



BioMap2

Guiding Land Conservation for Biodiversity in Massachusetts

Richmond

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: Richmond. 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

Richmond

Richmond is located in north-central Berkshire County, just southwest of Pittsfield. Most of the town falls within the Housatonic River watershed, though a small portion in the far northwest corner drains to the Hudson River in New York. The primary waterways are Furnace Brook, Cone Brook, and Lenox Mountain Brook; these three tributary streams meet just south of town in West Stockbridge to form the Williams River, which eventually joins the Housatonic mainstem in Great Barrington. Richmond lies within both the Western New England Marble Valleys and Taconic Mountains ecoregions (see Figure 1). The mountains of the Taconic Range in western Richmond form the town's boundary with Canaan, New York, while the jagged boundary with Lenox lies along another mountainous ridge to the east called Lenox Mountain. These hills contain some of the highest elevations in the region, including Perry Peak, which rises to 2,070 feet, and Yokun Seat, which tops out at 2,194 feet. A number of wetlands lie in the lowlands of the town's central valley, and Richmond Pond lies to the north along the town's boundary with Pittsfield.

Richmond is primarily rural in character, with approximately 1,600 residents. Development is mostly restricted to residential areas and a small amount of agriculture, primarily in the lowlands. Route 41, Swamp Road, and the CSX rail line all traverse the town from north to south, along with a network of parallel and connecting roads that criss-cross the valley. This relatively light amount of development has allowed for the preservation of many of Richmond's natural ecosystems. Consequently, much of the town's native biodiversity, including state-listed species and natural communities, continue to thrive. These natural heritage features are often closely tied to the town's forested areas, streams, floodplains and wetlands.

The lowlands of Richmond, where small tributaries flow south toward the Housatonic River mainstem in Great Barrington, are part of the Western New England Marble Valleys ecological region and are highly regarded for their native biodiversity. This is one of the most distinct and biologically rich ecoregions both in Massa-

chusetts and throughout New England, stretching from northwest Connecticut up through sections of the Hudson River and Lake Champlain watersheds. The marble valleys support an impressively high percentage of Massachusetts' state-listed species and natural communities, some of which are restricted to the ecoregion while others



Richmond at a Glance

- Total area: 12,180 acres or 19.0 square miles
- Human Population in 2009: 1,570 people
- Open space protected in perpetuity: 980 acres, or 8.0% of the town's total area*

BioMap2 Components

Core Habitat

- 9 Aquatic Cores: 715 acres
- 1 Forest Core: 232 acres
- 3 Wetland Cores: 316 acres
- 4 Priority Natural Communities: 96 acres

Species of Conservation Concern**

- 1 insect, 1 fish, 1 amphibian, 4 birds, 14 plants

Critical Natural Landscape

- 8 Upland Buffers of Aquatic Cores: 1,007 acres
- 7 Upland Buffers of Wetland Cores: 607 acres
- 2 Landscape Blocks: 2,733 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 Richmond

Insects

Butterflies

Dion Skipper (*Euphyes dion*), Threatened

Fish

Bridle Shiner (*Notropis bifrenatus*), Special Concern

Amphibians

Jefferson Salamander (*Ambystoma jeffersonianum*), Special Concern

Birds

American Bittern (*Botaurus lentiginosus*), Endangered

Common Moorhen (*Gallinula chloropus*), Special Concern

Sedge Wren (*Cistothorus platensis*), Endangered

Sora (*Porzana carolina*), SWAP

Plants

Barren Strawberry (*Waldsteinia fragarioides*), Special Concern

Creeping Sedge (*Carex chordorrhiza*), Endangered

Fen Sedge (*Carex tetanica*), Special Concern

Foxtail Sedge (*Carex alopecoidea*), Threatened

Great Laurel (*Rhododendron maximum*), Threatened

Hemlock Parsley (*Conioselinum chinense*), Special Concern

Hill's Pondweed (*Potamogeton hillii*), Special Concern

Hitchcock's Sedge (*Carex hitchcockiana*), Special Concern

Intermediate Spike-sedge (*Eleocharis intermedia*), Threatened

Labrador Bedstraw (*Galium labradoricum*), Threatened

Lyre-leaved Rock-cress (*Arabidopsis lyrata*), Endangered

Slender Blue-eyed Grass (*Sisyrinchium mucronatum*), Endangered

Slender Cottongrass (*Eriophorum gracile*), Threatened

Woodland Millet (*Milium effusum*), Threatened

Priority Natural Communities

Black Ash – Red Maple – Tamarack Calcareous Seepage Swamp (Imperiled)

