



BioMap2

Guiding Land Conservation for Biodiversity in Massachusetts

Hinsdale

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.

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

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

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**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>



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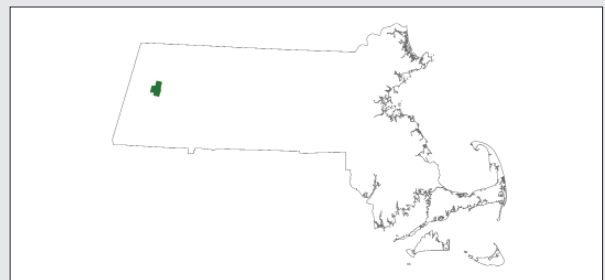
Hinsdale

Hinsdale is located in central Berkshire County, near the northeastern edge of the Housatonic River watershed. Small, high-elevation headwater streams drain from the town's highlands and join at Hinsdale Flats to form the East Branch Housatonic River. The town is situated within the Berkshire Highlands ecoregion (see Figure 1), which lies at higher elevations and has both a colder climate and more acidic soils than the marble valleys to the west, where the mainstem Housatonic River flows. Although Hinsdale's average elevation is well above 1,000 feet, its topography is quite level and the landscape features widespread wetland areas, such as Hinsdale Flats in the southern part of town. The East Branch winds through these wetlands as it runs northwest through town to its confluence with Wahconah Falls Brook in Dalton. Hinsdale also contains several lakes and reservoirs. The largest of these waterbodies, Ashmere Lake, lies along the town's boundary with Peru and is a popular spot for fishing and boating.

Both Hinsdale's economic history and its current settlement patterns are closely tied to its physical geography and natural ecosystems. In the town's early days, local residents supported themselves with farming operations in the eastern part of town and a woolen mill powered by the East Branch Housatonic River. Today, the town is fairly developed, in part because of its close proximity to more urban areas of Dalton and Pittsfield. Residential and commercial areas occur at relatively high density near the village of Hinsdale, around Ashmere Lake, and scattered along Routes 8 and 143. The town also contains several sand and gravel mines situated just outside Hinsdale Village. The amount of land that is protected for conservation is moderate – about 4,500 acres, or just over 30 percent of the town's area. The majority of these protected lands are part of three major holdings: the Appalachian Trail Corridor in western Hinsdale, the Dalton Fire District in northern Hinsdale, and Hinsdale Flats Wildlife Management Area in the south. The Commonwealth also considers the broader area of Hinsdale Flats, which extends into parts of Peru, Washington, and Dalton and includes headwater areas of both the Housatonic and Westfield Rivers,

to be a statewide Area of Critical Environmental Concern due to its natural beauty and the high quality of its aquatic and wetland ecosystems.

The highlands in this part of the Berkshires generally do not support the same elevated levels of biodiversity as areas to the west in the marble valleys, but the streams, floodplains, and extensive wetlands in Hinsdale con-



Hinsdale at a Glance

- Total area: 13,877 acres or 21.7 square miles
- Human Population in 2009: 1,907 people
- Open space protected in perpetuity: 4,523 acres, or 32.6% of total area*

BioMap2 Components

Core Habitat

- 5 Aquatic Cores: 846 acres
- 1 Forest Core: 66 acres
- 4 Wetland Cores: 959 acres
- 1 Priority Natural Community: 56 acres

Species of Conservation Concern**

- 2 insects, 1 fish, 1 amphibian, 1 reptile, 3 birds, 3 plants

Critical Natural Landscape

- 5 Upland Buffers of Aquatic Cores: 1,290 acres
- 3 Upland Buffers of Wetland Cores: 1,459 acres
- 3 Landscape Blocks: 5,708 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 and Exemplary Natural Communities, and Other Elements of Biodiversity in Hinsdale

Insects

Butterflies

Dion Skipper (*Euphyes dion*), Threatened

Dragonflies

Ocellated Darner (*Boyeria grafiana*), Special Concern

Fish

Bridle Shiner (*Notropis bifrenatus*), Special Concern

Amphibians

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

Reptiles

Wood Turtle (*Glyptemys insculpta*), Special Concern

Birds

American Bittern (*Botaurus lentiginosus*), Endangered

Least Bittern (*Ixobrychus exilis*), Endangered

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

Plants

Chestnut-colored Sedge (*Carex castanea*), Endangered

Hemlock Parsley (*Conioselinum chinense*), Special Concern

Woodland Millet (*Milium effusum*), Threatened

Priority Natural Communities

Spruce – Fir Swamp (Imperiled)

