Red Maple – Sedge Palustrine Woodland

System: Palustrine
Subsystem: Woodland
PA Ecological Group(s): Basin Wetland

Global Rank: G3G5
State Rank: S5

General Description

This type typically occurs in areas of past impoundment (often by beaver). Red maple (*Acer rubrum*) is often the only tree species, although scattered blackgum (*Nyssa sylvatica*), eastern white pine (*Pinus strobus*), Eastern hemlock (*Tsuga canadensis*), birch (*Betula* spp.), swamp white oak (*Quercus bicolor*), pin oak (*Quercus palustris*), and others may also occur. There are frequently numerous snags and stumps of trees drowned out by fluctuating water levels. Depending on the condition of the dam and time since impoundment, the area may be very wet with areas of open water to nearly dry. Typically there is a thick sedge layer with a pronounced hummock and hollow microtopography and live or dead trees on many of the larger hummocks. The shrub layer is variable; it may be dense, especially at the upland border, to nearly absent. Some of the possible shrub species are smooth alder (*Alnus serrulata*), highbush blueberry (*Vaccinium corymbosum*), winterberry (*Ilex verticillata*), leatherleaf (*Chamaedaphne calyculata* var. *angustifolia*), meadow-sweet (*Spiraea latifolia*), steeplebush (*Spiraea tomentosa*), silky willow (*Salix sericea*), arrow-wood (*Viburnum recognitum*), silky dogwood (*Cornus amomum*), and elderberry (*Sambucus canadensis*). The herbaceous layer is strongly dominated by sedges; the most common species is tussock sedge (*Carex stricta*), although other sedge species (e.g., *C. lurida*, *C. intumescens*, *C. canescens*, *C. stipata,* and *C. tribuloides*) may also occur. Other herbaceous species include bluejoint (*Calamagrostis canadensis*), fly-away grass (*Agrostis scabra*),

rushes (*Juncus* spp.), three-way sedge (*Dulichium arundinaceum* var. *arundinaceum*), and marsh St. John's-wort (*Triadenum virginicum*), 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

- Evidence of past impoundment
- Basins or streamside depressions with muck or mineral soils with a surface organic layer
- Pronounced hummock and hollow microtopography
- Dominated by red maple (*Acer rubrum*), tussock sedge (*Carex stricta*), and various other sedges (*C. lurida, C. intumescens, C. canescens, C. stipata, and C. tribuloides*)

Characteristic Species

Trees

- Red maple (*Acer rubrum*)
- Blackgum (*Nyssa sylvatica*)
- Eastern white pine (*Pinus strobus*)
- Eastern hemlock (*Tsuga canadensis*)
- Swamp white oak (*Quercus bicolor*)
- Pin oak (*Quercus palustris*)

Shrubs

- Smooth alder (*Alnus serrulata*)
- Highbush blueberry (*Vaccinium corymbosum*)
- Winterberry (*Ilex verticillata*)
- Leatherleaf (*Chamaedaphne calyculata* var. *angustifolia*)
- Meadow-sweet (*Spiraea latifolia*)
- Steeple-bush (*Spiraea tomentosa*)
- Silky willow (*Salix sericea*)
- Northern arrow-wood (*Viburnum recognitum*)
- Silky dogwood (*Cornus amomum*)
- American elder (*Sambucus canadensis*)

Herbs

- Tussock sedge (*Carex stricta*)
- Sedge (*Carex lurida*)
- Sedge (*Carex intumescens*)
- Sedge (*Carex canescens*)
- Sedge (*Carex stipata*)

- Sedge (*Carex tribuloides*)
- Canada bluejoint (*Calamagrostis canadensis* var. *canadensis*)
- Fly-away grass (*Agrostis scabra*)
- Rushes (*Juncus* spp.)
- Three-way sedge (*Dulichium arundinaceum* var. *arundinaceum*)
- Marsh St. John's-wort (*Triadenum virginicum*)
- Arrow-arum (*Peltandra virginica*)
- Wapato (*Sagittaria latifolia*)
- Marsh-marigold (*Caltha palustris*)

Bryophytes

- *Sphagnum* spp.

International Vegetation Classification Associations:

Red Maple / Tussock Sedge Wooded Marsh (CEGL006119)

NatureServe Ecological Systems:

Northern Appalachian-Acadian Conifer-Hardwood Acidic Swamp (CES201.574)
North-Central Appalachian Acidic Swamp (CES202.604)

Origin of Concept

Pennsylvania Community Code

WD : Red Maple – Sedge Palustrine Woodland

Similar Ecological Communities

Red Maple – Sedge Palustrine Woodland, Red Maple – Mixed shrub Palustrine Woodland, and Red Maple – Highbush Blueberry Palustrine Woodland can occur in similar habitats and can grade into each other. The main distinguishing feature for Red Maple – Sedge Palustrine Woodland is the dominance of sedge species in the herb layer as well as the lack of a shrub layer that defines the Red Maple – Mixed shrub Palustrine Woodland and Red Maple – Highbush Blueberry Palustrine Woodland types.

Fike Crosswalk

Red Maple – Sedge Palustrine Woodland

Conservation Value

Red Maple – Sedge Palustrine Woodland is potential habitat for bog turtles (*Glyptemys muhlenbergii*) and marsh birds. 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

Alteration to the current hydrological regime and succession are major threats to this community and can lead to habitat destruction and/or shifts in community function and dynamics. Clearing and development of adjacent land can lead to an accumulation of agricultural run-off and pollution, sedimentation, and insolation/thermal pollution. Invasive plant species such as purple loosestrife (*Lythrum salicaria*) and Japanese stiltgrass (*Microstegium vimineum*) can be common in this community.

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 should be avoided (e.g., roads, trails, filling of wetlands) and low impact alternatives (e.g., elevated footpaths, boardwalks, bridges) should be utilized in situations where accessing the wetland can not be avoided. Care should also be taken to control and prevent the spread of invasive species within the wetland. Alterations to groundwater sources should be minimized.

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

Wetland protection has most likely stabilized the decline of wetlands in general. Beaver activity has probably increased occurrences of this community type and the relative trend for this community is likely stable. The absence of beaver impoundments could result in a decrease of this community as it succeeds into the Red Maple – Mixed Shrub Palustrine Woodland or a forested wetland.

Range Map

Pennsylvania Range

Statewide

Global Distribution

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

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