Black-edge Sedge

Carex nigromarginata line drawing

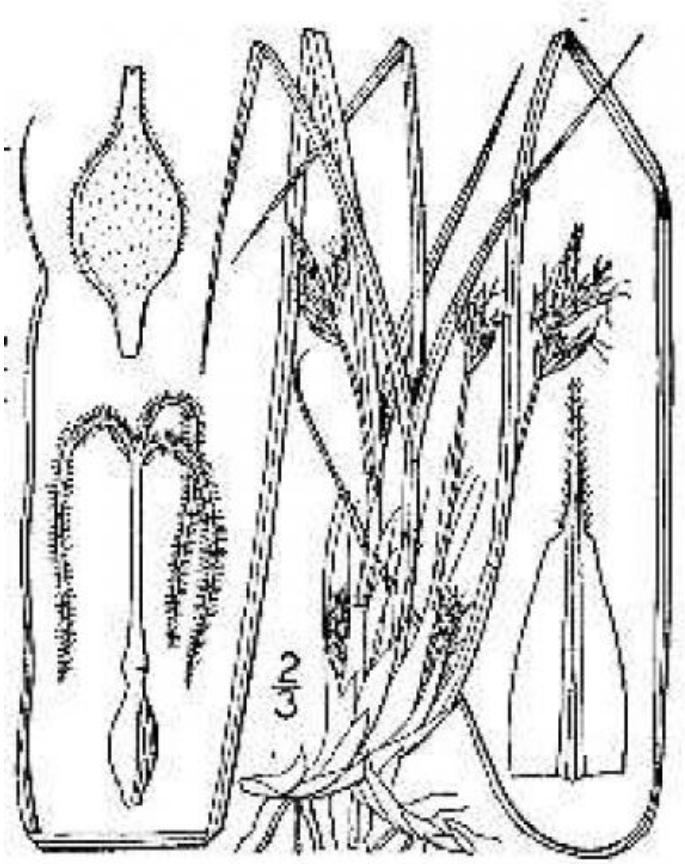


Photo credits: *Britton, N.L., and A. Brown (1913); downloaded from USDA-Plants Database.*

Scientific Name *Carex nigromarginata* Schwein.

Family Name Cyperaceae Sedge Family

Did you know?
Just a few years ago, this sedge was considered historical within New York (i.e. not seen in at least 20 years). David Werier rediscovered this sedge and he and others have been finding more populations. As more people learn to identify this plant, more populations will likely be encountered.

Summary

Protection Threatened in New York State, not listed federally.

This level of state protection means: listed species are those with: 1) 6 to fewer than 20 extant sites, or 2) 1,000 to fewer than 3,000 individuals, or 3) restricted to not less than 4 or more than 7 U.S.G.S. 7 ? minute topographical maps, or 4) listed as threatened by U.S. Department of the Interior.

Rarity G5, S2

A global rarity rank of G5 means: This species is demonstrably secure globally, though it may be quite rare in parts of its range, especially at the periphery.
A state rarity rank of S2 means: This plant is threatened/imperiled in New York because of rarity (typically 6-20 populations or few remaining individuals) or is vulnerable to extirpation from New York due to biological factors.

Conservation Status in New York

There are eight existing populations and about 10 historical populations but more of this species are likely to be found in the Hudson Highlands if surveys are done early enough to identify the species before it sheds its perigynia.

Short-term Trends

At least five new populations of this sedge have been located since 2002. Since this sedge is difficult to identify once its fruits shed, fruits relatively early in the season (fruits mostly shed by mid-June), and is easily overlooked, these five new populations were probably overlooked in the past. Therefore, it will probably be hard to determine if this species is expanding its range north as new populations are discovered. Overall, short term trends are not clear.

Long-term Trends

There are 10 populations which have not been seen in recent years. It is unknown if these populations are still extant since searches to many of these sites have not been conducted. In addition, at least five new populations have been seen in recent years. Therefore, long term trends are not clear but most likely the species is at least not declining. This needs to be backed up by further survey work.

Conservation and Management

Research Needs

It has become abundantly clear that this sedge is being overlooked in New York. Survey work in southeastern New York early in the season (May to early June) will help clarify what the abundance of this sedge is in New York.

Habitat

In New York, *C. nigromarginata* is found in rocky dry-mesic to mesic deciduous forests. Often these forests are of southern affinity and have oaks dominant. It is also known from coastal oak forests. Less frequently it occurs in more open rocky environments. It prefers S and E facing slopes probably because it is a southern plant at the northern edge of its range (New York Natural Heritage Program 2005). Acidic soils of rocky, dry woods, thickets, and clearings, in partial shade of mixed hardwood-pine forests or full sun along open roadsides and clearing edges, often adjacent to streams (Flora of North America 2002). Dry wooded slopes (Rhoads and Block 2000). Dry woods, chiefly in acid soils on the coastal plain (Gleason and Cronquist 1991). Dry woods, thickets, and clearings (Fernald 1970).