Other BioMap2 Components

Aquatic Cores

Forest Cores

Landscape Blocks

Upland Buffers of Aquatic Cores

Upland Buffers of Wetland Cores

Wetland Cores

tain important habitat for a variety of uncommon and state-listed species. These include the marsh birds American Bittern and Least Bittern, which both nest in cattail marshes and access areas of open water to seek out food. A state-listed minnow called the Bridle Shiner inhabits ponds along the East Branch Housatonic River and seeks cover in areas of dense aquatic vegetation, while Wood Turtles nest and feed near the river, burrowing in banks to hibernate during winter. Both the East Branch Housatonic River and Bennett Brook support the state-listed butterfly Dion Skipper, whose larval caterpillars feed on wetland sedges. Many wetland plant species thrive along the floodplains of these streams, including the state-listed Hemlock Parsley and Chestnut-colored Sedge.

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

Overview

In this section, we outline areas in Hinsdale that warrant special focus of conservation efforts locally, regionally, and throughout the state. Components of the Natural Heritage & Endangered Species Program's (NHESP's) statewide 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 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 Hinsdale, although a given area of Core Habitat or Critical Natural Landscape listed here may extend outside of the town boundaries of Hinsdale 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, a total of one to six Town PCAs were selected. Each Town PCA contains part of at least one BioMap2 Core; in Hinsdale, one was designated. Each Town PCA contains part of at least one BioMap2 core. Figure 3 illustrates how BioMap2 Core Habitat and Critical Natural Landscape relate to the location of Hinsdale's Town PCA.

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 cross town boundaries and are quite large, ranging from 373 acres to more than 25,000 acres. Ecological connectivity within these large Regional PCAs is important to biodiversity conservation, and these units often include select

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.

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 Hinsdale – the closest is located to the southwest in October Mountain State Forest, which is mostly in western Washington.

Core Habitat and Critical Natural Landscape Components in Hinsdale

Areas of Core Habitat in Hinsdale, called BioMap2 Cores (BCs), are summarized here. Also described are the various components of each BC, which may include Species of Conservation Concern, Exemplary and Priority Natural Communities, and 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.

BC1992 and CNL1322

BC1992 consists of a 24-acre Wetland Core. It occurs in southeast Hinsdale, just to the east of the East Branch

Housatonic River in a forested section of the Hinsdale Flats Wildlife Management Area. This core is part of a Landscape Block of CNL1322 that extends west into Peru and south into Washington. BC1992 occurs within an area that is protected for conservation, although some residential and agricultural development occurs along nearby roads to the east and south. CNL1322 also provides Wetland Buffers around the Wetland Core in BC1992.

BC2011 and CNL1029

BC2011 totals 84 acres and is mostly in Washington, with only a single acre in Hinsdale. The BC as a whole supports breeding habitat for an uncommon salamander species:

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

The Four-toed Salamander is the smallest salamander in Massachusetts. It tends to live in forested areas near marshes, swamps, vernal pools, or other predator-free aquatic areas where adults can reproduce and where young salamanders spend the first months of their lives. Juveniles and adults are primarily terrestrial, preferring mature hardwood or coniferous forest habitat.

