



Natural Heritage & Endangered Species Program

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Massachusetts Division of Fisheries & Wildlife

Gattinger's and Philadelphia

Panic-grasses

Panicum philadelphicum ssp. *gattingeri*

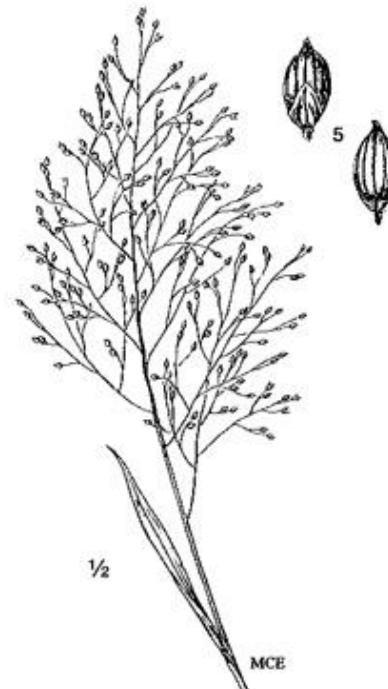
Panicum philadelphicum ssp. *philadelphicum*

State Status: **Special Concern**

Federal Status: **None**

GENERAL DESCRIPTION: Philadelphia Panic-grass (*Panicum philadelphicum*), a member of the Grass family (Poaceae), is a slender, hairy, herbaceous, annual grass with yellow-green leaves that grows from a bundle of fibrous roots. It typically grows to a height of about 2.5 to 3.25 ft (80-100 cm), but can also be found as tiny plants on receding pondshores. Philadelphia Panic-grass consists of three subspecies, two of which occur in Massachusetts (both rare here): Philadelphia Panic-grass (*P. philadelphicum* ssp. *philadelphicum*) and Gattinger's Panic-grass (*P. philadelphicum* ssp. *gattingeri*). Philadelphia Panic-grass subspecies *philadelphicum* grows primarily on sandy shores of lakes and streams. Gattinger's Panic-grass (ssp. *gattingeri*) grows in open fields, roadsides, rock or clay ledges, clifftops, and wet clay on receding shores.

AIDS TO IDENTIFICATION: Members of the genus *Panicum* are difficult to distinguish from one another and at first glance may appear similar. To positively identify any member of the genus *Panicum* (including the species *philadelphicum*) a technical manual should be consulted. The basic flowering unit of grasses is the spikelet, which may or may not have a pair of bracts at its base called glumes. A spikelet may be made up of one to many individual flowers (florets). Each floret has a pair of bracts at its base called the lemma and the palea. The palea is closer to the stem of the spikelet (rachilla) than the lemma. Species in the genus *Panicum* produce inflorescences on the ends of their stems (culms) in an open panicle and have spikelets with more than one floret. The spikelets have thin membranous glumes, a lower, sterile or male floret with a lemma that resembles the glumes, and an upper, fertile floret with a rigid, shiny lemma that clasps the palea.



Philadelphia Panic-grass. From: Holmgren, N.H. 1998. Illustrated companion to Gleason and Cronquist's manual: Illustrations of the Vascular Plants of Northeastern United States and adjacent Canada. The New York Botanical Garden, Bronx, NY

The illustration gives the general character of the species panicle, showing the short flag leaf of ssp. *philadelphicum*.

Philadelphia Panic-grass has branching, hairy stems that are erect to decumbent (curving at the base with an ascending tip). The subspecies of Philadelphia Panic-grass are best separated using a combination of characters; see the table below.

SIMILAR SPECIES: In Massachusetts, both subspecies of Philadelphia Panic-grass grow in association with other members of the genus *Panicum* including: Fall Panic-grass (*P. dichotomiflorum*), Flat-

A Species of Greatest Conservation Need in the Massachusetts State Wildlife Action Plan

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stemmed Panic-grass (*P. rigidulum*), and Witchgrass (*P. capillare*). Philadelphia Panic-grass is most likely to be confused with Witchgrass. The panicles of Philadelphia Panic-grass are usually less than half of the plant height, whereas they are greater than half in Witchgrass. The inflorescence stems (pedicels) of Philadelphia Panic-grass tend to stay intact, but when the pedicels of Witchgrass mature they usually break, forming tumbleweeds. As the fruits of Philadelphia Panic-grass ripen they turn dark brown, whereas those of Witchgrass are straw-colored.

Unlike Philadelphia Panic-grass, Fall Panic-grass and Flat-stemmed Panic-grass are mostly glabrous (hairless) throughout.

