Natural Heritage &
Endangered Species
Program

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THREATENED SPECIES OF MASSACHUSETTS

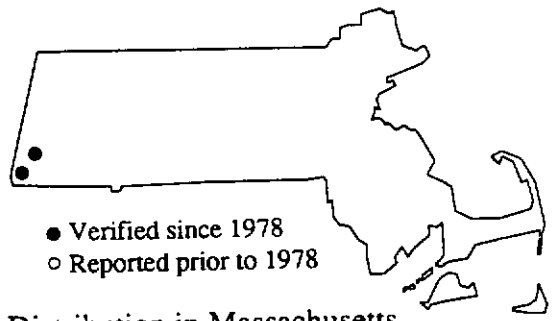
HANDSOME SEDGE
(*Carex formosa* Dewey)

Gleason, H. A. The New Britton and Brown Illustrated Flora of the Northeastern U.S. & Adjacent Canada. NY Botanical Garden, 1952.

DESCRIPTION: Handsome sedge is a slender, grass-like, perennial in the Sedge family (Cyperaceae). It grows in clumps that are 3 - 7 dm (3/4 - 2 1/2 ft.) in height, and its culms, or stems, are tinged with purple at the base. The leaves are 3 – 7 mm (3/25 - 7/25 in.) wide, very thin, and hairy underneath. Handsome sedge's much-reduced flowers are clustered in spikes (unbranched, usually elongate inflorescences in which the flowers are stalkless) that contain a mixture of male and female flowers. The terminal spike of *C. formosa* is mostly staminate, or male, with only a few pistillate, or female, flowers at its summit. In contrast, the 1 - 3 cm (2/5 - 1 1/5 in.) long lateral spikes are mostly pistillate—with a few staminate flowers at the base—and are borne on thin, downward curving peduncles (the stalks of inflorescences). These peduncles are longer than the spikes. The inflated, 3.5 - 5 mm (4/25 - 5/25 in.) long, perigynia (sac-like structures that enclose the female reproductive structures) are topped by short elongations or "beaks", and are sub-tended by scales that are slightly shorter than the perigynia. The bracts (modified leaves associated with flowers or inflorescences) sheath the stems and become much smaller toward the top of the plant. Handsome sedge's perigynia-enclosed fruits mature from early to late June.

RANGE: The range of *C. formosa* has been documented as occurring from southwestern Quebec , south through western New England to Connecticut, and west through southern Ontario and Minnesota, with an extension to North Dakota.

Documented Range of Handsome Sedge



Distribution in Massachusetts

SIMILAR SPECIES IN MASSACHUSETTS: Handsome sedge could easily be confused with Davis's sedge (*C. davisii*). Unlike Davis's sedge, however, Handsome sedge has both male and female flowers on its lateral spikes: the lateral spikes of Davis's sedge are entirely pistillate. In addition, the pistillate scales of Davis's sedge have very long awns (slender bristles located at the top of the scales); those of Handsome sedge do not.

HABITAT IN MASSACHUSETTS: Handsome sedge is a plant of rich mesic woods and meadows. In Massachusetts, all three current habitats (verified since 1978) are quite similar: woodlands with fairly open canopies, southwest aspects and moist calcareous soils that drain to nearby bodies of water or streams. In these sites, the species occupies the transition between wetland condition where the soil is saturated and upland meadow or woodland conditions where the soil is well-drained. Among the species associated with *C. formosa* are white ash (*Fraxinus americana*) and pubescent sedge (*Carex hirtifolia*)—both of which favor moist soils. Other species are various weedy aliens, including buckthorns (*Rhamnus* spp.) and common plants that occur in a variety of habitats.

POPULATION STATUS IN MASSACHUSETTS: *Carex formosa* is presently listed as "Threatened" in Massachusetts. Individuals of all species listed in Massachusetts are protected from take (picking, collecting, killing...) and sale under the Massachusetts Endangered Species Act. There are three current stations (discovered or relocated since 1978) and one historical station (unverified since 1978) in a total of two towns (Egremont and Stockbridge) in the Commonwealth. Handsome sedge is also considered rare in Connecticut, Vermont, New York, Pennsylvania, Minnesota, North Dakota and Wisconsin and was present historically in Ohio. It is considered to be very rare and local throughout its range.

MANAGEMENT RECOMMENDATIONS: As with most rare plants, exact needs for management of Handsome sedge are not known. The following advice comes from observations of the populations in Massachusetts. In a recent study, Handsome sedge seemed to do best in filtered light under open tree canopies with fairly open understories. At the current stations in Massachusetts, shade from dense shrub cover reduced growth most; whereas shade from tall trees, which allowed patches and shafts of sunlight was favorable for growth and flowering. Careful opening of overstory and /or shrub layers might be tried as a way to decrease strong shade. Despite the favorable conditions provided by an open canopy, logging —especially clear-cutting—may encourage both unfavorably dense undergrowth and invasion by exotics. Therefore, continuing observations after any forest opening is important, and any results, positive or negative, should be made known. It is also critical not to alter the moisture regime of the habitat by draining or ditching. The continuation of this species at any given site depends on the combination of filtered sunlight, alkaline soil, and appropriate levels of moisture; altering any of these may decrease the ability of Handsome sedge to compete with other plants, and lead to population decline.

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