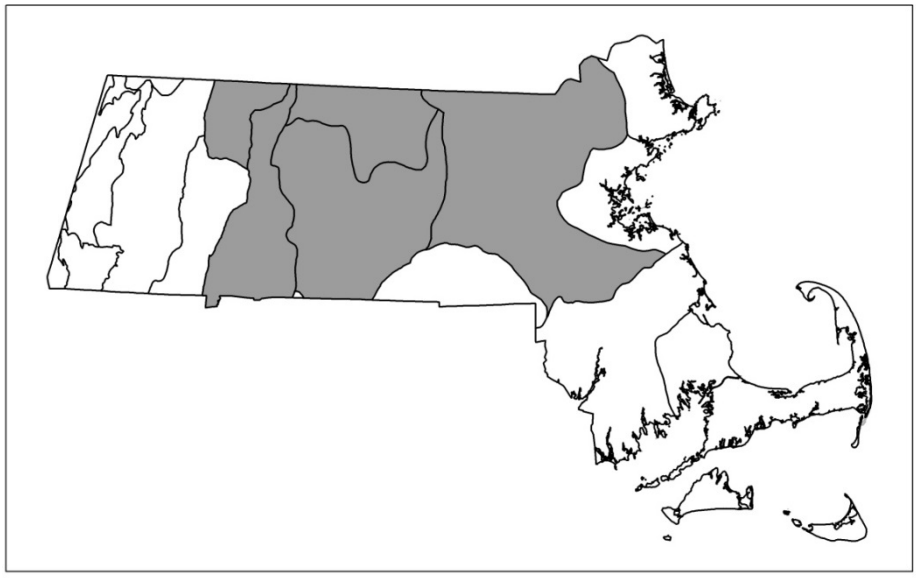
Red Maple – Black Ash Swamp

Community Code: CP1A2A2000

State Rank: S2



Concept: A rich variant of Red Maple Swamps in which black ash (*Fraxinus nigra*) is abundant in the canopy. Red Maple - Black Ash Swamps are associated with circumneutral groundwater seepage.

Environmental Setting: Red Maple - Black Ash Swamps are deciduous wetland forests characterized by a high diversity of tree species and dominated by red maple and black ash, with a relatively diverse herbaceous layer and many tall shrubs in the understory. They typically occur in areas with circumneutral groundwater seepage (the pH of black ash swamps in Essex County ranges between 7.0 and 7.4) and are relatively wet with seasonal inundation in depressions at or near the headwaters of streams, especially in the northern part of the state. Occasionally, they occur on sloping edges of river floodplains, adjacent to upland slopes where seepage input occurs or as small seepy pockets within larger Red Maple Swamp matrices. The surface topography is hummock and hollow, with fluctuating surface water levels in between the hummocks.

Vegetation Description: Red maple (*Acer rubrum*) and black ash (*Fraxinus nigra*) are prominent in the canopy and sub-canopy. Black ash trees do not usually grow very large in these wet environments and can be most abundant in the subcanopy. Common associates in the canopy include yellow birch (*Betula alleghaniensis*), white pine (*Pinus strobus*), and hemlock (*Tsuga canadensis*), all of which vary in abundance from site to site. The subcanopy is characterized by black ash and often American elm (*Ulmus americana*), with saplings of canopy tree species. The shrub layer is variable in cover, although relatively high in species diversity. The most characteristic shrub encountered in these swamps is winterberry (*Ilex verticillata*). Other common

