Species Status Assessment

Common Name	brown bog sedge	**Date Updated:**	2024-03-12
Scientific Name	*Carex buxbaumii*	**Updated By:**	Richard RIng
Family	Cyperaceae		

Species Synopsis

Brown Bog Sedge is a perennial graminoid in sedge (Cyperaceae) family. It is part of a large genus, *Carex,* with over 230 species in New York. Within *Carex,* it is placed in section Racemosae. The only other member of section Racemosae that occurs in New York is *C. atratriformis* (Murray 2002). Brown Bog Sedge has a circumboreal distr bution globally, occurring in northern temperate and subarctic Eurasia (Natureserve 2023). It occurs in most states in the U.S., though it is listed as Endangered or Threatened in a majority of the states where it is found. There are eleven known extant NY populations. Of the approximately twenty additional historical locations from the state, five have apparently been extirpated due to loss of habitat (Biotics 2023). In NY Brown Bog Sedge occurs primarily in high pH wetland habitats such as rich graminoid and rich shrub fens, calcareous riverside outcrops, peatlands and sedge meadows, and occasionally in vernal pool or lakeside habitats. Its habitat is vulnerable to invasion by invasive species, particularly *Typha latifolia* and *Phragmites australis.* Most populations have been known to persist for at least several decades, but recent trends population trends are difficult to assess due to lack of data.

I. Status

a. Current legal protected Status

i. Federal: **Candidate:**

ii. New York: Threatened

b. Natural Heritage Program

i. Global: G5

ii. New York: S2 **Tracked by NYNHP?** On Active Tracking List

Other Ranks:

COSEWIC: Not listed in Canada
IUCN Red List: Least Concern

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Status Discussion:

Carex buxbaumii is Threatened in New York (Ring 2023). There are approximately eleven known populations and at least nine additional historical locations. These populations are widely scattered throughout the entire state. This plant may be impacted by invasive wetland species. Only one population has over a thousand stems, with typical populations having a few hundred stems. Most of the Long Island New York City area historical locations are considered extirpated.

II. Abundance and Distribution

Region	Present ?	Abundance	Distribution	Time Frame	Listing status/State Rank	SGCN ?
North America	Yes	Unknown	Unknown	Unknown		-
Northeastern US	Yes	Unknown	Unknown	Unknown		-
New York	Yes	Unknown	Unknown	Unknown	T	Yes
Connecticut	Yes	Unknown	Unknown	Unknown	S1	-
Massachusetts	Yes	Unknown	Unknown	Unknown	S2	-
New Jersey	Yes	Unknown	Unknown	Unknown	S3	-
Pennsylvania	Yes	Unknown	Unknown	Unknown	S3	-
Vermont	Yes	Unknown	Unknown	Unknown	S1	-
Ontario	Yes	Unknown	Unknown	Unknown	S5	-
Quebec	No	-	-	-		-

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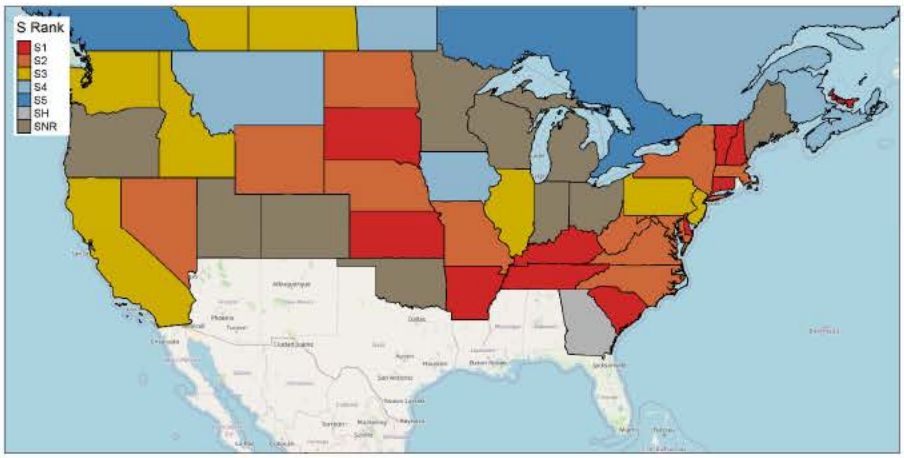