Calcareous Rocky Summit/Rock Outcrop Community (Imperiled)

Calcareous Seepage Marsh (Imperiled)

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

are more widespread. In Richmond, habitats like marshlands, swamps, and seeps along Cone Brook and its tributaries Sleepy Hollow Brook and Fairfield Brook provide habitat for state-listed plants such as Fen Sedge, Labrador Bedstraw, and Hill's Pondweed as well as state-listed wildlife species like Sedge Wren and Jefferson Salamander. Open water and wetlands near Richmond Pond support uncommon species such as Slender Cottongrass, Dion Skipper, and Bridle Shiner. Several Priority Natural Community types also occur here, including Black Ash – Red Maple – Tamarack Calcareous Seepage Swamp and Calcareous Sloping Fen.

The Taconic Mountains ecological region is an area of higher elevations and steep topography with underlying metamorphic bedrock, a colder climate, and more acidic soils than the marble valleys below to the east. Jefferson Salamanders are found in many upland locations throughout Richmond, usually near vernal pools. The Spring Salamander also occurs, typically seeking cover under rocks at high elevations along steep headwater streams. Interspersed throughout the higher elevations are calcareous rocky outcrop communities, sometimes with state-listed species such as Lyre-leaved Rock-cress.

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

Overview

In this section, we outline areas in Richmond 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 areas of Critical Natural Landscape (CNL), along with their associated components, are illustrated in Figure 2 and outlined in detail below. Only BioMap2 components that occur in Richmond are described in here, though a given area of Core Habitat or CNL listed may extend outside the town boundaries and contain additional components.

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 state-listed 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.

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 Richmond, four Town PCAs were designated; Figure 3 illustrates how BioMap2 Core Habitat and Critical Natural Landscape relate to their distribution.

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 can be quite large, ranging from 373 acres to more than 25,000 acres. Ecological connectivity within these Regional PCAs is important, and these large units often include select Town PCAs of particular ecological 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. Regional PCA 6 (also in Pittsfield, Lenox,

Stockbridge and West Stockbridge) includes an area in eastern Richmond that is coincident with Town PCA 1.

Core Habitat and Critical Natural Landscape Components in Richmond

Areas of Core Habitat in Richmond, 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, or Aquatic, Forest, Vernal Pool, or Wetland Cores. Components of Critical Natural Landscape (CNL) associated with each BC are also listed. These components include Upland Buffers of both Aquatic and Wetland Cores, as well as Landscape Blocks.

BC1963 and BC1965 (no CNL)

These BCs provide habitat for one uncommon plant and one uncommon salamander.

Hitchcock's Sedge (*Carex hitchcockiana*), Special Concern: This perennial woodland sedge occurs in Rich, Mesic Forests on, or at the base of, slopes.

Jefferson Salamander (*Ambystoma jeffersonianum*), Special Concern: This salamander species inhabits upland for-