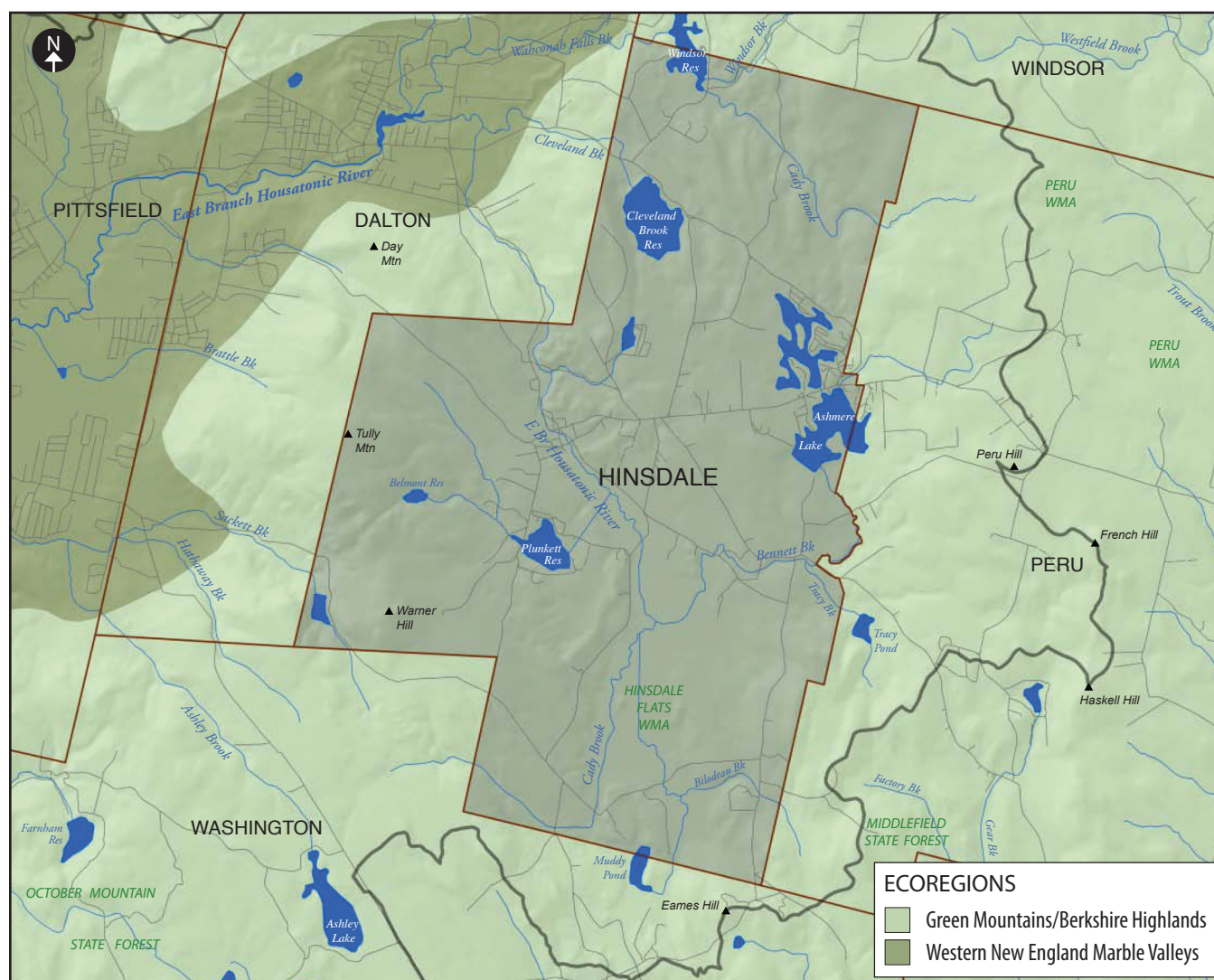


Figure 1. Town boundaries and ecoregions of Hinsdale, Massachusetts. Hinsdale lies in the Berkshire Highlands ecoregion, near the eastern boundary of the Housatonic River watershed (grey line on map).

BC2022 and CNL1029

BC2022 is a six-acre core containing one state-listed plant population. It is part of a Landscape Block of CNL1029.

BC2033 and CNL1322

BC2033 is a large BC that extends east and south into the Westfield River watershed in parts of Peru, Washington, Middlefield, Becket, and Chester. This BC consists of many Forest Cores, some Aquatic Cores along the Westfield River and its tributaries, several Wetland Cores, and vernal pools. The portion of BC2033 in Hinsdale includes the western edge of an area of Forest Core and part of an Aquatic Core along Tracy Brook. It is part of a Landscape Block of CNL1322.

BC2034 and CNL1029

BC2034 consists of a relatively small Aquatic Core (19.2

acres) that surrounds a forested wetland in western Hinsdale, just north of BC2022. It is embedded in CNL1029's large Landscape Block and supports a state-listed plant species.

BC2071 and BC2072 (no CNL)

These two small cores are located along South Street near the East Branch Housatonic River, just to the south of the village of Hinsdale. Each is less than two acres in size. A state-listed butterfly has been documented in both. Neither is part of a CNL.

