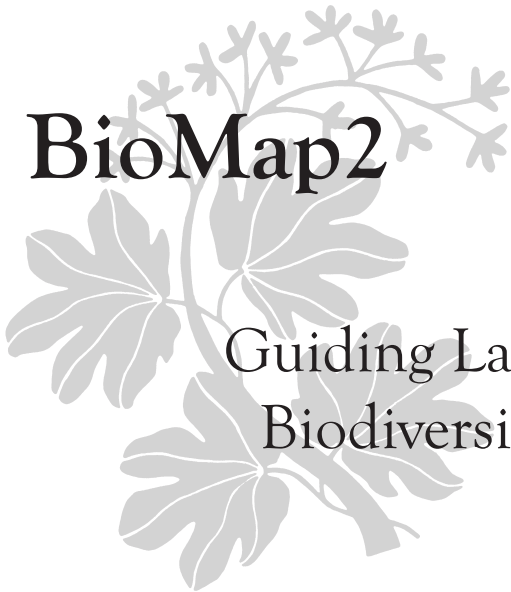




BioMap2

Guiding Land Conservation for Biodiversity in Massachusetts

Monterey

This report and associated maps 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.

Produced by:
Natural Heritage & Endangered Species Program
Massachusetts Division of Fisheries and Wildlife

Commonwealth of Massachusetts

Produced in 2011



BioMap2:

Guiding Land Conservation for Biodiversity in Massachusetts

Preferred citation:

NHESP. 2011. BioMap2, Guiding Land Conservation for Biodiversity in Massachusetts: Monterey. Natural Heritage & Endangered Species Program, Massachusetts Division of Fisheries and Wildlife. Westborough, MA.

The preferred citation for BioMap2 is:

Woolsey, H., A. Finton, J. DeNormandie. 2010. BioMap2: Conserving the Biodiversity of Massachusetts in a Changing World. MA Department of Fish and Game/Natural Heritage & Endangered Species Program and The Nature Conservancy/Massachusetts Program.

http://www.mass.gov/dfwele/dfw/nhesp/land_protection/biomap/biomap2_summary_report.pdf

Funding for this project was made available by the Massachusetts Sub-Council of the Housatonic River Trustee Council under the auspices of the Massachusetts and Department of the Interior (DOI) Natural Resource Damages Assessment and Restoration Programs and contributions to the Natural Heritage & Endangered Species Fund.



**Natural Heritage
& Endangered Species
Program**

Massachusetts Division of Fisheries and Wildlife

1 Rabbit Hill, Westborough, MA 01581
Tel: (508) 389-6360 Fax: (508) 389-7891
<http://www.nhesp.org>



For more information on rare species and natural communities, please see our fact sheets online at www.nhesp.org

BioMap2: Guiding Land Conservation for Biodiversity in Massachusetts

Monterey

Monterey is located in southern Berkshire County, and lies partly within the Berkshire Hills and partly within the marble valleys of Massachusetts' portion of the Housatonic River watershed. The town is centered along the upper reaches of the Konkapot River, with a highland plateau comprising much of the north section of town and hills rising above the valley to the east and south along town boundaries with Otis, Sandisfield, and New Marlborough. Lowland portions of central and western Monterey along the Konkapot River are part of the Marble Valleys, while northern Monterey and the town's southeastern perimeters are part of the Lower Berkshire Hills (see Figure 1). The mainstem Konkapot River flows west and then south from Monterey into New Marlborough, ultimately joining the Housatonic River mainstem near the Connecticut border in south Sheffield. Two small streams, Swann Brook in the northwest and Loom Brook in the northeast, flow south from the hills of Beartown State Forest to join the Konkapot River in the valley east of the village of Monterey. Rawson Brook joins the river from the south. Monterey contains two lakes – in the east, Lake Garfield is a large reservoir along a tributary to Loom Brook; to the southwest, along Monterey's boundary with New Marlborough, Lake Buel is a natural lake along a tributary to Konkapot River.

Monterey is sparsely populated, with fewer than 1,000 people. Residential areas are concentrated in the village of Monterey, as well as around the perimeters of recreational centers like Lakes Buel and Garfield. In general, development is relatively light. Farming and sawmills have been the primary industries in the area since the 18th and early 19th centuries, when Monterey was part of Tyringham. The region's earliest settlers constructed one of the original sawmills here, at a site along Konkapot Brook, Lake Garfield's outlet stream. Patches of farmland are still spread throughout the town's lowland areas, but forests dominate the landscape; Monterey has a higher percentage of forested land within its boundaries (82%) than all but two other towns in the Housatonic River watershed.

