



BioMap2

Guiding Land Conservation for Biodiversity in Massachusetts

Dalton

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

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BioMap2:

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

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BioMap2: Guiding Land Conservation for Biodiversity in Massachusetts

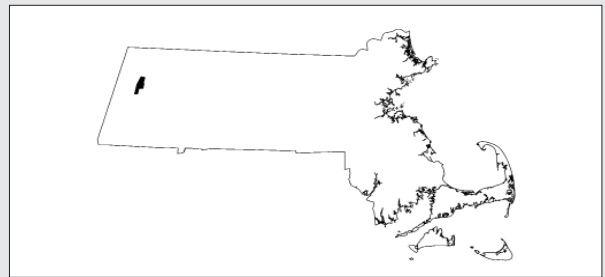
Dalton

Dalton is located in central Berkshire County. It lies primarily within the Berkshire Highlands, but its central lowlands fall within the marble valleys of the upper Housatonic River watershed. The northern part of Dalton contains highland areas that are part of the headwaters of both the Hoosic River, which drains to the north, and Wahconah Falls Brook, which drains south to the town's central valley. In the central lowlands, Wahconah Falls Brook joins the East Branch Housatonic River near the town center. The East Branch then flows west to its confluence with the mainstem of the Housatonic River in Pittsfield. Much of the southern half of Dalton is also part of the Berkshire Highlands; its small headwater streams run west to meet the East Branch and mainstem of the Housatonic River outside the town boundaries.

Dalton was historically a mill town, with the East Branch Housatonic River providing water power for several paper mills, grist mills, and sawmills within a mile of the town's center. Some of the dams for these mills have been lost or removed, but many remain today; these dams reduce connections within the stream network of the East Branch and its tributaries, potentially fragmenting populations of aquatic plants and animals. Approximately 15 percent of the town's land area is developed, with residential development concentrated in the central valley along the East Branch Housatonic River. The town's steep slopes and higher elevations are largely undeveloped; more than 10,000 acres in these areas (76 percent of the town's total land area) are forested. Some agricultural lands lie north and east of the center of town along Route 8A, but farms amount to less than five percent of all land in the town.

Central Dalton, where the East Branch Housatonic River flows west toward the Housatonic River mainstem, is part of the Western New England Marble Valleys ecological region (see Figure 1). This is one of the most biologically rich ecoregions both in Massachusetts and throughout New England, supporting a large number of state-listed species and Priority Natural Communities. Expansive marshlands along the East Branch Housatonic River and its floodplains provide breeding habitat for the

state-endangered American Bittern, a marshbird of the heron family. Aquatic larvae of the dragonflies Ocellated Darner and Zebra Clubtail inhabit streams and open water along Wahconah Brook and the East Branch Housatonic River, while adults dwell in nearby upland forests. The valley slopes also contain more than 130 acres of the uncommon natural community Rich, Mesic Forest,



Dalton at a Glance

- Total area: 14,009 acres (21.9 square miles)
- Human Population in 2009: 6,550 people
- Open space protected in perpetuity: 7,163 acres, or 51.1% of total area*

BioMap2 Components

Core Habitat

- 3 Aquatic Cores: 255 acres
- 2 Forest Cores: 4,696 acres
- 3 Wetland Cores: 52 acres
- 1 Vernal Pool Core: 8 acres
- 10 areas of 2 Priority Natural Communities: 152 acres

Species of Conservation Concern**

- 4 insects, 3 amphibians, 1 reptile, 2 birds, 2 plants

Critical Natural Landscape

- 4 Upland Buffers of Aquatic Cores: 610 acres
- 3 Upland Buffers of Wetland Cores: 605 acres
- 2 Landscape Blocks: 6,739 acres

*calculated using 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 and Exemplary Natural Communities, and Other Elements of Biodiversity in Dalton

Insects

Dragonflies

Zebra Clubtail (*Stylurus scudderii*), Special Concern
Ocellated Darner (*Boyeria graefiana*), Special Concern

Butterflies

Dion Skipper (*Euphyes dion*), Threatened
Mustard White (*Pieris oleracea*), Threatened

