

PRIORITY NATURAL COMMUNITIES

BioMap2 Components

Core Habitat: Priority Natural Communities
Critical Natural Landscape: NA

NATURAL COMMUNITIES: ASSEMBLAGES OF SPECIES IN SPACE AND TIME

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 can be classified and described by their dominant physical and biological features: Red Maple swamp and Pitch Pine/Scrub Oak communities are two examples. Natural communities are not discrete units with neat boundaries; there is overlap among and between communities in their composition, structure, and physical characteristics. Large animals often make use of multiple communities.

The Massachusetts Natural Heritage & Endangered Species Program and The Nature Conservancy's Massachusetts Program developed *BioMap2* in 2010 as a conservation plan to protect the state's biodiversity. *BioMap2* 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.

COMPONENTS OF *BIOMAP2*: *BioMap2* **Core Habitat** identifies specific areas necessary to promote the long-term persistence of rare species, other Species of Conservation Concern, priority natural communities, and intact ecosystems. *BioMap2* **Critical Natural Landscape** was created to identify and prioritize intact landscapes in Massachusetts that are better able to support ecological processes and disturbance regimes, and a wide array of species and habitats over long time frames. *BioMap2* uses specific data and sophisticated mapping and analysis tools to spatially define each of these components, calling on the latest research and understanding of species biology, conservation biology, and landscape ecology.



Figure 1: An example of Atlantic White Cedar Bogs delineated using aerial photographs and on-the-ground data collection.

PRIORITY NATURAL COMMUNITIES: Natural communities are defined as interacting assemblages of plant and animal species that share a common environment and occur together repeatedly on the landscape. Based on detailed NHESP data on the distribution, composition, and status of natural communities, NHESP currently defines 108 types of terrestrial (upland), palustrine (freshwater wetland), and estuarine (coastal salt-influenced wetland) community types across the Commonwealth.

Terrestrial communities include forests, rocky ridgetops, shrublands, and beaches; palustrine examples include red maple swamps, bogs, and marshes; and estuarine communities include salt marshes and tidal flats.

Natural communities may be restricted or widespread in their distribution across the state. In the creation of *BioMap2*, conservation priority was given to types of natural communities with limited distribution—regionally or globally—and to the best examples documented of more common types, such as old-growth tracts of widespread forest types.

These uncommon and exemplary natural communities were inventoried in the field and mapped using aerial

photograph interpretation. Based on assessment of their size, condition, and landscape context, 782 examples of 94 of these Priority and Exemplary Natural Community types are included as Core Habitat in *BioMap2*. Conservation of these areas will support the persistence of characteristic common as well as rare species within Massachusetts.

ACHIEVING STRATEGIC CONSERVATION WITH *BioMap2*: In *BioMap2*, the Core Habitat and Critical Natural Landscape are complementary and overlapping, and were delineated based on separate criteria. Each represents a different scale of biodiversity in Massachusetts, yet the protection of both is important to conserve the full suite of biodiversity in the state.



Figure 3: Pitch Pine/Scrub Oak Community

Natural communities may be restricted or widespread in their distribution across the state. Conservation priority should be given to natural communities with limited distribution across ecoregions within the state, those with restricted global distribution, and Massachusetts best examples of more common types (considered to be “Exemplary Natural Communities”).

Both land protection and stewardship may be necessary to protect the biodiversity represented by the Priority Natural Communities. For example, invasive species control may be necessary to maintain the integrity of the biodiversity of these areas, while land protection may be necessary to prevent alterations to the plant assemblages and the structure of these important areas.

Figure 2: Atlantic White Cedar swamp