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, 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

Leverett lies on the border of the Connecticut River Valley and the Worcester Plateau Ecoregions. The Connecticut River Valley Ecoregion, the borders of which are primarily defined by the bedrock geology, has rich soils, a relatively mild climate and low rolling topography. The valley floor is primarily cropland and built land. Central hardwoods and transition hardwood forests cover the ridges. The Worcester Plateau Ecoregion is an area that includes the most hilly areas of the central upland of Massachusetts with a few high monadnocks and mountains. The dominant forest types present are transition hardwoods and some northern hardwoods. Forested wetlands are common. Surface waters are acidic. Many major rivers drain this area.

Leverett at a Glance

- Total Area: 14,693 acres (23.0 square miles)
- Human Population in 2010: 1,851
- Open space protected in perpetuity: 4,818 acres, or 32.8% percent of total area*
- BioMap2 Core Habitat: 8,027 acres
- BioMap2 Core Habitat Protected: 3,519 acres or 43.8%
- BioMap2 Critical Natural Landscape: 9,899 acres
- BioMap2 Critical Natural Landscape Protected: 4,091 acres or 41.3%

BioMap2 Components

Core Habitat
- 1 Exemplary or Priority Natural Community
- 2 Forest Cores
- 2 Aquatic Cores
- 10 Species of Conservation Concern Cores**
  - 4 reptiles, 2 amphibians, 1 fish, 5 plants

Critical Natural Landscape
- 1 Landscape Block
- 2 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 Leverett

![Map of BioMap2 Core Habitat and Critical Natural Landscape in Leverett]

**BioMap2 Core Habitat**

**BioMap2 Critical Natural Landscape**

1 Mile
Species of Conservation Concern, Priority and Exemplary Natural Communities, and Other Elements of Biodiversity in Leverett

Amphibians
- Marbled Salamander, (Ambystoma opacum), T
- Four-toed Salamander, (Hemidactylium scutatum), Non-listed SWAP

Fishes
- Bridle Shiner, (Notropis bifrenatus), SC

Reptiles
- Wood Turtle, (Glyptemys insculpta), SC
- Eastern Box Turtle, (Terrapene carolina), SC
- Eastern Ribbon Snake, (Thamnophis sauritus), Non-listed SWAP
- Spotted Turtle, (Clemmys guttata), Non-listed SWAP

Plants
- Wall-rue Spleenwort, (Asplenium ruta-muraria), T
- Purple Clematis, (Clematis occidentalis), SC
- Shining Wedgegrass, (Sphenopholis nitida), T
- Appalachian Bristle-fern, (Trichomanes intricatum), E
- Swamp Oats, (Sphenopholis pensylvanica), T

Priority Natural Communities
- Calcareous Rock Cliff Community, S3

Other BioMap2 Components
- Forest Core
- Aquatic Core
- Landscape Block
- Aquatic 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 Leverett

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

**Core 2049**
Species of Conservation Concern

Spotted Turtle \( \text{Clemmys guttata} \)

Non-listed SWAP

**Core 2051**
Species of Conservation Concern

Spotted Turtle \( \text{Clemmys guttata} \)

Non-listed SWAP

**Core 2107**
Species of Conservation Concern

Spotted Turtle \( \text{Clemmys guttata} \)

Non-listed SWAP

**Core 2112**
Species of Conservation Concern

Four-toed Salamander \( \text{Hemidactylium scutatum} \)

Non-listed SWAP

Marbled Salamander \( \text{Ambystoma opacum} \)

T

Spotted Turtle \( \text{Clemmys guttata} \)

Non-listed SWAP

**Core 2171**
Species of Conservation Concern

Four-toed Salamander \( \text{Hemidactylium scutatum} \)

Non-listed SWAP

**Core 2208**
Forest Core

Species of Conservation Concern

Marbled Salamander \( \text{Ambystoma opacum} \)

T

Eastern Box Turtle \( \text{Terrapene carolina} \)

SC

Spotted Turtle \( \text{Clemmys guttata} \)

Non-listed SWAP

Wood Turtle \( \text{Glyptemys insculpta} \)

SC

**Core 2282**
Species of Conservation Concern

Spotted Turtle \( \text{Clemmys guttata} \)

Non-listed SWAP
Core 2285
Species of Conservation Concern
Spotted Turtle \textit{Clemmys guttata} Non-listed SWAP

Core 2332
Forest Core
Wetland Core
Priority & Exemplary Natural Communities
Black Gum Swamp S2

