Black Gum - Pin Oak - Swamp White Oak Perched Swamp

State Rank: S1 - Critically Imperiled

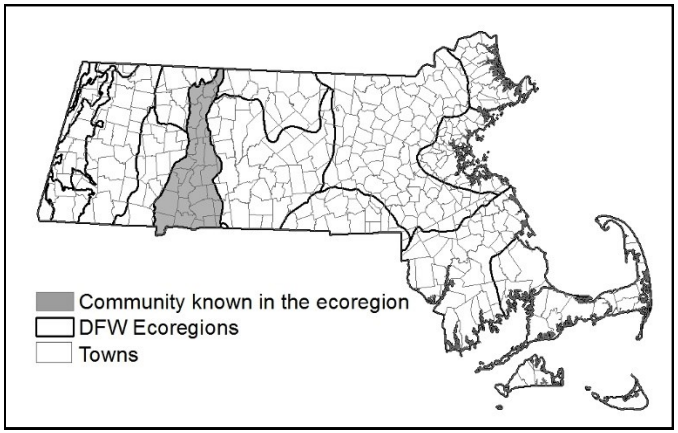
Black Gum leaves. Photo: Chris Evans, Illinois Wildlife Action Plan, Bugwood.org

Black Gum - Pin Oak - Swamp White Oak Perched swamp is an unusual type of wetland found in Massachusetts in one area of the Connecticut River Valley. This community type is dominated by red maple, with black gum, pin oak, and swamp white oak.

Description: Black Gum - Pin Oak - Swamp White Oak Perched Swamps (perched swamps) are closed canopy deciduous forests that occur on flat former lake beds of Glacial Lake Hitchcock in the Connecticut River valley. The glacial lake substrate includes layers of clay overlain by silt and sand. The relatively impermeable nature of the clay layer produces a locally perched water table that is not directly connected to the regional water tables, and supports this wetland community that is not found in the active floodplains of the river. The surface topography is hummock and hollow with the hummocks about 0.5 m (about 1.5 ft.) high. With the exception of some sedges most of the vegetation is confined to the hummocks. The sites are wet at least seasonally, flooding in the spring and drying out over the summer. Perched swamps are found at low elevations and are often nested within larger wetland systems.

Characteristic Species: The forest canopy is generally closed. The stands are a mosaic of microsites with different degrees of wetness supporting slightly different species mixes. In general, red maple dominates the overstory, but at least two of black gum, pin oak, and swamp white oak are present, often in abundance. Other hardwoods regularly occur as scattered individuals. Drier sites include eastern hemlock as a common associate with yellow birch consistently present at low densities. All sites have a fairly dense shrub layer. Common species include highbush blueberry, northern arrow-wood, common winterberry, witch hazel, and serviceberry. The wettest sites also have spicebush or often buttonbush. Mountain laurel is found in the drier sites, often in dense thickets. The herbaceous layer is variable but cinnamon fern occurs at all known sites. Other common herbaceous species are Canada mayflower, goldthread, Indian cucumber-root, and various fern and sedge species, particularly in the wetter sites. One of the most striking characteristics of this swamp forest is the high coverage of ferns. Netted chain-fern, a southern coastal plain species occurs at some sites.

Pin oak leaves. Photo: Paul Wray, Iowa State University, Bugwood.org



Differentiating from Related Communities: Black Gum - Pin Oak - Swamp White Oak Perched Swamps are known only from the Connecticut River Valley in areas underlain by clays in lakebed sediments of glacial Lake Hitchcock. The presence of fairly high proportions of black gum, pin oak and swamp white oak in the canopy, in addition to the topographic setting, distinguish the type. Red Maple - Black Gum Swamps are generally in small topographically constrained basins surrounded by upland forests. Black gum needs to be dominant or codominant in large areas of the swamp for the occurrence to be a black gum swamp, but they don't have high proportions of pin oak or swamp white oak. Red Maple Swamps may have black gum, or occasional pin oak or swamp white oak in low proportions in the canopy, but not as dominants or codominants.

Habitat for Associated Fauna: Black Gum - Pin Oak - Swamp White Oak Perched Swamps contribute variation within the habitats of large, mobile animals. Swamps can function as vernal pool habitat if water remains standing for 2-3 months and they lack fish; these areas provide important amphibian breeding habitat.

Examples with Public Access: Lawrence Swamp, Amherst; Great Swamp, Whately.

Swamp White Oak leaves, showing the two colors of the different sides of the leaves. Photo: Paul Wray, Iowa State university, Bugwood.org.

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