

# CYPERACEAE

## Carex

Got Sedge? Part Two

Revised 09 August 2015.

Draft from Designs On Nature; Up Your C 26

**CAREX** Linnaeus 1753 **SEDGE, LAÏCHE, SHEAR-GRASS**

**Carex garberi** Fernald \*IL, IN, ME, MI, MN, NH, NY, OH, PA, VT, WI **GARBER'S SEDGE**, aka *CAREX DE GARBER*, ELK SEDGE, FALSE GOLDEN SEDGE, PALE GOLDEN SEDGE, (*garberi* For Abram Pascal *Garber*, 1838–1881, Lancaster Co, Pennsylvania physician & botanist noted for his contributions to the flora of Florida, discovered *Carex garberi*.) Section *Bicolores*

Habitat: Calcareous beaches, interdunal swales, & pannes, always near Lake Michigan (ws92). Sandy beaches near Lake Michigan (m02). “Moist shores, meadows, fens, on base-rich soils; 0–1500 m” (fna). distribution/range: Very rare in Illinois, Cook & Lake cos only. Only mapped in Lake & Porter cos Indiana by ws92, no Illinois cos.

Culture:

Description: roots tufted, frequently more so than *Carex aurea*, to running by slender rhizomes; pistillate scales obtuse to broadly acute; perigynia distigmatic, to 3 mm long, plump, obovoid, beakless, white papillose above, becoming less so below the middle, where development of larger water-filled cells is absent or much less so than in *C aurea*, remaining glaucescent in age (ws92), N; key features: “Differentiated spikes, terminal spike linear, staminate or gynaeandrous, lateral spikes pistillate; achene enclosed in a prominently ribbed perigynium” (Ilpin.)

Comments: status: Endangered in Illinois, New Hampshire, New York, Ohio, & Pennsylvania. Special Concern in Maine. Threatened in Indiana, Minnesota, Vermont, & Wisconsin. phenology: Blooms May 03- May 26, mean week 11. Blooms June (m02). C3. Fruiting summer.

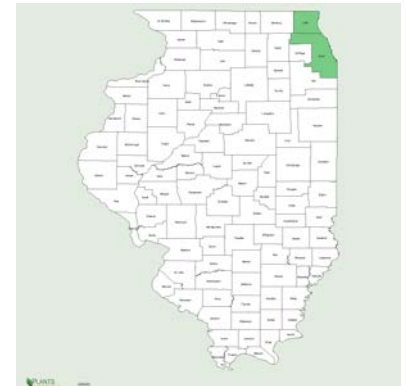
VHFS: [*C aurea* in part] [*C aurea* Nutt var *androgyna* Olney in S Watson, Botany (Fortieth Parallel), 371. 1871, not *C androgyna* Balbis 1801]

**Carex geyeri** Boot. Geyer's Sedge, aka ELK SEDGE, (*geyeri* after Charles A Geyer, a German botanist who collected in the 1840's in Washington & Idaho, Minnesota, & Iowa.) Subgenus *Primocarex* Section *Firmiculmes*

Habitat: Dry woods in calcareous soil. Woodlands, dry meadows, open slopes in the foothills east of the Cascades & into the Rockies. “Dry montane & subalpine grasslands, burns, & open spruce, fir, or pine woods; 800–3300 m” (fna).

distribution/range: Western sp, 2,000-4,500', with a disjunct population in Pennsylvania.

Culture: Plant 1-2 lb/acre in fall or spring (rain). Seed is commercially available. Low acid tolerance, medium salinity tolerance.





*Carex geyeri*

Photos Hurd, EG, NL Shaw, J Mastrogiuseppe, LC Smithman, & S Goodrich. 1998. USDA-NRCS PLANTS Database / Not copyrighted images.

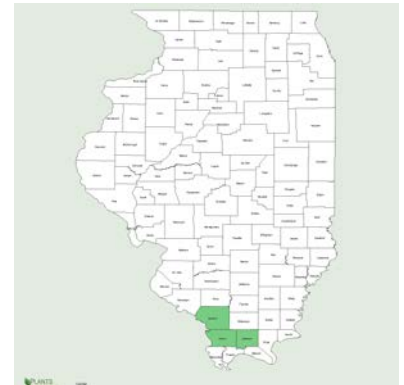
**Carex gigantea** Rudge \*IL, IN, KY GIANT SEDGE, aka LARGE SEDGE, Subgenus *Carex* Section *Lupulina*

Habitat: Wet woods, swampy woods, meadows (m02). “Wet swamp forests, forest openings, open swamps; 0–400 m” (fna).  
distribution/range: Rare, Jackson, Johnson, Pulaski, & Union cos. Southern Illinois is at the northern limit of its range.

Culture:

Description: spikes staminate spikes 2-5; perigynia widely spreading at maturity, deep green but becoming paler green, beaks about twice the length of the body; achenes angles knobbed, sides noticeably depressed, broader than long, summit subtruncate; key features: “Grows in small groups; staminate spikes often with a pistillate flowers; achene surrounded by a long beaked perigynium with a distinctly enlarged base; horizontal broad middle with sine-wave outline, narrow base, & persistent kinked beak. Very bottom is narrow, so effect is of a "ballooning". Achene with.” (Ilpin)

Comments: status: phenology: Blooms May – September (m02). Fruiting late spring – early summer.



few



*Carex gigantea*

Line drawing Britton & Brown (1913) courtesy of Kentucky Native Plant Society. Illinois map courtesy plants.usda.gov.

**Carex glaucoidea** Tuckerman ex Olney BLUE SEDGE, AKA FLACCID SEDGE, GLAUCESCENT SEDGE, GLAUCOUS SEDGE, (*glaucoideus* -a -um from Latin *glauca* -a -um bluish-gray or greenish-gray, from Greek γλαυκός, *glaukos*, silvery, gleaming, or bluish-green or gray, & -oides, with the form of or a resemblance, for the strongly glaucous foliage) Section *Griseae*

Habitat: Woods (m02). Wooded slopes over bedrock soils, ridges & ravines “Mesic to wet-mesic deciduous forests or seasonally moist prairies, usually in clays or loams; 10–1900 m (fna). distribution/range: Occasional in the s ½ of Illinois, absent elsewhere. Adventive in a oldfield in Porter Co. Indiana.

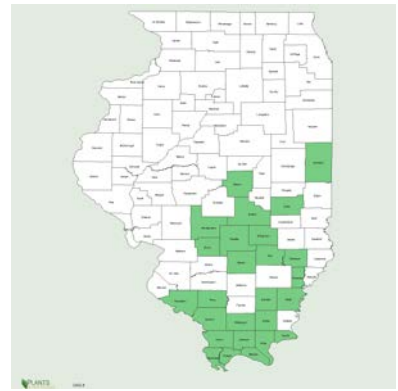
Culture: Available from Chesapeake Native Nursery.

Description: plants caespitose, rhizome internodes 1.2-2.8 mm; culms yellow brown at base, 0.3-1.5'; spikes terminal spike staminate, or barely with a few perigynia, lateral spikes usually 4; key features: ① “A plant of dry places. Leaves flat, very glaucous. Staminate spike inconspicuous, mostly sessile or short-peduncled, often exceeding topmost pistillate spike. Pistillate scales less than or equaling 1/2 length perigynia, acuminate to short-awned. Perigynia beakless, slightly emarginate, ellipsoid. Achene triangular, concave sides, blunt angles, stipitate, bent-apiculate. In the field, this plant is recognized by its thick, glaucous leaves lasting through the winter months.” (Ilpin)

Comments: status: phenology: Blooms May – July (m02). Fruiting spring to early summer (fna). It has been reported from Lake Co, Indiana several times, but the reports are probably all based on a specimen of *C granularis*.

This sp is frequently used in landscaping.

VHFS: [*C flaccosperma* Dewey var *glaucoidea* (Tuck) Kük, *C flaccosperma*]



*Carex glaucoidea*

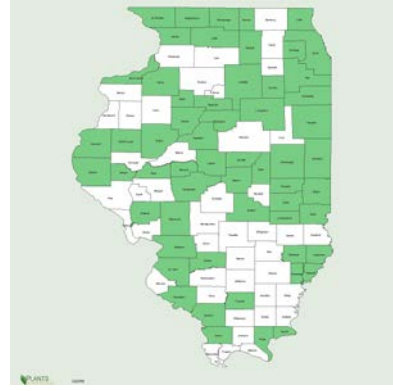
Line drawing Britton & Brown (1913) courtesy of Kentucky Native Plant Society. Illinois map courtesy plants.usda.gov.

**Carex gracilescens** Steudel \*WI SLENDER LOOSE-FLOWERED SEDGE, aka *CAREX GRELE*, SELDOM SEEN SEDGE, SLENDER WOOD SEDGE, SLENDER SEDGE, (*gracilescens* becoming slender or narrowing, by wishful thinking tapering to a point, from Latin *gracilescent-em*, present participle of *gracilesce-re*, to become slender, from the adjective *gracilis* -is -e, for the elongate lower pistillate peduncles.) Subgenus *Carex* Section *Laxiflorae*.

Habitat: Degrading Lake Michigan bluff mesic woodlands & mesophytic dune savannas near the lake in Indiana (ws92). Moist or dry woods (m02), often in calcareous soils. “Moist to dry deciduous or mixed deciduous-evergreen forests or woodland edges in partial shade, frequently on limestone or chalk, on clay or marl soils, stream bottoms or on steep slopes; 0–600 m” (fna). distribution/range:

Culture: Spp in the *C laxiflora* group are reported to have hydrophilic seeds (cu08). 184,000 (pm11); 654,179 (gnhm13); 764,353 (gnhm11) seeds per pound. Often specked, but seldom seen for sale. This sp is barely in the seed trade, being available from a single vendor. Buy early & buy often, & anticipate shortages.

bottom line: Dormant seeding is necessary for field establishment. Limited data shows 5-9% germinable & 87-89% dormant seed. Germ 7.0, 7.0, na, sd 2.0, r5.0-9.0 (1.0)% Dorm 88-88 na sd 1.0 r87-89 (2.0)% Test 28-28 na r25-30 days (#A)\*\*



Comments: status: Special Concern In Wisconsin. phenology: Blooms April 24-May 11, mean week 9; April – June (m02). Fruiting spring (fna). Genetic source Yorktown Twp, Henry Co.

“Not uncommon in large or small tufts along shady roadsides & the edge of woods. Not as common as *C blanda* which it resembles. (*C laxiflora* var *gracillima* Boott)” (ewf55)

“On the Valpariso Moraine on lake bluff regions west of Lake Michigan, this sp persists in mesophytic woodlands which once were more savanna-like. It was probably a principal fuel matrix sp, along with *Carex hirtifolia*, *C jamesii*, *C pensylvanica*, & *C rosea*.” (ws92)

VHFS: Gleason & Cronquist (1963) treat this as a variety of *C laxiflora*. [*C laxiflora* Lam *gracillima* Boott] Illinois map courtesy plants.usda.gov.

**Δ *Carex gracillima* Schweinitz** GRACEFUL SEDGE, aka PURPLE-SHEATHED GRACEFUL SEDGE, (Latin *gracillimus -a -um*, Latin superlative adjective, most slender or very slender, for the elongate slender pistillate spikes.) FACU+ Subgenus *Carex* Section *Gracillimae*.

Habitat: Frequent woodland sp, mesic woods, wet swamps, beech maple forests (ws92). Forests. “A woodland sedge that is found much more frequently in Stephenson & DeKalb cos than in Winnebago Co.” (ewf55) Irregular distribution, plentiful in some woods, absent from others (ewf59). distribution/range:

Occasional in the n ¼ of Illinois, also Alexander, Jackson, & McDonough cos.

Culture: 60 days cold moist stratification. Surface sow, seeds are very small or need light to naturally break dormancy & germinate (pm09). Genesis Nursery seed data is limited, but indicates cold moist stratification is required for most lots.