BC2074 and CNL1322

BC2074 is a 38-acre area adjacent to and east of BC2071 and BC2072, and much of it is surrounded by a Wetland Buffer of CNL1322. Like those nearby cores, it supports a state-listed butterfly, and it also contains one state-listed

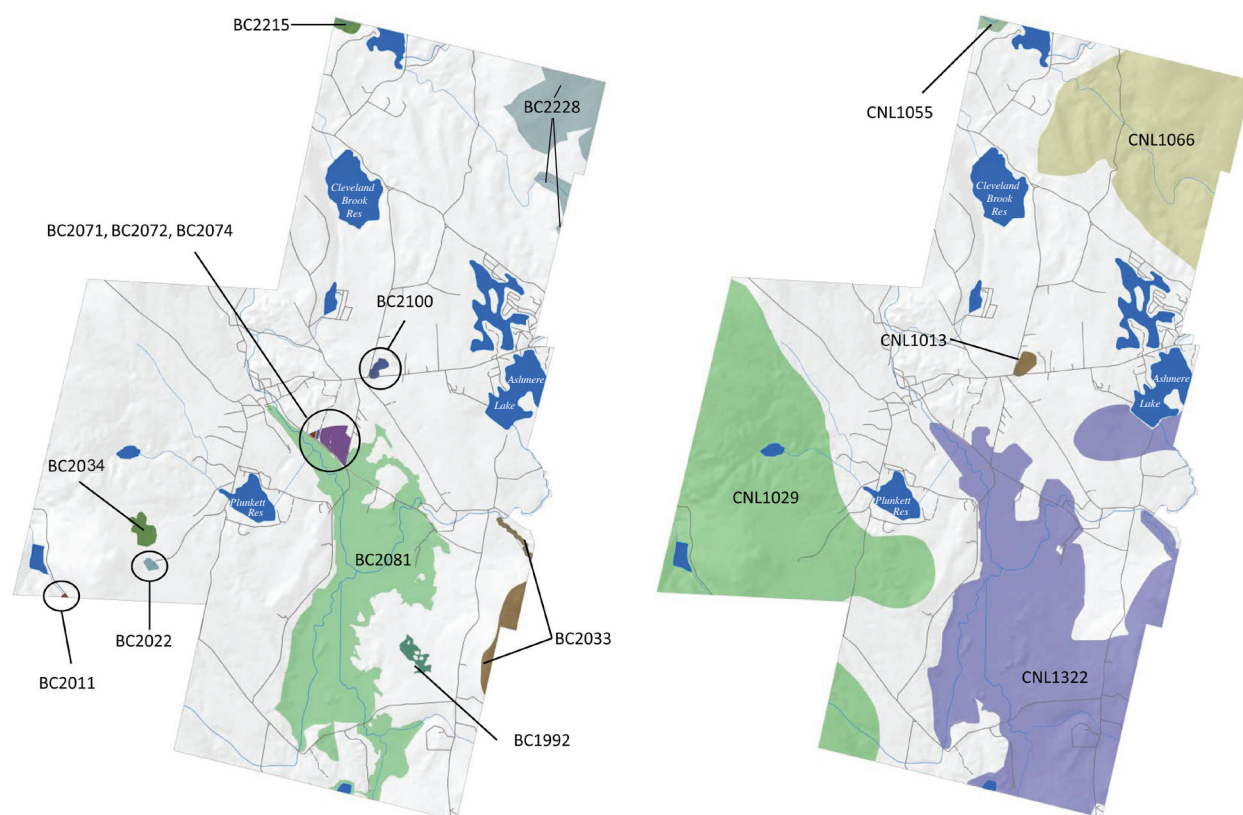


Figure 2. Hinsdale includes a total of 12 BioMap2 Cores (BCs; left) and five areas of Critical Natural Landscape (CNL; right). Overlap between Core Habitat and Critical Natural Landscape is shown in Figure 3.

plant and one Priority Natural Community.

Plants

Hemlock Parsley (*Conioselinum chinense*), Special Concern: In Massachusetts, this perennial herb of the parsley or angelica family is usually found in swamps, wet meadows, peatlands, and marshy forests. It blooms from July to September, and prefers pH-neutral or limy wetlands. It ranges throughout northern North America, but in Massachusetts is found mostly in the western part of the state.

Butterflies

Dion Skipper (*Euphyes dion*), Threatened: Dion Skipper butterflies typically inhabit sedge wetlands, including calcareous fens, wet meadows, riparian areas, and shrub swamps, as their larvae feed on sedges, or plants of the genus *Carex*. Adults nectar in nearby upland fields.