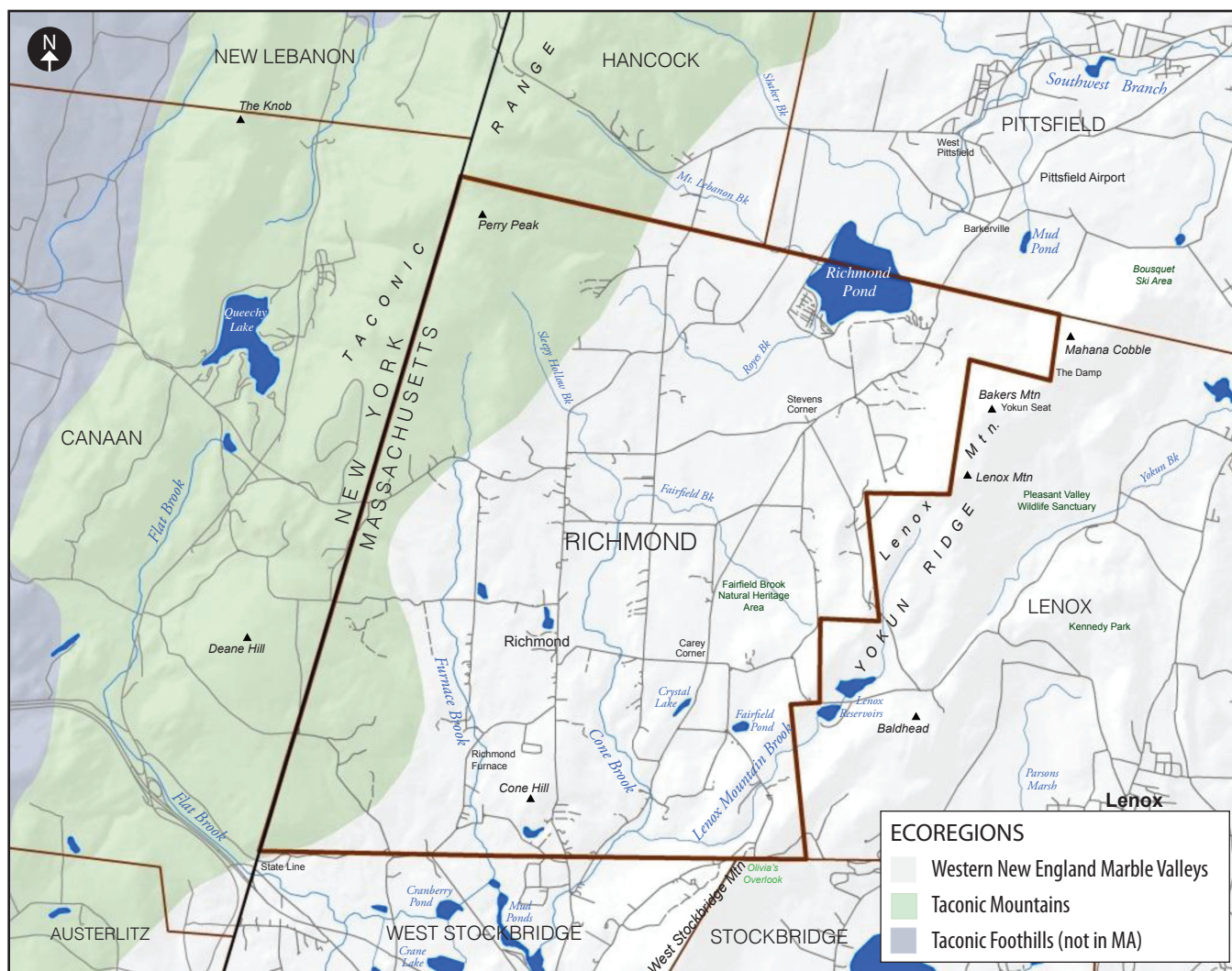


Figure 1. Richmond is part of the Western New England Marble Valleys and Taconic Mountains ecoregions.

est during most of the year, where it resides 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 disperse into upland forest.

BC1860 and CNL970

BC1860 is located in southeastern Richmond; most of it is embedded in a Landscape Block of CNL970. It includes one state-listed plant species and one state-listed salamander species:

Lyre-leaved Rock-cress (*Arabidopsis lyrata*), Endangered: This is a small, herbaceous perennial that inhabits thin soils and crevices of calcareous rocky cliffs, outcrops, and ledges, and is found in full to filtered sun.

Jefferson Salamander (*Ambystoma jeffersonianum*), Special

Concern: This salamander species inhabits upland forest during most of the year, where it resides 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 disperse into upland forest.

BC1871 and CNL970

BC1871 is a small core embedded in a Landscape Block of CNL970 in southern Richmond. It supports one state-listed salamander species:

Jefferson Salamander (*Ambystoma jeffersonianum*), Special Concern: This salamander species inhabits upland forest during most of the year, where it resides in small-mammal burrows and other subsurface retreats. Adults migrate during late winter or early spring to breed in

