



## Oak – Tulip Tree Forest

**Community Code:** CT1B2C0000

**State Rank:** S1



**Concept:** A forest on gentle, moist, concave slopes (coves), or on well-drained flats at the base of the slopes. Soils are circumneutral to slightly acidic. One site is rocky.

**Environmental Setting:** Oak - Tulip Tree Forests are tall closed-canopy forests that occur from upper mid-slope to the bottom of moist, concave, north- or east-facing slopes. The forest grades into wetland forests on flats at the base of the slopes. Soils are moist and generally well-drained. They are circumneutral to acidic, with intermediate fertility. Some sites are very rocky. Leaf litter covers most of the ground with moss-covered rocks and a patchy diverse herbaceous layer.

**Vegetation Description:** Tulip trees (*Liriodendron tulipifera*) are emergent (over 100 ft.) above an already tall canopy dominated by red oak (*Quercus rubra*) with red and sugar maples (*Acer rubrum* and *saccharum*), black and yellow birches (*Betula lenta* and *alleghaniensis*), white and black oaks (*Quercus alba* and *velutina*), sassafras (*Sassafras albidum*), white ash (*Fraxinus americana*), and additional tulip trees. A subcanopy/tall shrub layer may include the same species with scattered white pine (*Pinus strobus*), eastern hemlock (*Tsuga canadensis*), striped maple (*A. pensylvanicum*), and witch-hazel (*Hamamelis virginiana*). Witch-hazel is often the most dominant shrub with abundant maple-leaf viburnum (*Viburnum acerifolium*). Other sites have patches of mountain laurel (*Kalmia latifolia*) and beaked hazelnut (*Corylus cornuta*) in the shrub layer. The diverse herbaceous layer covers about a third of the ground, with leaf litter covering the rest. Common herbaceous species include small jack-in-the-pulpit (*Arisaema triphyllum*), false Solomon's seal (*Maianthemum racemosum*), ground pine (*Dendrolycopodium obscurum*), New York fern (*Parathelypteris noveboracensis*), Indian cucumber (*Medeola virginiana*), Christmas



fern (*Polystichum acrostichoides*), white wood-aster (*Eurybia divaricata*), wild oats (*Uvularia sessilifolia*), and two-leaved toothwort (*Cardamine diphylla*). Wetland species such as skunk cabbage (*Symplocarpus foetidus*), sweet pepperbush (*Clethra alnifolia*), and highbush blueberry (*Vaccinium corymbosum*) can become common towards the base of the slopes when the community grades into wetlands.

**Differentiating Occurrences:** The key feature that differentiates Oak - Tulip Tree Forests from other communities is the presence of multiple mature tulip trees (not just occasional individuals) with a strong dominance of red oak (>25%) in association with both northern and central hardwoods. Red Oak - Sugar Maple Transition Forest is very similar but lacks the tulip trees, and lacks a strong mix of species of northern areas (sugar, mountain, and striped maples and bluebead lily) combined with more southern or coastal species (called central hardwoods), such as tulip tree and sassafras. Other types of oak forest lack large populations of tulip trees and sugar maples.

**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). These small patch communities would constitute only parts of the habitats of many animals found in them. Acorns are important for wildlife including white-tailed deer (*Odocoileus virginianus*), black bear (*Ursus americanus*), grey squirrel (*Sciurus carolinensis*), and other small rodents. Birds include Wild Turkeys (*Meleagris gallopavo*) in areas with sufficiently large forests to provide all the habitat needs. Passerine birds of oak forests include Red-eyed Vireo (*Vireo olivaceus*), Ovenbird (*Seiurus aurocapillus*), Black-and-white Warbler (*Mniotilta varia*), Scarlet Tanager (*Piranga olivacea*), Great Crested Flycatcher (*Miarchus crinitus*), Downy Woodpecker (*Picoides pubescens*), Hairy Woodpecker (*P. villosus*), and Red-bellied Woodpecker (*Melanerpes carolinus*). Likely amphibians include northern redback salamanders (*Plethodon cinereus*) and spotted salamanders (*Ambystoma maculatum*). Ringneck snake (*Diadophis punctatus*) and redbelly snake (*Storeria occipitomaculata*) would be expected.

**Public Access:** Robinson State Park, Agawam; Douglas State Forest, Douglas.

**Threats:** Major threat is invasive plants, particularly *Berberis thunbergii*. Exotic species, including *Rosa multiflora* and *Alliaria petiolata*, may be present in the shrub and herb layers of disturbed stands.

**Management Needs:**

**USNVC/NatureServe:** A3303 *Quercus rubra* - *Acer saccharum* - *Betula lenta* Forest Alliance High Allegheny Rich Red Oak - Sugar Maple Forest [CEGL006125]; A2054 *Fagus grandifolia* - *Quercus rubra*/*Cornus florida* Forest Alliance.