Amphibians

Jefferson Salamander (*Ambystoma jeffersonianum*), Special Concern
Spring Salamander (*Gyrinophilus porphyriticus*), SWAP
Four-toed Salamander (*Hemidactylium scutatum*), SWAP

Reptiles

Smooth Green Snake (*Opheodrys vernalis*), SWAP

Birds

American Bittern (*Botaurus lentiginosus*), Endangered
Sharp-shinned Hawk (*Accipiter striatus*), Special Concern

Plants

Crooked-stem Aster (*Symphyotrichum prenanthoides*), Threatened
Dwarf Scouring-rush (*Equisetum scirpoides*), Special Concern

Priority Natural Communities

Rich, Mesic Forest (Vulnerable)
Spruce – Fir Swamp (Imperiled)

Other BioMap2 Components

Aquatic Cores
Forest Cores
Landscape Blocks
Upland Buffers of Aquatic Cores
Upland Buffers of Wetland Cores
Vernal Pool Cores
Wetland Cores

which support extensive Sugar Maple stands and a diverse suite of fern, sedge, lily, and buttercup species.

The higher elevations of Dalton are part of the Berkshire Highlands ecoregion and contain large tracts of forested land as part of the Chalet Wildlife Management Area, the Appalachian Trail Corridor, and other land ownerships that protect these headwater areas for conservation. Most of them fall within the Housatonic River watershed; however approximately 2,300 acres in the very northern part of Dalton (16.6 percent of the town's area) are part of the headwaters of South Brook, a tributary of the Hoosic River. Altogether, Dalton's highland areas provide expansive forest habitat that is little disturbed by roads, residential areas, or commercial areas. They also support species like the Sharp-shinned Hawk, a raptor of Special Concern found in the northeastern part of town, and the Spring Salamander, adults of which inhabit high-gradient, cold, clean headwater streams. Wetlands are scattered throughout the highlands, including a notable Spruce – Fir Swamp, a natural community that is typically dominated by Red Spruce and Balsam Fir and occurs at high elevations.

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

Overview

In this section, we outline areas in Dalton that warrant special focus of conservation efforts locally, regionally and throughout the state. Components of the Natu-

ral Heritage and Endangered Species Program's statewide BioMap2 project, which incorporated NHESP data and included 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, ranging in size from fewer than 10 acres to several thousand acres. Separate areas of Core Habitat, each called a BioMap2 Core (BC), and areas of Critical Natural Landscape (CNL), along with their associated components, are illustrated in Figure 2 and outlined in detail below. BioMap2 components described in this report are those that occur only in Dalton, although a given area of Core Habitat or Critical Natural Landscape listed here may extend outside of the town boundaries of Dalton 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) 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, up to six Town PCAs were selected. Each Town PCA contains part of at least one BioMap2 Core; in Dalton, three Town PCAs were selected. Figure 3 illustrates how Core Habitat and Critical Natural Landscape relate to distribution of Town PCAs in Dalton.

A larger-scale prioritization was also conducted to select Regional PCAs of the highest conservation and stewardship value among all towns in Massachusetts' por-

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.

tion of the Housatonic River watershed. Regional PCAs often cross town boundaries and can be quite large, ranging from 373 acres to more than 25,000 acres. Ecological connectivity within these Regional PCAs is important to biodiversity conservation; consequently these large units 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 and within a broader regional context. No Regional PCAs fall directly within Dalton; the closest one is to the southeast in Washington, Lenox, and Pittsfield.

Core Habitat and Critical Natural Landscape Components in Dalton

Areas of Core Habitat in Dalton, called BioMap2 Cores (BCs), are summarized here, as are the various components of each BC, which may include Species of Conservation Concern, Exemplary or 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, and Landscape Blocks.

BC2050 and CNL1029

BC2050 includes an Aquatic Core located in southwest Dalton along Hathaway Brook. This BC is surrounded by an Upland Buffer of CNL1029, and also lies within a Landscape Block of the same CNL. Three state-listed species occur here.

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 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. American Bitterns are found in wet fields in the western portion of BC2050.