The lowlands and streams in central Monterey are a part of the Western New England Marble Valleys ecological region, which runs up the Housatonic River valley along the east side of the Taconic Mountains from north-west Connecticut, and also along the Hoosic River and



Monterey at a Glance

- Total area: 17,519 acres (27.4 square miles)
- Human Population in 2009: 960 people
- Open space protected in perpetuity: 7,573 acres, or 43.2% of total area*

BioMap2 Components

Core Habitat

- 9 Aquatic Cores: 677 acres
- 1 Forest Core: 382 acres
- 10 Wetland Cores: 264 acres
- 1 Priority Natural Community: 0.43 acres

Species of Conservation Concern**

- 1 dragonfly, 1 fish, 2 salamanders, 1 turtle, 1 marshbird, 4 plants

Critical Natural Landscape

- 9 Upland Buffers of Aquatic Cores: 1,380 acres
- 10 Upland Buffers of Wetland Cores: 670 acres
- 3 Landscape Blocks: 10,805 acres

*calculated using MassGIS data layer "Protected and Recreational Open Space—November 2010"

**see next page for complete list of species, natural communities, and other biodiversity elements

Species of Conservation Concern, Priority Natural Communities, and Other Elements of Biodiversity in Monterey

Insects

Dragonflies

Ocellated Darner (*Boyeria grafiana*), Special Concern

Fish

Bridle Shiner (*Notropis bifrenatus*) Special Concern

Amphibians

Jefferson Salamander (*Ambystoma jeffersonianum*), Special Concern

Spring Salamander (*Gyrinophilus porphyriticus*), SWAP

Reptiles

Wood Turtle (*Glyptemys insculpta*), Special Concern

Birds

American Bittern (*Botaurus lentiginosus*), Endangered

Plants

Dwarf Scouring-rush (*Equisetum scirpoides*), Special Concern

Fen Sedge (*Carex tetanica*), Special Concern

Foxtail Sedge (*Carex alopecoidea*), Threatened

Vasey's Pondweed (*Potamogeton vaseyi*), Endangered

Priority Natural Communities

Calcareous Sloping Fen (Imperiled)

Other BioMap2 Components

Aquatic Cores

Forest Cores

Landscape Blocks

Upland Buffers of Aquatic Cores

Upland Buffers of Wetland Cores

Wetland Cores

other tributaries in the Hudson River and Lake Champlain drainages. This is one of the most biologically rich ecoregions both in Massachusetts and all of New England, supporting a high number of state-listed species and Priority Natural Communities. In Monterey, wetlands along the Konkapot River and the stream outlet of Palmer Pond provide breeding habitat for the state-endangered American Bittern, a marsh bird of the heron family. Aquatic nymphs, or larvae, of dragonflies like the Ocellated Darner inhabit streams and open water along the Konkapot and its tributaries, while adults dwell in nearby upland forests. Wood turtles feed and nest in upland forests and fields during spring and summer months, and hibernate in river banks or bottoms during the winter. The valley also contains a small Calcareous Sloping Fen, a calcium-rich natural community that supports a diverse assemblage of sedges and herbaceous plant species.

In northern Monterey, the highland areas of the plateau contain extensive forests that are not as ecologically diverse as areas in valley, but that still support their own suite of uncommon species. In particular, these areas are home to sensitive amphibians like the Spring Salamander, which requires undisturbed habitat along high-gradient headwater streams. Forested wetlands are also distributed throughout these mountain areas. Unlike much of the valley, the highlands are well protected from any future development; most land here is part of either Beartown or Arthur Wharton Swann State Forests.

BIODIVERSITY CONSERVATION TARGETS IN MONTEREY: CORE HABITAT, CRITICAL NATURAL LANDSCAPE, & PRIORITY CONSERVATION AREAS

Overview

In this section, we outline areas in Monterey that warrant special focus of conservation efforts locally, regionally, and throughout the state. Components of the Natural Heritage & Endangered Species Program's (NHESP's) state-wide BioMap2 project, which incorporates NHESP data and includes findings of studies funded by the Natural Resource Damages Assessment and Restoration Program (NRD) conducted in 2008 and 2009 as part of its Core Habitat and Critical Natural Landscape, were used to delineate and map these areas. The areas range in size from fewer than 10 acres to several thousand acres. Areas of Core Habitat, each called a BioMap2 Core (BC), and Critical Natural Landscape (CNL), along with their associated components, are illustrated in Figure 2 and outlined in detail below. Only those BioMap2 components that occur in Monterey are described in this report, though a given area of Core Habitat or Critical Natural Landscape listed here may extend outside of the town boundaries and contain additional components.

To facilitate land protection and stewardship, NHESP further prioritized areas in each of the towns in the watershed using habitat size, habitat conditions and other biodiversity indicators. Priority Conservation Areas (PCAs)

Biodiversity Studies in Massachusetts and the Housatonic River Watershed

BioMap2 is a statewide biodiversity conservation plan produced in 2010 by MassWildlife's Natural Heritage & Endangered Species Program and The Nature Conservancy. It is designed to guide strategic biodiversity conservation in Massachusetts over the next decade by focusing land protection and stewardship on the areas that are most critical for ensuring the long-term persistence of rare and other native species and their habitats, Priority Natural Communities, and a diversity of ecosystems. BioMap2 is also designed to include the habitats and Species of Conservation Concern identified in the State Wildlife Action Plan (SWAP).

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 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.

In 2008 and 2009, field surveys were carried out to improve knowledge of the region's biodiversity resources in towns in the Housatonic River watershed in western Massachusetts. During these surveys, coordinated by the Natural Heritage and Endangered Species Program (NHESP) with funds from the Natural Resources Damage Assessment and Restoration (NRD) Program, researchers collected important information about state-listed species and Priority Natural Communities of 19 towns in the region. Surveys were conducted by NHESP staff, expert consultants, academic researchers, and graduate students. Information on the surveys' findings was added to the NHESP database, combined with other NHESP data, and incorporated into Core Habitat of BioMap2. BioMap2 data layers, complete with these data and other information, are now available for use in conservation planning at the town, regional, and state levels.

were considered to be of high biodiversity value if they contained concentrations of state-listed species or Priority Natural Communities, or large areas of intact habitat. In each town, a total of one to six Town PCAs were designated. In Monterey, two Town PCAs were designated, and each contains part of at least one BioMap2 core. Figure 3 illustrates how BioMap2 Core Habitat and Critical Natural Landscape relate to the distribution of Town PCAs.