Priority Natural Communities

Spruce-Fir Swamp (Imperiled): This Priority Natural Community is a forested wetland dominated by Red Spruce and Balsam Fir trees. It is typically found along stream headwaters or in poorly drained basins at higher elevations in the western and north-central parts of the state.

BC2081 and CNL1322

BC2081 is the largest BC in Hinsdale and consists of extensive riparian areas and wetlands along the East Branch Housatonic River. Much of BC2081 falls within Hinsdale Flats Wildlife Management Area. In addition to three Wetland Cores, which total nearly 1,000 acres, BC2081 includes a nearly 800-acre area of Aquatic Core. Much of the BC is also surrounded by Upland Buffers and a Landscape Block of CNL1322. BC2081 includes several Species of Conservation Concern and one Priority Natural Community:

Plants

Hemlock Parsley (*Conioselinum chinense*), Special Concern: In Massachusetts, this perennial herb of the parsley or angelica family is usually found in swamps, wet meadows, peatlands, and marshy forests. It blooms from July to September, and prefers pH-neutral or limy wetlands. It ranges throughout northern North America, but in Massachusetts is found mostly in the western part of the state.

Woodland Millet (*Milium effusum*), Threatened: This tall, conspicuous grass grows in wooded habitats on mesic, calcareous slopes. It has a slender and somewhat succulent stem, which is notable for its delicate pastel green

color and whitish bloom. It often co-occurs with beech, sugar maple, broad-leaf goldenrod, and sedge species. In Massachusetts, it is most often found in the north-west part of the state.

Insects

Dion Skipper (*Euphyes dion*), Threatened: Dion Skipper butterfly larvae typically inhabit sedge wetlands, where they feed on sedges (plants of the genus *Carex*). Adults nectar in nearby upland fields.

Fish

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. This species is typically found in clear water in slack areas of streams and rivers, as well as in lakes and ponds, and is sensitive to turbidity, invasive plant species, and severe changes in flow regime. They are generally associated with submerged aquatic vegetation, but also school in areas of open water.

Amphibians

Four-toed Salamander (*Hemidactylium scutatum*), SWAP: The Four-toed Salamander is the smallest salamander in Massachusetts, and tends to live in forested areas near marshes, swamps, vernal pools, or other predator-free aquatic areas where adults can reproduce and where young salamanders spend the early stages of their lives. Juveniles and adults are primarily terrestrial.

Reptiles

Wood Turtle (*Glyptemys insculpta*), Special Concern: The Wood Turtle is a medium-sized turtle that can be recognized by its sculpted shell and orange coloration on its legs and neck. It is widespread in Massachusetts, and its habitat includes mid-sized, slow moving streams and rivers, generally with long corridors of undeveloped and connected uplands. These turtles are active from March to October, and hibernate during the winter in muddy banks, stream bottoms, woody debris, or abandoned muskrat burrows.

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, allow it to be well-camouflaged in marsh habitat. They are known to occur throughout BC2081.

Least Bittern (*Ixobrychus exilis*), Endangered: This is a small wading marshbird and member of the heron family, with a long neck and bill, and black crown. It typically

nests in marshes with tall, dense vegetation, such as cat-tails, and in areas that are interspersed with open water. This species is very sensitive to disturbance, particularly by invasive marsh plants like Purple Loosestrife and Phragmites. Their habitat overlaps with that of American Bittern in BC2081.

Priority Natural Community

Spruce - Fir Swamp (Imperiled): This natural community is a forested wetland dominated by Red Spruce and Balsam Fir. These swamps are typically found along head-water streams or in poorly drained basins at higher elevations in western and north-central parts of the state. Spruce-Fir Swamp occurs within two areas in BC2081. One is 15 acres and the other is 26 acres; both are located in the northern portion of the core, on opposite sides of Middlefield Road.

BC2100 and CNL1013

This 11-acre BC occurs near the intersection of Peru and New Windsor Roads in central Hinsdale. It consists of an Aquatic Core, is surrounded by an Upland Buffer of CNL1013, and supports one state-listed plant species.

BC2215 and CNL1055

BC2215 is a long, narrow BC that extends from Windsor Reservoir along Waconah Falls Brook through Windsor and Hinsdale into Dalton. Of the over 100 acres, the 14 acres in Hinsdale contain Aquatic Core and a state-listed dragonfly species. Upland Buffer in CNL1055 surrounds the Aquatic Core.