117,800 (gnam10); 119,884 (gnam11); 441,205 (gna06b); 445,973 (gnam08); 462,322 (gnam06); 1,632,000 (aes10) seeds per pound.

cultivation: Reported as clay soil tolerant (timber clays perhaps).

bottom line: Dormant seeding is necessary for field establishment. Flipflop species, somewhat crossover, 60% lots >72% dorm. Germ 22.5, 8.0, 2.0, sd 24.8, r2.0-66 (64)%. Dorm 61.5, 72, na, sd 25.5, r16-86 (70)%. Test 31, 33, 33, r22-36 days. (#7).\*\*

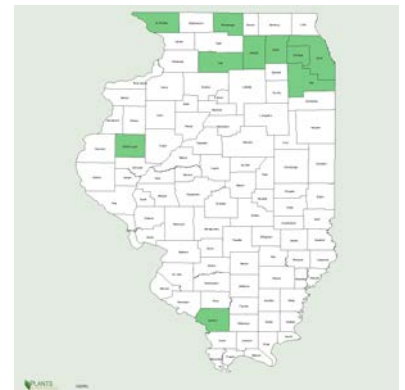
Description: Plant base red purple; leaves abundant, dark green, M-shaped, 4-11 mm broad, evergreen; sheaths older leaf sheaths minutely hairy & fine red-dotted; heads terminal spikelet with some perigynia at the tip; spikes perigynia appressed; staminate scales 2 x 1 mm; pistillate scales; perigynia beakless, bluntly 3-angled, 2.5-3 mm long (3.5 x 1.5 mm), 6-20 nerved, green, ellipsoidal, blunt. key features:

Comments: status: phenology: Blooms April 11 to May 24, mean week 9. Unusual woodland sedge. Excellent in shaded landscaping & naturalizing. Plant near paths to appreciate its beauty, clumping with fine blades & red stem bases. As the sp & common names name imply, graceful arching stems with several, slender, pendant strands of bead-like seeds. Seed source DuPage & Kane cos.

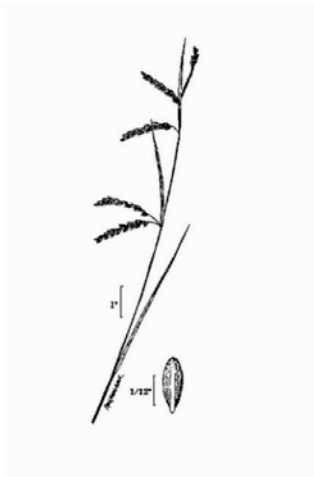
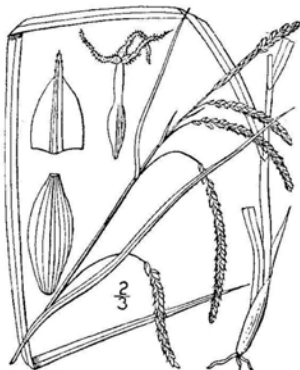
Associates: Butterfly host plant. Walnut tolerant.

ethnobotany:

VHFS: *Carex gracillima* Schwein X *Carex virescens* Muhl ex Willd.



test





*Carex gracillima*

Line drawing Britton & Brown (1913) courtesy of Kentucky Native Plant Society. Photo Robert H Mohlenbrock USDA-NRCS PLANTS Database; Not copyrighted image. 2<sup>nd</sup> line drawing Mark Mohlenbrock, USDA-NRCS PLANTS Database / USDA NRCS *Wetland flora: Field office illustrated guide to plant sp.* USDA Natural Resources Conservation Service. Not copyrighted image. Illinois map courtesy plants.usda.gov.

**Δ *Carex granularis* Muhlenberg ex Willdenow** \*NH LIMESTONE MEADOW SEDGE, aka *CAREX GRANULEUX*, GRANULAR SEDGE, MEADOW SEDGE, PALE FIELD SEDGE, PALE SEDGE, (*granularis* -is -e granular, composed of grains, or divided small knots or tubercles, as the roots of some *Saxifraga*, from Latin *granulum*, *granuli*, a granule, a small grain, & -aris, pertaining to, resembling clusters of grains, for the spikelets resembling clusters of grains.) Facultative wet+ Subgenus *Carex* Section *Granulares*.

**Habitat:** Wet meadows, old fields, open woodlands, uncommon, shaded hillside seeps, moist old fields, wet open calcareous meadows, raw marl, & wooded cliffs. woods & fen sp. Open calcareous ground near Lake Michigan, calcareous fens, disturbed woods, moist old fields (ws92). Prefers moist soil. Potential seed bank sp. Wilhelm (1991) lists this sp in the Alluvial community. Wet ground, irregularly distributed. Woods, old fields, fens, wet meadows (m02). “Low, open ground, meadows, fens, glades, or shores, ditches, moist woods, & bottomland swamps, especially along borders, clearings, streams, trails, usually in clayey or marly soils, frequently weedy in limestone districts; 0–700 m” (fna). **distribution/range:** Common throughout Illinois (m02) “Abundant where found but less frequent than the next (*C haleana*). Kishwaukee River slough near Killbuck Forest Preserve.” (ewf55)

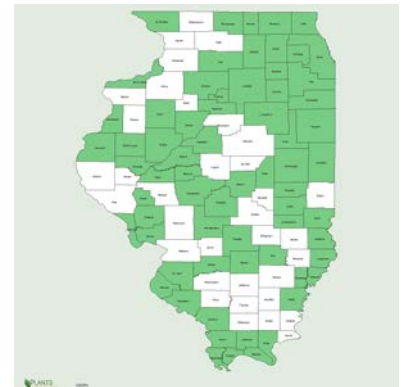
**Culture:** 60 days cold moist stratification. Surface sow, seeds are very small or need light to naturally break dormancy & germinate (pm09). Dormant seed or moist cold stratify. Small seeds need light to germinate, scant soil cover.

**seed counts & rates:** 248,000 (jfn04), 256,000 (pm01), 347,626 (gnh09), 353,996 (gnh02), 363,200 (gnh14), 364,659 (gnh02), 369,983 (gnh11), 397,897 (gnsp07), 400,000 (gn), 414,991 (gnhm09), 417,791 (gna06), 426,623 (gnh05), 428,504 (g489,884 (gnh12), 525,463 (gnh13) seeds per pound. In seed mixes plant up to 0.31 lb pls per acre (USDA 1997), but this rate very high & often too costly. Our recommendation is 0.063-0.125 lb pls per acre (gni).

**cultivation:** pH tolerance not available. Nutrient load tolerance low to moderate. Salt tolerance low. Not siltation tolerant! Partial to full sun. Tolerates 1” of standing water (clean water) for short to moderate times.

**bottom line:** Dormant seeding is a strong necessity for field establishment. Some say germination is best from fresh seed, but it germinates well from dry stored seed with stratification. I have seen no references to this sp having hydrophilic seed. Genesis Nursery seed tests show low germination (1-11%) without cold moist stratification. Consistently strongly dormant. Germ 5.3, 4.0, 2.0, sd 3.6, r1.0-11.5 (10.5)%. Dorm 82, 81, 88, sd 7.9, r68-95 (27)%. Test 32, 35, 39, r29-71 days. (#17).\*\*

**Description:** Similar to *C blanda*; roots cespitose sedge; culms 0.8-1.5', 0.5-2.0'; leaves blue-green; spikes the typical variety has pistillate spikes 5-6 mm thick; pistillate scales 2 x 1 mm, speckled; perigynia crowded, only slightly asymmetrical, broadest below middle, or ellipsoidal, 3 x 1.5 mm, (2.5 x 1.5 (ewf)) or 2.3-3.0 mm long by 1.0-1.5mm wide (M), blue green, only 20 nerved; the typical variety has perigynia strongly inflated, ovoid to subglobose, 2.5 mm-4.0 mm long, 1.5-2.5 mm wide; N 2n = 36, 38, 40, 42.; **key features:** Similar to *C blanda*, but leaves blue-green.



into

Flat

in partially shaded upper shoreline zones. Cool season, bunch habit, & calcareous soils. Seed source nursery production plots from genetic source Chicago Botanic Garden, Cook Co, & wet ditches near Harmon, Lee Co, & Marshall Co.

Five of ten plants analyzed by Miller et al (1999) were mycorrhizal, having arbuscles & vesicles.

VHFS: Sw94 list HALE’S SEDGE, var *haleana* (Olney) Porter, of dubious validity (formerly *C haleana* Olney). The variety has slender pistillate spikes & smaller narrower perigynia. Pistillate spikes 3-5 mm thick, perigynia more oblong, less inflated, ellipsoid, 2.3-3.0 mm long, 1.0-1.5. HALE’S SEDGE flowers April - June, grows in woods & wet meadows, & is scattered throughout Illinois. (m02) [including *C granularis haleana*, including *C haleana*]

“*C haleana* (Olney) Porter Kent Creek bottom on North Springfield avenue road; Killbuck Creek at US Rt No 51. Conspicuous in early spring because of its thick overwintering leaves. (*C granularis* var *haleana* (Olney) Porter)” (ewf55) [*Carex granularis* var *haleana* (Olney) Porter, *C haleana* Olney, *C rector* Mack, *C shriveri* Britt]



*Carex granularis* production plants

1<sup>st</sup> and 2<sup>nd</sup> line drawings Britton & Brown (1913) courtesy of Kentucky Native Plant Society. 3<sup>rd</sup> line drawing Mark Mohlenbrock, USDA-NRCS PLANTS Database / USDA NRCS *Wetland flora: Field office illustrated guide to plant sp.* USDA Natural Resources Conservation Service. Not copyrighted image. Photo Robert H Mohlenbrock USDA-NRCS PLANTS Database; not copyrighted images. Illinois map courtesy plants.usda.gov.

swollen, or teeming; weighed down; rich or abundant; gravid, referring to the fertile-looking clusters of spikelets.) [FACU]  
Subgenus *Vignea* Section *Bracteosae*

Habitat: Disturbed partially shaded areas, old fields, disturbed moist meadows, dry prairies (ws92). “Common in high prairie areas.” (ewf55). Sand prairies, dry savannas, & roadsides. Prairie roadsides. Dry prairies, old fields, & disturbed meadows (m02) “Prairies, ditches, swales, open forests, usually on calcareous soils; 100–1400 m” (fna).  
distribution/range: Scattered throughout Illinois.

Cultivation 60 days cold moist stratification (pm09). Dormant seed or moist cold stratify, small seeds need light to germinate, scant soil cover. (Code C, D Ken Schaal). 192,000 (ew12); 228,571 (gn); 246,254 (gnhm14), 265,000 (gn); 283,307 (gnam10); 288,346 (gnam11); 301,862 (gna06b); 302,518 (gnhae06); 309,686 (gnap08); 310,259 (gnhm13); 567,000 (lhn91) seeds per pound.

Genesis seed test data indicate good germination (70-87%) is possible in some lots without cold moist stratification.

Cultivation: Space plants 1.0-1.5. Mesic to dry soils, full sun to partial shade.

bottom line: Field sow dormant or spring, some lots 25-71% dormant. Green house germination will be enhanced by cold moist stratification. Flipflop species, dorm increasing 2013-2014 crop. Germ 61.7, 66, na, sd 19.5, r21-87 (66)%. Dorm 26.3, 19, na, sd 21.7, r4.0-71 (67)%. Test 30, 28, na, r21-42 days. (#10).\*\*

Description: Common sedge; plants caespitose; culms 1.5-3.0(4.5)'; leaves 5-8 mm wide; spikes spikelets short, sessile; staminate flowers at apex of each spikelet, a tiny club-shaped mass of whitish scales remaining after anthesis; spikelets aggregated; staminate scales; pistillate scales red tinged, 4 x 2 mm; perigynia plano-convex, ovate, 3-5.5 mm long (2-4.5) (average 4.3 mm, Swink (1990)) nerveless on flat face, red tinged; remaining green marginally, the body pale, becoming straw-colored or brownish above *the spongy base*, essentially nerveless on both faces (ws92); stigmas 2. key features:

Comments: status: Endangered in Indiana. Special concern or probably extirpated in Michigan. Special concern in Tennessee. phenology: Blooms early to late May. In northern Illinois, collect seeds in early June-late July. Fruiting late spring (fna). Cool season, bunching. “Noticeable because of its long stiff spreading stems & oblong heads.” (ewf59) Seed source DeKalb Co, Illinois.

Associates: Two of two plants analyzed by Miller et al (1999) were mycorrhizal, having hyphae, & intra-radical spores.

VHFS: The variety *gravid* has ovate body of the perigynia tapering into the beak, ½ as wide as long, obscurely nerved on the dorsal face. Wetter (2001) list var *gravid* Bailey from Wisconsin.

