



Red Maple – Black Ash – Tamarack Calcareous Seepage Swamp

Community Code: CP1B2B0000

State Rank: S2



Concept: Mixed deciduous-coniferous forested swamps with a sparse canopy occurring in areas where there is calcareous groundwater seepage. The species-rich herbaceous layer is characterized by calcium-loving species. Calcareous seepage swamps can also be called forested fens.

Environmental Setting: Red Maple - Black Ash - Tamarack Calcareous Seepage Swamps are wetland forests characterized by fairly short and sparse deciduous and coniferous trees and a diverse mix of shrub and herbaceous species. There are relatively high pH levels and high availability of calcium from surrounding limestone bedrock and soils. Distinctive characteristics include the presence of trees and high numbers of calcium-loving species. Otherwise, they grade into other types of wetlands and calcareous communities. These swamps generally occur in basins, but may have streams flowing through or adjacent to them. Soils usually have up to 12 inches of mucky organic material over mineral layers. Generally, the surface has a hummocky topography from tree tip-up mounds and mosses growing over shrub stems. The canopy may be open or somewhat closed with openings, so that light availability to the surface is variable across an occurrence.

Vegetation Description: A variable mixture of deciduous and coniferous trees forms the sparse canopy, but black ash (*Fraxinus nigra*), tamarack (*Larix laricina*), and red maple (*Acer rubrum*) are most common. Associated tree species may include yellow birch (*Betula alleghaniensis*), American elm (*Ulmus americana*), white pine (*Pinus strobus*), and eastern hemlock (*Tsuga canadensis*), depending on the site. At elevations above ~1000 ft., red spruce (*Picea rubens*), balsam fir (*Abies balsamea*), and Canada yew (*Taxus canadensis*) can also occur. Ironwood (*Carpinus caroliniana*) is characteristic



of the subcanopy. The shrub layer can be dense and diverse. Characteristic species are poison sumac (*Toxicodendron vernix*) and alder-leaf buckthorn (*Rhamnus alnifolia*), mixed with speckled alder (*Alnus rugosa*), gray dogwood (*Swida racemosa*), winterberry (*Ilex verticillata*), spicebush (*Lindera benzoin*), meadowsweet (*Spiraea alba* var. *latifolia*), and highbush blueberry (*Vaccinium corymbosum*). Shrubby cinquefoil (*Dasiphora floribunda*) often occurs in open areas. The herbaceous layer is diverse with many calciphilic (calcium-loving) species mixed in with other common wetland plants. Characteristic calciphiles are delicate sedge (*Carex leptalea*), brome-like sedge (*Carex bromoides*), long-stalked sedge (*Carex pedunculata*), rough-leaved goldenrod (*Solidago patula*), and golden ragwort (*Packera aurea*). Widespread species that usually occur in the herbaceous layer are skunk cabbage (*Symplocarpus foetidus*), sensitive fern (*Onoclea sensibilis*), royal fern (*Osmunda regalis*), jewelweed (*Impatiens capensis*), naked mitrewort (*Mitella nuda*), and additional sedges such as lakeside sedge (*Carex lacustris*). At one site, more than 80 species were counted in the herbaceous layer. This community type also has a concentration of state-protected rare plant species.

Differentiating Occurrences: This calcareous seepage swamp is more of a sparse wet woodland than related swamps, but it is shrubbier with more scattered low trees than most calcareous fens. All calcareous wetlands include shrubby cinquefoil (*Dasiphora floribunda*). Most also have other calciphiles (calcium-loving plants) such as grass-of-Parnassus (*Parnassia glauca*), Kalm's lobelia (*Lobelia kalmii*), hemlock parsley (*Conioselinum chinense*), alder-leaf buckthorn (*Rhamnus alnifolia*), autumn and hoary willows (*Salix serissima* and *S. candida*), and slender cotton-grass (*Eriophorum gracile*). Within a given site, calcareous fen communities grade from one to another as conditions change. Red Maple - Black Ash -Tamarack Calcareous Seepage Swamps are dominated by sparse trees and tall shrubs. Small openings share many of the species and conditions of Calcareous Sloping Fens or Calcareous Seepage Marshes, either or both of which may occur in mosaics in the same wetland. Calcareous Seepage Marshes lack the tree cover of the calcareous seepage swamps. They share species with both Shallow and Deep Emergent Marshes, but contain more calciphiles. Calcareous Sloping Fens may have tall shrubs and short trees in scattered patches. A diverse herbaceous layer dominates the vegetation. They are on shallow to moderate slopes and peat is mostly restricted to sedge hummocks. Calcareous Basin Fens have deep (> 2.0 meters (6.5 ft.)) peat in basins. They are dominated by sedges with a sparse shrub layer; they generally contain a more developed bryophyte layer than the other calcareous fens. Red Maple - Black Ash - Bur Oak Swamps and Red Maple - Black Ash Swamps have more closed canopies and do not have the strong calciphiles found in the Red Maple - Black Ash - Tamarack Calcareous Seepage Swamps. Stands of bur oak or bur oak/swamp white oak hybrids are more likely in Red Maple - Black Ash - Bur Oak Swamps than calcareous seepage swamps. Rich Conifer Swamps are high-elevation (>1000 ft.) forested wetlands that often include some calciphiles and other species found in calcareous seepage swamps but contain significant amounts of red spruce (*Picea rubens*) and/or balsam fir (*Abies balsamea*).



- Associated Fauna:** Calcareous seepage 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:** Due to the sensitivity of calcareous wetlands to damage from visitation, most land owners prefer not to publicize the locations.
- Threats:** Logging, nutrient inputs such as road salts, damming by beavers, and alterations of water levels threaten this community. Water level disturbance can lead to the invasion by non-native plants, including the aggressive exotics purple loosestrife (*Lythrum salicaria*), Tatarian honeysuckle (*Lonicera tatarica*), and Morrow's honeysuckle (*Lonicera morrowii*). Phragmites (*Phragmites australis*) is also an aggressive exotic in disturbed forested fens.
- Management Needs:** Removal/control of non-native plant species, especially phragmites.
- USNVC/NatureServe:** *Fraxinus nigra* - *Acer rubrum* Saturated Forest Alliance -- *Fraxinus nigra*-*Acer rubrum*-(*Larix laricina*)/*Rhamnus alnifolia* Forest [CEGL006009].