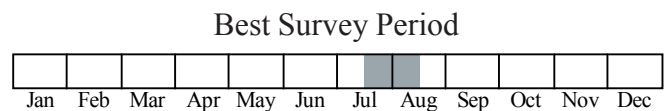
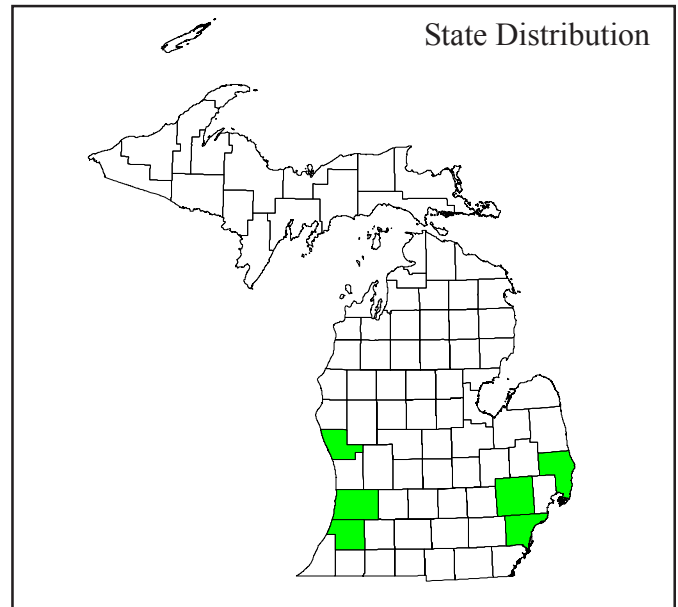
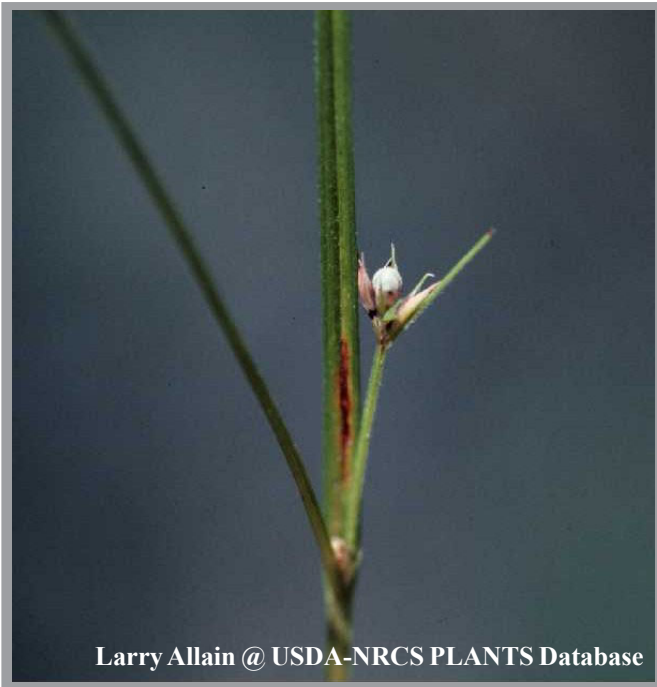


Scleria pauciflora Willd.

few-flowered nut-rush



Status: State endangered

Global and state rank: G5/S1

Other common names: fewflower nut-rush, papillose nut-rush, Carolina-whipgrass, nut-rush

Family: Cyperaceae (sedge family)

Taxonomy: Michigan collections have been assigned to the shorter and somewhat more southern-coastal var. *caroliniana* (Willd.) Wood.

Total range: Concentrated in the southeastern United States, *S. pauciflora* ranges from Florida to New Hampshire, extending westward to Michigan, Ohio, Kansas, Missouri, Oklahoma, and Texas. It also occurs in Cuba. This species is considered rare in Arkansas, Delaware, Illinois, Indiana, Kansas, Maryland, Ohio, Ontario, Pennsylvania, Rhode Island, Texas, and West Virginia, and is known only from historical records in New Hampshire (NatureServe 2003).

State distribution: Prior to 1988, *Scleria pauciflora* was known only from historical collections from St. Clair County (1903), Van Buren County (1904), and Oakland County (1920). It was subsequently discovered in 1988 in Muskegon County (Brodowicz 1990), in 1994 in Wayne County, and in 1995 in Allegan County. All

three of the latter occurrences were comprised of localized colonies composed of few plants.