A larger scale prioritization was also conducted to select Regional PCAs of the highest conservation and stewardship value among all towns in Massachusetts' portion of the Housatonic River watershed. Regional PCAs often cross town boundaries and are quite large, ranging from 373 acres to more than 25,000 acres. Ecological connectivity within these Regional PCAs is important to biodiversity conservation, and these large units often include select Town PCAs that are of particular biodiversity value to both the town and the region. In this way, biodiversity can be conserved at two scales: locally within each town, as well as within a broader regional context. Regional PCA 8, which also covers parts of Tyringham, Lee, Stockbridge and Great Barrington, includes the area in northern Monterey designated as Town PCA 2.

Core Habitat and Critical Natural Landscape Components in Monterey

Monterey's designated areas of Core Habitat, called BioMap2 Cores (BCs), are summarized here. The various components of each BC are listed and described; these may include Species of Conservation Concern, Exemplary and Priority Natural Communities, or Aquatic, Forest, Vernal Pool, or Wetland Cores. Components of Critical Natural Landscape (CNL) associated with each BC are also provided. These include Upland Buffers of both Aquatic and Wetland Cores, as well as Landscape Blocks.

BC1331 and CNL883

BC1331 consists of 46 acres along the boundary between Monterey and New Marlborough. It is partially within lands managed by the U.S. Fish and Wildlife Service. Two Certified Vernal Pools in this BC provide breeding habitat for amphibians, and the surrounding forested landscape has unfragmented areas with ample habitat for state-listed and common salamanders during non-breeding times. BC1331 lies within a Landscape Block of CNL883, and supports a population of one state-listed salamander.

