

The Sedge *Carex loliacea* in Eastern North America

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Carex loliacea, a circumboreal sedge found mostly in northwestern North America, has been known since 1954 from the northern boreal forest of Ontario. Recent collections have considerably extended its range eastward and southward and it is now known from within the area covered in Gray's Manual. A key is provided separating *C. loliacea* from other similar species in eastern North America, and complete citations of all known collections east of Manitoba are given.

Key Words: *Carex loliacea*, flora, Ontario, geographical distribution, records.

Carex loliacea (section Heleonastes) is an essentially circumboreal species that is widespread in northern Asia, northern Europe, and northwestern North America (Hultén 1968). Recently it has been reported from a few scattered localities in the northern boreal forest of Ontario (Dutilly et al. 1954; Baldwin 1958; Moir 1958). These published records are outside the area covered by the northeastern North American floras (Fernald 1950; Gleason 1952; Gleason and Cronquist 1963), and the species does not extend sufficiently north to be included in eastern arctic floras (e.g. Porsild 1964). Recent collections (cited below) have greatly extended its known range both eastward and southward so that it is now known from within the area covered by Fernald (1950) and closely approaches the area of Gleason (1952) and Gleason and Cronquist (1963).

In this paper we report the distribution of *C. loliacea* in Ontario and discuss ways in which it can be distinguished from similar species. We hope that botanists will become more familiar with the species so its distribution and ecology in eastern North America will become more fully known.

Description of *Carex loliacea*

Carex loliacea has a loosely caespitose habit with an infructescence of few separated spikes bearing a few narrowly elliptical spreading or reflexed perigynia. In these characters it closely resembles a number of widespread and common eastern North American species of *Carex* subgenus *Viginea*, particularly *C. interior* of section Stellulatae, *C. sylvicola* (*C. rosea* auct.) of section Bracteosae, and *C. disperma* of section Heleonastes, and to a lesser extent several other members of sections Heleonastes and Stellulatae. This convergence in appearance is a remarkable feature and has several other parallels in *Carex*, for example, in the west, there is great similarity between *C. illota* of section Ouales, *C. hoodii* of section Bracteosae, *C.*

vernacula of section Foetidae, and *C. jonesii* of section Vulpinea. *Carex loliacea* can be most readily recognized by the complete absence of a beak on the perigynium, although in a number of other similar species the beak may be extremely short (0.2 mm long). In this regard *C. disperma* is the species most likely to be confused with *C. loliacea* because it occurs in similar habitats, may have virtually no beak on the perigynium, and has only one or two staminate flowers in the terminal spike which can be easily overlooked. Although the position of the staminate flowers is the only certain means of distinguishing these species, there are several other features which may be useful. For example, the perigynia of *C. disperma* are either erect or spreading at an angle of less than 90° to the main axis, tend to taper rather abruptly at the apex, and often have nine or fewer rather thin nerves on each surface. The perigynia of *C. loliacea* often spread at an angle of 90° or greater to the main axis, taper very gradually from the middle to the apex, and often have nine or more rather stout nerves on each surface. Two representative infructescences of *C. loliacea* are illustrated in Figure 1.

Identification Key

We have provided the following short key to facilitate identification. This key includes all northeastern North American species of *Carex* subgenus *Viginea* that are caespitose and which have infructescences composed of several simple spikes. Species other than *C. loliacea* are not keyed in detail.

- 1 Terminal spike with staminate flowers at apex or entirely staminate.
..... Section Bracteosae, *Carex disperma*, *C. sterilis*
- 1 Terminal spike with staminate flowers at base or entirely pistillate.



FIGURE 1. Two representative infructescences of *Carex loliacea*.

- 2 Perigynia lanceolate to broadly ovate, widest well below middle; spongy layer at base of perigynium thick, occupying basal $\frac{1}{3}$ to $\frac{1}{2}$ of perigynium body, usually marked by an externally differentiated zone (except in *C. arcta*) Section Stellulatae, *Carex arcta*
- 2 Perigynia narrowly to broadly elliptic, widest near middle; spongy layer at base of perigynium thin or absent, not marked by an externally differentiated zone.
- 3 Lower two spikes of infructescence overlapping, the apex of the lowest reaching to or beyond the base of the next spike. *Carex glareosa*, *C. lachenalii*, *C. heleonastes*, *C. tenuiflora*, *C. amblyorhyncha*, *C. mackenziei*
- 3 Lower two spikes of infructescence separate, the apex of the lowest not reaching to the base of the next spike.