Butterflies

Dion Skipper (*Euphyes dion*), Threatened: In Massachusetts this butterfly species typically inhabits sedge wetlands, as the larvae feed on sedges (plants of the genus *Carex*). Adults feed on the nectar of milkweeds in upland marshes and wet fields in the western portion of BC2050.

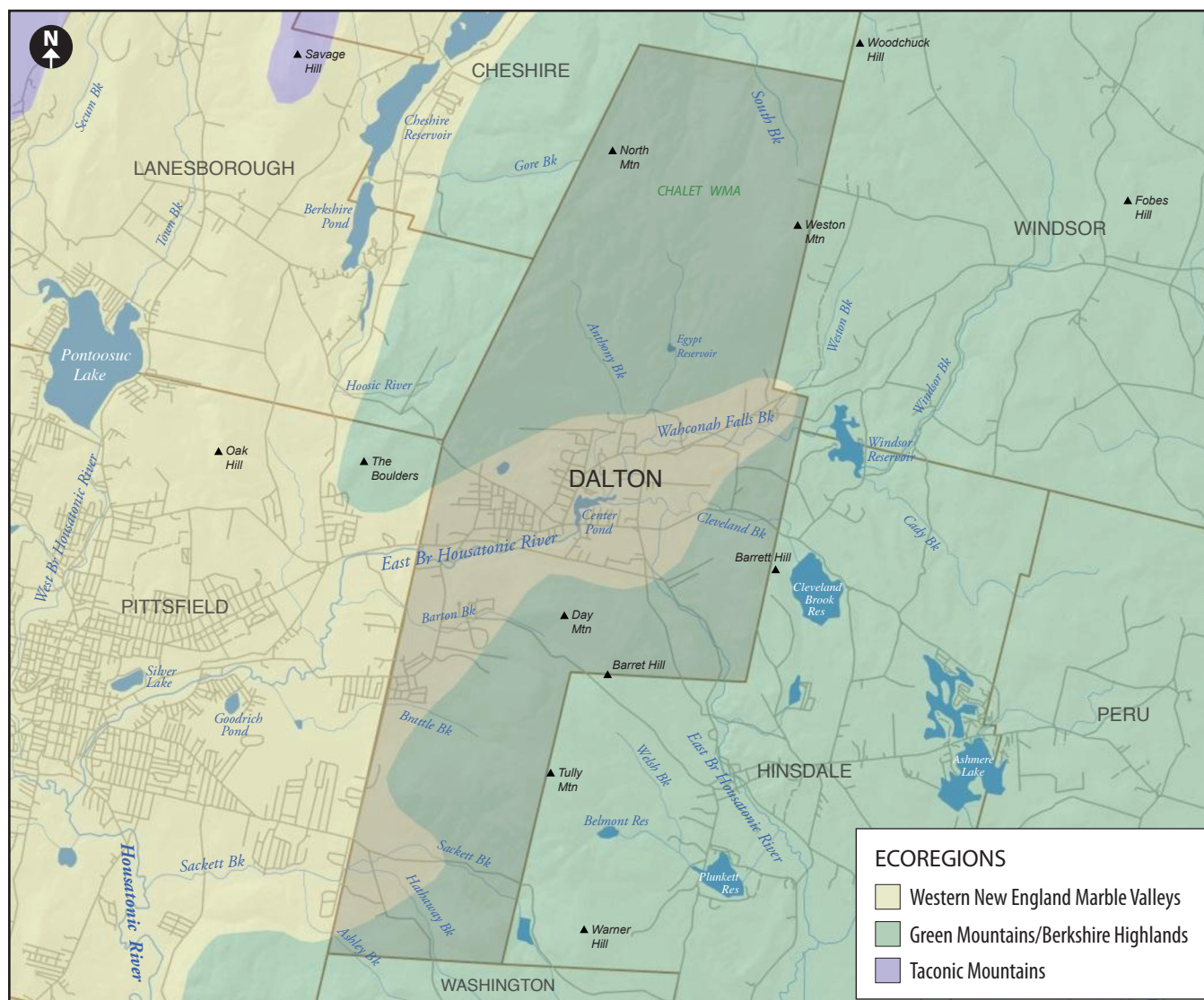


Figure 1. Town boundaries and ecoregions of Dalton, Massachusetts.