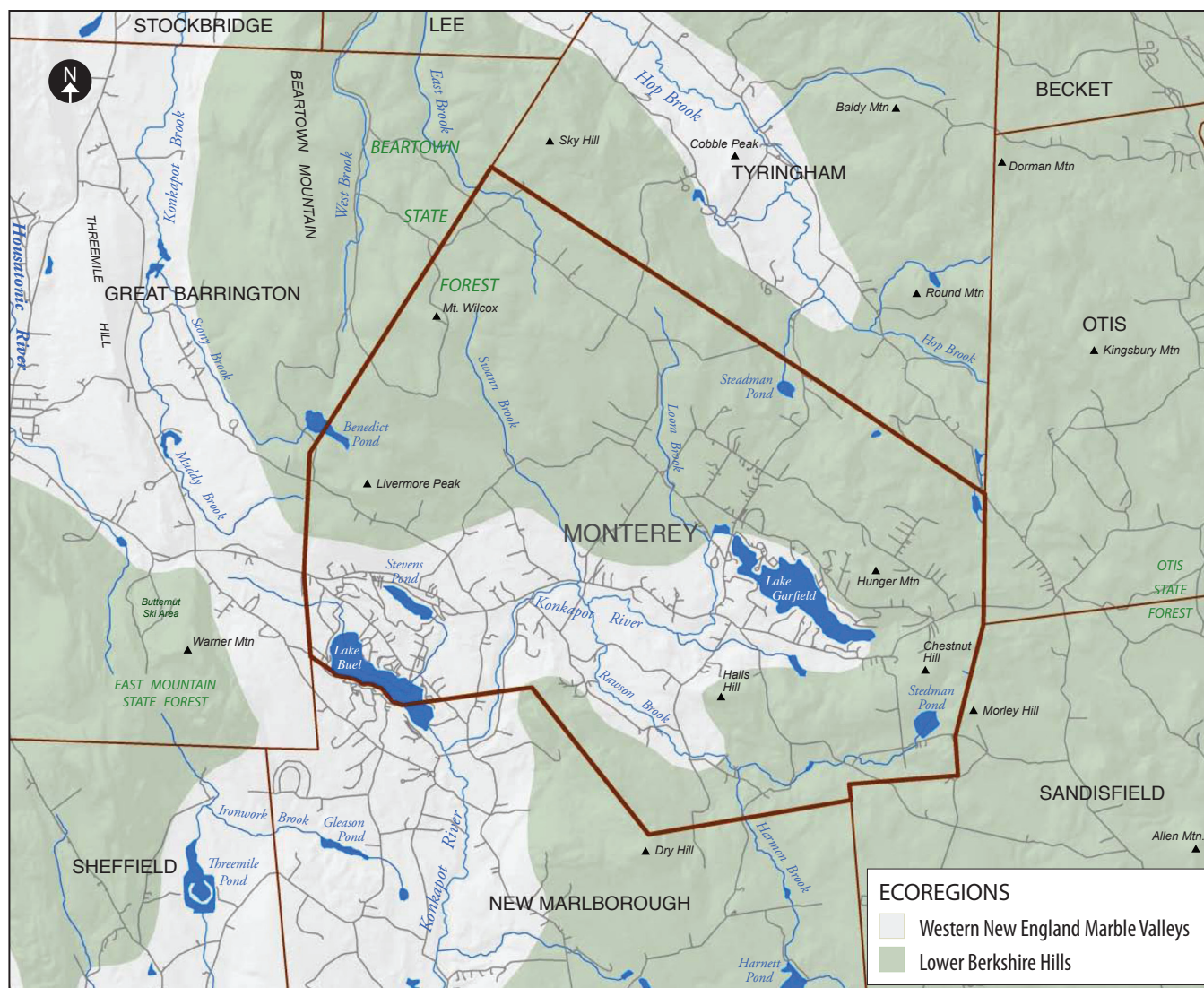


Figure 1. Town boundaries and ecoregions of Monterey, Massachusetts. Monterey lies within the Housatonic River watershed and is part of two ecological regions – the Lower Berkshire Hills and the Western New England Marble Valleys.

Jefferson Salamander (*Ambystoma jeffersonianum*), Special Concern:

Adult and juvenile Jefferson Salamanders inhabit upland forest 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, and young salamanders disperse into forested upland areas.

BC1348 and CNL883

BC1348 is a 20-acre core located in southeast Monterey and extends into Sandisfield. The area is part of the upper headwaters of the Farmington River in the Connecticut River basin. Most of the core is within lands protected by the Berkshire Natural Resources Council. BioMap2

components in BC1348 in Monterey include a Wetland Coresurrounded by an Upland Buffer, all embedded in a Landscape Block of CNL883.

BC1352 and CNL883

BC1352 is located along New Marlborough Road, near the point where the road passes over a small tributary of the Konkapot River. This BC is located in a somewhat developed area, and falls just outside the large Landscape Block of CNL883, located to the south. BC1352 includes an Aquatic Core and Upland Buffer of CNL883, and is known to support one state-listed marshbird species.

American Bittern (*Botaurus lentiginosus*), Endangered: This is a mottled brown heron-like bird that feeds and nests primarily in large cattail, tussock or shrub marshes, and

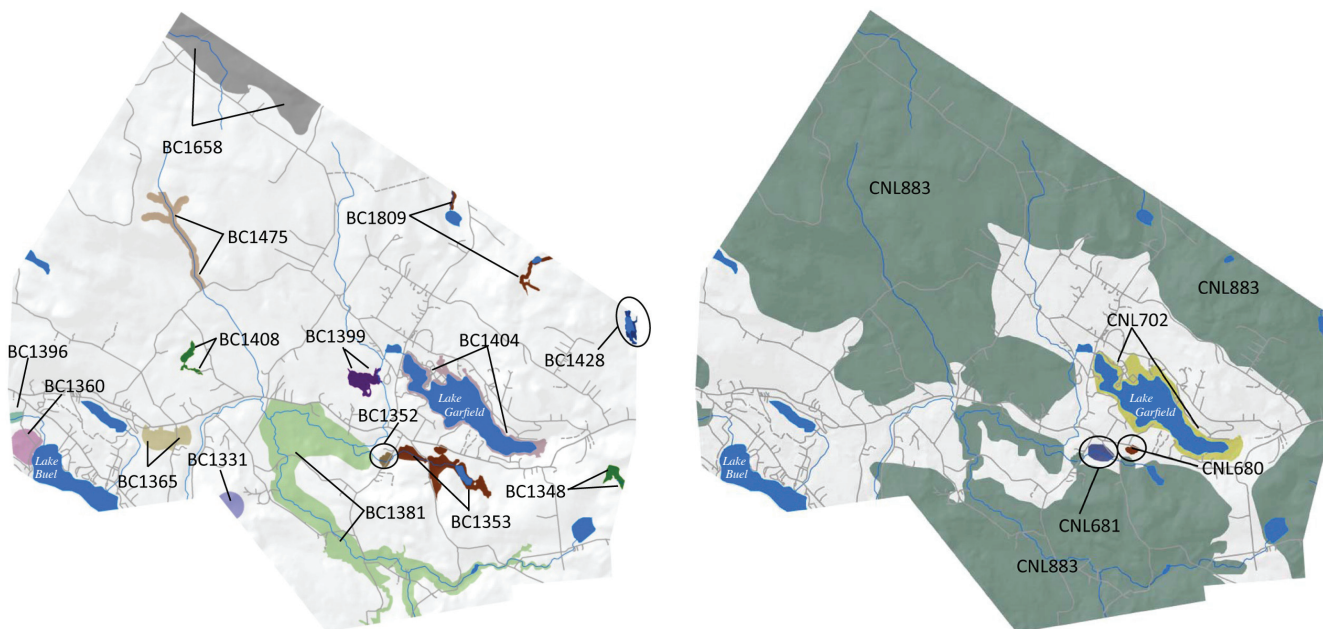


Figure 2. Monterey includes a total of 15 BioMap2 Cores (BCs) and four areas of Critical Natural Landscape (CNL), with CNL883 covering much of the town's area. Figure 3 shows overlap between Core Habitat and Critical Natural Landscape.

is very sensitive to disturbance. Its coloring and unique behavior of pointing its bill skyward when threatened, sometimes swaying to mimic movement of grasses in the wind, make it well-camouflaged in marsh habitat.

