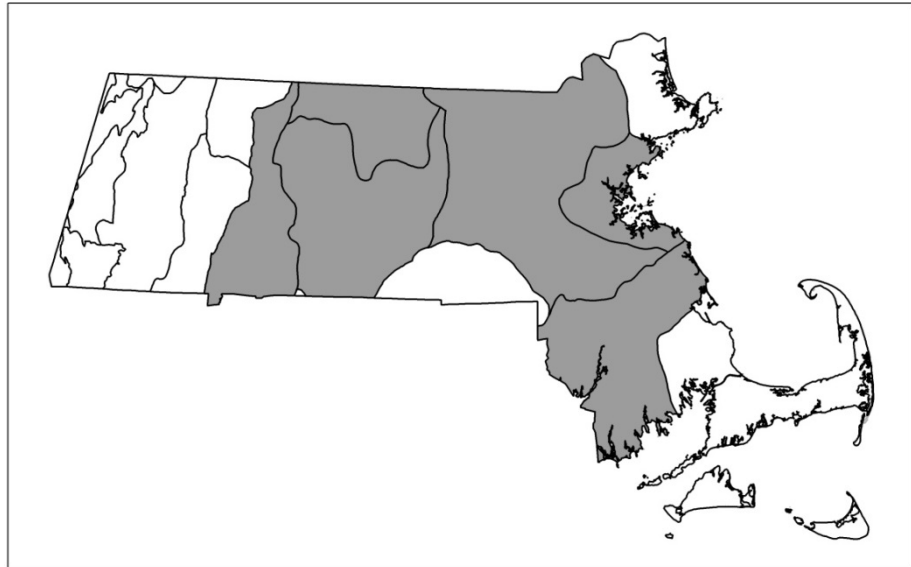




### Sugar Maple – Oak – Hickory Forest

**Community Code:** CT1C2A1000

**State Rank:** S3



**Concept:** A species-rich forest that combines aspects of Rich, Mesic Forest of the northern hardwood forests with rich Oak - Hickory Forests of the central hardwood forests.

**Environmental Setting:** Community occurrences are in or east of the Connecticut River Valley in Massachusetts. They are associated with outcrops of circumneutral rock and the slopes below them, which have more nutrients than are available in the surrounding forest. Occurrences are usually small patches within matrix forests, with which many species are shared. Many but not all are on slopes with southeast to southwest aspect.

**Vegetation Description:** Like Rich, Mesic Forests, Sugar Maple - Oak - Hickory Forests are dominated by sugar maple (*Acer saccharum*) and red oak (*Quercus rubra*) with white ash (*Fraxinus americana*) and bitternut hickory (*Carya cordiformis*). Basswood (*Tilia americana*) occurs consistently as very scattered individuals. However, black, white, and/or chestnut oaks (*Q. velutina*, *Q. alba*, and *Q. montana*) and shagbark, pignut and/or mockernut hickories (*C. ovata*, *C. glabra*, and *C. tomentosa*) occur regularly in the canopy. Black birch (*Betula lenta*) is commonly present. The sparse subcanopy includes hop hornbeam (*Ostrya virginiana*), red maple (*A. rubrum*), and canopy species. Pagoda dogwood (*Swida alternifolia*) contributes to a usually sparse tall shrub layer. The shorter shrubs are dominated by maple-leaf viburnum (*Viburnum acerifolium*). The herbaceous layer varies from sparse to intermittent, with some spring ephemerals including bloodroot (*Sanguinaria canadensis*) and trout-lily (*Erythronium americanum*). There are fewer individuals and species of spring ephemerals than in true Rich, Mesic Forest, particularly in the easternmost occurrences. Later-flowering species may include wild geranium (*Geranium*



*maculatum*), herb Robert (*G. robertianum*), false Solomon's seal (*Maianthemum racemosum*), wild licorice (*Galium circaezans*), maidenhair fern (*Adiantum pedatum*), bottlebrush grass (*Elymus hystrix*), and large amounts of white wood aster (*Eurybia divaricata*). Broad-leaved, semi-evergreen sedges in the Laxiflorae are common, with broad-leaved woodland-sedge (*Carex platyphylla*) being close to an indicator of the community type. Witch hazel (*Hamamelis virginiana*), hepaticas (*Anemone acutiloba* and *A. americana*), and wild oats (*Uvularia sessilifolia*) usually occur in areas of transition to surrounding forest types.