Core 2943H
Wetland Core
Aquatic Core
Priority & Exemplary Natural Communities
Black Ash-Red Maple-Tamarack Calcareous Seepage Swamp S2
Calcareous Rock Cliff Community S3
Calcareous Talus Forest/Woodland S3
Species of Conservation Concern
Adder’s-tongue Fern \textit{Ophioglossum pusillum} T
Appalachian Bristle-fern \textit{Trichomanes intricatum} E
Autumn Coralroot \textit{Corallorhiza odontorhiza} SC
Climbing Fumitory \textit{Adlumia fungosa} SC
Drooping Speargrass \textit{Poa saltuensis ssp. languida} E
Green Rock-cress \textit{Boechera missouriensis} T
Linear-leaved Milkweed \textit{Asclepias verticillata} T
Michaux’s Sandwort \textit{Minuartia michauxii} T
Pale Green Orchis \textit{Platanthera flava var. herbiola} T
Purple Clematis \textit{Clematis occidentalis} SC
Putty-root \textit{Aplectrum hyemale} E
Shining Wedgegrass \textit{Sphenopholis nitida} T
Swamp Oats \textit{Sphenopholis pensylvanica} T
Arrow Clubtail \textit{Stylurus spiniceps} Non-listed SWAP
Brook Snaketail \textit{Ophiogomphus aspersus} SC
Riverine Clubtail \textit{Stylurus amnicola} E
Spine-crowned Clubtail \textit{Gomphus abbreviatus} SC
Blue-spotted Salamander \textit{Ambystoma laterale} SC
Eastern Spadefoot \textit{Scaphiopus holbrookii} T
Four-toed Salamander \textit{Hemidactylium scutatum} Non-listed SWAP
Eastern Ribbon Snake \textit{Thamnophis sauritus} Non-listed SWAP
Bridle Shiner \textit{Notropis bifrenatus} SC
Grasshopper Sparrow \textit{Ammodramus savannarum} T
Vesper Sparrow \textit{Poecetes gramineus} T
Core Habitat Summaries

Core 2049
A 13-acre Core Habitat featuring a Species of Conservation Concern.

Strong populations of Spotted Turtles in good habitat - large, unfragmented, protected open space - continue to be of interest for the conservation of this species. This small, dark-colored turtle with yellow spots on its carapace inhabits a variety of wetlands year-round and nests in nearby uplands during spring. Road and collection are the primary conservation concerns.

Core 2051
A 25-acre Core Habitat featuring a Species of Conservation Concern.

Strong populations of Spotted Turtles in good habitat - large, unfragmented, protected open space - continue to be of interest for the conservation of this species. This small, dark-colored turtle with yellow spots on its carapace inhabits a variety of wetlands year-round and nests in nearby uplands during spring. Road and collection are the primary conservation concerns.

Core 2107
A 19-acre Core Habitat featuring a Species of Conservation Concern.

Strong populations of Spotted Turtles in good habitat - large, unfragmented, protected open space - continue to be of interest for the conservation of this species. This small, dark-colored turtle with yellow spots on its carapace inhabits a variety of wetlands year-round and nests in nearby uplands during spring. Road and collection are the primary conservation concerns.

Core 2112
A 704-acre Core Habitat featuring 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.

Adult and juvenile Marbled Salamanders inhabit upland forests during most of the year, where they reside in small-mammal burrows and other subsurface retreats. Adults migrate during late summer or early fall to breed in dried portions of vernal pools, swamps, marshes, and other predominantly fish-free wetlands. Eggs are deposited under logs, leaf-litter, or grass tussocks and hatch after being inundated by fall rains. Larvae metamorphose during late spring, whereupon they disperse into upland forest.

Strong populations of Spotted Turtles in good habitat - large, unfragmented, protected open space - continue to be of interest for the conservation of this species. This small, dark-colored turtle with yellow spots on its carapace inhabits a variety of wetlands year-round and nests in nearby uplands during spring. Road and collection are the primary conservation concerns.
Core 2171

A 79-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 2208

A 5,496-acre Core Habitat featuring Forest 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 large 3,895-acre Forest Core is among the largest 20% of Forest Cores in the state and is the third largest in the ecoregion. It is largely protected, primarily through the Paul C. Jones Working Forest.

Adult and juvenile Marbled Salamanders inhabit upland forests during most of the year, where they reside in small-mammal burrows and other subsurface retreats. Adults migrate during late summer or early fall to breed in dried portions of vernal pools, swamps, marshes, and other predominantly fish-free wetlands. Eggs are deposited under logs, leaf-litter, or grass tussocks and hatch after being inundated by fall rains. Larvae metamorphose during late spring, whereupon they disperse into upland forest.

