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 Habitat to ensure continued protection.

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

**BioMap2: One Plan, Two Components**

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

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

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

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

**Components of Core Habitat**

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

**Rare Species**

There are 432 native plant and animal species listed as Endangered, Threatened or Special Concern under the Massachusetts Endangered Species Act (MESA) based on their rarity, population trends, and threats to survival. For
Table 1. Species of Conservation Concern described in the State Wildlife Action Plan and/or included on the MESA List and for which habitat was mapped in BioMap2. Note that plants are not included in SWAP, and that marine species such as whales and sea turtles are not included in BioMap2.

<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

Hinsdale lies within the Berkshire Highlands/Southern Green Mountains Ecoregion, 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.

Hinsdale at a Glance

- Total Area: 13,884 acres (21.7 square miles)
- Human Population in 2010: 2,032
- Open space protected in perpetuity: 4,604 acres, or 33.2% percent of total area*
- BioMap2 Core Habitat: 1,915 acres
- BioMap2 Core Habitat Protected: 1,340 acres or 70.0%
- BioMap2 Critical Natural Landscape: 6,516 acres
- BioMap2 Critical Natural Landscape Protected: 3,405 acres or 52.3%.

BioMap2 Components

Core Habitat
- 1 Exemplary or Priority Natural Community
- 1 Forest Core
- 4 Wetland Cores
- 5 Aquatic Cores
- 11 Species of Conservation Concern Cores**
  - 3 birds, 1 reptile, 1 amphibian, 1 fish, 2 insects, 3 plants

Critical Natural Landscape
- 3 Landscape Blocks
- 3 Wetland Core Buffers
- 5 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 Hinsdale
Species of Conservation Concern, Priority and Exemplary Natural Communities,
and Other Elements of Biodiversity in Hinsdale

Insects

Butterflies
Dion Skipper, *(Euphyes dion)*, T

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

Amphibians
Four-toed Salamander, *(Hemitactylium scutatum)*, Non-listed SWAP

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

Reptiles
Wood Turtle, *(Glyptemys insculpta)*, SC

Birds
Sharp-shinned Hawk, *(Accipiter striatus)*, SC
American Bittern, *(Botaurus lentiginosus)*, E
Least Bittern, *(Ixobrychus exilis)*, E

Plants
Chestnut-colored Sedge, *(Carex castanea)*, E
Hemlock Parsley, *(Conioselinum chinense)*, SC
Woodland Millet, *(Milium effusum)*, T

Priority Natural Communities
Spruce-Fir Swamp, S3

Other BioMap2 Components
Forest Core
Aquatic Core
Wetland Core
Landscape Block
Aquatic Core Buffer
Wetland Core Buffer

E = Endangered
T = Threatened
SC = Special Concern
S1 = Critically Imperiled communities, typically 5 or fewer documented sites or very few remaining acres in the state.
S2 = Imperiled communities, typically 6-20 sites or few remaining acres in the state.
S3 = Vulnerable communities, typically have 21-100 sites or limited acreage across the state.
BioMap2 Core Habitat in Hinsdale

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

**Core 1992**  
Wetland Core

**Core 2011**  
Species of Conservation Concern  
Four-toed Salamander *Hemidactylium scutatum* Non-listed SWAP

**Core 2022**  
Species of Conservation Concern  
Hemlock Parsley *Conioselinum chinense* SC

**Core 2033**  
Forest Core  
Wetland Core  
Aquatic Core  
Vernal Pool Core  
Species of Conservation Concern  
Large-leaved Sandwort *Moehringia macrophylla* E  
Ocellated Darter *Boyeria grafiana* SC  
Wood Turtle *Glyptemys insculpta* SC  
Lake Chub *Couesius plumbeus* E

**Core 2034**  
Aquatic Core  
Species of Conservation Concern  
Hemlock Parsley *Conioselinum chinense* SC

**Core 2071**  
Species of Conservation Concern  
Dion Skipper *Euphyes dion* T

**Core 2072**  
Species of Conservation Concern  
Dion Skipper *Euphyes dion* T

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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

Core 2074
Priority & Exemplary Natural Communities
Spruce-Fir Swamp S3
Species of Conservation Concern
Hemlock Parsley Conioselinum chinense SC
Dion Skipper Euphyes dion T

Core 2081
Wetland Core
Aquatic Core
Priority & Exemplary Natural Communities
Spruce-Fir Swamp S3
Species of Conservation Concern
Hemlock Parsley Conioselinum chinense SC
Woodland Millet Milium effusum T
Dion Skipper Euphyes dion T
Four-toed Salamander Hemidactylium scutatum Non-listed SWAP
Smooth Green Snake Opheodrys vernalis Non-listed SWAP
Wood Turtle Glyptemys insculpta SC
Bridle Shiner Notropis bifrenatus SC
American Bittern Botaurus lentiginosus E
Least Bittern Ixobrychus exilis E