Sw94 list var *lunelliana* (Mackenzie) F J Hermann, of questionable validity, with no Chicagoland specimens clearly typical. This variety has the perigynia ⅔ to ¾ as wide as long, & conspicuously nerved on the dorsal face. Blooms May - July. Prairies & old fields. Scattered in Illinois, but apparently absent from the ne cos. (m02) “*C lunelliana* Mack. Not a very convincing sp & not recognized by Jones. The beak & scale awns are shorter than in *C gravid* & the leaves are wider. On Mulford & Penfield roads & other prairie areas east of Rockford.” (ewf55)



*Carex gravid*

Line drawing Britton & Brown (1913) courtesy of Kentucky Native Plant Society. Illinois map courtesy plants.usda.gov.

**A *Carex Gravii* | *Carex* BUIR SEDGE aka COMMON BUIR SEDGE GRAY'S BUIR SEDGE GRAY'S SEDGE MORNING STAR**

Habitat: Wet savannas & mesic woodlands. Alluvial terraces & backwaters, upland swamps, open lowland flats (ws92). Deciduous floodplain forests along major rivers. Also known from a closed canopy Black Oak-Black Maple-Tulip Poplar woodland on the east bluff (upland) of Bureau Creek, north of Princeton. Wet woods, in floodplains, along streams, wooded swamps (m02). distribution/range: Common throughout Illinois.



Culture: Cold moist stratify or dormant seed, small seeds need light to germinate, scant soil cover. (Wade nd). 60 days cold moist stratification (pm09). Sow at 18-22°C (64-71°F) for 2-4 wks, move to -4 to +4°C (34-39°F) for 4-6 wks, move to 5-12°C (41-53°F) for germination (tchn). 17,804 (gna06), 18,493 (gna08), 19,000 (ecs), 19,200 (pm, jfn04, aes10), 21,168\* (gnavs02), 22,073 (gnhen11), 25,189 (gnia07), 26,877 (gnam11), 36,181 (gnh14), 37,715\* (gna09) seeds per pound.

Dormant seeding in cold frame in fall & bringing into greenhouse works well with germination extending well into late June. Sown in greenhouse without moist stratification gives very limited, prolonged germination. Genesis seed test data indicate low germination (4-24%) without cold moist stratification. The perigynia should be removed for greenhouse propagation to increase water (vapor) induction. The achene of this sp is large & has a thick seed coat, which Wolfgang Schütz (2000) suggests as a contributing cause of physiological dormancy.

cultivation: Shade tolerant. Low drought tolerance. No salt tolerance.

bottom line: Dormant seed only for field establishment. Remove perigynia before broadcasting. Consistently strongly dormant, 55-95% dorm. Germ 5.6, 3.5, 4.0, sd 7.1, r1.0-24 (23)%. Dorm 77, 80, na, sd 13.2, r55-95 (40)%. Test 35, 34, 26, r26-46 days. (#9).\*\*

Description: Similar to *C lupulina* & *C intumescens*, bunching; roots 8" minimum depth; culms 1.0-2.0(3.0)'; leaves; sheaths; seed heads are persistent, perigynia numerous & crowded into 1-2 globose spikelets; staminate spikelet sessile; staminate scales; pistillate scales; perigynia shaped like 2 cones fitted base to base, 18 x 7 mm, beak 3 mm, teeth 2 mm, rarely pubescent; achenes 5 x 3 mm; stigmas; N. key features: Similar to *C lupulina* & *C intumescens*, but staminate spikelet sessile. Differs by having the perigynia radiating all directions, while *C intumescens* has no downward pointing perigynia.

Comments: status: phenology: Blooms late May to late June, or May-September (m02). Ripens much later than the similar *C intumescens*. In northern Illinois, collect seeds in late June. Attractive fresh cut or dry seedheads. Wetland restoration, rain gardens, shade landscaping. Some ornamental grass growers sell this sp as an ornamental for shade. Seed source nursery production plots, with original materials from black oak / black maple savanna near Princeton (*in an upland no less with Tulip Poplar!*), Rock River backwaters near Erie, & DuPage, Kane, & Will Cos, & Chicago Botanic Garden! (*Thank you Warren.*)

"Very uncommon. In wet woods in Sugar River Forest Preserve & in Pecatonica River sloughs in both Winnebago & Stephenson cos." (ewf55)

Associates: Larval host.

VHFS: Sw94 & m02 list var *hispidula* LH Bailey as occurring throughout the range of the typical variety. Reznicek & Ball (1974) do not recognize it as a valid taxon.

[*Carex asa-grayi* LH Bailey, *C grayi* J Carey var *hispidula* A Gray, *C intumescens* Rudge var *globularis* A Gray]







*Carex grayii*

Line drawing Britton & Brown (1913) courtesy of Kentucky Native Plant Society. 2<sup>nd</sup> line drawing Mark Mohlenbrock, USDA-NRCS PLANTS Database / USDA NRCS *Wetland flora: Field office illustrated guide to plant sp.* USDA Natural Resources Conservation Service. Not copyrighted image. 1<sup>st</sup> photo Robert H Mohlenbrock USDA-NRCS PLANTS Database; Not copyrighted images. Illinois map courtesy plants.usda.gov.

**Δ *Carex grisea* Wahlenberg** \*ME GRAY SEDGE, aka *CAREX GRIS*, EASTERN NARROW-LEAFED SEDGE, INFLATED NARROW-LEAF SEDGE, WOOD GRAY SEDGE, (*griseus -a -um*, *grisëus* gray, or pure pearly gray, perle-grey, somewhat grayish, from medieval Latin *grīseus -a -um*, grey, pearl grey, pure grey a little verging to blue. I had trouble finding the root for this word, & thought it was possibly from Greek *grisôn*, *grisônis*, pig, we all need *Carex grisea* PIG SEDGE, don't we?) upl Subgenus *Carex* Section *Griseae*

**Habitat:** Mesic woodlands, moist wooded slopes, low woods & terraces, moist or alluvial deciduous woods. One of the major sedges of the Box Elder barrens, co-dominant with *C Jamesii* & *C Davisii*. Low woods & terraces, associating with *Acer negundo*. Calcareous springy slopes, ditches, volunteers in partially shaded parks & picnic areas (ws92). Low woods, roadside ditches (m02). In New England, rich, deciduous woods, bottomlands, woods (afne). “Mesic deciduous forests & forest openings, most often in sandy & calcium-rich alluvia on flood plains; 10–400 m” (fna). **distribution/range:** Common, throughout Illinois, including Bureau Co.

**Culture:** 60 days cold moist stratification (pm09). Longer stratification may be indicated. Hull & dormant seed, or hull & moist cold stratify. 91,625 (gna07), 100,295 (gna06), 101,977 (gnh11), 105,778 (gnh15), 112,823 (gna04b), 117,183 (gnh09), 139,521 (gnh09), 182,549 (gna04) seeds per pound.

**bottom line:** Field sow dormant only. Seeds are highly dormant (0-11% germination without cold moist stratification). Consistently strongly dormant, 77-97% dorm. Germ 4.6, 4.5, 1.0, sd 3.9, r0.0-11 (11)%. Dorm 85.2, 84.5, 77, sd 6.7, r77-97 (20)%. Test 34, 33, na, r24-48 days. (#10).\*\*

**Description:** Erect, perennial, native sedge; more erect & robust than *C blanda*; roots; culms 0.5'-1.5', bases brown to reddish; leaves dark green, evergreen; pistillate scales 6 x 1.5 mm, elongate tapering, dark-speckled or streaked; perigynia 4-5.2 mm long (5 x 2.5 mm), beakless, symmetrical, ovoid or barrel-shaped, terete or slightly triangular, 30-50 nerves impressed rather than raised; **key features:**

**Comments:** **status:** Special Concern in Maine. **phenology:** Blooms early May to early June. In northern Illinois, collect seeds in early June- late June. Cool season, calcareous soils, bunching. Seed source nursery production from genetic source DuPage Co, & Box Elder savanna near Walnut, Bureau Co.

“A common sedge usually found in the edge of woods but also in the open in roadside ditches. Not so common in the sand areas. (*C amphibola* var, *turgida*)” (ewf55)

Possibly partially insect pollinated. Native Lady Bugs work the inflorescences during pollination.

**VHFS:** Formerly called *C amphibola* Steudel var *turgida* Fern. [*C amphibola*, in part, *C amphibola* Steudel var *turgida* Fern]





*Carex grisea*

Line drawing Britton & Brown (1913) courtesy of Kentucky Native Plant Society. Illinois map courtesy plants.usda.gov.

**Carex gynandra** Schweinitz NODDING SEDGE, aka *CAREX GYNANDRA*, (*gynandrus -a -um* combining both sexes, when the stamens are attached to the pistil as in orchids, from Greek *gyne*, female, & *andros*, male.)

Habitat: Swales & woods (ecs). In New England, swamps, alluvial woods, meadows, marshes, bogs, & shores (afne).

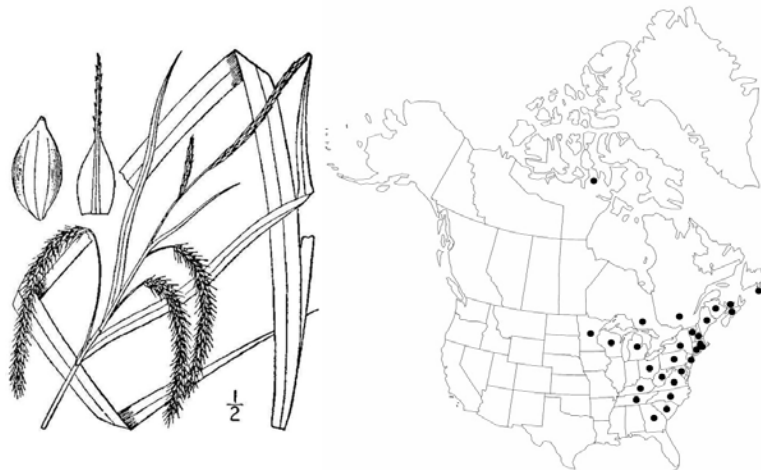
“Swamps, floodplain forests, wet meadows, marshes, bogs, stream edges, margins of lakes & ponds, roadside ditches; 0–2100 m” (fna). distribution/range: Next to but not in Illinois. Power to the Prairie Peninsula. *vide infra*. Transeau Lives!

Culture:

Description: N 2n = 66, 68. key features:

Comments: status: phenology: Blooms May to June. Provides cover & food for wildlife.

VHFS: [*Carex crinita* Lam var *gynandra* (Schwein) Schwein & Torr, *C crinita* Lam var *simulans* Fern] *Carex gynandra* Schwein X *Carex scabrata* Schwein.



*Carex gynandra*

Line drawing Britton & Brown (1913) courtesy of Kentucky Native Plant Society. North American map liberated from efloras.org.

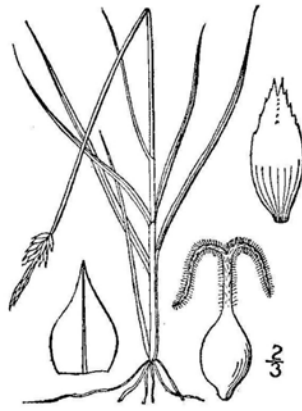
**Carex gynocrates** Wormskjöld ex Drejer \*ME, NY, WA NORTHERN BOG SEDGE (*gynocrates* dominant female, from Greek *gyn-*, *gyno-*, female or pertaining to female organs, & *crato-*, Greek strength, power, for the stout pistillate spike.)

Habitat: Northern bogs. In New England, wet, sphagnous soils (afne). distribution/range: Northeast, north, northwest, & in the western Rockies. Known from ne Wisconsin.

Culture: ?

Description: N 2n = 46, 48. key features:

Comments: status: Endangered in New York. Sensitive in Washington. Special Concern in Maine. phenology: Blooms



*Carex gynocrates*

Line drawing Britton & Brown (1913) courtesy of Kentucky Native Plant Society. Photos Hurd, EG, NL Shaw, J Mastrogiuseppe, LC Smithman, & S Goodrich. 1998. USDA-NRCS PLANTS Database / Not copyrighted images.

**Carex haleana** Olney see *C granularis haleana* Section *Granulares*

**Carex X hartii** Dewey [*C lurida* Wahlenberg X *C retrorsa* Schweinitz]

**Carex haydeniana** Olney HAYDEN'S SEDGE, aka CLOUD SEDGE, (the other HAYDEN'S SEDGE. Hayden must have been busy, or at least popular.)