Mustard White (*Pieris oleracea*), Threatened: This butterfly inhabits wet forest openings, as well as wet meadows, fields, and pastures. Its larvae feed on plants of the mustard family. In Massachusetts, it only occurs in central Berkshire County, and this is the southern extent of its natural range, which reaches north to Labrador and west across Canada.

BC2109 (no CNL)

BC2109 is relatively small (20 acres), and is located along Brattle Brook in southwest Dalton. It supports a population of an uncommon salamander species:

Four-toed Salamander (*Hemidactylium scutatum*), SWAP: This species lives in forested habitats surrounding swamps, bogs, marshes, vernal pools, and other fish-free waters that are used as breeding sites. Most breeding sites in

Massachusetts are characterized by pit-and-mound topography with significant Sphagnum moss cover. Eggs are typically laid in mounds or patches of 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.

BC2140, BC2142, BC2144, BC2150, BC2167, and BC2170 (no CNLs)

These small BCs all fall on the north and northeast facing slopes of Day Mountain, just south of the village of Dalton. They occur within an approximately 100-acre area that contains multiple patches of one Priority Natural Community and one state-listed plant species:

Priority Natural Community

Rich, Mesic Forest (Vulnerable): This Priority Natural Com-

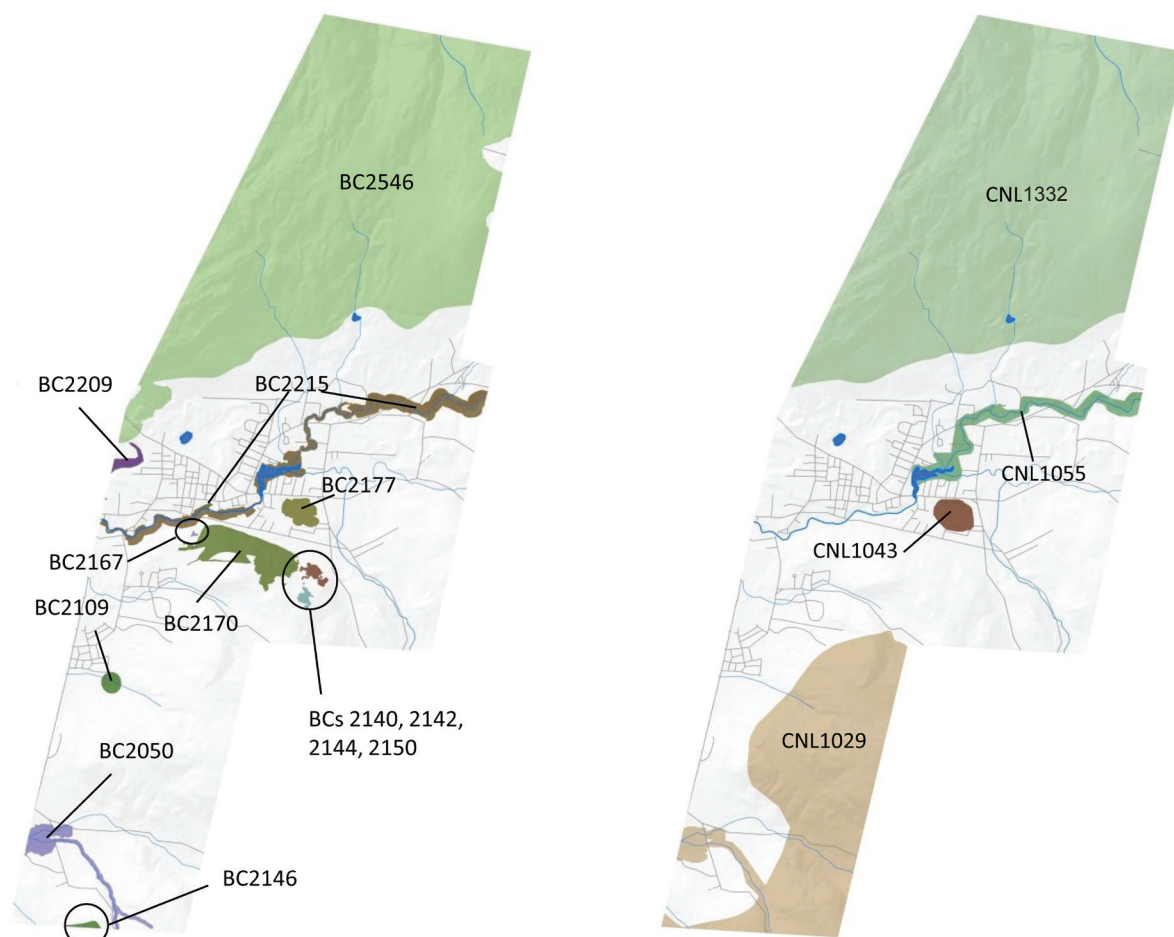


Figure 2. Dalton includes a total of 13 BioMap2 Cores (BCs; left) and four areas of Critical Natural Landscape (CNL; right).

munity occurs within a matrix of northern hardwood forest. It is a variant of the northern hardwood forest that is dominated by sugar maple trees and supports a diverse suite of herbaceous plants that thrive in its moist and nutrient-rich environment, including many spring wild flowers. Despite the presence of several invasive exotic species in the area of these cores, these Rich, Mesic Forest occurrences are significant both for their collective size and the species diversity they contain.

Plants

Crooked-stem Aster (*Symphyotrichum prenanthoides*), Threatened: This is a perennial herbaceous plant that occurs in open to semi-open forested areas with rich soils along rivers, streams, and seeps, and also along open and semi-open roadsides near such wet environments. It is scattered throughout patches of Rich, Mesic Forest in these BCs in Dalton, and co-occurs with several uncommon species (on NHESP's non-regulatory Plant Watch List) that are characteristic of this Priority Natural Community.