BC1353, and CNL680, CNL681, and CNL883

BC1353 comprises 97 acres in eastern Monterey, south of Route 23. It includes upland areas around Palmer Pond, the stream that flows east from Palmer Pond to join the Konkapot River, and adjacent wetlands in this area. Parts of this core are within a large Landscape Block of CNL883. Several Aquatic Cores and a Wetland Core are part of BC1353. Upland Buffers of CNL680, CNL681 and CNL883 surround parts of this BC. BC1353 includes state-listed plant species, one state-listed marshbird, and a Priority Natural Community.

Plants

Fen Sedge (*Carex tetanica*), Special Concern: This narrow-leaved perennial sedge grows in open calcareous fens.

Dwarf Scouring-rush (*Equisetum scirpoides*), Special Concern: This is a perennial, evergreen fern-ally that grows in a variety of cool, usually wet habitats, including hummocks in swamps, moist stream banks, and seeps associated with conifer tree species.

Birds

American Bittern (*Botaurus lentiginosus*), Endangered: This mottled brown heron-like bird feeds and nests primarily in large cattail, tussock or shrub marshes, and is

very sensitive to disturbance. Its coloring and notable behavior of pointing its bill skyward when threatened, sometimes swaying to mimic movement of grasses in the wind, make it well-camouflaged in marsh habitat.

Natural Communities

Calcareous Sloping Fen (Imperiled): This Priority Natural Community is an open, sedge-dominated wetland occurring on slight to moderate slopes with calcareous groundwater seepage. The small occurrence in BC1353 contains high floral diversity, and has a buffer of natural vegetation that maximizes its resilience to potential disturbance by human activities in nearby uplands.

BC1360 (no CNL)

This core is located in the very southwestern part of Monterey, in uplands on the western side of Lake Buel. Although somewhat developed, this area includes forested land that provides good habitat for adult salamanders and a Certified Vernal Pool that provides amphibian breeding habitat. BC1360 includes one listed amphibian species:

Jefferson Salamander (*Ambystoma jeffersonianum*), Special Concern: Adult and juvenile Jefferson Salamanders inhabit upland forest 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 or marshes. Larvae metamorphose in late summer or early fall, then disperse into upland forest areas.

BC1365 (no CNL)

This core is located in the southwestern part of Monterey, and has no associated CNL. It lies just south of Route 23 and contains a Certified Vernal Pool that provides breeding habitat for amphibians and other wildlife species. Although it is bisected by Corashire Road and is located near active residential and agricultural areas, this BC also includes sufficient forested habitat for adult salamanders.

Jefferson Salamander (*Ambystoma jeffersonianum*), Special

Concern: Adult and juvenile Jefferson Salamanders inhabit upland forests during most of the year, where they reside in small-mammal burrows and other subsurface retreats. Adults migrate during late winter or early spring to breed in vernal pools and fish-free areas of swamps or marshes. Larvae metamorphose in late summer or early fall, then disperse into upland forest areas.

BC1381 and CNL883

BC1381 is located in central and southern Monterey along reaches of the Konkapot River and Rawson Brook, as well as along their associated headwater tributaries. It includes Aquatic and Wetland Cores and their associated Upland Buffers, and falls within a Landscape Block of CNL883. It includes one state-listed dragonfly, one turtle, and one marshbird.

Ocellated Darner (*Boyeria grafiana*), Special Concern: This is a dragonfly species whose nymphs, or larvae, inhabit clear, shallow, rocky, swift-flowing streams and large, rocky lakes with little aquatic vegetation. Adults inhabit nearby uplands.

Wood Turtle (*Glyptemys insculpta*), Special Concern: Ideal habitat for this species includes streams and rivers with long corridors of undeveloped adjacent uplands.

American Bittern (*Botaurus lentiginosus*), Endangered: This is a mottled brown heron-like bird that feeds and nests primarily in large cattail, tussock or shrub marshes, and is very sensitive to disturbance. Its coloring and unique behavior of pointing its bill skyward when threatened, sometimes swaying to mimic movement of grasses in the wind, make it well-camouflaged in marsh habitat.

BC1396 and CNL883

This 163-acre BC lies mostly in southeast Great Barrington, but approximately ten acres are part of southwest Monterey, lying just northwest of Lake Buel and BC1360. This area includes a small stream and associated wetlands that drain to Lake Buel, including a Wetland Core and an Aquatic Core, and is surrounded by Upland Buffers of CNL883. It also supports one state-listed marshbird species.

American Bittern (*Botaurus lentiginosus*), Endangered: This is a mottled brown heron-like bird that feeds and nests primarily in large cattail, tussock or shrub marshes, and is very sensitive to disturbance. Its coloring and unique behavior of pointing its bill skyward when threatened, sometimes swaying to mimic movement of grasses in the wind, make it well-camouflaged in marsh habitat.

BC1399 and CNL883

BC1399 is located in central Monterey, west of Tyringham Road and north of Route 23. It lies at the eastern edge of a large Landscape Block of CNL883, and just to the west of Loom Brook. It includes a 36-acre area of Wetland Core that is surrounded by an Upland Buffer of CNL883.

BC1404 and CNL702

BC1404 is defined by an Aquatic Core that includes Lake Garfield and its nearby uplands. It is surrounded by an Upland Buffer of CNL702 and includes one state-listed aquatic plant species and one state-listed fish species.