Habitat: Western North American sp, primarily east of the Cascades, near to above the treeline, in wet to moderately dry habitats, disturbed subalpine meadows. "Rocky or gravelly subalpine to alpine meadows, slopes, stream banks; 1700–4300 m" (fna).

Culture: Physiological dormancy. 5 month outdoor cold moist stratification, surface sow (photodormant). Seeds germinate during fluctuating temperatures in spring (Wick et al 2001)

Description:  $N 2n = 82$ . key features:

Comments: Fruiting summer. Seed fill rates may be highly variable. 1,217,663 (Wick et al 2001) seeds per pound. Seed longevity is at least 4 years at 3° to 5°C in sealed containers (Wick et al 2001).

VHFS: [*C macloviana* D'Urville subsp *haydeniana* (Olney) Roy L Taylor & MacBryde, *C nubicola* Mack]

D Wick, J Evans, J Hosokawa, S Corey, & T Luna, 2001 Propagation protocol for production of container *Carex haydeniana* Olney plants (160 ml container): J Glacier National Park, West Glacier, Montana, In Native Plant Network, [URL:http://www.nativeplantnetwork.org](http://www.nativeplantnetwork.org) (accessed 9 July 2002). Moscow (ID): University of Idaho, College of Natural Resources, Forest Research Nursery.



*Carex haydeniana*

**Carex haydenii** Dewey \*MI, NJ, NY, OH HAYDEN'S SEDGE, aka *CAREX DE HAYDEN*, CLOUD SEDGE, LONG-SCALED MEADOW SEDGE, LONG-SCALED TUSsock SEDGE, (after its discoverer, Ferdinand Vandeveer *Hayden*, 1829-1887, American geologist & explorer) OBL Subgenus *Carex* Section *Acutae*

Habitat: Infrequent in low ground, wetlands over sand that go dry in summer (ws92). Low prairies & wet sandy meadows. Sedge meadows & sandy wetlands (m02). In New England, wet meadows, thickets, mostly in rich soil (afne). distribution/range: Occasional in the n ½ of Illinois, also Wabash Co.

Culture: propagation: Availability is poor to not available.

asexual propagation:

cultivation: Easy in rich, medium to wet soils in partial shade to full shade.

Sp will tolerate full sun if soil is rich & consistently wet, but it also tolerates dense shade. Low maintenance. Cut old foliage to the ground in late winter, or burn before new growth starts in early spring. Zone 3-8.

bottom line:

greenhouse & garden:

Description: Abundant hummock forming sp, conspicuous or dominant in respective habitats. Similar to *C stricta*, but less common; roots plant often forming dense tussocks, also spread by elongate rhizomes; plants 1.0-1.5'. 1.0-1.5 spread, culms 30-150 cm tall; bases often reddish & pinnate-fibrillose; leaves long & slender; *lowest leaves reduced to dark reddish brown, bladeless sheaths*; heads inflorescence arching, with 3-9 slender, many flowered pistillate spikelets below several slender staminate; spikes; staminate scales; pistillate scales brownish, pointed, longer than perigynia, 3.5 x 1 mm; perigynia 2-3 mm long, 2.5 x 1.5 mm, plumper & more divergent, with tiny abrupt beaks when mature, as broad as long when young; nerveless; achenes flattened; stigmas 2; N 2n = 54; key features: "*Carex haydenii* is often confused with *C stricta*; it can be identified by the inflated perigynia that are rounded apically, acute scales, & glabrous leaves & sheaths. Only basal sheaths of *C haydenii* are ladder-fibrillose. Although often sympatric with *C stricta* & *C nigra*, no hybrids appear to be formed." (fna)

Comments: status: Special concern or probably extirpated in Michigan. Endangered in New Jersey & New York. Presumed Extirpated in Ohio. phenology: Blooms May 04 to May 28, mean week 11. Blooms May – June (m02). Fruiting June – August (fna). A native sedge for wet, shady areas, including moist woodland gardens, shade gardens, shady rain gardens, low spots, rain gardens, & stream or pond gardens. 193,021 (lhn91) seeds per pound.

"*Carex haydenii* is a sp of seasonally saturated soils in open habitats. It appears to be declining in abundance with changes in land use." (fna)

"In low ground in the sandy area south of Rock Cut & in similar places in Sugar River sand area. Uncommon." (ewf55)

Associates: Reported as deer tolerant.

Ethnobotany:

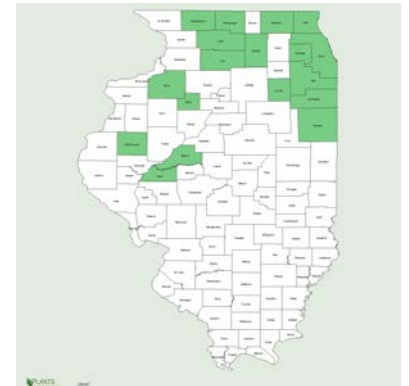
VHFS: [*Carex acuta* L var *erecta* Dewey, *C rousseaui* Raymond, *C stricta* Lam var *decora* LH Bailey, *C stricta* var *haydenii* (Dewey) Kük]



*Carex haydenii*

Line drawing Britton & Brown (1913) courtesy of Kentucky Native Plant Society. Illinois map courtesy plants.usda.gov.

**Carex heleonastes** Linnaeus f HUDSON BAY SEDGE aka *CAREX DES TOURBIÈRES*. *TORF-SEGGE*. (*heleonastes* marsh





*Carex heleonastes*

Line drawing Britton & Brown (1913) courtesy of Kentucky Native Plant Society. Color illustration Jacob Sturm, Johann Georg Sturm - *Deutschlands Flora in Abbildungen* (1796). Copyright expired. Source: [www.biolib.de](http://www.biolib.de). Line drawing public domain from Hippolyte Coste - *Flore descriptive et illustrée de la France, de la Corse et des contrées limitrophes*, 1901-1906.

**Carex heliophila** see also *C pensylvanica*

**Carex heliophila** Mackenzie PLAINS SEDGE, aka SUN SEDGE, (*heliophilus* -a -um sun-loving, from Greek ἥλιος,, *helios*, the sun, & Greek φιλοσεον, *philoseon*, φίλος, *philos*, loved, loving, friendly, fond,) Section *Montanae* Plants.usda.gov & fna place this in *Carex inops* LH Bailey ssp *heliophila* (Mack) Crins, which see.

Habitat: Gravel hill prairies of Rock River (ewf59). Prairies, plains, & savannas (m02) distribution/range: Hardin, Jo Daviess & Rock Island Cos.

Culture: ?

Description: Small early flowering western sedge, perigynia 3.5 x 2 mm.

Comments: status: phenology: Blooms May. Blooms May (m02).

VHFS: M02 retains this as a sp. Sw94 refers this to *C pensylvanica*. Sp was considered a plains variety (var *digyma* Boeckii) of *C pensylvanica*. [*C pensylvanica* Lam ssp *heliophila* Mack, *C inops* LH Bailey ssp *heliophila* (Mack) Crins) WA Weber]

**Carex hendersonii** LH Bailey HENDERSON'S SEDGE

Habitat: Understory of moist forests. distribution/range: Northwestern USA

Culture: Available Fourth Corner Nursery.

**Carex heterostachya** Bunge DIFFERENT-SPIKE SEDGE, aka FULLER'S SEDGE, (*heterostachya* variously spiked.) Section *Paludosae*

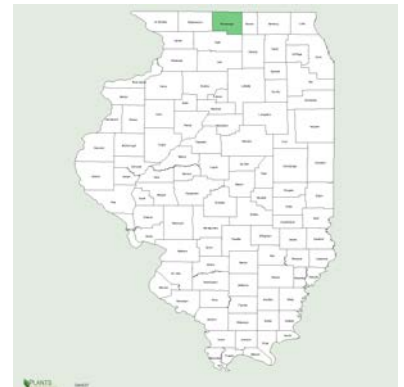
Habitat: Shaded gravel bluffs of Rock River at Camp Grant, Winnebago Co, adventive from Asia. One large colony found about 1956. (Much of Camp Grant is now under the Rockford Airport?) distribution/range: Native to east Asia. Very rare, Winnebago Co, Illinois.

Culture:

Description: Plants colonial, rhizomes long creeping; perigynia 3 x 1.5 mm, scale 5 mm.

Comments: Fruiting June-July. "*Carex heterostachya* is a rare introduction from eastern Asia; first discovered in 1949, it is still extant & slowly spreading at its only known North American location (AA Reznicek 1994).

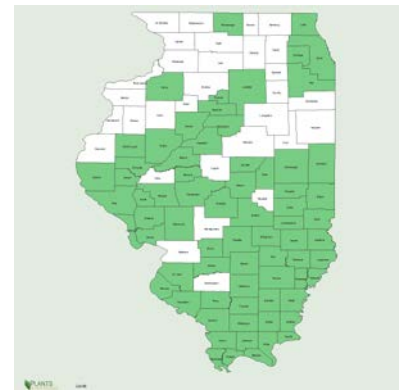
VHFS: HE Ahles (Rhodora 58; 318-320) first described this as a hybrid of *C laeviconica* & *C pensylvanica*, while ewf59 thought it was *C meadii* & *C pensylvanica*. [*Carex X fulleri* HE Ahles] Illinois map courtesy plants.usda.gov.



x 2

A *Carex* *hirsutella* Mackenzie \*OT NH Fuzzy Wuzzy SEDGE aka *Campylopusis* *hamy* *green* SEDGE *hamy*

diminutive suffix, covered with tiny hairs. One source has this as shaggy, thickly covered with hair (a poor translation) up! Subgenus *Carex* Section *Virescentes*  
Habitat: Dry woods, sterile situations, in areas having a history of great disturbance (ws92). Dry woods, fields, & dry meadows (m02). In New England, open woods, meadows, & fields, in neutral to basic soils (afne). “Meadows, dry to mesic woods, neutral to basic soils; 100–500 m” (fna). distribution/range: Common throughout Illinois except apparently absent from most nw cos.



Cultivation 60 days cold moist stratification (pm09). Moist cold stratify, small seeds need light to germinate, scant soil cover (Code C, D Ken Schaal).

Dormant seeding in flats in cold frames works well. Seed tests indicate the seed is predominately dormant.

Bottom line: Field sow dormant only. Consistently strongly dormant, 50-93% dorm. Germ 18.6, 17.5, na, sd 9.4, r4.0-33 (29)%. Dorm 64.8, 61, 50, sd 15.9, r50-93 (43)%. Test 35, 35, 35, r34-35 days. (#7).\*\*

Description: sheaths lowest dark reddish brown, & white nerved, *bladeless*, becoming greenish & hirsute upwards, & quickly with well-developed leaves (ws92); N 2n = 52. key features: Terminal spikelet pistillate at summit, pistillate scales obtuse to short-apiculate, shorter than the perigynia.

Comments: status: Special Concern in Connecticut. Endangered in New Hampshire. phenology: Blooms May 16 to June 05, mean week 12. Blooms May-June (m02). Fruiting late spring-early summer. 288,000 (pm01); 349,500 (gnahf04b); 354,243 (gnahf04a); 400,000 (gn); 442,465 (gnh13); 456,000 (lhn91); 468,283 (gnam11); 470,539 (gnhm12); 800,000 (gn) seeds per pound. Seed source nursery production from genetic source rich, dry woods, Ottawa, LaSalle Co. Coming soon to a seed room near you.

VHFS: [*C complanata*, *C complanata* Torrey & Hook var *hirsuta* (LH Bailey) Gleason, *C triceps hirsuta*] Illinois map courtesy plants.usda.gov.

***Carex hirta*** Linnaeus HAIRY SEDGE, aka *BEHAARTE SEGGE*, *CAREX HÉRISSE*, *CAREX HIRSUTE*, *CARICE VILLOSA*, HAMMER SEDGE, *LAÏCHE HÉRISSE*, *LASTON*, SHARP TOOTHED WOOLLY SEDGE, (*hirtus* -a -um hairy, with short or stiffish hairs, hairy but shorter than hirsute, from Latin *hirtus*, rough, hairy, shaggy, or rude, rough, unpolished, uncultivated, for the hairy perigynia) Subgenus *Carex* Section *Hirtae* or *Carex* proper.

