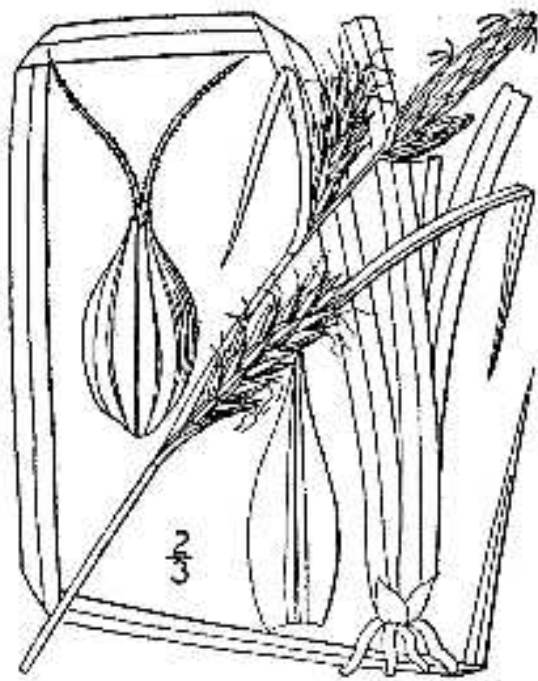


NEBRASKA SEDGE

Carex nebrascensis Dewey

Plant symbol = CANE2

Contributed by: USDA NRCS Idaho State Office,
Boise, Idaho



From Britton & Brown (1913)
@ plants.usda.gov

Wildlife and Livestock: Nebraska sedge is a valuable forage species used by big game and livestock. The annual production and nutrient levels are quite high. It has half the protein level of alfalfa. It provides cover for nesting waterfowl, seeds for small mammals and birds, and muskrats and geese graze the shoots. It can be used as a key species to determine grazing pressure. It has moderate to good palatability early in the season, but becomes tough as the temperatures grow colder.

Conservation Uses: This species has utility for erosion control, constructed wetland system applications, wildlife food and cover, wetland creation and restoration, and for increasing plant

diversity in wetland and riparian communities. Its dense root mass (214 cm of roots/cm³ of soil) makes this species resistant to soil compaction and erosion. It also makes it an excellent choice for soil stabilization in wetland and riparian sites. Nebraska sedge is used extensively in bioengineering techniques, because of its root system. The rhizomes also form a matrix for many beneficial bacteria making this plant an excellent choice for wastewater treatment.

Status

Please consult the PLANTS Web site and your State Department of Natural Resources for this plant's current status (e.g. threatened or endangered species, state noxious status, and wetland indicator values).

Description

General: Sedge Family (Cyperaceae). Nebraska sedge is a native, perennial, heavily rhizomatous wetland plant that is found in low valleys to mid-elevations. It will form dense stands, but more often, it is the dominant member of the wetland community. It grows in wet to moist meadows, marshes, swamps, ditches, seeps, stockwater ponds, low to moderate gradient streams, riparian wetlands, and lake shores. It reproduces by rhizomes and seed. However, seedling establishment is rare probably, because it needs freshly deposited, fertile, moist soil. Shoots from rhizomes are produced throughout the growing season and into late fall.

It forms a dense deep root system with root biomass to 3000g/m² in the top 20 cm of the soil. The stems are upright and triangular. The plants growing in saturated soils will grow to about 90 cm. The leaves are elongated, alternate, longer or shorter than the stem, up to 12 mm wide, and often with a bluish tinge. The flowers are borne in spikes. Male and female spikes are usually separate and on the same plant (monoecious). One or two male spikes are found above the female spikes. They are narrowly cylindrical and up to 5 cm long. Female spikes number from 2-5. They are 1-5 cm long and the lowest spike is subtended by a leafy bract. Plants flower in June to August.

The fruits are brown lenticular achenes, up to 2 mm long. Seed ripens in August to September. They are surrounded by a "leathery capsule" called a perigynium. Perigynia are elliptic to ovate, 3 to 4 mm long, and yellowish brown to light brown in color. The seed (if present) is found in the base of the perigynial cavity. There are 2.7 million

United States Department of Agriculture-Natural Resources Conservation Service

Plant Materials <<http://plant-materials.nrcs.usda.gov/>>

Plant Fact Sheet/Guide Coordination Page <<http://plant-materials.nrcs.usda.gov/intranet/pfs.html>>

National Plant Data Center <<http://npdc.usda.gov>>

perigynia/kg. The perigynia is not held tightly in the seed head and high winds and frost will cause the perigynia to drop off.