Ocellated Darner (*Boyeria grafiana*), Special Concern: Nymphs, or larvae, of this dragonfly species typically inhabit clear, shallow, rocky, swift-flowing streams, as well as large, rocky lakes with little vegetation. Adults inhabit nearby uplands, often preferring forests with mixed coniferous and deciduous trees.

BC2228 and CNL1066

This 313-acre core in the northeast corner of Hinsdale supports habitat for a rare state-listed bird of prey.

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.

Priority Conservation Areas in Hinsdale

Hinsdale contains one area identified as a Town Priority Conservation Area (Town PCA) by NHESP:

Town PCA 1: This 1,507 acre Priority Conservation Area is located in south-central Hinsdale along the East Branch Housatonic River, and its boundaries are nearly coincident with those of BC2081. It includes important elements of biodiversity associated with the river, its wetlands, and floodplain, including many documented state-listed species. As noted in the summary of BC2081 above, it includes one large Aquatic Core and Upland Buffer, seven state-listed species, and one Priority Natural Community. Much of Town PCA 1 falls within the Hinsdale Flats Wildlife Management Area.

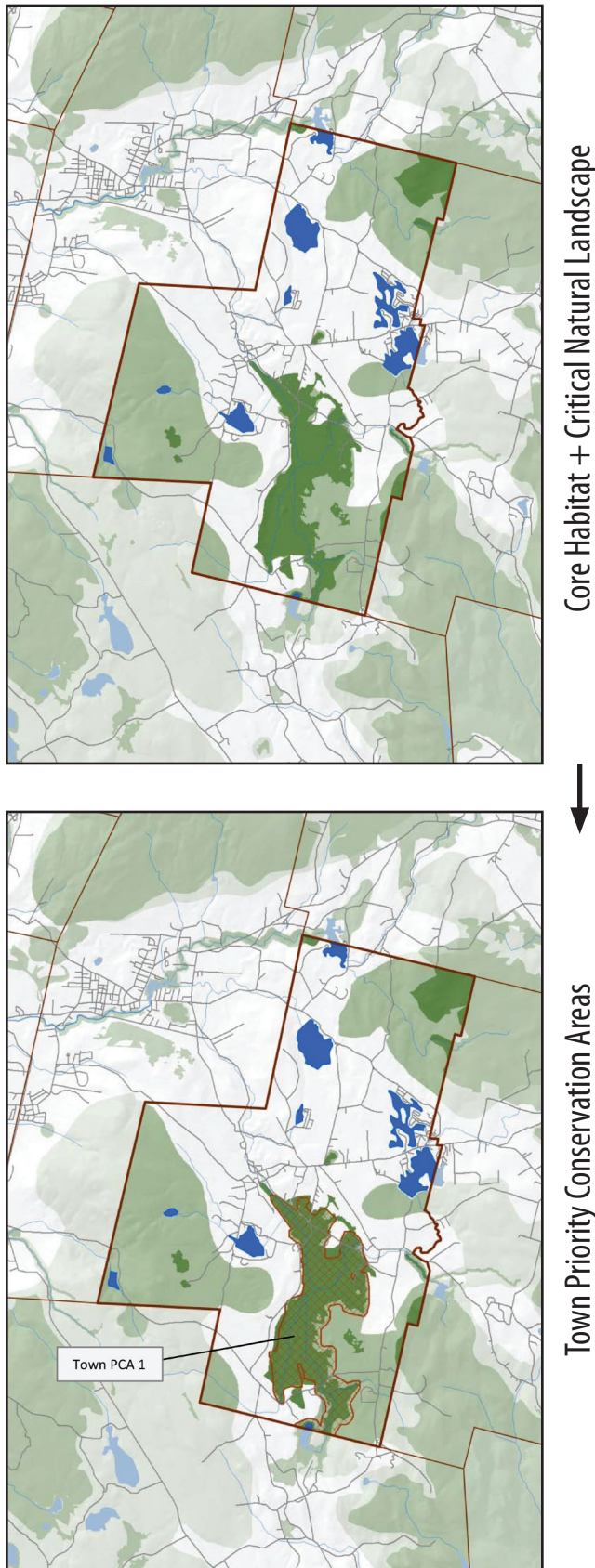


Figure 3. Core habitat (dark green), Critical Natural Landscape (light green), and Town Priority Conservation Areas (PCAs; reddish-brown grid) in Hinsdale. Town PCAs make up 1,507 acres in Hinsdale, or 10.9 percent of the town's total land area.

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/nhsp/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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