Vasey's Pondweed (*Potamogeton vaseyi*), Endangered: This floating-leaved, aquatic herbaceous plant is known to occur in lakes and ponds throughout the Northeast and upper Midwest. In Massachusetts, it occurs in quiet waterbodies with acidic to slightly alkaline waters.

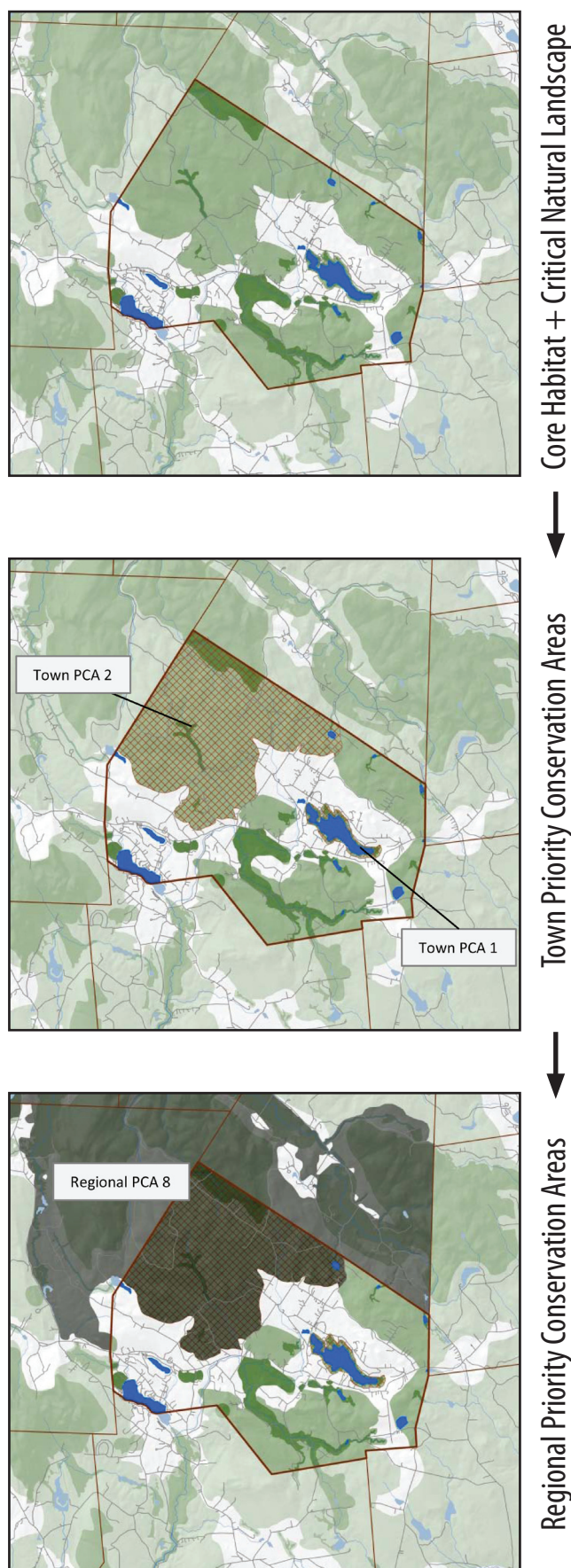
Bridle Shiner (*Notropis bifrenatus*), Special Concern: The Bridle Shiner is a small, straw-colored minnow with a distinct dark lateral band that runs from the tip of the snout to the base of the tail. It is typically found in clear water, in slack areas of streams and rivers, as well as in lakes and ponds. It is sensitive to turbidity, invasive plant species, and severe changes in flow regime.

BC1408 and CNL883

BC1408 is a 14-acre area located less than half a mile north of the Konkapot River in west-central Monterey. Its boundaries are defined by a Wetland Core lying just to the west of Swann Road. It is surrounded by an Upland Buffer and is part of a Landscape Block of CNL883. BC1408 falls within the lower elevations of the Berkshire Hills ecoregion near its boundary with the Western New England Marble Valleys.

BC1428 and CNL883

BC1428 is a 35-acre core near the tri-town boundary of Monterey, Tyringham, and Otis. It contains a relatively large Wetland Core. It also includes a small reach of a tributary to Hop Brook, which drains northwest to join the Housatonic River in Lee, and a small pond associated with these headwaters. It is surrounded by an Upland Buffer and is within a large Landscape Block of CNL883.



BC1475 and CNL883

BC1475 is along a mile-long reach of Swann Brook in Beartown State Forest and includes select high-gradient headwater tributaries to this section of the stream that lie inside CNL883's large Landscape Block. This BC supports a sensitive salamander species.

Spring Salamander (*Gyrinophilus porphyriticus*), SWAP: This species inhabits clean, cold, high-gradient brooks and headwater seeps in forest habitat. 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 hiding under rocks along the margins of brooks, springs, and seeps; however, they will venture into upland forest during rainy weather.

BC1658 and CNL883

BC1658 contains over 9,000 acres and extends from northern Monterey into western Tyringham, southern Lee and Stockbridge, as well as northeastern Great Barrington. In Monterey, it includes a large, 382-acre area of Forest Core, partly within Beartown State Forest, that is part of a large Landscape Block of CNL883.