***Figure* 1:** Carex buxbaumii *North American distribution*

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Peripheral	Unknown

III. NY Rarity and Trends

Trends Discussion

There are eleven populations that have been seen in recent years. Population trends at these populations is unknown. Most of these populations are not large but appear healthy. There is no reason to suspect that they are declining but there is no data to prove this assertion.

Short term trends

The short term trends are unknown but are suspected of being stable. At least four populations that once occurred in the New York City area are believed extirpated.

Long term trends

There are at least 20 additional historically known populations that have not been seen in recent years. One of these populations was searched for without success but may still be extant. It is unknown if the other historical populations are still extant. Overall, long term trends indicate at least some decline but additional surveys for historical populations are needed.

Details of historic and current occurrence:

Carex buxbaumii occurs widely scattered throughout most of New York. Populations from the New York City area appear to have been extirpated due to urbanization. There are an estimated 2500-3500 individuals total based on numbers from extant occurrences, although most of the populations have not been surveyed for more than 20 years.

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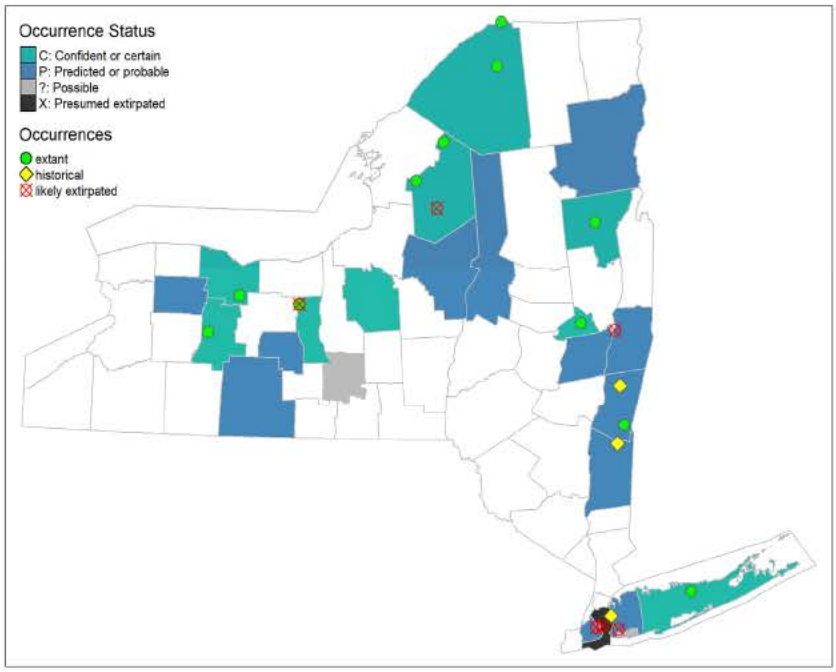

Figure 2: *NYS distribution for* Carex buxbaumii

Table 1. *Number of records (element occurrences) of* Carex buxbaumii *grouped by the dates known to be extant (the years spanning first observation to last observation) and the number and percent of total of USGS 7.5 minute map quadrangles these observations fall within for New York State.*

Years	# of Records	# of distinct quads	% of quads in State
Pre-1995	20	21	2.1
1995-2004	7	8	0.8
2005-2014	5	6	0.6
2015-2023	4	5	0.5

Monitoring in New York

Two extant populations occur on State Park lands and are monitored on a ten-year rotation. One additional population on State Forest lands is also monitored on a five-year cycle. None of the other populations have been regularly monitored.