The Eastern Box Turtle is a terrestrial turtle, inhabiting many dry and moist woodland and early successional habitat. Development, roads, collection, and disease are the primary conservation concerns.

Strong populations of Spotted Turtles in good habitat - large, unfragmented, protected open space - continue to be of interest for the conservation of this species. This small, dark-colored turtle with yellow spots on its carapace inhabits a variety of wetlands year-round and nests in nearby uplands during spring. Road and collection are the primary conservation concerns.

Wood Turtle habitat is streams and rivers, preferably with long corridors of undeveloped, connected uplands. They also use fields and early successional habitat extending up to 500 meters on both sides of the waterways. Mowing and roads are the primary causes of mortality. Collection is also a conservation concern.

Core 2282

A 67-acre Core Habitat featuring a Species of Conservation Concern.

Strong populations of Spotted Turtles in good habitat - large, unfragmented, protected open space - continue to be of interest for the conservation of this species. This small, dark-colored turtle with yellow spots on its carapace inhabits a variety of wetlands year-round and nests in nearby uplands during spring. Road and collection are the primary conservation concerns.
Core 2285
A 22-acre Core Habitat featuring a Species of Conservation Concern.

Strong populations of Spotted Turtles in good habitat - large, unfragmented, protected open space - continue to be of interest for the conservation of this species. This small, dark-colored turtle with yellow spots on its carapace inhabits a variety of wetlands year-round and nests in nearby uplands during spring. Road and collection are the primary conservation concerns.

Core 2332
A 1,763-acre Core Habitat featuring Forest Core, Wetland Core and Priority Natural Communities.

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.

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.

Black Gum Swamps are forested hummocky peatlands that occur in poorly-drained basins. Black gum is an abundant or dominant canopy tree with red maple, growing primarily on the hummocks, which results in a relatively open canopy. This relatively small example of a Black Gum Swamp is in good condition, with few exotics and good species diversity. It is also well buffered within a naturally vegetated landscape.

Core 2943H
A 7,696-acre section of a larger 93,990-acre Core Habitat featuring Wetland Core, Aquatic Core, Priority Natural Communities, and Species of Conservation Concern.

Mt. Toby is part of the extensive Connecticut River Core Habitat. The mineral-rich conglomerate bedrock of this mountain supports an amazing concentration of rare ferns and orchids; indeed, it is home to 15 state-listed plants.

Black Ash-Red Maple-Tamarack Calcareous Seepage Swamps are mixed deciduous-coniferous forested swamps occurring in areas where there is calcium-rich groundwater seepage. This nutrient enrichment supports many rare calcium-loving plant species. This moderate-sized example of Black Ash-Red Maple-Tamarack Calcareous Seepage Swamp is in good condition and is part of a larger complex of naturally vegetated wetlands. It is particularly unusual this far east in the state.

Calcareous Rock Cliffs are sparsely vegetated cliff communities. Unusual, highly specialized plants and ferns grow in cracks and ledges in the calcium-rich cliff face. This type of cliff community has more species diversity than Acidic Rock Cliffs. This Core has three examples of Calcareous Rock Cliff including one that is in excellent condition and exists in a mosaic with several other important calcareous communities. Together they provide a significant amount of habitat for many unusual and rare plants and animals.
Calcereous Talus Forest communities develop on loose rocky slopes below calcareous cliffs or rock outcrops. The soil between the boulders is usually moist and loamy. Trees are usually best established on lower slopes. Four examples of Calcereous Talus Forest including one that, although small and close to a developed area, has a tremendous diversity of slope, shade, and moisture, which has led to great floristic diversity.

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

Aquatic Cores are intact river corridors within which important physical and ecological processes of the river or stream occur. They delineate integrated and functional ecosystems for fish species and other aquatic Species of Conservation Concern.
BioMap2 Critical Natural Landscape in Leverett

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

**CNL 1019**
Aquatic Core Buffer

**CNL 1031**
Aquatic Core Buffer

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

CNL 1019
An 80-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 1031
A 76-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 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.
Help Save Endangered Wildlife!

Please contribute on your Massachusetts income tax form or directly to the

Natural Heritage &
Endangered Species Fund

To learn more about the Natural Heritage & Endangered Species Program and the Commonwealth’s rare species, visit our web site at www.mass.gov/nhsp.