BC1809 and CNL883

BC1809 is very large – totaling more than 11,000 acres – and stretches along the Housatonic River mainstem in Stockbridge and Lee as well as along several tributaries, including Hop Brook in Tyringham, Mohawk Lake Brook in Stockbridge, and the Williams River in West Stockbridge. A small part of the BC is part of Monterey, where it includes Aquatic Cores and is surrounded by Upland Buffers of CNL883 embedded in its large Landscape Block. BC1809 covers two areas in northeastern Monterey; one is located along a small stream that flows north from Steadman Pond to join Hop Brook in Tyringham, and the other lies along a second headwater tributary to Hop Brook that lies further east.

Priority Conservation Areas in Monterey

Monterey contains two areas identified as Priority Conservation Areas (PCAs) by NHESP. Both are Town PCAs,

Figure 3. Core habitat (dark green), Critical Natural Landscape (light green), Town Priority Conservation Areas (PCAs; reddish-brown grid), and Regional Priority Conservation Areas (transparent grey) in Monterey. Town PCAs make up 6,459 acres, or 36.9 percent of the town's land area. The part of Regional PCA 8 in Monterey is 6,021 acres, or 34.4 percent of the town's land area.

and one of them – Town PCA 2 – is also part of the larger Regional PCA 8, which extends to the north.

Town PCA 1: Town PCA 1 is 439 acres and encompasses Garfield Lake and its immediate upland areas. This PCA includes one Endangered plant species, Vasey's Pondweed (*Potamogeton vaseyi*), and one MESA-listed Special Concern fish species, the Bridle Shiner (*Notropis bifrenatus*).

Town PCA 2/Regional PCA 8: Town PCA 2 is part of Regional PCA 8, which encompasses nearly 20,000 acres in parts of Pittsfield, Washington, Lee, Lenox, and Monterey, including highlands and headwater tributaries of the Housatonic River mainstem in this region. Within Monterey, Regional PCA 8 and Town PCA 2 contain large tracts of Forest Core and the headwaters of Swann and Loom Brooks. This area also contains BC1408, BC1475, BC1658, and part of BC1809, all of which lie within CNL883's Landscape Block.

Glossary

Aquatic Cores (in BioMap2, a component of Core Habitat) include intact river corridors within which important physical and ecological processes of the river or stream occur, delineated using integrated and functional ecosystems for fish species and other aquatic Species of Conservation Concern. To identify those areas integrally connected to each river and stream, each river segment was buffered 30 meters. All wetlands wholly or partially contained within this buffer were then included, and the combination of the river channel, the adjacent buffer, and the connected wetlands make up this riverine Core Habitat.

BioMap2 Cores (BCs) (called Core Habitats in BioMap2) identify 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.

Certified Vernal Pools are temporary ponds or other fishless wetlands that meet certain biological and physical criteria to be classified as essential breeding habitat for a number of amphibian and invertebrate species, such as Wood Frog, Spotted Salamander, Blue-spotted Salamander, Jefferson Salamander, Marbled Salamander, and Intricate Fairy Shrimp. The certification of vernal pool habitat in The Commonwealth is administered by the Natural Heritage & Endangered Species Program. A number of regulations incorporate protections for certified vernal pools (please see http://www.mass.gov/dfwele/dfw/nhesp/vernal_pools/pdf/vpcert.pdf for more information).

Critical Natural Landscape (CNL) (part of BioMap2) identifies large natural landscape areas 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.

Cobbles are small hills or rocky knolls made of marble and quartzite. The alkaline soils derived from the calcareous rocks support a distinct and diverse flora. Examples include Bartholomew's Cobble in southern Sheffield and Tyringham Cobble in Tyringham.

Critically Imperiled natural communities typically have five or fewer documented sites or have very few remain-

ing acres in the state. Natural Community types ranked as Critically Imperiled are in the Priority Natural Communities category.

Disturbance, in an ecological sense, is an event that disrupts the normal structure and function of an ecosystem. Disturbances often produce bare soil and openings in forests where rapidly growing, sun-loving species, including invasive exotic species, can grow. Human activities have accelerated the number and types of disturbances in many ecosystems.

Ecoregions are areas of relatively homogeneous ecological systems, including vegetation, soils, climate, geology, and patterns of human uses.

Endangered species are in danger of extinction throughout all or a significant portion of their range or are in danger of extirpation from Massachusetts. Endangered is a category of state-listed species defined in the Massachusetts Endangered Species Act (M.G.L. c.131A) and listed in its regulations (321 CMR 10.00).

Exemplary Natural Communities are the best examples documented of relatively common (Secure) types of natural communities.

Forest Cores (in BioMap2, a component of Core Habitat) identify the best examples of large, intact forests that are least impacted by roads and development, providing critical "forest interior" habitat for numerous woodland species.

Fragmented Landscape, in ecological and conservation terms, refers to the idea that a large spatial area (the landscape) that in the past might have had connected habitats (for example, unbroken forest, continuous river, or undisturbed grasslands) have become interspersed with artifacts of human development that alter habitat and ecological processes – or that the human influence has come to dominate the land leaving patches, or fragments, of natural habitat surrounded by development.

Imperiled communities typically have 6-20 sites or few remaining acres in the state. Natural Community types ranked as Imperiled are included in the Priority Natural Communities category.