BC2146 and CNL1029

At more than 7,000 acres, BC2146 includes areas along the Housatonic River and its tributaries in Pittsfield, Washington, Lenox, Lee, and Dalton. However, only a very small part of it – eight acres – is within Dalton; this area contains part of a Forest Core and lies along the town's boundary with Washington. The broader Forest Core is embedded in a Landscape Block of CNL1029, which is nearly 40,000 acres in size and covers large areas in Lee, Becket, Washington, and much of the south and east of Dalton.

BC2177 and CNL1043

BC2177 includes an Aquatic Core and is surrounded by an Upland Buffer of CNL1043. It is comprised of a 61-acre area of wetlands and open water just south of Main Street, and supports habitat for one state-listed bird:

Birds

American Bittern (*Botaurus lentiginosus*), Endangered: This mottled brown, heron-like bird feeds and nests primar-

ily 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.

BC2209 (no CNL)

This 80-acre BC lies along the boundary between Dalton and Pittsfield, covering parts of both towns. In Dalton, it encompasses two separate areas that together comprise 20 acres. It includes a small stream near the boundary of the two towns and supports one state-listed plant species. This core is dominated by Northern Hardwoods – Hemlock – White Pine Forest, the general matrix forest type of the area.

Plants

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

This evergreen fern-ally thrives on steep, moist slopes with seeps and streams, and is often found in transitional areas between wetlands and uplands. It occurs throughout BC2209.

BC2215 and CNL1055

BC2215 includes an Aquatic Core along the East Branch Housatonic River and immediate riparian areas downstream of its confluence with Wahconah Falls Brook. It also extends along Wahconah Falls Brook upstream of that confluence. The eastern portion is surrounded by an Upland Buffer of CNL1055. One state-listed marshbird is known to occur in BC2215, along with two dragonfly species:

Birds

American Bittern (*Botaurus lentiginosus*), Endangered: This species 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.

Dragonflies

Zebra Clubtail (*Stylurus scudderii*), Special Concern: This dragonfly species inhabits lakes or mid-sized forested streams that are sandy-bottomed and have slow to moderate stream flows with intermittent rapids. Its larvae are aquatic and live on stream bottoms, while adults are terrestrial and inhabit nearby uplands.