Distribution: Nebraska sedge is common throughout the western Midwest and western United States. For current distribution, please consult the Plant Profile page for this species on the PLANTS Web site.

Adaptation

It tolerates alkaline conditions very well. It is a wetland obligate plant. Nebraska sedge grows in areas that are saturated. It can handle standing water for long periods as long as there are periods where the soils dry. The sites where it is found rarely have the water table drop more than 1 m below the root zone late in the growing season. It can tolerate total inundation for about 3 months.

Seeds and Plant Production

Collection and cleaning: Seeds may be collected by hand stripping the seed from the plant or clipping it using a pair of hand shears. A power seed harvester may also be used. The perigynia is often mistaken for the seed. In many cases, especially if there is a frost during flowering, the seed will not fill, but the perigynia will still form. It is recommended the collector open several perigynia to see if it actually contains a seed.

If debris or other seed mixed in the collection, cleaning may be desirable. The hammer mill is used to break up the large debris and knock the seed loose from the stem. It may not always be needed. Cleaning can be accomplished using a seed cleaner with a No. 8 top screen and a No. 20 bottom screen. Screens should be sized so desired seed will fall through and debris and weed seed are removed. Air velocity should be adjusted so chaff and empty perigynia is blown away. Air flow and screen size may require adjustment to optimize cleaning process for given situation.

Once the "seed" is cleaned, the perigynia must be removed. It can be removed with a seed scarifier or a sandpaper box. The seed is then re-cleaned using the top and bottom screens to separate the seed from the empty perigynia.

Special procedures: The germination rate may be enhanced by removing the perigynia and by stratifying the seed in a mixture of water and sphagnum moss at 2° C for 30 days.

Greenhouse Seeds need light, moisture, and heat for germination. Place seeds on surface of soil and press

in lightly to assure good soil contact. Do not cover seed. Soil should be kept muddy. Greenhouse should be kept hot (32°C to 38°C). Germination should begin within about one week. Maintain moisture until plants are to be transplanted.

Wild transplants: Wild plants can be collected and transplanted directly into the desired project site. As long as no more than 4 dm squared and 13 to 15 cm deep is removed from any 1 m² area, the hole will fill in within one growing season. Care should be taken not to collect plants from weedy areas as these weeds can be relocated to the transplant site and the hole left at the collection site may fill with undesirable species.

Establishment

Planting plugs (either from the greenhouse or wild transplants) is the surest way to establish a new stand of this species. Plug spacing of 30 to 45 cm will fill in within one growing season. The soil should be kept saturated with no more than 2.5 to 5.1 cm of standing water until the plants are well established and the aerenchymous material (the above ground biomass) is about 0.3 m tall. Fluctuating the water level during the establishment period may speed establishment and spread. Water levels can be managed to enhance rhizome spread and to control weeds.

Management

The soil should be kept saturated. The water table should rarely drop below the root zone. This species can tolerate periods of drought and total inundation. Water levels can be managed to control terrestrial weeds.

Pests and Potential Problems

Few insect or disease problems have been encountered in the greenhouse. Aphids will feed on the stems, but little or no damage has been noted and the vigor of the plant has not been affected.

Cultivars, Improved, and Selected Materials (and area of origin)

Contact your local Natural Resources Conservation Service (formerly Soil Conservation Service) office for more information. Look in the phone book under "United States Government". The Natural Resources Conservation Service will be listed under the subheading "Department of Agriculture."

References

USDA NRCS. *Wetland plant fact sheet – creeping spikerush (Eleocharis palustris)*. Interagency

Riparian/Wetland Project, Plant Materials Center,
Aberdeen, Idaho.

Prepared By:

Dan Ogle, USDA NRCS Idaho State Office, Boise,
Idaho.

Species Coordinator:

Dan Ogle, USDA NRCS Idaho State Office, Boise,
Idaho.

Edited: 28sep05 jsp

For more information about this and other plants, please contact your local NRCS field office or Conservation District, and visit the PLANTS Web site <<http://plants.usda.gov>> or the Plant Materials Program Web site <<http://Plant-Materials.nrcs.usda.gov>>

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