



Status: State threatened

Global and state rank: G5/S2

Other common names: American sloughgrass, Beckmann's grass.

Family: Poaceae (grass family), also known as the Gramineae

Synonyms: *Beckmannia syzigachne* (Steud.) Fernald ssp. *baicalensis* (Kusnez.) Koyama & Kawano; *Beckmannia syzigachne* (Steud.) Fernald var. *uniflora* (Scribn. ex A. Gray) B. Boivin. *Beckmannia eruciformis* auct. non (L.) Host is an invalid name that has been applied to this species (Flora of North America 2007).

Taxonomy: *B. syzigachne* is one of two species in the genus, the other being the European *B. eruciformis*, to which it was formerly referred. In eastern Asia, where *B. syzigachne* also occurs, two subspecies are sometimes recognized; American plants would be referred to ssp. *baicalensis* (Kusnez.) Koyama & Kawano (Voss 1972).

Total range: A species of considerable range, and also apparently introduced in many areas, slough grass is

distributed from southern Alaska to California, ranging eastward in the northern portion of its range through Ontario to Quebec and Nova Scotia, and in the southern portion of its range occurring from New Mexico through Kansas and the Midwest into the Northeast. It is considered rare in Arizona, Illinois, and Quebec (NatureServe 2009).

State distribution: This species is known only from 11 widely scattered stations, ranging from St. Clair County, which includes five of the eight extant occurrences, to Isle Royale in Keweenaw County, where no mainland colonies are known. Slough grass is known only from historical occurrences in Bay and Emmet counties and one of the two documented occurrences on Isle Royale. The most recent collection of this species was in 2000, when a small colony was documented in the Hiawatha National Forest along the Chippewa-Mackinac County border. The largest populations of slough grass occur in St. Clair County, where one of the county's occurrences is protected and managed within a Michigan Nature Association sanctuary.

Recognition: The stout but somewhat spongy stems of slough grass, which may grow solitarily or in clumps, range from about 5-10 dm in height, and bear flat, roughened leaf blades (ca. 3-8 mm wide and 1-2.5 dm long) with loose, overlapping sheaths and large



membranous ligules. Terminating each fertile stem is a narrow inflorescence, **consisting of numerous crowded, erect, and overlapping short branches, each 1-5 cm long and composed of several crowded spikelets arranged in two rows along the lower side of the branch. The roundish 1-flowered spikelets, ca. 2-3 mm wide and long, are flattened and keeled, with the glumes laterally wrinkled and pointed at the apex. Protruding slightly above the glumes is the sharp tip of the lemma.** This grass very distinctive and not likely confused with any other Michigan grass species, although to the inexperienced it may appear superficially similar to some species of barnyard grass (*Echinochloa* spp.), a large, coarse genus that can be easily distinguished by its strongly awned spikelets with stiff, pustule-based hairs, among other features of the leaves and sheaths.

Best survey time/phenology: This species must be fertile (flowering or fruiting) for identification. Michigan's occurrences have all been documented from early July to early August, and thus the optimal survey period is conservatively estimated to be from July through mid-August.

FQI Coefficient and Wetland Category: -5, OBL

Habitat: Little is known about the habitat for this species in southern Michigan, where the extant populations have been observed primarily in wet depressions in old farm fields, similar types of fallow areas, and drainage ditches. In such habitats in St. Clair County it is found in shallow depressions with *Juncus effusus* (soft-stemmed rush), *Phalaris arundinacea* (reed canary grass), *Typha angustifolia* (narrow-leaved cat-tail), and *Carex stricta* (sedge). In Emmet County it occurred along the border of "a cold spring" and on Isle Royale on a gravelly point. In the eastern Upper Peninsula, slough grass was found in a dense, grassy opening adjacent to a stream bank, where it was associated with *Glyceria grandis* (reed manna grass), *Bidens cernuus* (nodding bur-marigold), *Scirpus atrovirens* (bulrush), *Urtica dioica* (nettle), *Carex crinita* (sedge), *Impatiens capensis* (jewelweed), and *Equisetum sylvaticum* (woodland horsetail). On Passage Island, slough grass was found on a wave-washed sandy storm beach in ca. 10 cm of water, occurring with *Carex tetanica* (sedge) and *Potentilla anserina* (silverweed). Throughout its broad range slough grass is a plant of marshes, low wet ground or "sloughs", floodplains,

pond shores, lakes, streams, ditches, and other types of open wetland habitats (Flora of North America 2007).

Biology: *Beckmannia syzigachne* is an annual grass species. While rare in Michigan, this species is often a significant and dominant species of wetlands in the main portion of its range, such as in the prairie pothole region of North Dakota (Sloan 1970) and in many other areas. Boe and Wynia (1985) cited slough grass as a valuable wetland forage species in the northwestern and north-central states. Slough grass is known to be an important food for waterfowl (Krapu 1974), which consequently play an important role in seed dispersal (Gill 1974). The preliminary data from initial germination studies by Boe and Wynia (1985) indicated that as a potential forage species for cultivation, slough grass did not appear to be limited by complex germination requirements, low forage yield, or poor seed production.

Conservation/management: One occurrence in St. Clair County occurs within a Michigan Nature Association sanctuary. Another locality, on Passage Island, lies within a Research Natural Area within Isle Royale National Park. The wet, often coastal habitat of this plant is vulnerable to hydrologic alterations and development. The potential for the long-term persistence of populations occurring in fallow fields and ditches, such as the occurrences known in St. Clair County, may be poor.

Comments: *B. syzigachne* was formerly known as a sporadic weed species in China, but now is widely distributed and considered to be an aggressive, competitive species in wheat and oilseed rape fields due to changes in agricultural practices over the last two decades (Rao et al. 2008).

Research needs: For the short-term, periodic status inventories would be useful for directing conservation actions, as very little information exists concerning population size and condition. Better data concerning habitat, landscape setting/context, and known and potential threats would greatly enhance the evaluation of conservation efforts and identifying priorities. *De novo* inventory (i.e. surveys to detect new sites) may also be useful.

Related abstracts: Intermittent wetland, northern wet meadow, sand and gravel beach.



Selected references:

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