleracea</em></td>
<td>T</td>
</tr>
<tr>
<td>Tule Bluet</td>
<td><em>Enallagma carunculatum</em></td>
<td>SC</td>
</tr>
<tr>
<td>Arrow Clubtail</td>
<td><em>Stylurus spiniceps</em></td>
<td>Non-listed SWAP</td>
</tr>
<tr>
<td>Brook Snaaketail</td>
<td><em>Ophiogomphus aspersus</em></td>
<td>SC</td>
</tr>
<tr>
<td>Ocellated Darner</td>
<td><em>Boyeria graffiana</em></td>
<td>SC</td>
</tr>
<tr>
<td>Rapids Clubtail</td>
<td><em>Gomphus quadricolor</em></td>
<td>E</td>
</tr>
<tr>
<td>Riffle Snaaketail</td>
<td><em>Ophiogomphus carolus</em></td>
<td>T</td>
</tr>
<tr>
<td>Spine-crowned Clubtail</td>
<td><em>Gomphus abbreviatus</em></td>
<td>SC</td>
</tr>
<tr>
<td>Zebra Clubtail</td>
<td><em>Stylurus scudderi</em></td>
<td>Non-listed SWAP</td>
</tr>
<tr>
<td>Four-toed Salamander</td>
<td><em>Hemidactylium scutatum</em></td>
<td>Non-listed SWAP</td>
</tr>
<tr>
<td>Jefferson Salamander</td>
<td><em>Ambystoma jeffersonianum</em></td>
<td>SC</td>
</tr>
<tr>
<td>Northern Leopard Frog</td>
<td><em>Rana pipiens</em></td>
<td>Non-listed SWAP</td>
</tr>
<tr>
<td>Spring Salamander</td>
<td><em>Gyrinophilus porphyriticus</em></td>
<td>Non-listed SWAP</td>
</tr>
<tr>
<td>Wood Turtle</td>
<td><em>Glyptemys insculpta</em></td>
<td>SC</td>
</tr>
<tr>
<td>American Bittern</td>
<td><em>Botaurus lentiginosus</em></td>
<td>E</td>
</tr>
<tr>
<td>Bald Eagle</td>
<td><em>Haliaeetus leucocephalus</em></td>
<td>T</td>
</tr>
<tr>
<td>Common Moorhen</td>
<td><em>Gallinula chloropus</em></td>
<td>SC</td>
</tr>
<tr>
<td>Sora</td>
<td><em>Porzana carolina</em></td>
<td>Non-listed SWAP</td>
</tr>
<tr>
<td>Water Shrew</td>
<td><em>Sorex palustris</em></td>
<td>SC</td>
</tr>
</tbody>
</table>

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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).

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**Massachusetts Division of Fisheries and Wildlife**

1 Rabbit Hill Road, Westborough, MA 01581  
phone: 508-389-6360  fax: 508-389-7890
Core Habitat Summaries

Core 1813
A 173-acre Core Habitat featuring a 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.

Core 1823
A 16-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 high elevation Granite, one of the least common ecological settings for Wetland Cores in the state.

Core 1826
An 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 1827
A 136-acre Core Habitat featuring a Species of Conservation Concern.
Mustard White butterflies inhabit mesic forest openings as well as wet meadows, fields, and pastures.

Core 1832
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 high elevation Granite, one of the least common ecological settings for Wetland Cores in the state.

Core 1850
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 1863
A 50-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 high elevation Granite, one of the least common ecological settings for Wetland Cores in the state.

Core 1882
A 7,189-acre Core Habitat featuring Forest Core, Wetland Core, Aquatic Core, Priority Natural Communities, and 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 6,756 acre Forest Core is the fifth largest in the state, the second largest in the ecoregion, and is almost completely protected, primarily situated in October Mountain State Forest.

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.

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 example of Hickory-Hop Hornbeam Forest is large, and despite evidence of some human disturbance, is in very good condition, with few exotic invasives, and good species diversity.

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.

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

Common Moorhens are fowl-like marshbirds that typically nest in dense cattail beds adjacent to open water.