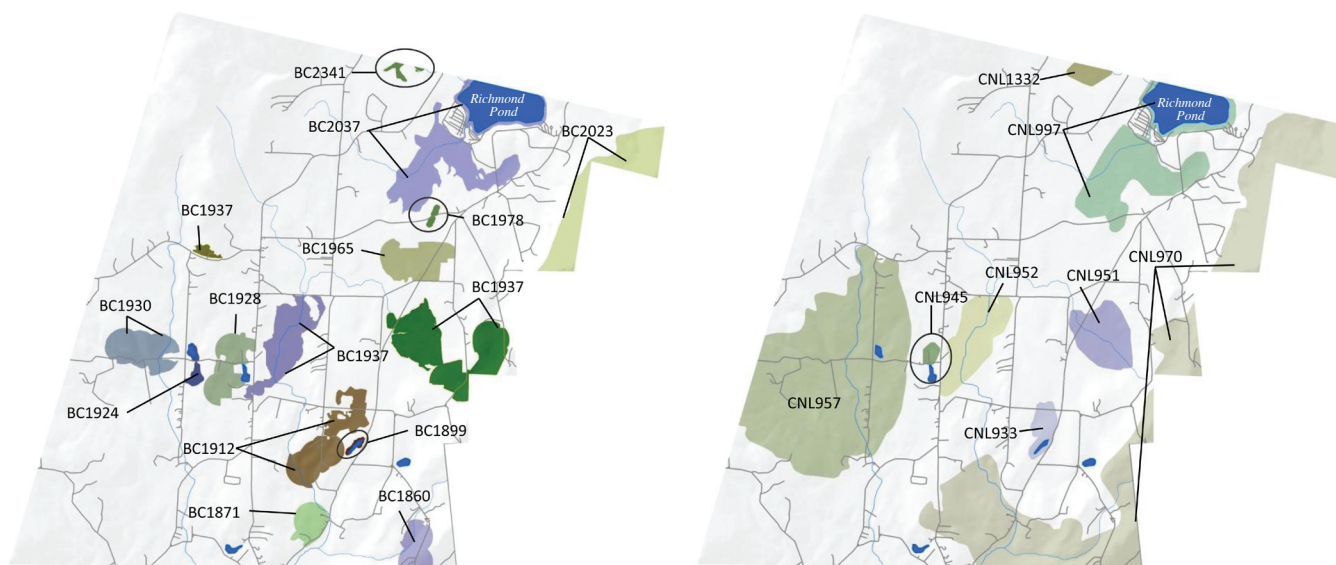


Figure 2. Richmond includes a total of 15 BioMap2 Cores (BCs; left) and eight areas of Critical Natural Landscape (CNL; right). Overlap between these two layers is shown in Figure 3.

vernal pools and fish-free areas of swamps, marshes, or similar wetlands. Larvae metamorphose in late summer or early fall, and disperse into upland forest.

BC1899 and CNL933

BC1899 is a small core made up of an Aquatic Core that includes Crystal Lake and is surrounded by an Upland Buffer and is within the Landscape Block of CNL933. It lies in southeast Richmond along Swamp Road. It is also near but not part of the larger CNL970 to the southeast. It includes one state-listed plant species.

BC1912, CNL933 and CNL970

BC1912 includes an Aquatic Core along a tributary to Cone Brook in the vicinity of Dublin Road, and is partly surrounded by an Upland Buffer of CNL933 and partly within a Landscape Block of CNL970. It includes several state-listed species and Priority Natural Communities:

Plants

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

Hitchcock's Sedge (*Carex hitchcockiana*), Special Concern: This plant is a perennial woodland sedge that occurs in Rich, Mesic Forests on, or at the base of, slopes.

Labrador Bedstraw (*Galium labradoricum*), Threatened: This plant is a perennial herb of open to semi-open alkaline fens, wet meadows, or swamps. It often grows on hummocks or tussocks in full or filtered sunlight.

Barren Strawberry (*Waldsteinia fragarioides*) Special Concern:

This plant is a short, herbaceous perennial that occurs on rich soils near streams in a variety of forest types.

Amphibians

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

This salamander species inhabit upland forest during most of the year, where it resides 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 disperse into upland forest.

Priority Natural Communities

Black Ash – Red Maple – Tamarack Calcareous Seepage Swamp (Imperiled):

This Priority Natural Community is a mixed deciduous-coniferous forested swamp that occurs in areas with calcium-rich groundwater seepage. Its nutrient enrichment supports many uncommon, calcium-loving plant species. The small example in BC1912 is in good condition and supports several state-listed plant species.

