



Natural Heritage & Endangered Species Program

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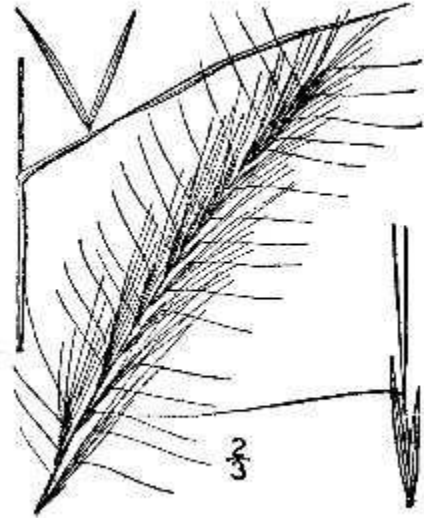
Massachusetts Division of Fisheries & Wildlife

Purple Needlegrass *Aristida purpurascens* Poir.

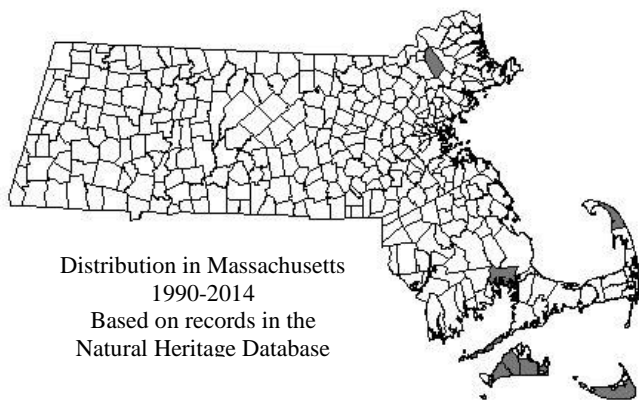
State Status: **Threatened**

Federal Status: **None**

DESCRIPTION: Purple Needlegrass (*Aristida purpurascens*) is a densely tufted perennial belonging to a distinctive genus of mostly xerophytic (drought-adapted) grasses which are easily recognized by their long-awned "bottlebrush" flower spikes. Purple Needlegrass has smooth, upright stems from 30-75 cm (1 to 1.5 ft.) high which branch from the lower nodes of a hard, closely sheathed base. The narrow leaf blades are flat and smooth below, but slightly hairy with rolled-in margins above. As the leaves mature, they become curled and slacker. The flowers first appear in a dense, narrow, dark purple-brown panicle whose length is as much as 1/3 to 1/2 the height of the plant. Each flower of the inflorescence is borne in a single, 7-10 mm long, pointed spikelet which consists of several narrow, overlapping chaffy bracts (modified floral parts) with a conspicuous three-forked awn projecting from one of the inner bracts. In Purple Needlegrass, all three awns are straight, erect, and about equal in length (1.5-3 cm). As the inflorescence matures from mid-August on, the awns spread open so that they are widely and equally separated from each other and horizontal to the axis of the flower spike. At this time the maturing inflorescence loses its purple coloration and turns a pale straw color.



USDA-NRCS PLANTS Database / Britton, N.L., and A. Brown. 1913. *An illustrated flora of the northern United States, Canada and the British Possessions*. 3 vols. Charles Scribner's Sons, New York. Vol. 1: 182.



Distribution in Massachusetts
1990-2014
Based on records in the
Natural Heritage Database

SIMILAR SPECIES: In most cases, species of *Aristida* may be distinguished by differences in the general arrangement or shape of the inflorescence. For them to be positively identified, however, comparison of the relative length and divergence of the fully-developed awns from mature plants is required. Barrens Needlegrass (*Aristida longespica*) is an annual with smaller and narrower flower spikes, having flowers with two erect lateral awns that are shorter than the horizontally positioned middle awn. It also tends to grow in seasonally moist habitats. Prairie Needle-grass (*A. oligantha*) is a soft-based perennial and roadside weed with a fewer-flowered panicle and spikelets with three equal and much longer (3.5-7 cm) divergent awns. Seabeach Needle-grass (*A. tuberculosa*, Threatened) is a

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

Massachusetts Division of Fisheries & Wildlife

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rare coastal dune annual which can sometimes occur inland on sandy scrapes. The "bottlebrush" flower panicles are shorter, more open, and wider due to long, (3-5 cm) widely spreading awns which are also spirally twisted at their base.

RANGE: Purple Needlegrass is found in a variety of open, sandy habitats, including prairies, which contributes to its wide distribution throughout eastern North America from Massachusetts to Florida and Texas, and inland and north to Michigan, Wisconsin, southern Ontario and eastern Nebraska.

HABITAT IN MASSACHUSETTS: Purple Needlegrass is usually found in the dry, nutrient-poor, sandy habitats known as heathlands and sandplain grasslands. These rare and local plant communities are scattered along the New England coastline, persisting where human land use practices and natural stresses from salt spray, fire and storms inhibit the growth of woody shrubs and trees. Purple Needlegrass can also grow in maintained or disturbed areas such as grazed pastures, fire lanes, and powerline openings as long as trees are excluded. Sandplain grasslands are dominated

by ubiquitous prairie bunch grasses like Little Bluestem, Big Bluestem, Poverty Grass, Redtop, and Indian Grass. Also characteristic of and often restricted to grasslands are low, broadleaved herbs such as bush-clovers, asters, Golden Heather and Bushy Rockrose. Grassy heathlands are highly stressed, xeric, sparsely vegetated, low shrub communities found on sandy coastal headlands and in openings in Pitch Pine/Scrub Oak barrens. Inhospitable to most plants, these areas are successfully vegetated by large patches of Bayberry, Huckleberry, Golden-aster, and hardy grass species.

POPULATION STATUS: Purple Needlegrass is listed as Threatened in Massachusetts because of the widespread succession of grasslands and open fields to forests. This species clearly prefers frequent disturbance and shows intolerance of shade or competition from encroaching woody plants. Changes in human land use practices have had a major part in changing the amount of open land. In the past, grazing, agriculture, and fire opened up abundant suitable habitat for this species. Since 1990, populations of Purple Needlegrass remain in only ten towns, occurring mostly in small remnant patches of habitat. Purple Needlegrass is currently restricted mainly to Cape Cod and the Islands.

Updated 2015

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