Least Bitterns are heron-like birds that typically nest in cattail marshes interspersed with open water and are very sensitive to disturbance.

Core 1889

A 74-acre Core Habitat featuring Priority Natural Communities and a Species of Conservation Concern. 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 example of Acidic Graminoid Fen is part of an acidic peatland complex, along with a Level Bog. This wetland is relatively isolated from disturbances by a moderate buffer of natural vegetation.

Level Bogs are dwarf-shrub peatlands, generally with pronounced hummocks and hollows in sphagnum moss. These wetland communities are very acidic and nutrient-poor because the peat isolates them from nutrients in groundwater and streams. This example of Level Bog is part of a larger complex of acidic wetlands that offers a diversity of habitat types and is well buffered by surrounding natural vegetation.

Tule Bluets are damselflies whose nymphs are aquatic and live among aquatic vegetation and debris in a variety of wetland types including sluggish river sections and large lakes. The adults inhabit emergent vegetation along the shore and nearby uplands.

Core 1891

A 75-acre Core Habitat featuring Wetland Core, Aquatic Core, and a 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 61-acre Wetland Core is among the largest 20% of Wetland Cores in this ecoregion. It occurs on high elevation Granite, one of the least common ecological settings for Wetland Cores in the state.

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 1892**
A 21-acre Core Habitat featuring a 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.

**Core 1910**
A 57-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 1954**
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.

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

**Core 1970**
A 2-acre Core Habitat featuring a Priority Natural Community.

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 small but representative Spruce-Fir Swamp is one of several in a large, forested area.

**Core 1974**
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 high elevation Granite, one of the least common ecological settings for Wetland Cores in the state.

**Core 2011**

An 85-acre Core Habitat featuring a Species of Conservation Concern.

Four-toed Salamanders live in forested habitats surrounding swamps, bogs, marshes, vernal pools, and other fish-free waters that are used as breeding sites. Most breeding sites in MA are characterized by pit-and-mound topography with significant sphagnum-moss cover. Eggs are typically laid in mounds or patches of sphagnum moss that overhang water. Upon hatching, the larvae wriggle through the moss and drop into the water, where they will develop for several weeks prior to metamorphosis.

**Core 2033**

A 6,552-acre Core Habitat featuring Forest Core, Wetland Core, Aquatic Core, Vernal Pool Core, and 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 4,966-acre Forest Core is among the largest 20% of Forest Cores in the state, the seventh largest in the ecoregion, and provides important forest interior habitat. It is only partially protected, primarily through Middlefield State Forest. It is part of an important cluster of Forest Cores within a large Landscape Block. Only a small portion of the Forest Core occurs in Hinsdale.

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.

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.

Large-leaved Sandwort, a member of the pink family, is one of our most specialized plants, occurring only on exposed outcrops of serpentine rock.

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.
The Lake Chub is an elongate, round bodied minnow that is restricted to clear, cold lakes and clear, cold, fast-flowing rivers, that in Massachusetts has been found only in rivers.

**Core 2050**

A 120-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.

Dion Skipper Butterflies inhabit sedge wetlands. Adults nectar in nearby upland fields.

Mustard White butterflies inhabit mesic forest openings as well as wet meadows, fields, and pastures.

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

**Core 2081**

A 1,580-acre Core Habitat featuring Wetland Core, Aquatic Core, Priority Natural Communities, 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.

A 613-acre Wetland Core is the largest in this ecoregion and among the largest 20% of Wetland Cores statewide. A separate 204-acre Wetland Core is the 3rd largest in this ecoregion and among the largest 20% of Wetland Cores statewide. Another 169-acre Wetland Core is among the largest 20% of Wetland Cores statewide and in this ecoregion.

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 large and rich example of a Spruce-Fir Swamp has a calcareous influence. Invasive species are at very low levels. It is bisected by a road and a shrubby utility easement.

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.

Woodland Millet is typically found on steep slopes in rich, mesic forest communities with calcareous soils. Its microhabitat often includes the drier, rocky upper slopes of the woodland.