**Differentiating Occurrences:** Geography is basic to differentiating Sugar Maple - Oak - Hickory Forest from Rich, Mesic Forest: most occurrences of Rich, Mesic Forest in Massachusetts are west of the Connecticut River Valley. The presence of multiple species of hickories and oaks in Sugar Maple - Oak - Hickory Forest is a main difference between these two types. Broad-leaved woodland-sedge (*Carex platyphylla*) is close to being an indicator of Sugar Maple - Oak - Hickory Forest. Rich, Mesic Forest is characterized by very dense herbaceous growth of spring ephemerals. Sugar Maple - Oak - Hickory Forest shares some of the ephemeral species but with fewer individuals of fewer species. Sugar Maple - Oak - Hickory Forest has evergreen ferns, Christmas fern (*Polystichum acrostichoides*) and evergreen wood ferns (such as *Dryopteris marginalis*), that Rich, Mesic Forests lack. Oak - Hickory Forests and Dry, Rich Oak Forests lack abundant sugar maple, basswood, and white ash, and lack spring ephemerals and herbaceous species indicative of rich conditions, such as herb Robert and others listed as characteristic Sugar Maple - Oak - Hickory Forest species.

**Associated Fauna:** Very few animal species are strongly associated with Sugar Maple - Oak - Hickory forests to the exclusion of other community types. Birds that breed in forests include Wood Thrush (*Hylocichla mustelina*), Veery (*Catharus fuscescens*), Black-and-white Warbler (*Mniotilta varia*), Ovenbird (*Seiurus aurocapillus*), Louisiana Waterthrush (*S. motacilla*), Scarlet Tanager (*Piranga rubra*), and Barred Owl (*Strix varia*). Species that breed in vernal pools are often found in surrounding forests, for example, species of mole salamanders (*Ambystoma* spp.) and spotted turtles (*Clemmys guttata*). Most of the small mammals of forests occur in rich forests, although some are limited by their geographical distribution. Southern flying squirrels (*Glaucomys volans*), grey squirrels (*Sciurus carolinensis*), woodland jumping mice (*Napaeozapus insignis*), masked shrews (*Sorex cinereus*), and red-backed voles (*Clethrionomys gapperi*) are among the widespread species whose habitat includes rich forests. Large mammals include rich forests as parts of their habitat, but are usually more dependent on size of undisturbed forest than on the precise type.

**Public Access:** Middlesex Fells Reservation, Stoneham; Manchester Reservoir Conservation Land, Attleboro; Wachusett Mountain State Reservation, Princeton; Palmer WMA, Palmer; Wells State Park, Sturbridge.

**Threats:** Occurrences are susceptible to invasive exotic species. Original easternmost version of community description: the easternmost occurrences are in very developed



areas, although two are on conservation land. The other may be developed; there is an old subdivision plan and roads.

**Management Needs:**

Removing invasive exotics as necessary and maintaining forested buffer around the occurrences would benefit the occurrences. Aside from removing invasive exotics, active management is not necessary.

**USNVC/NatureServe:**

Related to: *Carya (glabra, ovata) - Fraxinus americana - Quercus (alba, rubra)* Forest Alliance - *Carya (glabra, ovata) - Fraxinus americana - Quercus* spp. Forest [CEGL006236]. A3303 *Quercus rubra - Acer saccharum - Betula lenta* Forest Alliance - *Acer saccharum - Quercus rubra/Hepatica nobilis var. obtusa* Forest [CEGL006046]; A4126 *Acer saccharum - Tilia americana - Quercus rubra* Rocky Forest Alliance - *Acer saccharum - Fraxinus americana - Juglans cinerea/Staphylea trifolia/Adlumia fungosa* Forest [CEGL006577].