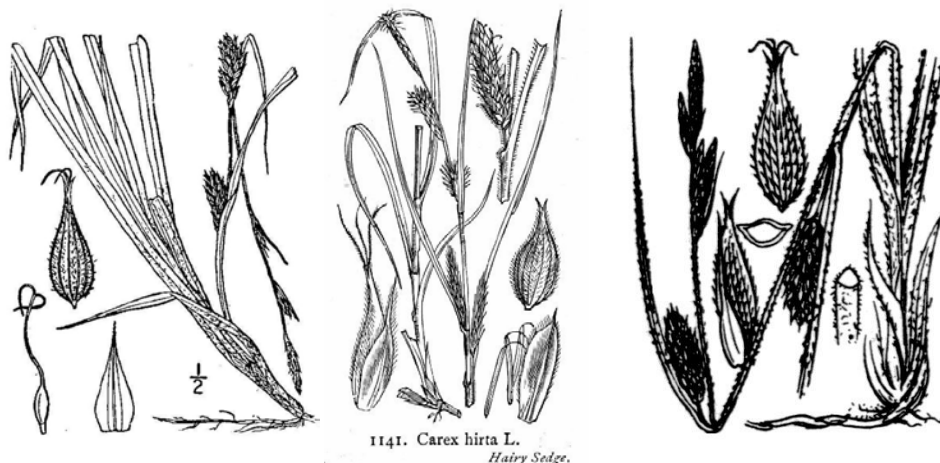
Habitat: Adventive in a prairie restoration in Illinois. In New England, dry fields, roadsides, & railroad embankments (afne). distribution/range: Native of Eurasia. Known from Ford Co, Illinois.

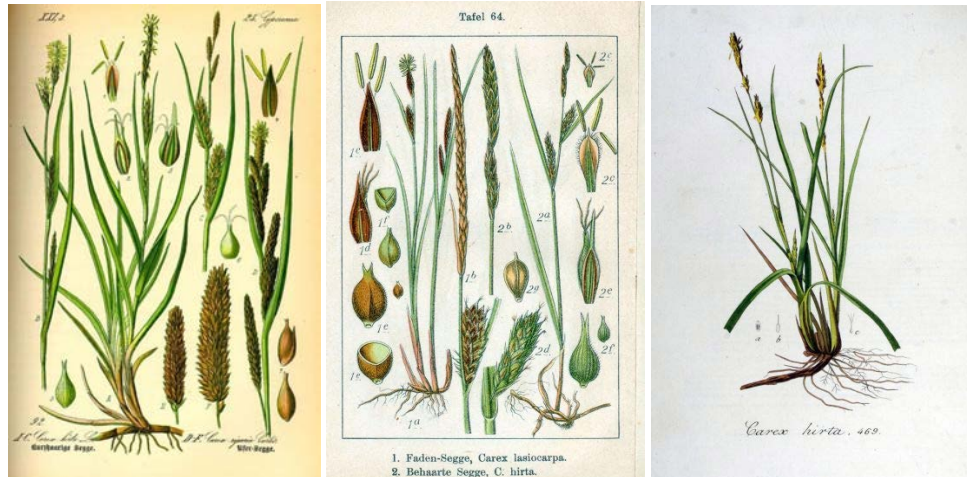
Culture:

Description: leaves 2-4 mm wide; sheaths; heads; staminate spikes 1-3, on long peduncles; perigynia pubescent, conic-ovoid, 5-9 mm long, teeth of the beak 1-2 mm long; N 2n = 112-114. key features:

Comments: status: phenology: Blooms June (m02)

Introduced from Europe, locally established in Illinois & Wisconsin. This is the type sp for the genus & for the section *Hirtae*. Known from a restoration in east central Illinois.





*Carex hirta*

Line drawing Britton & Brown (1913) courtesy of Kentucky Native Plant Society.

Walter Hood Fitch - Illustrations of the British Flora (1924); Otto Wilhelm Thomé: *Flora von Deutschland, Österreich und der Schweiz* (1885) - Permission granted to use under GFDL by Kurt Stueber. Source: [www.biolib.de](http://www.biolib.de) Jacob Sturm, Johann Georg Sturm - Deutschlands Flora in Abbildungen (1796). Source: [www.biolib.de](http://www.biolib.de) Jan Kops, Herman Christiaan van Hall - Flora Batava, Volume 6 (1832) - Permission granted to use under GFDL by Kurt Stueber. Source: [www.biolib.de](http://www.biolib.de).

**Carex hirtifolia** Mackenzie HAIRY SEDGE, aka HAIRY WOOD SEDGE, PUBESCENT SEDGE, (*hirtifolius -a -um* with hairy leaves, from Latin *hirtus*, rough, hairy, & *folium*, leaf, for the hairy leaves.) Upland Subgenus *Carex* Section *Triquetrae*

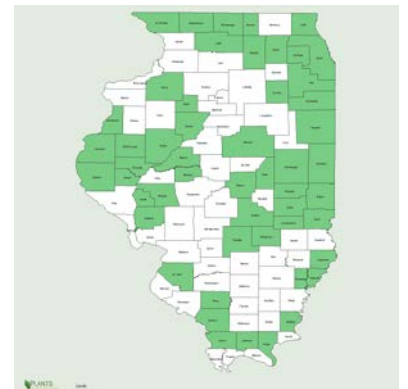
**Habitat:** Savannas, hill prairies-oak openings, common, in rich woodlands. Dry or mesic woods Maple-basswood forests. Morainal savanna woodlands & beech maple woods (ws92). “A common early woodland sedge.” (ewf55) Generally distributed in damp woods & less commonly in dry woods (ewf59). Dry or mesic woods (m02). In New England, rich woods & meadows, often calcareous (afne).  
**distribution/range:** Common throughout Illinois. Known but not mapped from Greenville Twp, Bureau Co.

**Cultivation** Dormant seed or moist cold stratify. Small seeds need light to germinate, scant soil cover.

**Description:** Small tufted sedges, loosely bunched, soft hairy leaves & stems; culms 0.8-2.5', 5-15 (54) cm tall, bases brown to red purple; leaves pale green, hairy, flaccid, 5-10 mm wide; spikes terminal entirely staminate, staminate spike 1 sessile or nearly so; staminate scales; pistillate scales 4.5 x 1 mm, awn 1.5 mm; perigynia minutely pubescent, with only 2 ribs, densely hairy triangular seed sacks, broadly ellipsoid, 3.5-5 mm long, (perigynia 4 x 1.5 mm) teeth of the beak minute; achenes 3-sided; stigmas 3, reddish brown; N 2n = 50. **key features:**

**Comments:** **status:** **phenology:** Blooms early April to early May. In northern Illinois, collect seeds in late July - early August. Cool season. 340,200 (lhn91) seeds per pound. Seed source nursery production from genetic source rich, dry woods, Wacktown Timber, Greenville Twp, Bureau Co. Coming soon to a seed room near you

The most pubescent native *Carex* in Illinois. Resembles a dark green, hairy *C blanda*. A very attractive sedge.  
**VHFS:** [*C pubescens*]





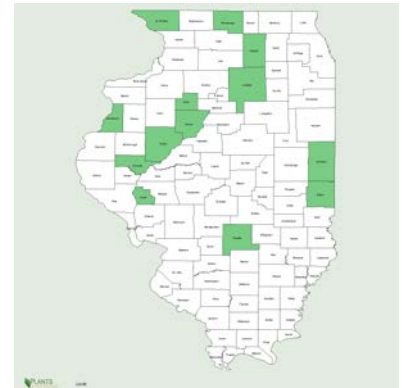
*Carex hirtifolia*

Line drawing Britton & Brown (1913) courtesy of Kentucky Native Plant Society.

**Carex hitchcockiana** Dewey HAIRY WOOD SEDGE, aka *CAREX DE HITCHCOCK*, HAIRY BEECH SEDGE, HITCHCOCK'S SEDGE, (after Edward Hitchcock, 1793-1864, Massachusetts botanist & geologist) Subgenus *Carex* Section *Oligocarpa*  
**Habitat:** Maple basswood forests. Low woods. Rich woods (m02). In New England, rich or calcareous woods (afne).  
**distribution/range:** Scattered in the n ½ of Illinois, also Fayette & Jackson cos. More common in southern Wisconsin, ne Indiana, & sw lower Michigan. "A very uncommon sedge found only in the woods west of Roscoe & in the maple woods on Newburg road, always growing with *C oligocarpa*." (ewf55)

**Description:** staminate spikelet 1; **key features:** Uncommon sedge. Plants taller than *C plantaginea*, perigynia 5 x 2 mm, sharply triangular, curved, beaked, with 30-50 impressed nerves. Scale 6 x 2 mm, Awn 3 mm. Bract sheaths minutely white hispid.

**Comments:** **status:** **phenology:** Blooms May 08 to June 04, mean week 11. Blooms May-June (m02) Usually growing with *C jamesii* & *C oligocarpa* (ewf59)



*Carex hitchcockiana*

Line drawing Britton & Brown (1913) courtesy of Kentucky Native Plant Society.

**Carex hoodii** Boott HOOD SEDGE, aka HOOD'S SEDGE, (*hoodii* after Robert Hood, 1797?-1821, a midshipman with the first Arctic Land Expedition of 1819-1822.)

**Habitat:** Western USA, mostly east of the Cascades, & Canada, lowlands to subalpine zone, or near to above the treeline, wet to moderately dry habitats.

**Culture:** Physiological dormancy. Cold moist stratification for 112 days. Germination at 22°D/17°N C alternating temperatures. (Baskin, Baskin & Robbins 32 flavors). 40% germination with 5-month outdoor cold moist stratification. Seeds sown on surface (photodormant). Germination temperatures 13°-21°C daytime & 0°-5°C night. Rapid growth. Division possible. (Cox et al 2001). 1 217 662 (Cox et al 2001) seed per pound



CC Baskin & JM Baskin, 2002 Propagation protocol for production of container *Carex hoodii* Boot. plants: University of Kentucky, Lexington, Kentucky, In Native Plant Network, [URL:http://www.nativeplantnetwork.org](http://www.nativeplantnetwork.org) (accessed 9 July 2002). Moscow (ID): University of Idaho, College of Natural Resources, Forest Research Nursery.

R Cox, J Evans, J Hosakawa, & D Wick, 2001 Propagation protocol for production of container *Carex hoodii* Boot plants (490 ml container): Glacier National Park, West Glacier, Montana, In Native Plant Network, [URL:http://www.nativeplantnetwork.org](http://www.nativeplantnetwork.org) (accessed 9 July 2002). Moscow (ID): University of Idaho, College of Natural Resources, Forest Research Nursery



*Carex hoodii*

3<sup>rd</sup> Seed photo courtesy of Bend Seed Extractory, Seeds of Success, <http://seedsofsuccess.smugmug.com>.

#### **Carex hormathodes** Fernald MARSH STRAW SEDGE

Habitat: In New England, brackish to freshwater marshes, coastal sands & rocks (afne). distribution/range:

Culture:

Description: N 2n = 74. key features:

Comments: status: phenology: Blooms

VHFS: [*C straminea* Willd ex Schkuhr var. *hirsuta* W Boott] *Carex hormathodes* Fern X *Carex scoparia* Schkuhr ex Willd.

#### **Carex hostiana** de Candolle

Habitat: In New England, marshes, meadows, shores, glades on calcareous soils (afne). distribution/range:

Culture:

Description: key features:

Comments: status: phenology: Blooms

VHFS: [*Carex hostiana* var *laurentiana* (Fern & Weigand) Fern & Weigand.]

#### **Δ Carex houghtoniana** Torrey ex Dewey \*NY (In some texts, this is “incorrectly corrected” to *C houghtonii*)

HOUGHTON’S SEDGE, aka *CAREX DE HOUGHTON*, HOUGHTON’S WOOLY SEDGE, “FRIDAY THE 13<sup>TH</sup> SEDGE”. (According to Voss, this sedge is named after Douglass Houghton, 1809-1845, who discovered the sedge on Friday the 13th, July, 1832, on sandy jack pine ridges near Lake Itasca, shortly before he & Henry Rowe Schoolcraft first visited that lake, the source of the Mississippi River.) Subgenus *Carex*, Section *Hirtae* or *Carex* proper.