Calcareous Sloping Fen (Imperiled):

This Priority Natural Community is an open, sedge-dominated wetland that occurs on slight to moderate slopes with calcareous groundwater seepage. It is a rare species “hot spot” and has many associated state-listed plant and animal species. This small Calcareous Sloping Fen is in a pipeline cut maintained by mowing of the surrounding agricultural field. It has a diverse suite of native species, and also contains some invasive exotics.

BC1924 and CNL957

BC1924 is a 21-acre BC located near the intersection of Rossiter and West Roads. It includes an Aquatic and Wetland Core that are both surrounded by Upland Buffers and within a Landscape Block of CNL957. It also supports one state-listed aquatic plant species.

BC1928, CNL957, and CNL945

BC1928 is located in central Richmond in an area along Route 41 that is bisected by a few roads. It includes areas of forests, wetlands, and fields that are part of an Aquatic Core. BC1928 lies partly within a Landscape Block of CNL957 and is surrounded by an Upland Buffer of CNL945. It also supports two state-listed species:

Labrador Bedstraw (*Galium labradoricum*), Threatened: This plant is a perennial herb of open to semi-open alkaline fens, wet meadows, or swamps. It often grows on hummocks or tussocks in full or filtered sunlight.

Jefferson Salamander (*Ambystoma jeffersonianum*), Special Concern: This salamander species inhabits upland forest during most of the year, where it resides 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 disperse into upland forest.

BC1930 and CNL957

BC1930 is located in western Richmond in an area of fields, wetlands, and mixed deciduous and evergreen forests in Landscape Block of CNL957. Roads passing through BC1930 are bordered by some development; nonetheless, this BC contains important habitat for breeding salamanders, as Certified Vernal Pools occur within it and in nearby areas. One state-listed salamander species is documented in BC1930.

Jefferson Salamander (*Ambystoma jeffersonianum*), Special Concern: This salamander species inhabits upland forest during most of the year, where it resides 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 disperse into upland forest.

BC1937 and CNL 951

BC1937 includes much of the MA Division of Fish and Wildlife's Fairfield Brook Natural Heritage Area in eastern Richmond. It consists of an Aquatic Core and supports several state-listed species and Priority Natural Commu-

nities. BC1937 is surrounded by an Upland Buffer of CNL951.

Plants

Great Laurel (*Rhododendron maximum*), Threatened: This plant is a tall, broad-leaved evergreen shrub that grows in the understory of swampy, acidic woodlands.

Hemlock Parsley (*Conioselinum chinense*), Special Concern: Hemlock Parsley is a perennial herbaceous plant of forested swamps that have sparse canopy cover. It generally grows in enriched soils overlying calcareous bedrock.

Labrador Bedstraw (*Galium labradoricum*), Threatened: This plant is a perennial herb of open to semi-open alkaline fens, wet meadows, or swamps. It often grows on hummocks or tussocks in full or filtered sunlight.

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.

Amphibians

Jefferson Salamander (*Ambystoma jeffersonianum*), Special Concern: This salamander species inhabits upland forest during most of the year, where it resides 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 disperse into upland forest.

Priority Natural Communities

Black Ash – Red Maple – Tamarack Calcareous Seepage Swamp (Imperiled): This Priority Natural Community type is a mixed deciduous-coniferous forested swamp that occurs in areas with calcium-rich groundwater seepage. Its nutrient enrichment supports many state-listed calcium-loving plant species. This 74-acre occurrence is of good quality and is associated with several state-listed plant species.

Calcareous Rocky Summit/Rock Outcrop (Imperiled): This is a sparsely-vegetated, dry, and open community type typically found along lower-elevation ridge tops within the marble valleys of Berkshire County. Its open aspect is maintained by natural processes that result in the uprooting and falling of trees. This single-acre occurrence in BC1937 has good diversity and moderate landscape context, and is found in association with the other two Priority Natural Communities in the core.

Calcareous Seepage Marsh (Imperiled): This Priority Natural Community type is a marshy wetland enriched by

calcareous groundwater seepage. Of the three types of calcareous fen communities described in Massachusetts, this one is intermediate in terms of nutrient richness and number of botanical rarities. The 16-acre Calcareous Seepage Marsh in BC1937 has good native diversity with some patches of non-native invasive species. It is found along Fairfield Brook and is surrounded by another Priority Natural Community, the Black Ash – Red Maple – Tamarack Calcareous Seepage Swamp (see above).

