

Red Maple – Mixed shrub Palustrine Woodland



System: Palustrine

Subsystem: Woodland

PA Ecological Group(s): Basin Wetland

Global Rank: G4G5

State Rank: S5

General Description

This community type usually occurs on mineral soil with a thin layer of muck. The pH is somewhat acidic to circumneutral. Trees are sparse (10-60% cover) and generally less than 30 feet tall. Red maple (*Acer rubrum*) dominates the canopy, sometimes with a mixture of other trees such as blackgum (*Nyssa sylvatica*), Eastern hemlock (*Tsuga canadensis*), eastern white pine (*Pinus strobus*), black willow (*Salix nigra*), swamp white oak (*Quercus bicolor*), pin oak (*Q. palustris*), and black ash (*Fraxinus nigra*). The shrub layer is typically dense and includes silky dogwood (*Cornus amomum*), winterberry (*Ilex verticillata*), spicebush (*Lindera benzoin*), smooth alder (*Alnus serrulata*), silky willow (*Salix sericea*), swamp rose (*Rosa palustris*), and buttonbush (*Cephalanthus occidentalis*). Ferns usually dominate the herbaceous layer. Characteristic species include marsh fern (*Thelypteris palustris*), cinnamon fern (*Osmunda cinnamomea*), sensitive fern (*Onoclea sensibilis*), crested wood fern (*Dryopteris cristata*), and royal fern (*Osmunda regalis*). Other herbs include skunk-cabbage (*Symplocarpus foetidus*),

beggar-ticks (*Bidens* spp.), jewelweed (*Impatiens capensis*), and in wetter areas, arrow-arum (*Peltandra virginica*), wapato (*Sagittaria latifolia*), and marsh-marigold (*Caltha palustris*).

Rank Justification

Uncommon but not rare; some cause for long-term concern due to declines or other factors.

Identification

- Tree cover between 10 and 60%, dominated by red maple (*Acer rubrum*) and usually less than 30 feet tall
- Shrub layer is extremely dense with shrubs growing on hummocks, including silky dogwood (*Cornus amomum*), winterberry (*Ilex verticillata*), spicebush (*Lindera benzoin*), smooth alder (*Alnus serrulata*), silky willow (*Salix sericea*), swamp rose (*Rosa palustris*), and buttonbush (*Cephalanthus occidentalis*).
- Have standing water between the hummocks for most of the year with wapato (*Sagittaria latifolia*), bur-reed (*Sparganium americanum*), and other emergent aquatic plants

Characteristic Species

Trees

- [Red maple \(*Acer rubrum*\)](#)
- [Gray birch \(*Betula populifolia*\)](#)
- [Blackgum \(*Nyssa sylvatica*\)](#)
- [Black willow \(*Salix nigra*\)](#)

Shrubs

- [Smooth alder \(*Alnus serrulata*\)](#)
- [Swamp rose \(*Rosa palustris*\)](#)
- [Spicebush \(*Lindera benzoin*\)](#)
- [Silky dogwood \(*Cornus amomum*\)](#)
- [Buttonbush \(*Cephalanthus occidentalis*\)](#)

Herbs

- [Cinnamon fern \(*Osmunda cinnamomea*\)](#)
- [Marsh fern \(*Thelypteris palustris*\)](#)
- [Skunk cabbage \(*Symplocarpus foetidus*\)](#)
- [Jewelweed \(*Impatiens capensis*\)](#)
- [Canada bluejoint \(*Calamagrostis canadensis* var. *canadensis*\)](#)

Vines

- [Virginia-creeper \(*Parthenocissus quinquefolia*\)](#)
- [Poison-ivy \(*Toxicodendron radicans*\)](#)

Bryophytes

- [Sphagnum spp.](#)

International Vegetation Classification Associations:

[Southern New England / Northern Piedmont Red Maple Seepage Swamp](#) (CEGL006406)

NatureServe Ecological Systems:

[Northern Appalachian-Acadian Conifer-Hardwood Acidic Swamp](#) (CES201.574)

[North-Central Appalachian Acidic Swamp](#) (CES202.604)

[Central Appalachian Stream and Riparian](#) (CES202.609)

Origin of Concept

Pennsylvania Community Code

WM : Red Maple – Mixed Shrub Palustrine Woodland

Similar Ecological Communities

Red Maple – Mixed shrub Palustrine Woodland differs from the Red Maple – Highbush Blueberry Palustrine Woodland and Red Maple – Sedge Palustrine Woodland in that the dominant shrub species is a combination of silky dogwood (*Cornus amomum*), winterberry (*Ilex verticillata*), spicebush (*Lindera benzoin*), smooth alder (*Alnus serrulata*), silky willow (*Salix sericea*), swamp rose (*Rosa palustris*), and/or buttonbush (*Cephalanthus occidentalis*). Red Maple – Sedge Palustrine Woodland lacks a definitive shrub layer and is dominated by sedge species in the herb layer. Red Maple – Highbush Blueberry Palustrine Woodland has a shrub layer dominated by highbush blueberry (*Vaccinium corymbosum*).

Fike Crosswalk

Red Maple – Mixed shrub Palustrine Woodland

Conservation Value

This community serves as nesting habitat for birds such as swamp sparrow (*Melospiza georgiana*), yellow-rumped warbler (*Dendroica coronata*), and American goldfinch (*Carduelis tristis*) as well as foraging habitat for wood ducks (*Aix sponsa*), black ducks (*Anas rubripes*), and bat species. This community may serve as habitat for many species of dragonflies and damselflies. This community also serves as a buffer for sediment and pollution runoff from adjacent developed lands by slowing the flow of surficial water causing sediment to settle within this wetland.

Threats

Red Maple – Mixed shrub Palustrine Woodlands are threatened by habitat alteration in the watersheds they occupy and nutrient input from surrounding uplands. Clearing and development of adjacent land can lead to an accumulation of run-off, pollution, and sedimentation. Clearing adjacent lands can also lead to wind damage since the trees have shallow root systems. Alterations to the hydrologic regime (beaver dams, road crossings that impede water movement, lowering or raising of water tables) may actually encourage this wetland type. Invasive exotic plant species are a threat when there is nutrient input from surrounding uplands. Species such as common reed (*Phragmites australis* ssp. *australis*), purple loosestrife (*Lythrum salicaria*), and other exotic invasive species can become abundant with increases in nutrients, sediments, and other disturbances.

Management

A natural buffer around the wetland should be maintained in order to minimize nutrient runoff, pollution, and sedimentation. The potential for soil erosion based on soil texture, condition of the adjacent vegetation (mature forests vs. clearcuts), and the topography of the surrounding area (i.e., degree of slope) should be considered when establishing buffers. The buffer size should be increased if soils are erodible, adjacent vegetation has been logged, and the topography is steep as such factors could contribute to increased sedimentation and nutrient pollution. Direct impacts and habitat alteration in the wetland should be avoided (e.g., roads, trails, filling of wetlands). Where disturbances are unavoidable, the wetland should be monitored for changes in vegetation, especially invasive species.

Research Needs

Variations may occur at ecoregional levels. There is a need to collect plot data to characterize variations and guide further classification of this community.

Trends

This community tends to benefit from disturbance and may be expanding due to beaver population expansion as well as hydrological alterations resulting from housing development and road construction.

Range Map



Pennsylvania Range

Statewide

Global Distribution

Connecticut, Delaware, Maine, Massachusetts, New Hampshire, New Jersey, Pennsylvania, Rhode Island, and Vermont

References

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. La Roe. 1979. Classification of wetlands and deepwater habitats of the United States. U.S. Fish and Wildlife Service. Washington, D.C. 131 pp.

