

Reed Canary-grass Floodplain Grassland



System: Palustrine

Subsystem: Herbaceous

PA Ecological Group(s): River Floodplain

Global Rank: GNR

State Rank: S5

General Description

This community is typically found on sand and cobble bars attached to the banks or wide alluvial flats along tributaries. These areas are exposed to frequent floods, high stream velocity, and ice scour. The substrate is sand to sand over cobble and often represents sites where flooding frequency and duration, while still high, is less than that of the Big Bluestem – Indian-grass River Grassland or Periodically Exposed Shoreline Community. An area of sparsely vegetated cobbles often separates this community from the flowing water.

This community is characterized by thick herbaceous and graminoid vegetation, dominated by reed canary-grass (*Phalaris arundinacea*). Bluejoint (*Calamagrostis Canadensis*) or hairy-fruit sedge (*Carex trichocarpa*) are often present and may represent the historically dominant species of these riverine meadows prior to invasion by reed canary-grass. While the diversity of this type is often low, common associate species are Virginia cutgrass (*Leersia virginica*), false nettle (*Boehmeria cylindrica*), spotted joe-pye-weed (*Eupatorium maculatum*), twisted sedge (*Carex torta*), flatsedges (*Cyperus* spp.), water-pepper (*Persicaria punctata*), and beggar-ticks (*Bidens* spp.). A few scattered willows (*Salix* spp.) and sycamore (*Platanus occidentalis*) may be present as short shrubs; however, their relative cover rarely exceeds 10%.

Rank Justification

Common, widespread, and abundant in the jurisdiction.

Identification

- Clearly dominated by reed canary-grass (*Phalaris arundinacea*)
- Soils are alluvial and range from deep sand deposits to shallow sandy alluvium over cobble
- Occurs at or just above the flowing water
- Found on broad gravel and cobble deposits of the river floodplains of major rivers
- Maintained by annual episodes of high intensity flooding and ice scour

Characteristic Species

Shrubs

- [Sycamore \(*Platanus occidentalis*\)](#)
- [Willows \(*Salix* spp.\)](#)

Herbs

- [Reed canary-grass \(*Phalaris arundinacea*\)](#)
- [Canada bluejoint \(*Calamagrostis canadensis* var. *canadensis*\)](#)
- [Sedge \(*Carex trichocarpa*\)](#)
- [Cutgrass \(*Leersia virginica*\)](#)
- [Spotted joe-pye-weed \(*Eutrochium maculatum*\)](#)
- [Twisted sedge \(*Carex torta*\)](#)
- [Field mint \(*Mentha arvensis*\)](#)
- [Nutsedges \(*Cyperus* spp.\)](#)
- [Dotted smartweed \(*Persicaria punctata*\)](#)
- [Beggar-ticks \(*Bidens* spp.\)](#)

International Vegetation Classification Associations:

[Reed Canarygrass Wet Meadow](#) (CEGL006044)

NatureServe Ecological Systems:

[Central Appalachian River Floodplain](#) (CES202.608)

Origin of Concept

Zimmerman 2008

Pennsylvania Community Code

na : Not Available

Similar Ecological Communities

Floodplain Meadow and Big Bluestem – Indian-grass Riverine Grassland are similar to the Reed Canary-grass Floodplain Grassland in position on the floodplain and in soils but differs in species composition. The near monotypic stand of reed canary-grass (*Phalaris arundinacea*) is the most defining character for the Reed Canary-grass Floodplain Grasslands and it is often found on deeper, sandy soils.

Fike Crosswalk

None; this type is new to the Pennsylvania Plant Community Classification developed from river floodplain classification studies in the Susquehanna and Ohio River Basins.

Conservation Value

This habitat represents a modified grassland community type on the river floodplain, influenced by human disturbance, alteration of the natural flooding regime, deposition of sediment from excessive erosional events upstream and invasion of the non-native species reed canary-grass (*Phalaris arundinacea*). Native plants, often those of native floodplain grasslands and herbaceous communities are threatened by the expanding reed canary-grass. This invasion into native communities results in loss of habitat for a number of important and rare insect species, namely tiger beetles (genus *Cicindela*), and ground beetles (order Carabidae) and others. While this community is associated with decreasing native species diversity, the 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

This type is not threatened and represents a plant community type dominated by one plant species: reed canary-grass (*Phalaris arundinacea*). Invasion by non-native plants may be equally devastating as native floodplain plants are displaced and has led to destruction and/or shifts in community function and dynamics within other plant communities. In particular, this community can completely displace Hairy-fruited Sedge (*Carex trichocarpa*) Floodplain Wetland and Twisted Sedge (*Carex Torta*) Stream Margin.

In addition to reed canary-grass, Japanese knotweed (*Fallopia japonica*), giant knotweed (*F. sachalinensis*), and purple loosestrife (*Lythrum salicaria*) may be present in this type. Construction of flood-control and navigational dams has resulted in drastic changes to the timing and duration of flood events. These dams have, in some cases, slowed the river flow resulting in deposition of finer sediments favored by many invasive plants.

Management

It is important to prevent the spread of this community through invasive species control (herbicide and manual removal) and to maintain a natural buffer around the wetland to minimize the spread of this community into adjacent vegetation.

Research Needs

There is need to assess and quantify soils, site hydrology, and other factors to further assess differences between floodplain grasslands on the Ohio, Delaware, and Susquehanna river basins. There continues to be a debate over the presence of native and introduced populations of reed canary-grass, suggesting the need for genetic studies.

Trends

This community type is becoming more common as reed canary-grass populations continue to expand.

Range Map



Pennsylvania Range

Statewide

Global Distribution

Colorado, Connecticut, Delaware, Idaho, Indiana, Iowa, Maine, Maryland, Massachusetts, Minnesota, Montana, New Hampshire, New Jersey, New Mexico, New York, North Dakota, Ohio, Pennsylvania, Rhode Island, Tennessee, Utah, Vermont, Virginia, Washington, West Virginia, and Wyoming. This community also occurs in Canada in Ontario, British Columbia, and Alberta.

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