BC1939 and CNL952

BC1939 is located along Cone Brook in central Richmond, between the railroad and Route 41. It is important for biodiversity despite the presence of some development. It includes an Aquatic Core and Wetland Core that are surrounded by Upland Buffers of CNL952. It also supports several state-listed plant and bird species.

Plants

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

Intermediate Spike-sedge (*Eleocharis intermedia*), Threatened: This is a densely tufted grass-like annual found on muddy, alkaline riverbanks and pondshores, usually visible during periods of low water when mud is exposed.

Slender Cottongrass (*Eriophorum gracile*), Threatened: This peatland species is a colonial perennial sedge that requires open habitats but can tolerate a wide range of water chemistry.

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.

Sedge Wren (*Cistothorus platensis*), Endangered: This bird is a perching species that inhabits wetlands dominated by short grasses and sedges – it typically nests in large, wet meadows. It is sensitive to loss of these habitats due to changes in hydrology that drain or reduce moisture in nesting areas. It is also vulnerable to incompatible agricultural activities and encroachments by invasive plants.

BC1978 and CNL997

BC1978 includes 7.6 acres of an Aquatic Core. It is surrounded by an Upland Buffer of CNL997 and supports one state-listed aquatic plant species.

BC2023 and CNL970

BC2023 is defined by a 232-acre Forest Core, and lies within a Landscape Block of CNL970.

BC2037 and CNL997

BC2037 is a 525-acre core located in northeastern Richmond and southwest Pittsfield, within and around Richmond Pond. It also includes land along Royes Brook (one of the pond's tributaries) as well as wetland areas associated with this stream. BC2037 contains Aquatic Core around Richmond Pond and Wetland Core along Royes Brook, both surrounded by Upland Buffers of CNL997. BC2037 is not located far from the City of Pittsfield, the region's most developed and populated area; however, it contains extensive open water and wetland habitat for a variety of state-listed plants, insects, fish, and marshbirds.

Plants

Creeping Sedge (*Carex chordorrhiza*), Endangered: This plant is a grass-like perennial sedge species that occurs in wet, open, and boggy calcareous marshes and fens.

Foxtail Sedge (*Carex alopecoidea*), Threatened: This plant is typically found with other sedges, along with grasses and herbs, in open swales within floodplain forests.

Slender Cottongrass (*Eriophorum gracile*), Threatened: This peatland plant is a colony-forming, perennial sedge that requires open habitats but can tolerate a wide range of water chemistry conditions.

Butterflies

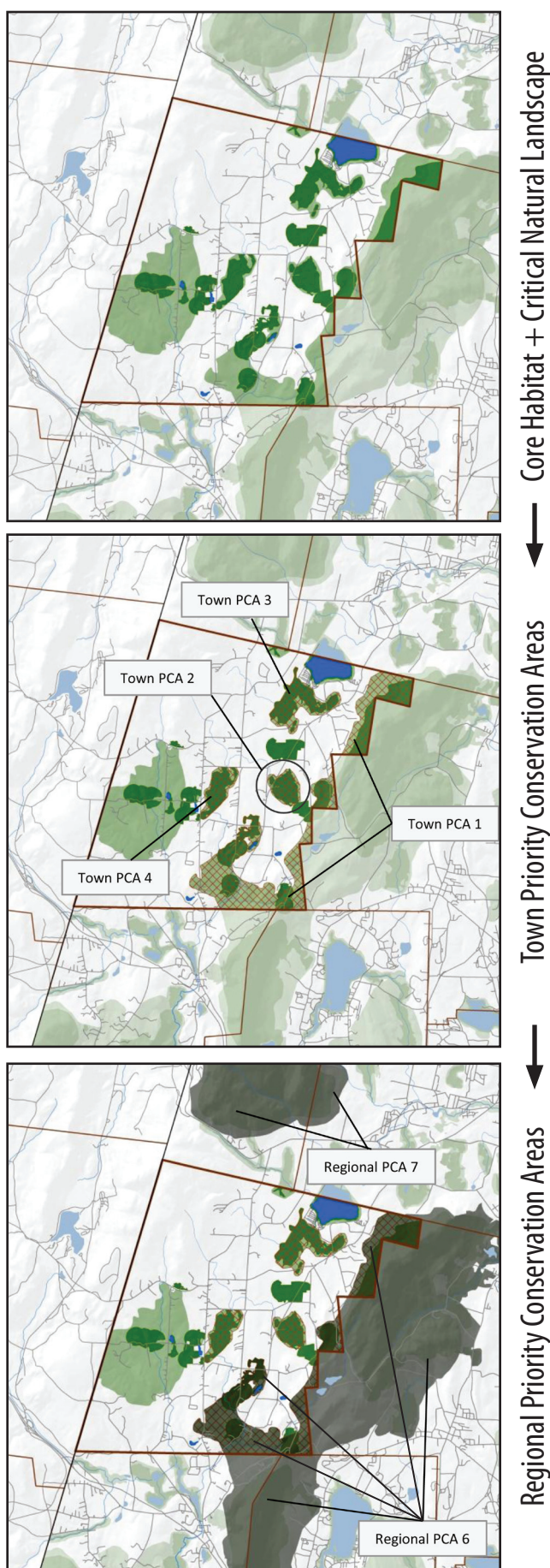
Dion Skipper (*Euphyes dion*), Threatened: In Massachusetts, this butterfly species typically inhabits sedge wetlands, as their larvae feed on sedges (plants of the genus *Carex*). Adults feed on the nectar of milkweeds in upland marshes or old fields.

