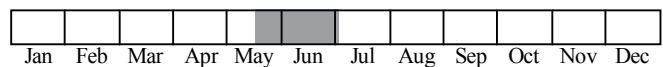


Best Survey Period



Status: State special concern

Global and state rank: G4/S3S4

Family: Cyperaceae (sedge family)

Total Range: This sedge ranges from the province of British Columbia to Quebec, south through New York, Pennsylvania, Maryland, and Washington D.C., and west through Ohio, Indiana, Iowa, North and South Dakota, and Wyoming. It is considered rare in Alberta, Quebec, Illinois, Indiana, Iowa, Maryland, Michigan, North Dakota, Pennsylvania, Vermont, Wisconsin, and Wyoming, and possibly extirpated in Ohio.

State Distribution: In the Upper Peninsula, Richardson's sedge has been documented from alvar communities and gravelly shores of Delta, Chippewa, and Keweenaw counties and from a hillside prairie in Menominee County. The Chippewa County occurrences, five of which occur on Drummond Island, are notable for the abundance of the sedge, which numbers in the thousands in individual populations. It also occurs in abundance along the calcareous shores of northern Lake Huron in Presque Isle County in the northern Lower Peninsula. In the southern Lower

Peninsula, only four occurrences of this species have been observed in recent times, including records from Oakland County in 1964, 1980 and 1986, and a 1997 record from Lapeer County. Older records from Clinton, Montcalm, Ionia, Gratiot, Livingston and Macomb counties date mostly from the 1800's and may or may not persist today. These southern occurrences are associated with sandy prairie openings of remnant oak barrens. Because of the ephemeral nature of this species, it is likely that more occurrences of this species will be discovered with dedicated survey efforts.

Recognition: The mostly basal, stiff, and **short-leaved tufts** of this species grow from loose rhizomes and are **reddish brown at the base**. They usually form **one large, terminal staminate spikelet** (10-22 mm long) and **two or three pistillate spikelets** (10 mm long) that sometimes have staminate flowers at the tip. The species is rather short in stature, with fertile stems reaching up to 2.5 dm. The pistillate spikelets bear from **10-25 minutely pubescent perigynia** that are bluntly angled on the back and sharply angled laterally. **A key feature of this species is the reddish-brown sheath that subtends the pistillate spikelets**, particularly noticeable on the slightly separated bottom spikelet. The **bodies of the scales that subtend both the male and**



female flowers are similarly reddish-brown, and in combination, the sheath and scales contrasting against the green stems, peduncles, and perigynia, render this a very striking sedge. Using this characteristic along with knowledge of its **very early and ephemeral flowering period**, it is not likely to be confused with any other sedge. *Carex coccinea* (beauty sedge) and *Carex scirpoidea* (bulrush sedge) are most likely to be found flowering with Richardson's sedge in the same habitat, but both lack the reddish sheaths and differ in other substantial ways. Bulrush sedge forms a solitary spikelet only, and has longer leaves, while the staminate spikelets of beauty sedge are much shorter (4-6 mm) than those of *Carex richardsonii*.

Best Survey Time/Phenology: The striking reddish brown sheaths of Richardson's sedge can be identified from late May through late June fairly reliably, however, the optimal recognition period is during the rather ephemeral flowering window of late May through early June.

Habitat: Range wide, Richardson's sedge is known from dry or rocky upland woods. In southern Michigan it is found in similar, sandy woodland openings and edges and probably occurred more frequently prior to wide-scale disturbance of native oak barrens and savanna communities. The most recently observed (1997) occurrence in Lapeer County was documented with *Juniperus communis* (ground juniper), *Juniperus virginiana* (red cedar), *Physocarpus opulifolius* (ninebark), *Prunus serotina* (black cherry), *Andropogon gerardii* (big bluestem), *Aster laevis* (smooth aster), *Luzula multiflora* (common wood rush), *Hieracium venosum* (rattlesnake weed), *Krigia biflora* (false dandelion), *Helianthus divaricatus* (woodland sunflower), *Anemone thalictroides* (rue anemone), *Solidago juncea* (early goldenrod), *Sisyrinchium albidum* (common blue-eyed-grass), *Danthonia spicata* (poverty grass), *Fragaria virginiana* (strawberry), and *Taraxacum officinale* (dandelion) as associates. In northern Lower Michigan and the Upper Peninsula it is largely associated with calcareous systems, predominantly alvar grasslands and bedrock beaches of the Great Lakes shores where dolomite is at or near the surface. Common associates in these habitats include ground juniper, *Thuja occidentalis* (white cedar), *Abies balsamea* (balsam fir), *Picea glauca* (white spruce),

Populus balsamifera (balsam poplar), *Arctostaphylos uva-ursi* (bearberry), *Campanula rotundifolia* (harebell), *Cypripedium calceolus* (yellow lady's-slipper), *Primula mistassinica* (bird's-eye primrose), *Castilleja coccinea* (Indian paintbrush), *Calamintha arkansana* (low calamint), *Danthonia spicata* (poverty grass), and *Carex eburnea* (sedge). Several rare plants are associated with Richardson's sedge in the alvar communities of Drummond Island, including bulrush sedge, beauty sedge, *Geum triflorum* (prairie smoke), *Sporobolus heterolepis* (prairie dropseed), *Eleocharis compressa* (spike-rush), and *Cirsium hillii* (Hill's thistle).

Biology: Richardson's sedge is a perennial species that flowers in late May to early June and forms fruit shortly thereafter, persisting in fruit only for a short while. It is often difficult to find when later blooming sedges are in their prime, however, the characteristic reddish sheaths can be used to help target this species.

Conservation/management: At least five occurrences of Richardson's sedge are located in nature preserves or natural areas owned by the Nature Conservancy, Michigan Nature Association, and the State of Michigan, where they are afforded considerable protection. An additional five occurrences are located on Lake Superior State Forest lands, two are on State Recreation Area lands, and the remaining are on private lands.

Research Needs: Studies on virtually every aspect of the lifecycle of this striking sedge would provide helpful information for the development of adequate conservation strategies. It would be particularly beneficial to assess the level of disturbance tolerable by this species, since the shoreline occurrences are facing ever-increasing threat of development.

Related abstracts: Limestone pavement lakeshore, wooded dune and swale, butterwort, dwarf lake iris, English sundew, Houghton's goldenrod, prairie Indian plantain, prairie dropseed, box turtle, Caspian tern, common tern, piping plover, woodland vole.

Selected references:

Fernald M.L. 1932. *Carex richardsonii* in New England. *Rhodora* 3(406): 193-212.



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