Edinger, G. J., D.J. Evans, S. Gebauer, T. G. Howard, D. M. Hunt, and A. M. Olivero. 2002. Ecological Communities of New York State. Second Edition. A revised and expanded edition of Carol Reschke's Ecological Communities of New York State. New York Natural Heritage Program, New York State Department of Environmental Conservation. Albany, NY. 136 pp.

Fike, J. 1999. Terrestrial and palustrine plant communities of Pennsylvania. Pennsylvania Natural Diversity Inventory. Harrisburg, PA. 79 pp.

Golet, F.C., A.J.K. Calhoun, W.R. DeRagon, D.J. Lowery and A.J. Gold. 1993. Ecology of Red Maple Swamps in the Glaciated Northeast: a Community Profile. U.S. Dept. of Interior, Fish and Wildlife Service, Washington, D.C.

NatureServe. 2009. NatureServe Central Databases. Arlington, Virginia. USA.

Rhoads, A.F. and T.A. Block. 2007. *The Plants of Pennsylvania*, 2nd ed. University of Pennsylvania Press.

Thompson, E. 1996. Natural communities of Vermont uplands and wetland. Nongame and Natural Heritage Program, Department of Fish and Wildlife in cooperation with The Nature Conservancy, Vermont chapter.

Wenger, S. 1999. A Review of the Scientific Literature on Riparian Buffer Width, Extent and Vegetation. Office of Public Outreach, Institute of Ecology, Univ. of Georgia, Athens.

Rhoads, Ann F. and Timothy A. Block. 1999. Natural Areas Inventory of Bucks County, Pennsylvania. Bucks County Commissioners, Doylestown, PA.

Rhoads, Ann F. and Timothy A. Block. 2002. Nescopeck State Park; Inventory of PNDI-listed Plants and Plant Communities. Report submitted to DCNR, Bureau of State Parks.

Rhoads, Ann F. and Timothy A. Block. 2005. Jacobsburg Environmental Education Center Vegetation Inventory. Report submitted to DCNR, Bureau of State Parks.

Khan, Nancy R., Ann F. Rhoads, and Timothy A. Block. 2005. Characterization and assessment of the Floristic Resources in Evansburg State Park. Report submitted to DCNR, Bureau of State Parks.

Rhoads, Ann F. and Timothy A. Block. 2006. Vegetation Inventory of Gouldsboro State Park. Report submitted to DCNR, Bureau of State Parks.

Khan, Nancy R., Ann F. Rhoads, and Timothy A. Block. 2008. Vascular flora and community assemblages of Evansburg State Park, Montgomery County, Pennsylvania. *Bulletin of the Torrey Botanical Club* 135(3): 438-458.

Rhoads, Ann F. and Timothy A. Block. 2008. Natural Resources Inventory of French Creek State Park. Report submitted to DCNR, Bureau of State Parks.

Horvath, Jamie L., Timothy A. Block, and Ann F. Rhoads. 2008. Description of the population, canopy cover, and associated vegetation of the globally rare sedge *Carex polymorpha* (Cyperaceae) in Nescopeck State Park, Pennsylvania. In *Sedges: Uses, Diversity, and Systematics of the Cyperaceae*, eds. R. Naczi and B. Ford. Missouri Botanical Garden Press, St. Louis, MO.

Rhoads, Ann F. and Timothy A. Block. 2008. Natural Areas Inventory Update, Montgomery County, Pennsylvania. Montgomery County Planning Commission, Norristown, PA.

Stone, B., D. Gustafson, and B. Jones. 2006 (revised). Manual of Procedure for State Game Land Cover Typing. Commonwealth of Pennsylvania Game Commission, Bureau of Wildlife Habitat Management,

Forest Inventory and Analysis Section, Forestry Division. Harrisburg, PA. 79 ppg.

Pennsylvania Department of Conservation and Natural Resources (DCNR). 1999. Inventory Manual of Procedure. For the Fourth State Forest Management Plan. Pennsylvania Bureau of Forestry, Division of Forest Advisory Service. Harrisburg, PA. 51 ppg.