Associated Ecological Communities

Acidic Talus Slope Woodland

An open to closed canopy woodland that occurs on talus slopes (slopes of boulders and rocks, often at the base of cliffs) composed of non-calcareous rocks such as granite, quartzite, or schist.

Allegheny Oak Forest

A hardwood forest that occurs on well-drained sites in the unglaciated portion of southwestern New York. This is a forest of mixed oaks with a diverse canopy and richer ground flora than other oak communities in the state.

Appalachian Oak-hickory Forest
A hardwood forest that occurs on well-drained sites, usually on ridgetops, upper slopes, or south- and west-facing slopes. The soils are usually loams or sandy loams. This is a broadly defined forest community with several regional and edaphic variants. The dominant trees include red oak, white oak, and/or black oak. Mixed with the oaks, usually at lower densities, are pignut, shagbark, and/or sweet pignut hickory.

Chestnut Oak Forest
A hardwood forest that occurs on well-drained sites in glaciated portions of the Appalachians, and on the coastal plain. This forest is similar to the Allegheny oak forest; it is distinguished by fewer canopy dominants and a less diverse shrublayer and groundlayer flora. Dominant trees are typically chestnut oak and red oak.

Cliff Community
A community that occurs on vertical exposures of resistant, non-calcareous bedrock (such as quartzite, sandstone, or schist) or consolidated material; these cliffs often include ledges and small areas of talus.

Coastal Oak-hickory Forest
A hardwood forest with oaks and hickories codominant that occurs in dry, well-drained, loamy sand of knolls, upper slopes, or south-facing slopes of glacial moraines of the Atlantic Coastal Plain.

Coastal Oak-holly Forest
A semi-deciduous to mixed deciduous-evergreen broadleaf forest that occurs on somewhat moist and moderately well drained silt and sandy loams in low areas on morainal plateaus. In New York State this forest is best developed on the narrow peninsulas of eastern Long Island. The trees are usually not stunted, and are removed from the pruning effects of severe salt spray. The dominant canopy trees are black oak, black gum, red maple, and American beech. American holly is abundant in the subcanopy and tall shrub layers.

Other Probable Associated Communities

Appalachian oak-pine forest
Coastal oak-beech forest
Oak-tulip tree forest
Successional maritime forest
Successional shrubland
Successional southern hardwoods

Associated Species

Virginia Snakeroot (*Aristolochia serpentaria*)
Sweet Birch (*Betula lenta*)
Bellow-beaked Sedge (*Carex albicans var. albicans*)
Fibrous-root Sedge (*Carex communis*)

Slender Wood Sedge (*Carex digitalis*)
Willdenow's Sedge (*Carex willdenowii*)
Mockernut Hickory (*Carya alba*)
Pignut Hickory (*Carya glabra*)
Poverty Oatgrass (*Danthonia spicata*)
Bosc's Panicgrass (*Dichanthelium boscii*)
Small-fruited Panicgrass (*Dichanthelium dichotomum var. dichotomum*)
Whorled Loosestrife (*Lysimachia quadrifolia*)
Common Solomon's-seal (*Polygonatum biflorum*)
White Oak (*Quercus alba*)
Chestnut Oak (*Quercus montana*)
Red Oak (*Quercus rubra*)
Black Oak (*Quercus velutina*)

Identification Comments

Cusick (1992) describes Carex nigromarginata as "a beautiful sedge with brightly-colored scales of rich chestnut or purple with a green midrib".

