

Red Maple – Magnolia Palustrine Forest



System: Palustrine

Subsystem: Forest

PA Ecological Group(s): River Floodplain and Basin Wetland and Coastal Plain

Global Rank: G3?

State Rank: S1

General Description

This community type is largely restricted to low-lying areas of the Coastal Plain, with outliers occurring in the Piedmont and South Mountain sections. The dominant trees are red maple (*Acer rubrum*), sweet-bay magnolia (*Magnolia virginiana*), blackgum (*Nyssa sylvatica*), sweetgum (*Liquidambar styraciflua*), and swamp white oak (*Quercus bicolor*). Shrubs include sweet pepperbush (*Clethra alnifolia*), fetterbush (*Leucothoe racemosa*), winterberry (*Ilex verticillata*), smooth winterberry (*Ilex laevigata*), highbush blueberry (*Vaccinium corymbosum*), swamp azalea (*Rhododendron viscosum*), and possum-haw (*Viburnum nudum*). The herbaceous layer is often sparse; species include marsh St. John's-wort (*Triadenum virginicum*) in openings, violets (*Viola* spp.), royal fern (*Osmunda regalis*), cinnamon fern (*Osmunda cinnamomea*), and other ferns, sedges, and sphagnum.

Rank Justification

Critically imperiled in the jurisdiction because of extreme rarity or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation.

Identification

- Nutrient poor, acidic swamp forest
- Found on the Coastal Plain and some areas in the Piedmont

- Groundwater fed
- Moderately deep to deep muck over mineral soils with standing water
- Co-dominance of red maple (*Acer rubrum*) with sweet-bay magnolia (*Magnolia virginiana*), sweetgum (*Liquidambar styraciflua*), and blackgum (*Nyssa sylvatica*)

Characteristic Species

Trees

- [Red maple \(*Acer rubrum*\)](#)
- [Sweet-bay magnolia \(*Magnolia virginiana*\)](#)
- [Blackgum \(*Nyssa sylvatica*\)](#)
- [Sweetgum \(*Liquidambar styraciflua*\)](#)
- [Swamp white oak \(*Quercus bicolor*\)](#)

Shrubs

- [Sweet pepperbush \(*Clethra alnifolia*\)](#)
- [Fetter-bush \(*Leucothoe racemosa*\)](#)
- [Winterberry \(*Ilex verticillata*\)](#)
- [Smooth winterberry \(*Ilex laevigata*\)](#)
- [Highbush blueberry \(*Vaccinium corymbosum*\)](#)
- [Swamp azalea \(*Rhododendron viscosum*\)](#)
- [Possum-haw \(*Viburnum nudum*\)](#)
- [Shadbush \(*Amelanchier canadensis*\)](#)

Herbs

- [Marsh St. John's-wort \(*Triadenum virginicum*\)](#)
- [Violets \(*Viola* spp.\)](#)
- [Cinnamon fern \(*Osmunda cinnamomea*\)](#)
- [Royal fern \(*Osmunda regalis*\)](#)
- [Southern twayblade \(*Listera australis*\)](#)

Bryophytes

- [Sphagnum spp.](#)

International Vegetation Classification Associations:

[Southern Red Maple - Blackgum Swamp Forest](#) (CEGL006238)

NatureServe Ecological Systems:

[Northern Atlantic Coastal Plain Stream and River](#) (CES203.070)

[Northern Atlantic Coastal Plain Pitch Pine Lowland](#) (CES203.374)

Origin of Concept

Fike, J. 1999. Terrestrial and palustrine plant communities of Pennsylvania. Pennsylvania Natural Diversity Inventory. Harrisburg, PA. 86 pp.

Pennsylvania Community Code

SX : Miscellaneous Palustrine/Floodplain Forest

Similar Ecological Communities

The presence of red maple (*Acer rubrum*) with sweet-bay magnolia (*Magnolia virginiana*), sweetgum (*Liquidambar styraciflua*), and other coastal plain species clearly distinguishes the Red Maple – Magnolia Palustrine Forest from other red maple dominated palustrine forests such as Red Maple – Blackgum Palustrine Forest and Red Maple – Black Ash Palustrine Forest.

Fike Crosswalk

Red maple - magnolia coastal plain palustrine forest

Conservation Value

Red Maple – Magnolia Palustrine Forest is a rare community within the state and rare plant species found in this community may include sweet-bay magnolia (*Magnolia virginiana*), fetter-bush (*Leucothoe racemosa*), and possum-haw (*Viburnum nudum*).

Threats

Alteration to the hydrological regime and development are the major threats to this community (e.g., impoundments, beaver dams) 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, as well as sedimentation. Invasive plant species such as tree-of-heaven (*Ailanthus altissima*), Japanese barberry (*Berberis thunbergii*), multiflora rose (*Rosa multiflora*), purple loosestrife (*Lythrum salicaria*), and common reed (*Phragmites australis* spp. *australis*) can dominate 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.

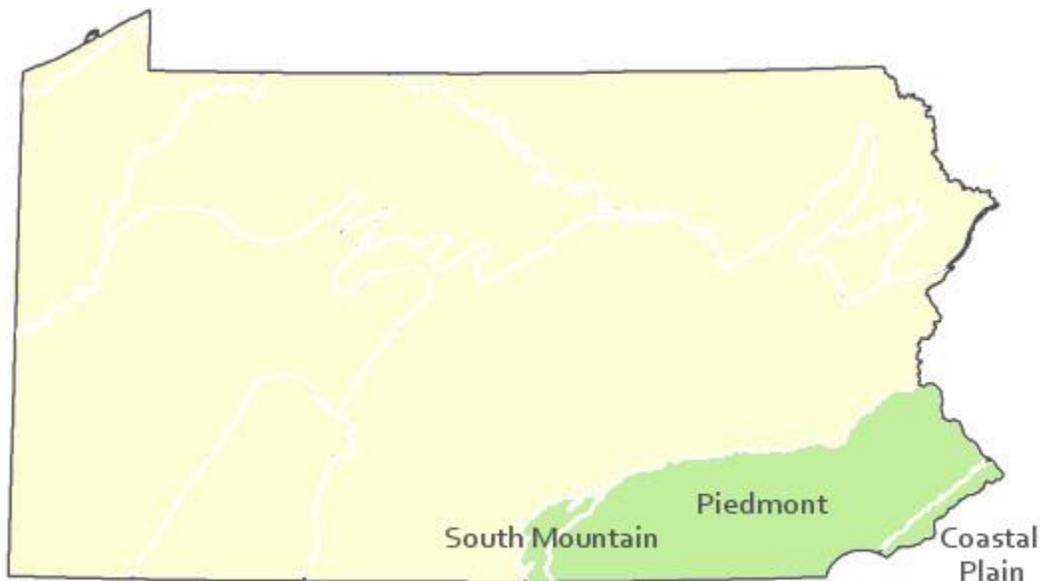
Research Needs

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

These wetlands were probably more common but declined due to wetland draining/filling and clearing of the adjacent lands leading to increased sedimentation and altered hydrology. The development of the Coastal Plain in Pennsylvania contributed to the decline of this community. The relative trend for this community is likely stable or may be declining slightly due to hydrological alterations and habitat destruction.

Range Map



Pennsylvania Range

Coastal Plain, Piedmont, South Mountain.

Global Distribution

Delaware, New Jersey, Maryland, and Pennsylvania.

References

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