Recognition: Arising from hard, knotty rhizomes, the tufted triangular stems of *S. pauciflora* may vary from ca. 2-7 dm in height. **Both the leaves and stems are moderately to densely hairy.** The leaves, borne basally and upward on the stems, are narrowly linear and from 1-2.5 mm in width. **A dense spikelet cluster terminates the stem**, subtended by a 2-5 cm long leaf-like bract. Occasionally, 1-2 axillary spikelet clusters on short slender stalks (subtended by similar leaf-like bracts) may occur beneath the terminal one. The hard, nut-like fruits are **globose white achenes** 1.5-2 mm in diameter that are **finely but irregularly bumpy (papillose)**; this will require a hand lens for field examination. At the base of the achene is a pedestal or **disc-like structure (the hypogynium) ornamented with six tiny rounded tubercles.** *S. verticillata*, the most common species of *Scleria* in Michigan, differs in its glabrous leaves and stems, shorter anthers (1 mm long versus 2-2.5 mm in *S. pauciflora*), 3-5 spikelet clusters, and achenes that lack an ornamented basal disc. The achenes of *Scleria triglomerata*, a state special concern nut-rush, are smooth rather than bumpy, and in the state threatened *S. reticularis* (netted nut-rush), a coastal plain disjunct that could occur with *S. pauciflora*, the achenes have a net-like (reticulate) surface pattern and three



tubercles at the base, and the foliage is glabrous. *Scleria muhlenbergia*, not yet found in Michigan although it is known from northwestern Indiana, can be distinguished by its glabrous foliage and slightly pubescent achenes.

Best survey time/phenology: Michigan collections of this species have been documented from approximately mid-July through mid-August.

Habitat: Michigan's early records merely note that *S. pauciflora* was collected from "sandy, open ground" and a "dry, gravelly knoll." In Muskegon County it was found in dry sand (Au Gres soil series) with a pH of 4.2, adjacent to a moist depression where it was associated with *Xris torta* (yellow-eyed-grass), *Rhynchospora capitellata* (beak-rush), *Andropogon scoparius* (little bluestem), *Spartina pectinata* (prairie cordgrass), *Stachys hyssopifolia* (hyssop hedge nettle), and *Polytrichum* species (hair cap mosses), which indicate the presence of coastal plain marsh habitat. The locality in Allegan County is very similar to that observed in Muskegon County, as this species was discovered at the edge of oak barrens adjacent to a large coastal plain marsh. In Wayne County, few-flowered nut-rush was found in seasonally inundated sandy soil with a pH of 6.5-7.0, where it occurred in a disturbed lakeplain prairie opening; there associates included little bluestem, *Aristida longespica* (three-awned grass), *Danthonia spicata* (poverty grass), *Euthamia graminifolia* (grass-leaved goldenrod), *Hypericum prolificum* (shrubby St. John's-wort), *Krigia biflora* (wild dandelion), *Polygala sanguinea* (field milkwort), and *Liatris scariosa* (blazing star).

Elsewhere it is typically a plant of moist to dry sandy mineral soil, occurring in the southeastern United States in meadows, prairies, swamps, boggy seeps, and pine flatwoods and savannas (Godfrey and Wooten 1979). In northwestern Indiana it has been found in moist marsh borders with *Calamagrostis canadensis* (bluejoint), *Hypericum adpressum* (shore St. John's-wort), *Panicum verrucosum* (warty panic grass), *Scleria muhlenbergia* (nut-rush), and *Scleria triglomerata* (tall nut-rush) (Swink and Wilhelm 1994). In Ohio, it grows in open, moist, often sandy habitats such as lake shores, wet fields, and "bogs" (McCance and Burns 1984).

Biology: This species is a rhizomatous perennial.

Conservation/management: The locality in Muskegon County lies in the Huron-Manistee National Forest. Although land managers are aware of this occurrence, it remains vulnerable to excessive off-road-vehicle (ORV) use and other threats. The Allegan County site occurs within a large state game area where coastal plain marshes and oak barrens are protected and monitored and restoration management is occurring; however, this locality also remains vulnerable to impacts from illegal ORV use. The occurrence in Wayne County, although on township land, is threatened by impending development as well as the lack of management necessary to maintain and perpetuate lakeplain prairie habitat.

Research needs: Few-flowered nut-rush is a somewhat obscure sedge and could be overlooked, as it appears to be quite localized when found. The relatively recent records indicate that this species has a strong potential for occurring in association with coastal plain marshes and lakeplain prairies, and thus should be sought, particularly in southeastern and southwestern Lower Michigan. The Allegan County occurrence was found in a sandy area recently disturbed by logging activities, suggesting that soil scarification may be necessary to stimulate soil seed banks. Research in restoration management would be desirable to determine the optimal disturbance regimes necessary to maintain habitat and perpetuate colonies.

Related abstracts: Coastal plain marsh, lakeplain wet prairie, lakeplain wet-mesic prairie, oak barrens, purple milkweed, paniced screw-stem, Hill's thistle, Alleghany plum, Hall's bulrush, meadow beauty, Gattinger's gerardia, Skinner's gerardia, three-awned grass, northern appressed clubmoss, chestnut sedge, short-fruited rush, Leiberg's panic grass, pink milkwort, prairie buttercup, eastern box turtle, eastern fox snake, red-legged spittlebug, blazing star borer, culver's root borer, silphium borer

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Abstract citation:

M.R. Penskar and S.R. Crispin. 2004. Special plant abstract for *Scleria pauciflora* (few-flowered nut-rush). Michigan Natural Features Inventory. Lansing, MI. 3 pp.

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Funding for abstract provided by the National Oceanic and Atmospheric Administration (NOAA) Coastal Services Center via the Great Lakes Commission.

