

Rich, Mesic Forest

State Rank: S3 – Vulnerable



Rich, Mesic Forest with maidenhair fern in dense understory. Photo: Charlie Eiseman.

Description: Rich, Mesic Forests (RMF) are restricted to elevations below 2,400 ft. (~650 m), usually on east or southeast-facing, concave, mid- to lower slopes with downslope movement of nutrients and organic matter. Rich refers to rich in nutrients; they are also rich in species. Mesic is the moderate moisture regime. Soils are usually deep, with leaves and other plant litter quickly incorporated into the soil, so that there is rarely more than one year's accumulation of leaves on the forest floor. The dominant trees of RMF are very shade-tolerant and able to establish and grow under low-light conditions of a full canopy. Species of lower layers are also shade tolerant and can make use of transient light patches from small canopy gaps. RMF are noted for having abundant herbaceous species:

Rich, Mesic Forest is a western Massachusetts variant of northern hardwood forest. Sugar maple dominates the canopy. The diverse herbaceous layer includes many spring wild flowers on moist, nutrient rich slopes.

spring ephemerals (plants that flower before tree leaf out and have foliage that disappears in late spring) are characteristic, along with slightly later bloomers that keep their leaves into summer and others that flower later.

Characteristic Species: Rich Mesic Forests are dominated by sugar maple, with white ash, bitternut hickory, elm species, and basswood. Hop hornbeam is commonly in the subcanopy. The often sparse shrub layer may have pagoda dogwood, leatherwood, or red-berried Elderberry. The herbaceous layer usually has a dense mix of species starting in early spring. Typical species include bloodroot, Dutchman's breeches, squirrel corn, toothwort, maidenhair fern, late blue cohosh, sweet cicely, wild leek, plantain-leaf sedge Goldie's fern, glade-fern, and/or zigzag goldenrod.

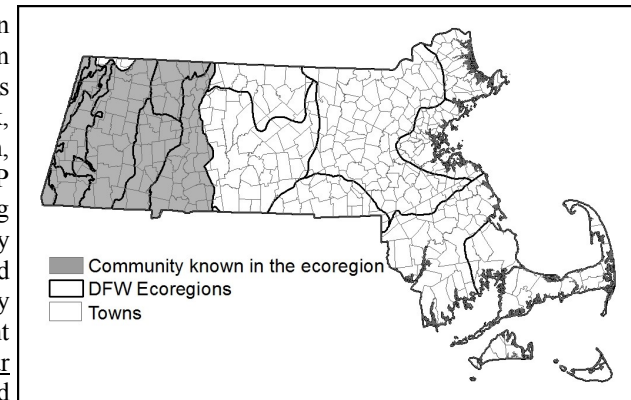


Bloodroot (L) and Dutchman's breeches (R), Spring ephemerals typical of, but not limited to, Rich, Mesic Forests. Photos: P. Swain, NHESP.

Differentiating from Related Communities: Rich, Mesic Forest is usually within the Northern Hardwoods - Hemlock - White Pine Forest (NHHWPF) or in the transition between it and the oak dominated forests to the south: RMF lacks conifers, beech, and oaks. The understory has dense spring ephemerals with late blue cohosh and/or wild leek, and lacks

abundant evergreen wood fern and wild sarsaparilla found in NHHWPF. NHHWPF has abundant eastern hemlock, white pine, American beech, and red oak. Enriched NHHWP may have scattered spring ephemerals, but also early yellow violet and broad-leaved spring beauty that usually indicate lower nutrient availability. Red Oak - Sugar Maple Transition Forest (SMOHF) has red oak as a dominant, with sugar maple, American beech, and black birch. Spring ephemerals are uncommon. Most occurrences of RMF in Massachusetts are west of the Connecticut River Valley, Sugar Maple - Oak - Hickory Forest (SMOHF) is to the east. The presence of multiple species of hickories and oaks in SMOHF is a main difference between these two types. Broad-leaved woodland-sedge is close to being an indicator of SMOHF. RMF has semi-evergreen plantain-leaf sedge instead. RMF is characterized by very dense herbaceous growth of spring ephemerals; SMOHF shares some of the species but with fewer individuals of fewer species. SMOHF has evergreen wood ferns that RMF lacks.

Habitat for Associated Fauna: All upland forest types provide valuable structural attributes such as tree cavity den sites (used by a variety of bird and mammal species) and large woody material (used by various amphibian, reptile, and invertebrate species). Very few animal species are strongly associated with Rich, Mesic Forests to the exclusion of other community types. Species such as mole salamanders that breed in vernal



pools use the surrounding upland, deciduous forests for foraging and hibernation. Most of the small mammals of forests occur in RMFs, although some are limited to their geographical distribution. Large mammals include RMFs as parts of their habitat, but are usually more dependent on size of undisturbed forest than on the precise type.

Examples with Public Access: Day Mountain WMA, Dalton; Maple Hill WMA, West Stockbridge; The Hopper - Mt. Greylock SR, Williamstown; Knightville and Hiram Fox WMAs, Cheshire; Appalachian Trail, Tyringham.



Rich, Mesic Forest with mixed tree sizes and almost continuous herbaceous layer in mid summer Photo: Patricia Swain, NHESP.