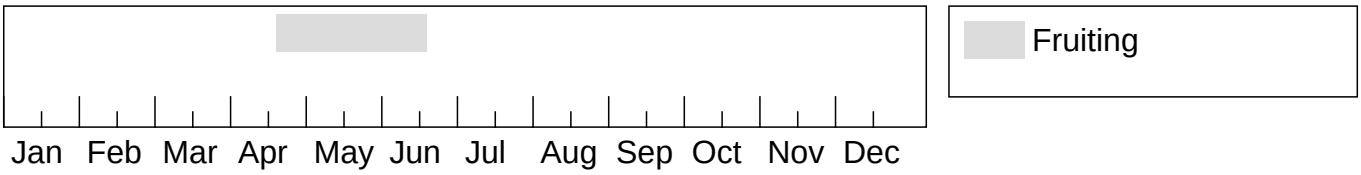
The plants are perennial herbs, 4-12 in. tall, growing in dense tufts, often producing short branches which root. The whole plant often has a flattened appearance as if it had been stepped on. Each stem produces a single inflorescence with these flowering stems of varying height. Some of the culms are short and hidden in the leaves while others are longer and more apparent. The principal leaf blades are very narrow (1.4-4.5 mm wide) and mostly arising from the base. The flowers are unisexual. Staminate flowers occur on the end of the elongated flower structure, the pistillate below. Staminate flowers contain three small, slender, erect stamens which project beyond the petals when pollen is produced. There are 1-4 pistillate flowers (usually 2 or 3) up to .25 in. long, stemless, often crowded, and the lowest sometimes slightly separated but overlapping the next above. The small dry fruit does not open at maturity, is three-angled or nearly round, and contains 3 stigmas. The scales that subtend the pistillate flowers/fruits are often dark red to dark purple sub-marginally. These scales also have a green mid-stripe and pale narrow margins (derived from Gleason 1952 and Crins and Rettig 2002).

Best Life Stage for Identifying This Species

This sedge is most easily identified while in fruit. Full ample specimens are useful for identification purposes. These specimens should include the entire plant (i.e. roots, stems, leaves, and fruit).

The Best Time to See

The species is one of the earliest of the sedges to flower and fruit. It flowers from early April to mid May and is in fruit from late April to early June. The best time to survey for this species is May to very early June.



The time of year you would expect to find Black-edge Sedge in New York.

Similar Species

Carex nigromarginata is a member of section *Acrocystis*. A few other members of this section are a little similar although *C. nigromarginata* is really quite a distinctive sedge.

Carex umbellata, C. tonsa var. *tonsa*, and *C. tonsa* var. *rugosperma* should not be confused with *C. nigromarginata*. The former three all have at least some spikes arising from the base of the culm. These basal spikes can have elongated peduncles and therefore can appear to arise towards the upper parts of the culm. In addition, *C. nigromarginata* often has some culms that are very short but again these culms have all the spikes arising from the upper portion of the culm.

Carex albicans var. *albicans* has wider leaves 1.3-2.5(-2.6) mm wide (vs. (1.9-)2.2-3.4(-4.5)mm wide); and most culms are as long as or longer than the leaves (vs. many culms shorter than the leaves). *Carex albicans* var. *emmonsii* has the widest leaves (1.4-)1.5-2.5 mm wide; staminate spike peduncle (0.5-)0.7-1.5 mm long (vs. 0.4-0.8 mm long); and perigynia 2.3-3.3 mm (vs. (2.6-)2.8-4.0 mm).

Conservation Comments

Some authors included various other members of section Acrocystis as varieties under C. nigromarginata. These include C. nigromarginata var. elliptica (Boott) Gleason = C. peckii; C. nigromarginata var. muhlenbergii (Gray) Gleason = C. albicans var. albicans; C. nigromarginata var. minor (Boott) Gleason = C. albicans var. emmonsii; and C. nigromarginata var. floridana (Schweinitz) K?kenthal (which only occurs south of New York) (Gleason 1952, Crins and Rettig 2002). Rettig (1988, 1990) and Rettig and Giannasi (1990) have placed C. nigromarginata in the C. nigromarginata complex comprised of C. nigromarginata, C. floridana, C. albicans var. albicans, C. albicans var. emmonsii, C. albicans var. australis, and C. peckii. In these studies the researchers found C. nigromarginata to be distinct at the species level. Roalson and Friar (2004) found that the C. nigromarginata complex is not monophyletic. Possibilities for the non-monophyly of this complex include cryptic species, hybridization, and gene paralogs.

Taxonomy

Kingdom Plantae
└ **Phylum** Anthophyta
└ **Class** Monocots (Monocotyledoneae)
└

Order Cyperales

└─ **Family** Cyperaceae (Sedge Family)

Additional Common Names

Sedge

Additional Resources

Links

USDA Plants Database
http://plants.usda.gov/java/nameSearch?mode=sciname&keywordquery=CAREX+NIGROMARGINATA

NatureServe Explorer
http://natureserve.org/explorer/servlet/NatureServe?searchName=CAREX+NIGROMARGINATA

Flora of North America
http://efloras.org/florataxon.aspx?flora_id=1&taxon_id=242357359

Google Images
http://images.google.com/images?q=CAREX+NIGROMARGINATA

New York Flora Atlas
http://www.newyork.plantatlas.usf.edu/Plant.aspx?id=1141

Best Identification Reference

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