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IV. Primary Habitat or Community Type

Northeastern Habitat Classification Macrogroup: Central Appalachian and Coastal Peatlands, Eastern North American Riverscour Vegetation, Northeastern Floodplain Forest, Northern Swamp

NatureServe broad habitat types: Grassland/herbaceous, Forest/Woodland, Bare rock/talus/scree, Forest - Hardwood, Riparian, FORESTED WETLAND, HERBACEOUS WETLAND, Bog/fen.

Habitat or Community Type Trend in New York

Declining: **Stable:** **Increasing:** **Unknown:** ✓

Time Frame of Decline/Increase:

Habitat Specialist **Yes:** ✓ **No:**

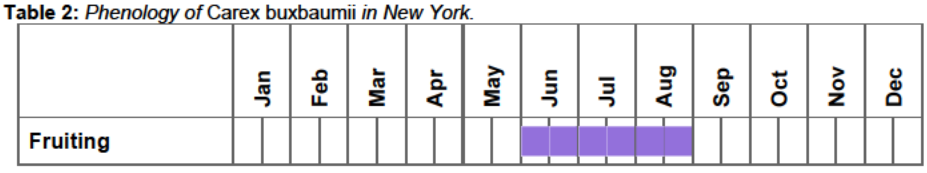
Habitat Discussion:

Carex buxbaumii occurs in a variety of wetland habitats, but prefers calcareous, high pH sites. It grows in rich fens, swamps, wet meadows, ice scoured river edges, lake shores, and occasionally in vernal ponds. It is mostly found in relatively small patches (New York Natural Heritage Program 2023). Wet meadows, marshes, and fens (Murray 2002). Peat-bogs, marshes, wet meadows, and other wet places (Gleason and Cronquist 1991). Shores, meadows, marshes, and old bogs, often forming large stands; sometimes in marly bogs and marshes (Voss 1972). Wet shores, swamps, and bogs (Fernald 1970). Sunny swamps or wet meadows or springy places in calcareous regions (Mackenzie 1931-1935).

V. Species Demographics and Life History

Brown Bog Sedge is a perennial, graminoid (grass-like) species. Individual shoots may flower and fruit in their first year; most temperate Carex species' shoots live a maximum of two to six years, though mortality of individual shoots is high (Bernard 1990). Colonies of *Carex* also reproduce asexually via underground stolons. Like all *Carex* species, Brown Bog Sedge is wind-pollinated (Gleason and Cronquist 1991). *Carex* seeds are primarily dispersed by simple gravity, and wind, and Brown Bog sedge fruit lack specialized structures for dispersal by water (Zukowski et al 2010).

Table 2: *Phenology of* Carex buxbaumii *in New York.*



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VI. Threats

The fen habitats often favored by Brown Bog Sedge are threatened by invasive plants, particularly *Typha angustifolia* and *Phragmites australis* (Biotics 2023). Fens and other wetland habitats may also be threatened by eutrophication or modification of the hydrologic regime, and flooding by beavers (NY Natural Heritage Program 2023).

Are there regulatory mechanisms that protect the species or its habitat in New York?

Yes: **No:** ✓ **Unknown:**

If yes, describe mechanism and whether adequate to protect species/habitat:

Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:

Invasive species need to be monitored at least one population, and controlled if negatively impacting the habitat where the *Carex buxbaumii* occurs. One site needs to be monitored for flooding by beavers and flooding needs to be prevented. At least one population needs to be protected from potential adjacent development. The fen habitats where this plant is most commonly found are vulnerable to invasion by exotic plants (particularly *Phragmites australis)* as well as eutrophication from adjacent agriculture and changes to the surrounding hydrology; invasive species management and protection of upstream lands should be undertaken accordingly (NYNHP 2023).

Table 3. *Recommended conservation actions for* Carex buxbaumii.

Conservation Actions	
Action Category	**Action**
Land/water protection	1.1. Site/area protection
Land/water protection	1.2. Resource & habitat protection
Land/water management	2.1. Site/area management
Land/water management	2.2. Invasive/problematic species control
Land/water management	2.3. Habitat & natural process restoration

VII. References

This SSA drew heavily from these resources:

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Add NE Habitat Classification Macrogroup Reference

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