Habitat: Dry open sand. Sandy, gravelly, or rocky open ground, ranging from moist (shores, swampy woods borders, & clearings); very dry (jack pine plains, sandy blowouts, dune ridges). Often in disturbed sites... roads & railroads (Voss). In New England, dry, acid sands & gravels, & rocky openings (afne). Nursery waif in Illinois, sandy oldfield, which was recently cropland. This sp may form part of a long-term upland seed bank & will occur in areas where mineral soil has been exposed by fire or other disturbances such as soil scraping. distribution/range: Native to northern Wisconsin, Michigan, & Minnesota. Genesis west field is a state record!! Yeeha.

Culture: Clone at the least. Greenhouse sown without moist stratification yields nada. (gni). 72,900 (gnh02) seeds per pound.

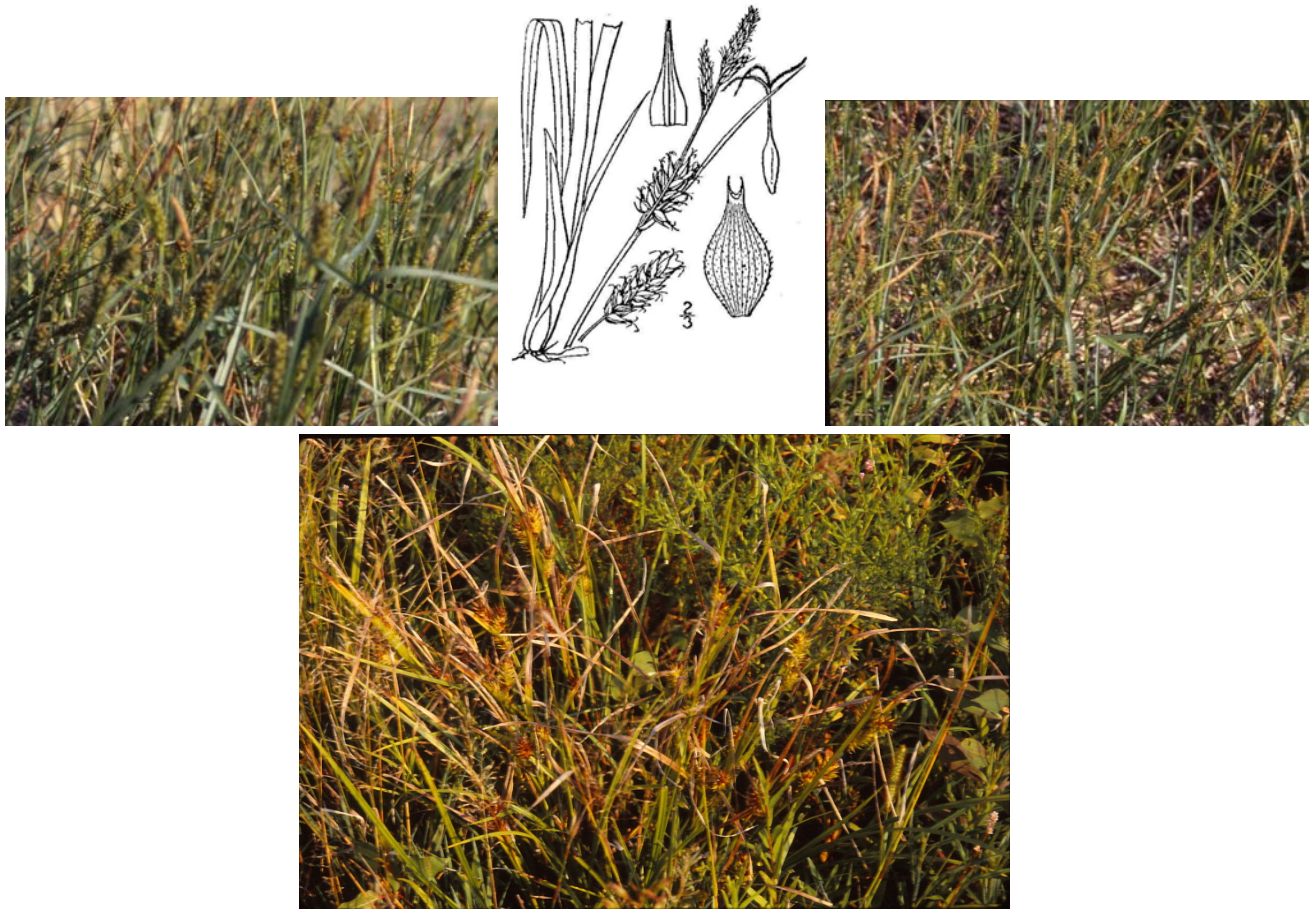
Bottom line: Dormant seed in permanent location may work or 90-120 days moist cold stratification for greenhouse work. Disturbance dependent.

fibrillose sheaths; spikes staminate spikelets 1-3; pistillate spikes 1-3, ascending, remote, 1-4 cm long; pistillate scales often minutely fringed on margins; perigynia small, globose, pubescent 5-6 mm long, 2-3 mm thick, w/ coarse hairs & 10-16 prominent nerves, sometimes reddish when ripe (description mostly after Fassett); achenes; stigmas 3;  $N 2n = ?$  key features:

Comments: status: Threatened in New York. Observed in bloom April 19, 2005. In northern Illinois, collect seeds in early July. Spreading by strong rhizomes, forming weak, open sod. As a young stand of plants during good years it is very striking in fruit, a kind of in your face sedge, visible from 75 feet. As a mature plant, it is unremarkable & easily overlooked, with widespread fertile & vegetative culms. Seed source nursery production from disjunct population.

AA Reznicek identified a specimen from our population. Another Midwest taxonomist called our population one of those un-named troublesome *C pellita* hybrids, which leads us to believe some of the clonal hybrid *Carex* mentioned in sw94 should be re-examined. (*A commercial seed test indicate a high percentage of viable seed from our population, one argument against hybrid origin.*) It may prove to be more common than is thought. In the Flora of North America, there is now a dot for *Carex houghtoniana* in Illinois, & if you look very closely, it is in Whiteside Co. Yee ha!

VHFS: [*Carex "houghtonii"* Pursh – mistranscribed. *C houghtonii* auct non Torr.]





*Carex houghtoniana*

Line drawing Britton & Brown (1913) courtesy of Kentucky Native Plant Society. North America map ripped from FNA.

**Carex howei** see **C atlantica capillacea**

Δ **Carex hyalinolepis** Steudel \*MI DITCH SEDGE, aka SHORELINE SEDGE, SEDGE, (*hyalinolepis* -is -e New Latin transparent scales, from Latin *hyalinus*, from Greek ὑάλινος, *hyalinos*, of glass or crystal, & Greek λείπις, λειπίδο-, *lepis*, *lepido*-, scale, flake. Subgenus *Carex*, Section *Paludosae*

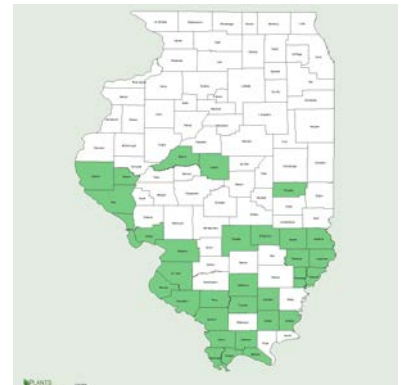
Habitat: Calcareous or brackish swamps, swales, & shores, native south & east of our area. Reputedly adapted to urban hydrology. Wet ditches & swamps (m02). Swamp forests, river bottoms, shores of streams, ponds & lakes, wet meadows, often in clay soils, seasonally moist sites; 0–400 m (fna). distribution/range: Occasional to common in the s ½ of Illinois, apparently absent elsewhere. This sedge also occurs on the east coast, in oligohaline environments.

Culture: 2-3 months moist cold stratification yields less than moderate germination. (gni) 160,000 (gni) seeds per pound.

Description: Roots from long creeping rhizomes; culms phyllopodic, 1.3-3.3'; N; key features: Plants similar to *C lacustris*, but with whitish to pale brown blade bearing lower sheaths, rarely fibrillose.

Comments: status: Special concern in Michigan. phenology: Blooms April-July. Fruiting April - July (fna). Our colony flowers late April to mid-May. Extremely aggressively rhizomatous, forming extensive sterile stands. Almost nonexistent seed production after 3 years in our plot which was established from seed grown plugs, which in 2002 produced one seed stalk, but flowering & fruiting abundantly in 2003 (see also *C utriculata*). Surprisingly fertile for a strongly rhizomatous sp, but a cyclical fruiter. “*Carex hyalinolepis* is abundant in the Mississippi lowlands & often dominant in the understory of open, wet floodplain forests & bottomland meadows. It is a rapid invader of ditches & other disturbed areas. Sometimes extensive stands are seen without fertile culms.” (fna) Genetic seed source the late Dr. Richard Clinebell (*Penstemon* expert, Lafayette Home Nursery alumnus, & native of Stark Co, Illinois), formerly of the St. Louis area. Sp could be of value in urban erosion control projects, regardless of its nativity.

Some references to this plant in the Chicago region are referred to *Carex acutiformis*. A native nursery offers this sp in a shoreline seed mix.





*Carex hyalinolepis*

**Δ *Carex hystericina* Muhlenberg ex Willdenow** BOTTLEBRUSH SEDGE, aka BLADDER SEDGE, PORCUPINE SEDGE, (*hystericina*, *hystricina* Greek *hystrix*, porcupine, & *-inus*, belonging to, for the bristled spike's resemblance to a porcupine) obl Subgenus *Carex* Section *Pseudo-cyperae*

Habitat: Fens & agricultural drainage ditches; calcareous; common in slightly disturbed wet meadows, & on sandy or marly shores. "Frequent sp in its limited habitat, the calcareous fen... & more disturbed areas such as ditches" (ws92). Very common in sloughs, ditches, & other wet places. (ewf59) Swamps, calcareous fens, wet ditches (m02). In New England, swamps, shores, meadows, & seeps, mostly in calcareous soils (afne). distribution/range: Occasional to common in the n ⅓ of Illinois.

Culture: 60 days cold moist stratification (pm09). Cold moist stratify or dormant seed, small seeds need light to germinate, scant soil cover (Wade). Seeds germinate after about 60 days of cold, moist stratification. Seeds need light to break dormancy & germinate. Plant on top of growing media & do not cover. (he99)

Dormant seed or moist cold stratify, small seeds need light to germinate, scant soil cover. In greenhouse no treatment is needed for an adequate crop, though some lots significantly benefit from cold moist stratification. An occasional lot may be non-dormant. (gni) 307,068 (gna07); 362,620 (gnh09); 379,210; 389,365 (gna06); 393,244 (gna08); 477,472 (lhn91); 480,000 (pm01, aes10); 525,463 (gnh02); 528,000 (ew12); 576,000 (pn02,jfn04); 708,268 (gna10); 837,638 (gnh13); 1,184,334 (gn11) seeds per pound.

cultivation: Space plants 1.0-1.5 on center. Wet soils, full sun to light shade.

bottom line: Dormant seeding is best, 50% of lots are significantly to strongly dormant. Nondormant lots & 90% dormant lots are known. Flipflop, germ & dorm highly variable. Germ 64.5, 75, na, sd 29.9, r6.0-98 (92)%. Dorm 24.9, 20, 0.0, sd 30.7, r0.0-90.5 (90.5)%. Test 35, 34, 34, r 27-48 days. (#17).\*\*

Description: Robust; roots caespitose; culms 0.5-2.5' (5-30 cm) very variable in size, bases red, pinnate fibrillose; leaves 3-10 mm wide; heads staminate spikelets 1-3 above clustered, stalked, erect, or drooping pistillate spikelets that are thick-cylindrical; pistillate scales abruptly narrowed near base(?) into a long awn (scale 4 x 1 mm, awn 2.5 mm); perigynia inflated, numerous, divergent, lanceolate-ovoid, 13-20 nerved, 5-7 mm long, 1.6-2 mm thick, (6.5 x 2 mm, beak 2.5mm, teeth 0.5 mm) delicate, pale green to straw-colored; achenes broadest above the middle, 1.5 x 1 mm; stigmas 3; N 2n = ?

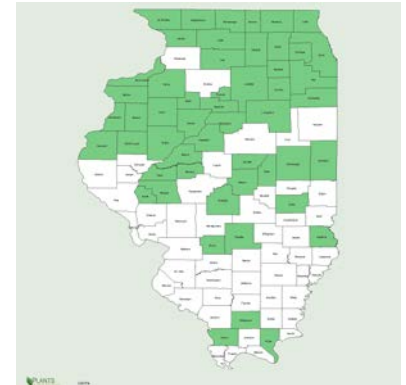
key features:

Comments: status: phenology: Blooms mid-May to early June. In northern Illinois, collect seeds in late June - mid-August. Collect seeds in se Wisconsin in September (he99). Bunching. The perigynia remain green as the fruit matures & shatters. Great in landscaping, rain gardens, clean-water swales, pond & ditch shorelines, & clean infiltration basins. Seed source nursery production, originally from Kane Co, & drainage ditches, Green River Lowland.