associates include highbush blueberry (*Vaccinium corymbosum*), poison sumac (*Toxicodendron vernix*), speckled alder (*Alnus incana* ssp. *rugosa*), and spicebush (*Lindera benzoin*). Occasional shrubs include witch-hazel (*Hamamelis virginiana*), silky dogwood (*Swida amomum*), northern arrow-wood (*Viburnum dentatum* var. *lucidum*), and mountain holly (*Ilex mucronata*). In addition, saplings of most of the tree canopy species are also present in the shrub layer. The herbaceous layer is lush and diverse. Cinnamon fern (*Osmundastrum cinnamomeum*) and skunk cabbage (*Symplocarpus foetidus*) are usually the most abundant herbaceous species, with a high coverage of other ferns, including royal fern (*Osmunda regalis* var. *spectabilis*), marsh-fern (*Thelypteris palustris*), and sensitive fern (*Onoclea sensibilis*). Herbaceous associates include seep indicators like swamp saxifrage (*Micranthes pensylvanica*), golden ragwort (*Packera aurea*), foamflower (*Tiarella cordifolia*), and golden saxifrage (*Chrysosplenium americanum*), as well as widespread forest wetland species such as jewelweed (*Impatiens capensis*), jack-in-the-pulpit (*Arisaema triphyllum*), water avens (*Geum rivale*), goldthread (*Coptis trifolia*), tussock sedge (*Carex stricta*), and fowl meadow-grass (*Glyceria striata*). Mosses (predominantly *Sphagnum* spp.), can be dense on the hummocks, although there is little buildup of peat.

Differentiating Occurrences: Red Maple - Black Ash Swamps (black ash swamps) are an enriched variant of Red Maple Swamps that are very similar in structure and general species composition. However, to be a black ash swamp, black ash must be of sufficient abundance to be close to codominant in the canopy/subcanopy in at least parts of the swamp; otherwise, the site would be considered to be within the variation of the broadly defined Red Maple Swamp which may include scattered black ash trees. Black ash swamps generally include more abundant indicators of enriched seepage than do Red Maple Swamps. Red Maple - Black Ash - Bur Oak Swamps (bur oak swamps) are similar in structure and species composition to Red Maple - Black Ash Swamps (black ash swamps), but bur oak swamps occur in Berkshire County near marble/limestone bedrock and black ash swamps occur east of Berkshire County. Both are forested wetlands with fairly closed canopies;, but only the bur oak swamps have bur oak (*Quercus macrocarpa*) or bur oak/swamp white oak (*Q. bicolor*) hybrids. They also have more ironwood (*Carpinus caroliniana*) in the tall shrub layer. Red Maple - Black Ash - Tamarack Calcareous Seepage Swamps (calcareous seepage swamps) have sparser canopies than black ash swamps. The clearest difference may be that even in openings, black ash swamps do not have the strong calciphiles found in calcareous seepage swamps. Calciphiles include shrubby cinquefoil (*Dasiphora floribunda*), grass-of-Parnassus (*Parnassia glauca*), Kalm's lobelia (*Lobelia kalmii*), alder-leaf buckthorn (*Rhamnus alnifolia*), hemlock parsley (*Conioselinum chinense*), autumn and hoary willows (*Salix serissima* and *S. candida*), and slender cotton-grass (*Eriophorum gracile*).Rich Conifer Swamps also have closed canopies but with high proportions of eastern hemlock (*Tsuga canadensis*), red spruce (*Picea rubens*), or balsam fir (*Abies balsamea*) as important canopy species, along with variable amounts of hardwoods and white pine. Black ash is an occasional species rather than a co-dominant.

Associated Fauna: Red Maple - Black Ash 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.

Public Access: Oxbow National Wildlife Refuge, Harvard; Tully Lake Reservation (US Army Corps of Engineers), Royalston; Satan's Kingdom WMA, Northfield; Mt. Holyoke Range State Park, South Hadley.

Threats: Known threats include alteration of natural seepage and logging. More information is needed to determine the greatest threats to black ash swamps.

Management Needs: More information is needed to assess the management needs of black ash swamps.

USNVC/NatureServe: *Fraxinus nigra - Acer rubrum* Saturated Forest Alliance: *Acer rubrum - Fraxinus nigra* - (*Tsuga canadensis*)/*Tiarella cordifolia* Forest (CEGL006502); Related to: *Acer rubrum -Fraxinus pennsylvanica* Seasonally Flooded Forest Alliance: *Fraxinus nigra-Acer rubrum*/*Nemopanthus mucronatus-Vaccinium corymbosum* Forest (CEGL006220).