- 4 Perigynia tapering uniformly to the apex, not contracted to a beak *Carex loliacea*
- 4 Perigynia abruptly contracted to a short but definite beak 0.2–0.9 mm long *Carex canescens*, *C. brunnescens*, *C. tripserma*, *C. mackenziei*

Distribution and Ecology of *Carex loliacea*

The known distribution of *Carex loliacea* east of Manitoba now extends to within 130 km of the Quebec boundary (Figure 2). It is likely that searches will disclose this species in Quebec. In Ontario, the species is rare in the northern boreal forest and occurs disjunctly near the north shore of Lake Superior (Figure 3), paralleling a number of other northern species (Soper and Maycock 1963). This species should be looked for in the Lake Superior area of Minnesota and Michigan as well.

Virtually no information is available about the ecology of the species in eastern Canada. It evidently grows in *Sphagnum* bogs shaded by conifers and in rich, wet sites that are mossy but often with little or no *Sphagnum*. Most of the collections are along river banks or associated with small streamlets. At the Moose River site (TRTE 5348) the species occurred

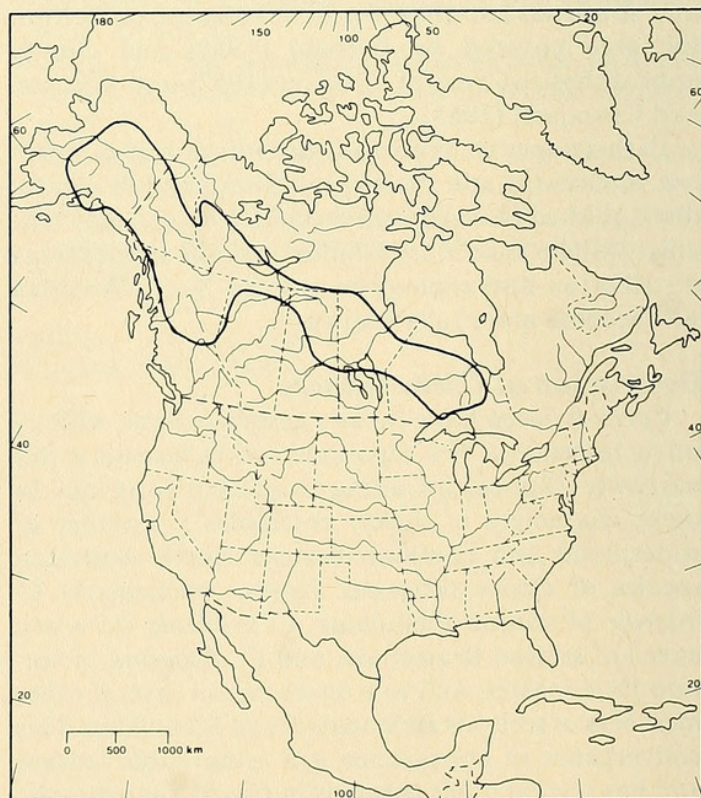


FIGURE 2. Distribution of *Carex loliacea* in North America.