"Common & variable as to height. Ditches, sloughs, & other wet places." (ewf55)

Associates: Larval host.

VHFS: [*Carex hystricina* Muhl ex Willd [orthographic "correction"]]





*Carex hystericina*

**Carex incompta** see *C atlantica*

**Carex inops** LH Bailey subsp **heliophila** (Mackenzie) Crins GREAT PENNSYLVANIA SEDGE, aka LONG-STOLON SEDGE, ROUND-BODIED OAK SEDGE, SUN SEDGE, (*inops, inopis*, poor, helpless, in need, insignificant, puny, weak.) See also *C pennsylvanica*.

Habitat: In New England, open sandy, loamy soils (afne). distribution/range:

Culture:

Description: N 2n = 36, 40. key features:

Comments: status: phenology: Blooms

VHFS:

**Carex inops** LH Bailey subsp **inops** [*C pennsylvanica*] LONG-STOLONED SEDGE

Habitat: Dry to moist meadows & open forests of the west coast states. distribution/range:

Culture: Available at Fourth Corner Nursery

Description: key features:

Comments: status: phenology:

VHFS:



*Carex inops*

Seed photo courtesy of Bend Seed Extractory, Seeds of Success, <http://seedsofsuccess.smugmug.com>.

**Carex interior** LH Bailey INLAND SEDGE, aka DWARF TUFTED FEN SEDGE, INLAND STAR SEDGE, PRAIRIE STAR SEDGE, (Latin *interior*, inner or interior, referring to the inland provenance) Not providence as one hears all too often. Subgenus *Vignae* Section *Stellulatae*

Habitat: In Tamarack bogs, more common in calcareous meadows, also moist prairies (ws92). Wet peaty places; Mostly in wet very acid or very alkaline soils in the sun. Always in very wet open places. (ewf59). Bogs, wet meadows, moist prairies, wet woods, swamps (m02). In New England, swamps, shores, meadows, & seeps, often in calcareous soils (afne). 2,000-

Culture: 60 days cold moist stratification (pm09). 608,000 (jfn2004); 624,000 (pm2001) seeds per pound. Alone plant 1-2 lb/acre in fall or spring (rain) Available Fourth Corner Nursery.

Description: Plants small, slender, tufted; roots caespitose, small tufts; culms 13-24"; leaves 1-3 mm wide; heads spikelets usually 3 (2-5) per culm; spikelets all similar, sessile, as broad as long, with staminate scales at bases; scales rounded ?; pistillate scales 1.5 X 1.5 mm; perigynia ovate, tapering to a short beak, almost nerveless on flat inner face, 1-2 ( 1.25) mm wide & 2-3.5 (2.25) mm long, green or yellowish perigynia divergent or reflexed, giving spikelet a star shape when viewed from above; N 2n = ? key features: Key characteristics are its resemblance to *C sterilis*, differing in having only 2-3 spikes. The similar *C rosea* & *C radiata* are always in woods. (ewf59)

Comments: status: phenology: Blooms May 14 to May 15(31), mean week 10?, April-May (m02) cool season, bunching habit, good erosion control, good wildlife values, satisfactory forage values, "Very good xeriscaping" in one source (Yea right)

"It resembles *C rosea* but it is less robust & it always grows in boggy places. Rather frequent in Coon & Kent Creek bottoms. Usually abundant where found." (ewf55)

*C interior* is considered nonmycorrhizal & has bulbous-based root hairs. The unusual root hairs may represent an adaptation for nonmycorrhizal growth. (Miller et al 1999) None of three plants analyzed in the study were mycorrhizal, having only bulbous based root hairs.

VHFS: [*C scirpoides*]

**▲ *Carex intumescens* Rudge** \*IL SEDGE, aka BLADDER SEDGE, *CAREX GONFLÉ*, GREATER BLADDER SEDGE, SHINING BUR SEDGE, STAR SEDGE, SWOLLEN SEDGE, (*intumescens* Latin becoming swollen, swelling, swelling up, having swellings, becoming puffed up or tumid, from *intumescere*, to swell, & *-escens*, becoming.) FACW+ Subgenus *Carex* Section *Lupulinae*

Habitat: Hydromesophytic swamps, acidic prairies, & hemlock swamps (ws92). Wet woods, meadows, & swamps (ecs). Cool damp woods, slough & wet woods from several northern Illinois cos (ewf59). Wet woods, swamps, marshes, & bogs (m02). "Dry-mesic to wet coniferous, mixed, & deciduous forests, forest openings, thickets, wet meadows, ditches; 0–2000 m (Ball & Reznicek in fna). In New England, alluvial woods, wet meadows, & swales (afne). In New York, "Hardwood & coniferous-hardwood forests & thickets. Mostly in at least seasonally wet to sometimes just mesic soils but usually not in more perennially seepy habitats. Also mostly in habitats that have at least some canopy." (nyfa) In the se USA, variety *fernaldii* LH Bailey grows in spruce-fir forests, northern hardwood forests, & grassy balds, while variety *intumescens* grows in bogs & wet forests (w11). distribution/range: Sp is rare in the Tallgrass Prairie & nearly absent in the Prairie Peninsula. (*Vide infra*) Scattered in Illinois, but not common. Known from but not mapped from the backwaters of the lower Rock River, Whiteside Co.

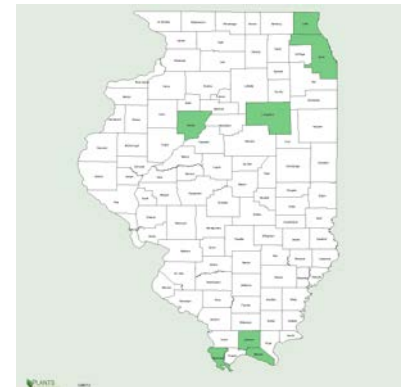
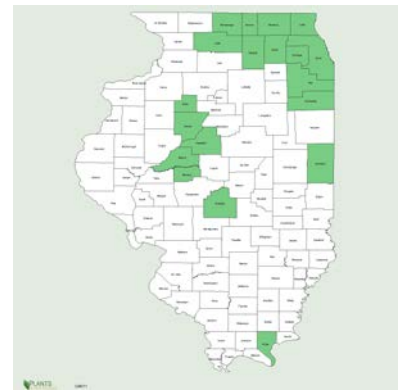
Culture: 60 days cold moist stratification (pm09). Dormant seed in cold frames works well. Removing the inflated perigynia or giving light soil cover helps to hydrate the achene & will improve germination. Large seeded sedges such as this are typically physiologically dormant. 31,011 (gnhe12), 37,264\* (gn00), 37,497 (gn06), 40,000 (ecs) seeds per pound.

cultivation: Shade tolerant. No drought tolerance. No salt tolerance. pH 4.8-7.0. Plants may be short-lived.

bottom line: Remove perigynia for seed soil contact & quicker hydration & dormant seed only. Limited data indicated strong dormancy, 87-88%. Germ 3.0, 4.0, 4.0, r1.0-4.0%. Germ 1.0-4.0%. Dorm 87-88%. Test 36 days. (#3).\*\*

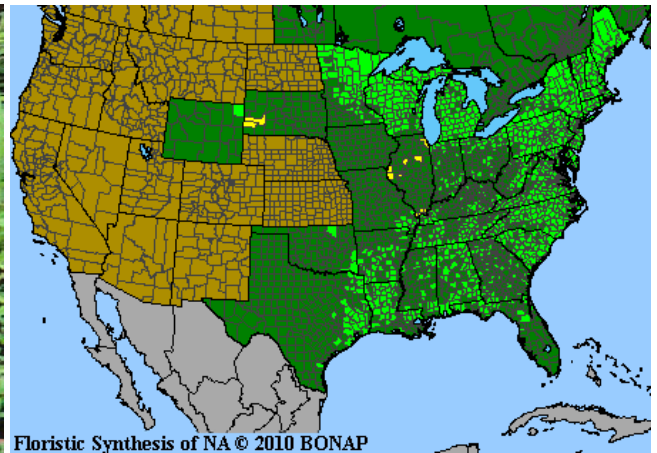
Description: Bunch type sedge, similar to *C lupulina*; roots 8" minimum depth; culms to 3'; leaves evergreen; spikes pistillate 1-3, as long as wide; perigynia 2-7 (15) dark green, lanceolate-ovoid, divergent, 10-15 mm long, not crowded; achenes style straight; N 2n = ? key features: Similar to *C lupulina*, but leaves evergreen. Evergreen leaves & red bases closely resemble *C arctata* & *C gracillima*.???

Comments: status: Threatened in Illinois. phenology: Blooms early May to early June. Blooms May 11 to June 06, mean week 12, May - September (m02). Fruiting late spring-early summer (fna). This sp grows in alluvial woods along Rock River in southwestern Whiteside & northwestern Henry cos. In the past, we misidentified it as *Carex lupuliformis/lupulina*, & propagated & lined it out as such, & learned of our mistake when the young plants seeded out. (*It looks like a few-seeded, mutant, steroidal HOP SEDGE*). When this sp is setting seed, the similar *C lupulina* & *C lupuliformis* have not yet shown seed spikes. When the HOP SEDGES are ripening, the fruits of this sedge have largely shattered. The plants may be short-



**VHFS:** Includes var *fernaldii* LH Bailey, with lanceolate perigynia up to 5 mm wide from Porter Co, Indiana. Insignificant variety to some, but upheld by others including Reznicek & Ball (1974) & Uttal (1971).

[*Carex intumescens* Rudge var *fernaldii* LH Bailey, *C intumescens* Rudge var *intumescens*]



*Carex intumescens*, cultivated Whiteside Co plants

Line drawing Britton & Brown (1913) courtesy of Kentucky Native Plant Society. Photo Robert H Mohlenbrock USDA-NRCS PLANTS Database - Not copyrighted image. Line drawing Mark Mohlenbrock, USDA-NRCS PLANTS Database / USDA NRCS *Wetland flora: Field office illustrated guide to plant sp.* USDA Natural Resources Conservation Service. Not copyrighted image. Illinois map courtesy plants.usda.gov. North America map courtesy of BONAP (2010)

**Carex Jamesii** Schweinitz \*MI GRASS SEDGE, aka JAMES' SEDGE, (after the plants' discoverer, Edwin P *James*, 1797-1861, explorer, surgeon, naturalist & Colorado's first botanist, who explored Pikes Peak & Yellowstone & discovered *Carex Jamesii*, a student of John Torrey.) upl Subgenus *Carex* Section *Phyllostachyae*

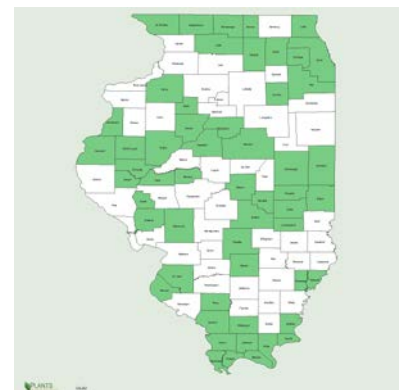
**Habitat:** Mesic savannahs, uncommon, moist wooded slopes & ravines; morainic (moronic) woods. Maple forests & BOX ELDER barrens. Tolerates closed canopies. Mesic woods, often on slopes, sugar maple woods, (ws92). Damp woods. (ewf59). Mesic woods, dry woods (m02). **distribution/range:** Common throughout Illinois. One of the many species known but not mapped from Bureau Co.

**Culture:** Fresh seed, dormant seed or moist cold stratify (treat as hydrophilic?). Small seeds need light to germinate, scant soil cover. 139,569 (lhn91), 145,420 (gnhm14) seeds per pound.

**asexual propagation:** Division of mature plants probably most economical, efficient, & practical. Self sows once established in correct habitats.