Dion Skipper Butterflies inhabit sedge wetlands. Adults nectar in nearby upland fields.
Four-toed Salamanders live in forested habitats surrounding swamps, bogs, marshes, vernal pools, and other fish-free waters that are used as breeding sites. Most breeding sites in MA are characterized by pit-and-mound topography with significant sphagnum-moss cover. Eggs are typically laid in mounds or patches of sphagnum moss that overhang water. Upon hatching, the larvae wriggle through the moss and drop into the water, where they will develop for several weeks prior to metamorphosis.

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 ventrers. 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.

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.

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

Least Bittern are heron-like birds that typically nest in cattail marshes interspersed with open water and are very sensitive to disturbance.

Core 2146

A 7,293-acre Core Habitat featuring Forest Core, Wetland Core, Aquatic Core, Vernal Pool Core, Priority Natural Communities, and Species of Conservation Concern.

The Housatonic River, from Pittsfield south to Lee, flows through rich lowland marshes and forests, including very good examples of Major-river Floodplain Forest, Transitional Floodplain Forest, and High-terrace Floodplain Forest natural communities. Thirty-four rare and uncommon species are found in this Core Habitat, including 17 plants and eight dragonflies and damselflies (three of which are globally rare). The state's best population of the Mustard White butterfly is here, and the floodplain forests host the globally rare Ostrich Fern Borer Moth.

Alluvial Red Maple Swamps are a type of red maple swamp that occurs in low areas along rivers and streams. Regular flooding enriches the soil with nutrients, resulting in an unusual set of associated trees and plants. These good patches of Alluvial Red Maple Swamp occur in a mosaic with other floodplain and wetland communities on protected land. The canopy and subcanopy have good species representation, but diversity in the shrub layer is limited by invasives.

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 moderately small Hemlock-Hardwood Swamp is in a large mosaic along the floodplain of the
Housatonic with several types of priority natural communities. It has species reflecting more nutrient availability and less acidity than are usual for the community type.

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. These patches combine to make a very good, large example of High-terrace Floodplain Forest along the river with other floodplain and wetland forests. There are few invasives.

Level Bogs are dwarf-shrub peatlands, generally with pronounced hummocks and hollows in sphagnum moss. These wetland communities are very acidic and nutrient-poor because the peat isolates them from nutrients in groundwater and streams. This example of Level Bog is small and in fair condition, but is well buffered by extensive natural vegetation.

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 two examples of Major-River Floodplain Forest including patches with structural and species diversity with areas of a shrubby community variant. Flooding occurs and there are few invasives.

Red Maple-Black Ash-Bur Oak Swamps are mostly deciduous forests of calcium-enriched (circumneutral) wetlands. The trees growing on hummocks form an almost continuous canopy over shrub and dense and diverse herbaceous layers. This moderate sized Red Maple-Black Ash-Bur Oak Swamp is our only known example in a floodplain where it is in a mosaic with other priority and more common types of natural communities. The adjacent railroad and scattered exotics detract from the good surroundings.

Transitional Floodplain Forests are riverside silver maple-green ash-American elm forests that experience annual floods. Of the three floodplain forest community types, these communities are intermediate in vegetation and soils. This Core has two moderate-sized Transitional Floodplain Forest examples. One has good diversity of native species, but abundant invasives. Portions of what may have been floodplain forest were lost in construction of a powerline right of way.

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.

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.
BioMap2 Critical Natural Landscape in Washington

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

**CNL 915**
- Wetland Core Buffer

**CNL 1029**
- Aquatic Core Buffer
- Landscape Block
- Wetland Core Buffer

**CNL 1322**
- Aquatic Core Buffer
- Landscape Block
- Wetland Core Buffer
Critical Natural Landscape Summaries

CNL 915
A 53-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 1029
A 38,996-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.

At 37,639 acres, this mostly forested Landscape Block is the fourth largest in the Berkshire Plateau Ecoregion, and the sixth largest in the state. These large forested landscapes provide invaluable wildlife habitat and other ecosystem values such as clean drinking water and absorbing carbon from the
atmosphere. Much, but not all, of this Block is protected, largely through October Mountain State Forest and water supply lands.

**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.

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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.