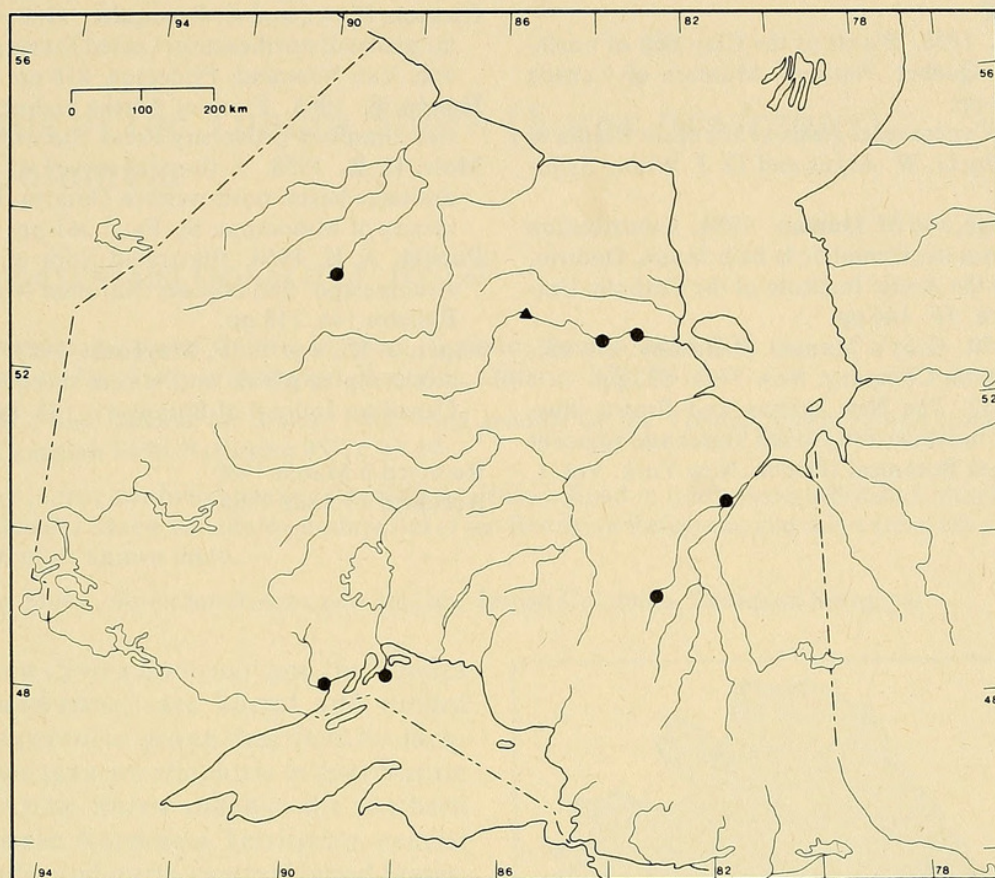


FIGURE 3. Distribution of *Carex loliacea* in Ontario. ● Specimens examined. ▲ Literature records.

with *Carex media* and other fine-leaved sedges on the sides of small, mossy hummocks in a network of streamlets through *Picea glauca* (White Spruce) – *Thuja occidentalis* (White Cedar) woods just above the bank of the Moose River.

Ontario Records of *C. loliacea*

Kenora District

Fawn River between Big Trout Lake and Otter River, 8 July 1952, Moir 357. Deep Sphagnum bog (CAN 259793).

Attawapiskat River 53°08'N, 83°18'W. 17 July 1957. Porsild et al. 20253. Dry river bank (CAN 787751).*

Attawapiskat River, 60 miles (100 km) upstream from town. 7 July 1977. Riley 6699. Closed spruce forest by cool seepage streamlet (TRT 202024) (sub *C. brunnescens*).

Albany R. au rapide Frenchman. 51°22'N, 87°48'W. 22 August 1952. Dutilly, Lepage & Duman 30574. Bois de conifères (n.v.).

*A number of other specimens from this locality collected in the same year (e.g., Porsild et al. 20096, 20205) were distributed as *C. loliacea*. These specimens are *C. disperma*.

Thunder Bay District

Port Arthur, east of Hodder Avenue. 2 July 1950. Garton 1156. In muskeg under alders. (DAO 172285).

Brodeur Island, Lake Superior. Bay at north end of island, 48°33'N, 88°18'W. 8 July 1973. Soper & Given 13151. In *Sphagnum* under Balsam-Spruce. (CAN 367847) (sub *C. interior*).

Algoma District

Kapuskasing; 26 miles (42 km) southwest in Shanly Tp., on Kapuskasing River. 30 June 1953. Baldwin 4963. Road through old black spruce forest. (CAN 225843).

Cochrane District

Canfield Tp. Grey Goose Island; 5½ miles (9 km) south west of Moose River railway crossing. 50°46'N, 81°24'W. 15 July 1974. Reznicek & Carlton. Wet mesic Black Spruce – White Cedar forest at river's edge. Infrequent on hummocks associated with runnels of water (TRTE 5348).

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Literature Cited

- Baldwin, W. K. W.** 1958. Plants of the Clay Belt of northern Ontario and Quebec. National Museum of Canada Bulletin 156. 324 pp.
- Ball, P. W.** 1980. Cyperaceae. Atlas of the Rare Plants of Ontario. Edited by G. W. Argus and D. J. White. *Syllogeus*. In press.
- Dutilly, A., E. Lepage, and M. Duman.** 1954. Contribution à la flore du versant occidental de la baie James, Ontario. Contributions of the Arctic Institute of the Catholic University of America. 5F. 144 pp.
- Fernald, M. L.** 1950. Gray's Manual of Botany. 8th edition. American Book Company, New York. 632 pp.
- Gleason, H. A.** 1952. The New Britton and Brown illustrated flora of the northeastern United States and adjacent Canada. New York Botanical Garden, New York. Vol. 1. 482 pp.
- Gleason, H. A., and A. Cronquist.** 1963. Manual of vascular plants of northeastern United States and adjacent Canada. Van Nostrand, Princeton. 810 pp.
- Hultén, E.** 1968. Flora of Alaska and neighboring territories. Stanford University Press, Stanford. 1008 pp.
- Moir, D. R.** 1958. A floristic survey of the Severn River drainage basin, northwestern Ontario. Ph.D. thesis, University of Minnesota, St. Paul. 261 pp.
- Porsild, A. E.** 1964. Illustrated flora of Canadian Arctic Archipelago. 2nd edition. National Museum of Canada Bulletin 146. 218 pp.
- Soper, J. H., and P. F. Maycock.** 1963. A community of arctic-alpine plants on the east shore of Lake Superior. Canadian Journal of Botany 41: 183-198.

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