	<i>ssp. philadelphicum</i>	<i>ssp. gattengeri</i>
Spikelet length	1.4 - 2.1 mm	1.9-2.4 mm
Flag leaf length (uppermost stem leaves)	less than half the length of panicle	greater than half the length of panicle
Secondary panicle branches and floral stalks	press against the primary panicle branches	diverge away from the main panicle branches
Upper glume and lower lemma tips	curve over the upper flowers	straight
Leaf blade width	usually 2-6 mm	5-12 mm

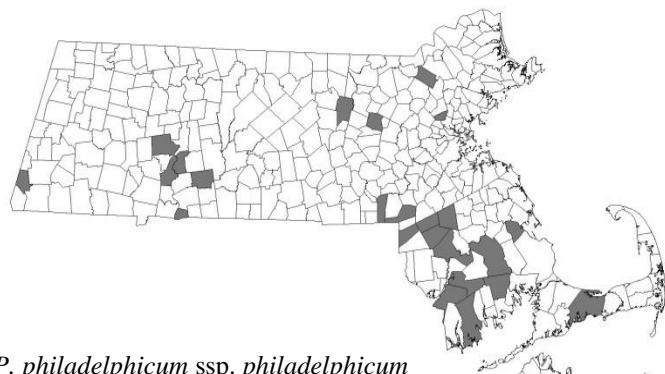
HABITAT: Philadelphia Panic-grass subspecies *philadelphicum* grows in open, full sun, on seasonally flooded sands typically bordering acidic stream, lakes, and wetlands. Plants typically found growing in association with subspecies *philadelphicum* in Massachusetts include: Common Buttonbush (*Cephalanthus occidentalis*), Golden Hedge-hyssop (*Gratiola aurea*), Fall Panic-grass (*P. dichotomiflorum*), Slender Fimbristylis (*Fimbristylis autumnalis*), Toothed Flatsedge (*Cyperus dentatus*), and various Spikerushes (*Eleocharis* species).

Gattinger's Panic-grass grows in open, disturbed areas usually with alkaline soils. All but one documented occurrences of Gattinger's Panic-grass in Massachusetts grow along roadsides. The occurrence that is not found along a roadside grows on the top of a cliff. In Massachusetts, Gattinger's Panic-grass grows in association with the following species: Field Horsetail

(*Equisetum arvense*), Ragweed (*Ambrosia artemisifolia*), and Witchgrass (*P. capillare*).

RANGE: Philadelphia Panic-grass subspecies *philadelphicum* ranges from Nova Scotia west to Ontario and south to Georgia, Alabama, and Texas. Philadelphia Panic-grass is not considered globally imperiled, but is rare in a number of other states including Rhode Island, Ohio, and Iowa. Gattinger's Panic-grass ranges from Quebec and Ontario south to North Carolina, Oklahoma, Kansas, and Alabama. Gattinger's Panic-grass is rare in numerous other states including New Jersey, and Kansas, and is also not considered globally imperiled.

POPULATION STATUS IN MASSACHUSETTS: Philadelphia Panic-grass, including both subspecies *philadelphicum* and *gattengeri*, is listed under the Massachusetts Endangered Species Act as a Species of Special Concern. All listed species are legally protected from killing, collection, possession, or sale, and from activities that would destroy habitat and thus directly or indirectly cause mortality or disrupt critical behaviors. The two subspecies are currently known from different counties within Massachusetts. Philadelphia Panic-grass (*ssp. philadelphicum*) is currently known from Barnstable, Bristol, Hampden, Hampshire, Middlesex, Norfolk, Plymouth, and Worcester counties. Gattinger's Panic-grass is currently known from Berkshire and Franklin counties. It is likely that both subspecies may occur in other locations in the state, but have gone unnoticed due to their similarities with other members of the genus *Panicum*.



P. philadelphicum ssp. *philadelphicum*

Distribution in Massachusetts

1982-2007

Based on records in Natural

Heritage Database

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MANAGEMENT RECOMMENDATIONS:

Philadelphia Panic-grass subspecies *philadelphicum* requires open, sunny habitat that experiences seasonal flooding. Activities that alter hydrologic regimes could threaten this subspecies of Philadelphia Panic-grass. Overgrowth and shading by other plants through succession could also harm Philadelphia Panic-grass.

Many Massachusetts populations of Gattinger's Panic-grass occur in disturbed areas near roadsides and are in danger of being harmed by road maintenance activities. Roads also act as corridors for the dispersal of invasive plant species that are capable of forming dense monocultures and of excluding native species through shading. Efforts should be made to prevent the dispersal of such invasive plants into areas where either subspecies of Philadelphia Panic-grass grows.

To avoid inadvertent harm to rare plants, all active management of rare plant populations (including invasive species removal) should be planned in consultation with the Massachusetts Natural Heritage & Endangered Species Program.

PHENOLOGY: In Massachusetts, both subspecies of Philadelphia Panic-grass flower from June to August. Fruits form from late August to October.

Flowering Time in Massachusetts:

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

Updated 2015

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