Core 2100
Aquatic Core
Species of Conservation Concern
Chestnut-colored Sedge Carex castanea E

Core 2215
Aquatic Core
Species of Conservation Concern
Occellated Darter Boyeria grafiana SC
Zebra Clubtail Stylurus scudderi Non-listed SWAP
Smooth Green Snake Opheodrys vernalis Non-listed SWAP
American Bittern Botaurus lentiginosus E

Core 2228
Wetland Core
Aquatic Core
Species of Conservation Concern
Bailey’s Sedge Carex baileyi T
Bartram’s Shadbush Amelanchier bartramiana T

For more information on rare species and natural communities, please see our fact sheets online at www.mass.gov/nhesp.
<table>
<thead>
<tr>
<th>Species</th>
<th>Scientific Name</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Bittern</td>
<td>Botaurus lentiginosus</td>
<td>E</td>
</tr>
<tr>
<td>Sharp-shinned hawk</td>
<td>Accipiter striatus</td>
<td>SC</td>
</tr>
</tbody>
</table>
Core Habitat Summaries

Core 1992

A 24-acre Core Habitat featuring Wetland Core.

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

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 2022

A 6-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 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 2034**

A 29-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.

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 2071**

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

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

**Core 2072**

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

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

**Core 2074**

A 39-acre Core Habitat featuring a Priority Natural Community and 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.

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

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 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

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

**Core 2100**

An 11-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.

Chestnut-colored Sedge is found in calcareous seeps within wet meadows, deciduous or mixed forests, and along river and pond shores. It is capable of tolerating disturbance and is often found in transitional habitats, such as in forest edges next to open land.

**Core 2215**

A 344-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.

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.

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.

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.

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

**Core 2228**

A 2,580-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.

Four Wetland Cores occur on high elevation Mafic bedrock (rich in minerals like iron and magnesium), 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.

Bailey’s Sedge, a member of the Sedge family, is a perennial, herbaceous, grass-like plant of freshwater wetlands and moist woodlands.

Bartram’s Shadbush thrives in mountain thickets, near sphagnum bogs and on high-elevation, steep, wooded, rocky slopes.

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

Sharp-shinned Hawks nest in mixed woodlands and coniferous forests, often with nearby open areas. They are sensitive to disturbance around the nest, but they do occasionally nest near human development.
BioMap2 Critical Natural Landscape in Hinsdale

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

CNL 1013
Aquatic Core Buffer

CNL 1029
Aquatic Core Buffer
Landscape Block
Wetland Core Buffer

CNL 1055
Aquatic Core Buffer

CNL 1066
Aquatic Core Buffer
Landscape Block
Wetland Core Buffer

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

CNL 1013
A 19-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 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 1055**

A 270-acre Critical Natural Landscape featuring Aquatic Core Buffer.

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**CNL 1066**

A 13,026-acre Critical Natural Landscape featuring Aquatic Core Buffer, Wetland Core Buffer and Landscape Block.

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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.

This largely forested Landscape Block is 12,550 acres and is among the largest 20% of all Blocks across Massachusetts. These large forested landscapes provide invaluable wildlife habitat and other ecosystem values such as clean drinking water and absorbing carbon from the atmosphere. This Landscape Block is contiguous with other large Blocks and is partially protected.
CNL 1322

A 288,370-acre Critical Natural Landscape featuring Aquatic Core Buffer, Wetland Core Buffer and Landscape Block.

A variety of analyses were used to identify protective upland buffers around wetlands and rivers. One, the variable width buffers methodology, included the most intact areas around each wetland and river, by extending deeper into surrounding unfragmented habitats than into developed areas adjacent to each wetland. Other upland buffers were identified through the rare species habitat analysis. In this way, the conservation of wetland buffers will support the habitats and functionality of each wetland, and also include adjacent uplands that are important for many species that move between habitat types.

Landscape Blocks, the primary component of Critical Natural Landscapes, are large areas of intact predominately natural vegetation, consisting of contiguous forests, wetlands, rivers, lakes, and ponds, as well as coastal habitats such as barrier beaches and salt marshes. Pastures and power-line rights-of-way, which are less intensively altered than most developed areas, were also included since they provide habitat and connectivity for many species. Collectively, these natural cover types total 3.6 million acres across the state. An Ecological Integrity assessment was used to identify the most intact and least fragmented areas. These large Landscape Blocks are most likely to maintain dynamic ecological processes such as buffering, connectivity, natural disturbance, and hydrological regimes, all of which help to support wide-ranging wildlife species and many other elements of biodiversity.

In order to identify critical Landscape Blocks in each ecoregion, different Ecological Integrity thresholds were used to select the largest intact landscape patches in each ecoregion while avoiding altered habitat as much as possible. This ecoregional representation accomplishes a key goal of BioMap2 to protect the ecological stages that support a broad suite of biodiversity in the context of climate change. Blocks were defined by major roads, and minimum size thresholds differed among ecoregions to ensure that BioMap2 includes the best of the best in each ecoregion.
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