Landscape Blocks (component of BioMap2 Critical Natural Landscape), the primary component of Critical Natural Landscape, are large areas of intact and predominately natural vegetation, consisting of contiguous forests, wetland, rivers, lakes, and ponds, as well as coastal habitats such as

barrier beaches and salt marshes. Pastures and power-line right-of-way, which are less intensively altered than most developed areas, were also included since they provide habitat and connectivity for many species.

Landscape Context refers to taking the broadest view of the ability of ecosystems or species populations to maintain themselves where they are by considering the siting within the larger area. For example, a wooded area within a city park has a very different, urban context than a wooded area on a farm.

MESA (Massachusetts Endangered Species Act) (M.G.L. c.131A) and its implementing regulations (321 CMR 10.00) provide regulatory protection of rare species and their habitats. MESA protects rare species and their habitats by prohibiting the “Take” of any plant or animal species listed as Endangered, Threatened, or Special Concern by the MA Division of Fisheries & Wildlife.

Natural Communities are assemblages of species that occur together in space and time. These groups of plants and animals are found in recurring patterns that are classified and described by their dominant biological and physical features.

Nymphs, sometimes informally referred to as larvae, are the young, immature form of dragonflies and some other invertebrates. Dragonfly nymphs are aquatic. On maturing, they change into the flying terrestrial adults that are seen along rivers and lakes, and nearby uplands.

Priority Natural Communities include types of natural communities with limited distribution, or relatively few occurrences, and/or low acreages in Massachusetts.

Protected in Perpetuity refers to land owned as conservation land by a public entity in Massachusetts whose lands come under the authority of Massachusetts Constitution Article 97, or federal land owned by a federal conservation agency, or by a non-profit dedicated to land conservation; or for which the conservation values have been protected by legal restrictions on the deed or by a conservation easement (conservation restriction).

Secure types of natural communities typically have over 100 sites or abundant acreage across the state; excellent examples are identified as Core Habitat to ensure continued protection and are referred to as Exemplary Natural Communities.

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. Special Concern is a category of state-listed species defined in the

Massachusetts Endangered Species Act (M.G.L. c.131A) and listed in its regulations (321 CMR 10.00).

Species of Conservation Concern (in BioMap2, a component of Core Habitat) include those species that meet the criteria for listing under the Massachusetts Endangered Species Act, as well as a number of species that do not meet these criteria for listing, but are considered to be of conservation concern within Massachusetts, such as inclusion in the State Wildlife Action Plan (SWAP).

State-listed Species are species listed under the Massachusetts Endangered Species Act (M.G.L. c.131A) and its regulations (321 CMR 10.00). – that is, Endangered, Threatened, or Special Concern species.

SWAP (State Wildlife Action Plan), approved in 2006, the Massachusetts Division of Fisheries and Wildlife’s State Wildlife Conservation Strategy, most often referred to as the State Wildlife Action Plan (SWAP), is a comprehensive document to help guide wildlife conservation decision making for Massachusetts’ wildlife for many years.

SWAP Species were identified as being those in greatest need of conservation in the Massachusetts Division of Fisheries and Wildlife’s State Wildlife Conservation Strategy, most often referred to as the State Wildlife Action Plan (SWAP).

Threatened species are likely to become Endangered in Massachusetts in the foreseeable future throughout all or a significant portion of their range. Threatened is a category of state-listed species defined in the Massachusetts Endangered Species Act (M.G.L. c.131A) and listed in its regulations (321 CMR 10.00).

Upland Buffers of Aquatic Cores (component of BioMap2’s Critical Natural Landscape) identify protective upland areas adjacent to all Aquatic Cores. A variable width buffer, that extends deeper into surrounding unfragmented habitats than into developed areas, was used to include the most intact areas around Aquatic Cores. The conservation of wetland buffers will support habitats and functionality of each aquatic area, and also include adjacent uplands that are important for many species that move between habitat types.

Upland Buffer of Wetland Cores (component of BioMap2’s Critical Natural Landscape) identify protective upland areas adjacent to all Wetland Cores. A variable-width buffer, that extends deeper into surrounding unfragmented habitats than into developed areas, was used to include the most intact areas around the Wetland Cores. The conservation of wetland buffers will support habitats and functionality of each wetland, and also include adjacent uplands that are important for many species that move between habitat types.

Variant of a natural community refers to a named subtype of a more broadly defined type of community. In Massachusetts the term is not a formal designation, but rather is intended as an aid for understanding community relationships.

Vernal Pools, also known as ephemeral pools, autumnal pools, and temporary woodland ponds, typically fill with water in the autumn or winter due to rainfall and rising groundwater and remain ponded through the spring and into summer. They usually dry completely by the middle or end of summer each year. Vernal pools are unique wildlife habitats best known for the amphibians and invertebrate animals that use them to breed.

Vernal Pool Cores (BioMap2, component of Core Habitat) identify, based on a GIS model, the highest quality most interconnected clusters of Potential Vernal Pools (a dataset of likely vernal pools identified from interpretation of aerial photographs) and the habitat between them.

Vulnerable communities typically have 21-100 sites or limited acreage across the state. Natural Community types ranked as Vulnerable are in the Priority Natural Communities category.

Wetland Cores (BioMap2, component of Core Habitat) identify, based on a GIS model, the least disturbed wetlands within undeveloped landscapes—those with intact buffers and little fragmentation or other stressors associated 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.

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.nhesp.org.