Ocellated Darner (*Boyeria graefiana*), Special Concern (recommended for delisting in 2011): Larvae of these dragonflies inhabit clear, shallow, rocky, swift-flowing streams and

large and rocky lakes with little aquatic vegetation. Adult Ocellated Darners are terrestrial and dwell in nearby upland areas.

BC2546 and CNL1332

BC2546 includes tracts of Forest Core in north Dalton, southeast Cheshire, and western Windsor, as well as sections of Aquatic Core along the Hoosic River and its tributaries in Cheshire and small parts of Windsor and Adams. It covers nearly 11,500 acres in total, and is nearly coincident with a large Landscape Block of CNL1332. Northern hardwood forest is the prevailing forest type, and is interspersed with less common natural community types at higher elevations. Much of this core has been protected by an impressive combined stewardship of federal, state, and private entities. In northeastern Dalton, BC2546 also contains three areas of high-quality Wetland Cores surrounded by their Upland Buffer, and a Vernal Pool Core; these areas extend into Windsor. In addition, BC2546 supports several animal species of conservation interest and two Priority Natural Communities:

Birds

Sharp-shinned Hawk (*Accipiter striatus*), Special Concern:

Sharp-shinned Hawks nest in mixed woodlands and coniferous forests, often with nearby open areas used for hunting prey. Although they are sensitive to disturbance around their nests, they occasionally raise their young near developed areas. This species occurs in the northeastern part of BC2546.

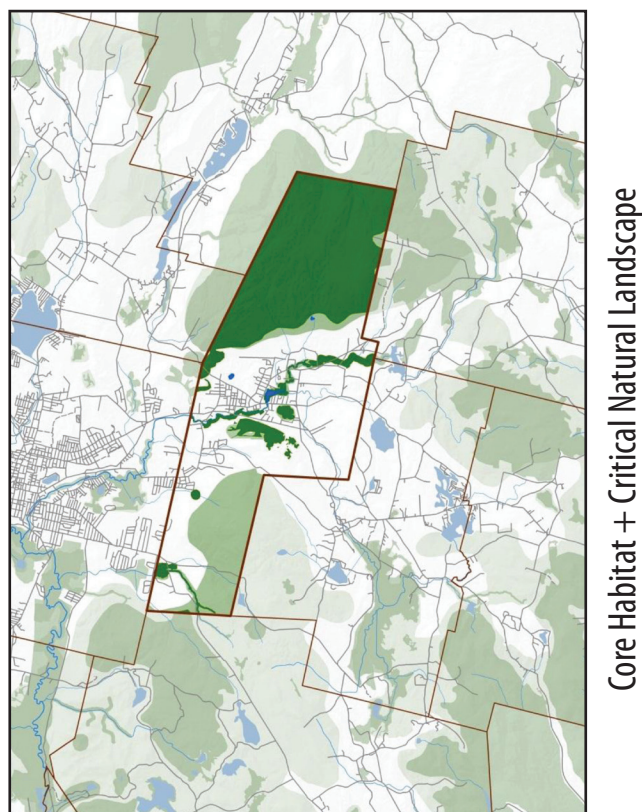
Reptiles

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

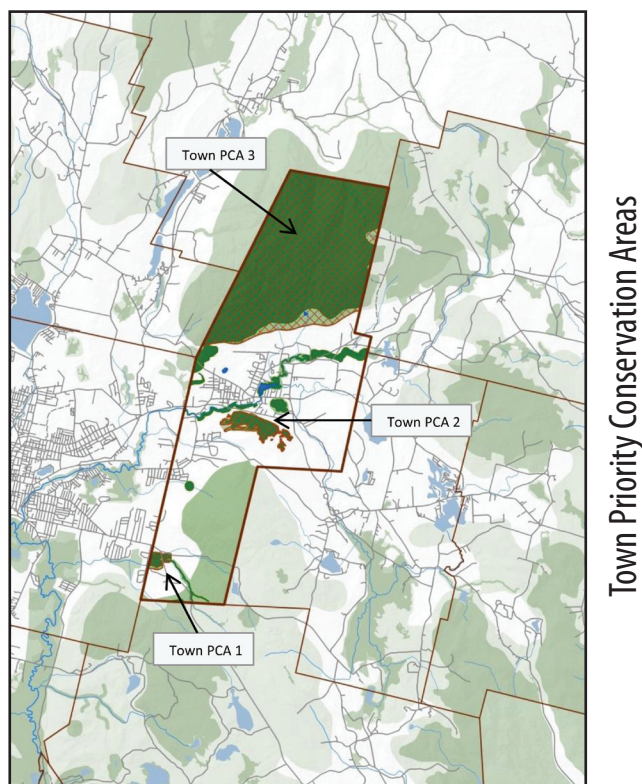
Adult and juvenile Jefferson Salamanders inhabit upland forests during most of the year, where they reside in small-mammal burrows and other subsurface retreats. Adults migrate during late winter or early spring to breed in vernal pools and areas of swamps, marshes, or similar wetlands that are free of fish that would prey on eggs and young salamanders. Larvae metamorphose in late summer or early fall and then disperse into upland forests. This species occurs in the very southwestern part of BC2546 in Dalton.