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. It 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. This fish is generally associated with submerged aquatic vegetation, but it also uses areas of open water to school.

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.



Common Moorhen (*Gallinula chloropus*), Special Concern: These are duck-like marshbirds that inhabit shallow freshwater marshes and typically nest in dense cattail beds adjacent to open water.

Sora (*Porzana carolina*), SWAP: This species is a secretive marshbird that typically nests in dense cattail beds adjacent to open water. Sora are known to breed and nest in BC2037.

BC2341 and CNL1332

BC3241 is an 11,593-acre core that is mostly part of Hancock, to the north of Richmond. It also extends east into Lanesborough and Pittsfield. A small extension (9.9 acres) crosses south into Richmond and contains part of an Aquatic Core that is surrounded by an Upland Buffer of CNL1332.

Priority Conservation Areas in Richmond

Richmond contains four areas identified as Priority Conservation Areas (PCAs) by NHESP. Each is a Town PCA and one – Town PCA 1 – is also part of the larger Regional PCA 6 that extends beyond the town boundaries.

Town PCA 1/Regional PCA 6: Town PCA 1 in Richmond is part of Regional PCA 6, which is an 8,927-acre area that extends from south-central Pittsfield, first along the boundary between Lenox and Richmond, then along the boundary between Stockbridge and West Stockbridge. Regional PCA 6 reaches its southern limit in those two latter towns, just north of the Massachusetts Turnpike. In Richmond, Town PCA 1 is over 1,500 acres and lies all along Richmond's eastern boundary with Lenox. It is the town's largest Town PCA and includes a Forest Core, as well as areas around Lenox Mountain and Cone Brook in southern and southeastern parts of town, and is part of a large Landscape Block. It also includes several locations that support Jefferson Salamanders.

Town PCA 2: This Town PCA lies along Fairfield Brook in east-central Richmond. It includes most of BC1937, which supports a diversity of state-listed plant species and

Figure 3. Core habitat (dark green), Critical Natural Landscape (light green), and Town Priority Conservation Areas (PCAs; reddish-brown grid), and Regional Priority Conservation Areas (transparent grey) in Richmond. Town PCAs make up 2,267 acres, or 18.6 percent of the town's total land area. Part of Regional PCA 7 constitutes 1,549 acres or 12.7 percent of the town's land area

several Priority Natural Communities. Much of this PCA is designated as Aquatic Core.

Town PCA 3: This Town PCA lies along Royes Brook in northern Richmond, just south of Richmond Pond. It includes parts of BC2037 and its associated BioMap2 components, including state-listed plant and insect species, and three marshbirds. Parts of this PCA are also designated as Wetland and Aquatic Cores.

Town PCA 4: Town PCA 4 is along Cone Brook just downstream of the confluence of Sleepy Hollow and Fairfield Brooks. It includes all BioMap2 components associated with BC1939, including many state-listed plant species and Wetland and Aquatic Cores.

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.

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.