Four-toed Salamander (*Hemidactylium scutatum*), SWAP:

This species lives in forested habitats surrounding swamps, bogs, marshes, vernal pools, and other fish-free waters that are used as breeding sites. Most breeding locations in Massachusetts are characterized by pit-and-mound topography with significant Sphagnum moss cover. Eggs are typically laid in mounds or patches of 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 Habitat + Critical Natural Landscape



Town Priority Conservation Areas

Four-toed Salamanders occur in the same areas as Jefferson Salamanders in BC2546.

Spring Salamander (*Gyrinophilus porphyriticus*), SWAP: Spring salamanders inhabit 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 under objects along the margins of brooks, springs, and seeps, but venture into upland forest during rainy weather. In Dalton, Spring Salamanders occur near coldwater streams and seeps along the town's boundary with Lanesborough.

Priority Natural Communities

Rich, Mesic Forest (Vulnerable): This natural community occurs within a matrix of northern hardwood forest. It is a variant of northern hardwood forest that is dominated by sugar maple trees and supports a diverse suite of herbaceous plants that thrive in its moist and nutrient-rich environment, including many spring wild flowers. The moderate-sized example in BC2546 is in good condition and has good species diversity, but is poorly buffered to effects of development and overuse for recreation.

Spruce – Fir Swamp (Imperiled): This is a forested wetland community, with a tree canopy that consists primarily of Red Spruce and Balsam Fir. In Massachusetts, it is often found either in stream headwater areas, or in poorly-drained basins at higher elevations in the north-central and western parts of the state. The Spruce – Fir Swamp in Dalton is approximately 20 acres, and occurs primarily on protected lands in a managed forest northeast Dalton, near its border with Windsor.

Priority Conservation Areas in Dalton

The town of Dalton contains three Priority Conservation Areas identified by NHESP; all are Town PCAs.

Town PCA 1: This 71-acre Town PCA contains a portion of BC2050 in southwestern Dalton, along its boundary with Pittsfield. This area has many wetlands and supports populations of the marshbird American Bittern as well as two butterfly species, the Mustard White and Dion Skip-

Figure 3. Core Habitat (dark green), Critical Natural Landscape (light green), and Town Priority Conservation Areas (PCAs; reddish-brown grid) in Dalton. Town PCAs cover 5,269 acres, or 37.6 percent of the town's total land area.

per. It also includes a BioMap2 Aquatic Core. The headwater streams that flow into these wetlands from the west are largely protected as part of the water supply area for the City of Pittsfield.

Town PCA 2: This PCA comprises 235 acres in central Dalton. It contains BC2140, BC2142, BC2144, BC2150, BC2167, and BC2170, which include large patches of Rich, Mesic Forest. It also supports the state-listed plant Crooked-stem Aster.

Town PCA 3: Town PCA 3 encompasses 4,962 acres in northern Dalton. Its boundaries match those of the large Landscape Block of CNL1332, and it contains extensive tracts of unfragmented forestland, much of it Forest Core. It also contains Wetland and Vernal Pool Cores, populations of three sensitive salamander species, state-listed marshbirds, raptors, and extensive habitat for these species. It also includes one Priority Natural Community, the Spruce – Fir Swamp.

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.

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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.