**bottom line:** Initial datum indicates dormant seeding is strongly needed. Germ 9%. Dorm 80%. Test 27 days. (#2).\*\*

**Description:** A small tufted inconspicuous sedge, bunching, densely cespitose; culms capillary, of various lengths, 0.25-1.6', 5-15 (54) cm tall plant bases brown to red purple; staminate spikelet 1'; staminate scales; pistillate scales; perigynia minutely



characteristic is the weak stems exceeded by the lax leaves. Most spikelets low in foliage, almost buried in plant base on culms 0.5- 4.0" tall.

Comments: status: Special concern (or not listed?) in Michigan. phenology: Flowering late April to late May early June. In northern Illinois, collect seeds in mid- to late June. One of the few sedges justifiably sold by the gram, were there some seed to be sold. The perigynia looks like a beachball with a traffic cone on top. Interesting in the landscape, shaded ground cover, plant on 0.67' centers.

In 1999, with a dry spring, in a population near Walnut, this sp appeared to flower early & short, with culms 0.5- 1.5", & with a later, longer, greener set of flowering culms, 4-7". A nearby population of *Carex aquatilis* exhibited a similar, though taller, flowering sequence also that spring. Seed source nursery production from genetic source degraded woods near Walnut, Bureau Co, growing under *Acer negundo*, where some butthead ran a road grader in 2005. It is common in Box Pond Woods, north of Buda, growing with *Perideridia americana*.

"An inconspicuous early sedge which, being once recognized is found rather frequently in dry as well as damp woods. In the latter situation it is commonly associated with *C oligocarpa*." (ewf55) Usually growing with *C oligocarpa* (ewf59).

### **Carex X knieskernii** Dewey [*C arctata* Boott X *C castanea* Wahlenberg]

**Carex lacustris** Willdenow COMMON LAKE SEDGE, aka HAIRY SEDGE, LAKEBANK SEDGE, LAKE SEDGE, LAKESHORE SEDGE, RIP-GUT SEDGE, SAW GRASS, "TRIDENTATE SEDGE", (*lacuster, lacustris, lacustris* New Latin, of a lake, referring to a lake, by extension, living in ponds or lakes, from Latin *lacuster*, a lake margin, from *lacus*, lake, in reference to *C lacustris*, a reference to growing in glacial lake plains in parts of its range.) obl Subgenus *Carex* Section *Paludosae*

Habitat: Seasonally inundated areas, wet meadows. Marshes, bogs, & swamps (ecs). Calcareous marshes, calcareous shrub communities, bog borders, swampy woods (ws92). Common in all wetlands. Swampy woods, calcareous marshes, bogs, sometimes in standing water (m05?). In New England, swamps, shores, meadows, & marsh edges, in calcareous or circumneutral soil (afne). distribution/range: Throughout Illinois, but infrequent in the s cos.

Culture: Cold moist stratify or dormant seed, light (Wade). 60 days cold moist stratification (pm09).

Cold moist stratify, small seeds need light to germinate, scant soil cover. Seed test data indicate this sp has a high percentage of dormant seed & benefits from dormant seeding or cold moist stratification. 172,989 (gnhj02); 210,380 (gnam10); 221,463 (gnma07); 229,525 (gnhm11); 234,504 (gnhj14), 314,513 (gnaj(02)03); 416,000 (pn02 & jfn04); 512,000 (pm01 & ecs); 648,000 (lhn91, aes10) seeds per pound.

asexual propagation: Division of mature clumps in early spring or fall.

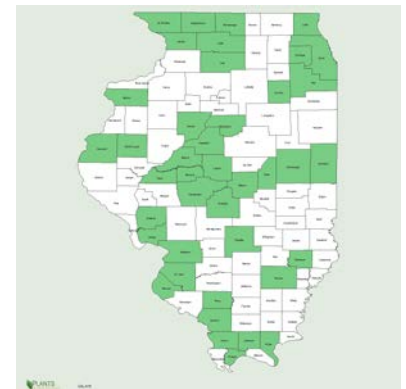
culture: Shade tolerant. No drought tolerance. No salt tolerance. pH 5.6-6.8.

bottom line: Field establish from dormant seeding only. Considering dormancy, seed cost, & availability, plugging is more cost efficient than seeding. Consistently strongly dormant. Germ 6.8, 5.0, 12, sd 5.7, r0.0-17 (17)%. Dorm 81.9, 82, 90, sd 7.2, r68-90 (22)%. Test 35, 34, na, r14-59 days. (#16).\*\*

Description: Aggressive, coarse, mat-forming, rhizomatous sedges, forming large monotypic stands to 30' across, roots 12" minimum depth, rhizomatous; culms aphyllodid, bases reddish & pinnate fibrillose; numerous pseudoculms 0.5-1.5 m high, 20" to 4", usually taller than the fruiting culms; leaves blue green, strongly M-shaped, 8-10mm wide, margins harshly serrate; spikelets ascending, cylindrical, 2.5 cm long, scattered on erect culms, the lower 1-4 pistillate, the upper 2-5 staminate; staminate scales; pistillate scales acute, 4.5 by 1.25 mm; perigynia somewhat inflated, dull green, 5-7 (7 mm long by 2 mm wide) mm long, ovoid-cylindrical, strongly many nerved, blunt, many with a tiny 3rd tooth next to one of the small apical teeth, 0.3-1 mm long; stigmas 3; N 2n = 74. key features:

Developing seedlings show a partially red basal sheath, m-shaped leaves, & long ligules.

Comments: status: phenology: Blooms early May to late May. In northern Illinois, collect seeds in June. Collect seeds in se Wisconsin in September (he99). Useful in shoreline erosion control & in moist rain gardens. Very irregular seed producer. Seed source nursery production genetic source DuPage, Kane & Will cos (Horlock) plus railroad remnants, Green River Lowland, Hamilton & Harmon Twps, Lee Co, & Hume Twp, Whiteside Co. Seed production in the wild & in cultivated stands of this & other aggressively rhizomatous spp is "feast or famine", with many years between good crops in any particular colony. Irregular crops were has been noted by ewf59. New colonies established from seed may go three to





“Found in the Co only in old drainage ditches north of Shirland, in Otter Creek bottom in Laona Twp & in a prairie slough south of Killbuck Forest Preserve. In Stephenson Co it is in a prairie slough south of Ridott & Pecatonica River sloughs north of Ridott. (*C riparia* Curtis var *lacustris* (Willd) Kukenth)” (ewf55)

Associates: *C lacustris* seed is known to be infected by an often unnoticed, black, smut-like infection inside the perigynia (Richard Agnew, personal communication, Arkansas Valley Seed Lab seed tests). (*One man’s smut is another man’s biodiversity.*) Larval host *Euphyes dion* DION SKIPPER, *Euphyes dukesi* DUKE’S SKIPPER, *Poanes viator* BROAD-WINGED SKIPPER (inland populations), & *Satyroides appalachia* APPALACHIAN BROWN BUTTERFLY. Provides food & cover for wildlife.

VHFS: Sw94 note *C lacustris* “...is uncommonly open to hybridization”, with known hybrids with *C pellita* & *C trichocarpa*. Wilhelm’s report of *C X subimpressa* Clokey from Porter Co. is referred to an unnamed hybrid between *C lacustris* & *C pellita*. Specimens from Porter Co have short teeth, pubescent perigynia, ligules more than 1-2 cm. long. (ws92)

Our experience suggests some of these “hybrids” should be revisited. It is probably partly to totally self-incompatible, making it open to hybridization.

*Carex crinita* Lam X *Carex lacustris* Willd. Catling, Reznicek, & Denford (1984) cite a hybrid with *C trichocarpa* from New York & Ontario, with beaks 1.5-2.5 mm long & teeth 0.7-1.2 mm long. (ws92) [*C riparia*, *C riparia lacustris*]

JL Bernard, 1975, The life history of shoots of *Carex lacustris*, Canadian Journal of Botany 53:256-260.



*Carex lacustris* seedlings

**Carex laeviconica** Dewey SMOOTHcone SEDGE, aka LONG-TOOTHED LAKE SEDGE, SMOOTH LAKE SEDGE, PLAINS SLOUGH SEDGE, (Latin *laevis* -is -e, smooth, free from hairs, & *conus*, a cone, & *-icus* emphasizing a characteristic. ) Subgenus *Carex* Section *Paludosae*

Habitat: Collected in 1874 by E J Hill on “low islands’ in the Kankakee River. Further west it grows in low wet prairies along rivers (ws92). Wet prairies, marshes (m02). “Openings in bottomland & lowland forests, edges of marshes, lakes, & ponds, wet meadows, wet thickets, mesic to wet prairies & savannas; 140–600 m” (fna).  
distribution/range: Occasional in the n ½ of Illinois, rare elsewhere, & apparently absent from the s ¼ of Illinois. Called a western sp (ws92), but native in northwestern Illinois. Sp is at the se limit of its range in Illinois.

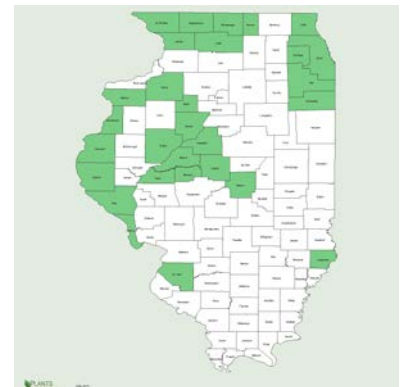
Culture: 120,000 (pm11); 192,000 seeds per pound.

Description: culms 1.0-4.0’; leaves; pistillate scales 6 x 1.5 mm, awn 3 mm; perigynia 8 x 2.5 mm, beak 3 mm, teeth 1.5 mm; N. key features:

Comments: status: phenology: Blooms June-July (m02). Fruiting May - July (fna).

“Locally common north of Shirland & in prairie sloughs in this & in neighboring cos.” (ewf55) It resembles *C trichocarpa* in growth habit & distribution, but with sterile stems less abundant (ewf59).

VHFS: Hybridizes with *C trichocarpa*. In some old texts, the sp name may be spelled *laevi-conica*.

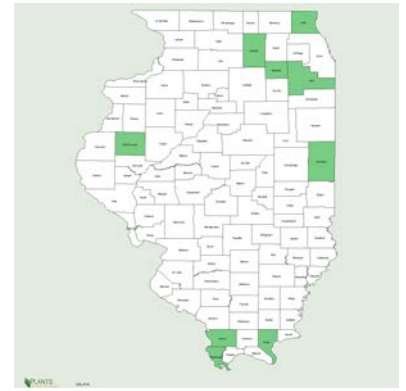


Habitat: Swamps & wet woods, wooded seeps, fens, moist limestone barrens (m02). Wooded seeps at the toes of bluffs & in fens, moist limestone barren, & hemlock swamps (ws92). In New England, swamps, meadows, marshes, & alluvial bottomlands, especially on calcareous soils (afne). River bottom (ewf59). distribution/range: Scattered in Illinois, but not particularly common.

Culture:

Description: Perigynia the base conspicuously pale & *spongy-thickened*;  $N\ 2n = 46$ . key features:

Comments: status: Endangered in Wisconsin. phenology: Blooms April 26 to May 24, mean week 10. Blooms May-August (m02). “It is a southern plant differing from *C stipata* mainly in the firm inner band of the sheath” (ewf59).



**Carex lanuginosa** (from Latin *lanuginosus*, downy, for the pubescent perigynia) see *C pellita*

**Carex lasiocarpa** Ehrhart var **americana** Fernald NARROW-LEAVED WOOLLY SEDGE, aka AMERICAN WOOLLY-FRUITED SEDGE, DOWNY-FRUITED SEDGE, HAIRY-FRUITED SEDGE, SLENDER SEDGE, SLENDER WETLAND SEDGE, SLENDER WOOLLY SEDGE, WOOLLYFRUIT SEDGE, (*lasiocarpus* rough or woolly-fruited, from Greek *λάσιος*, *lasios*, hairy, shaggy, woolly, & *καρπός* *karpos*, fruit, for the pubescent perigynia, & *americanus* -a -um, of the New World) Subgenus *Carex* Section *Hirtae* or *Carex* proper

Habitat: Sphagnum bogs, sedge meadows, sometimes in shallow water (m02). In Washington shallow water areas & neutral bogs. Sphagnum bogs, peaty, minerotrophic sedge meadows (ws92). In New England, rich meadows, bogs, shores, swales (afne).

7distribution/range: More northern & usually in peat bogs (ewf59). Confined to the n ½ of Illinois, also Jefferson Co (m02). Sp is at the s limit of its range in Illinois.

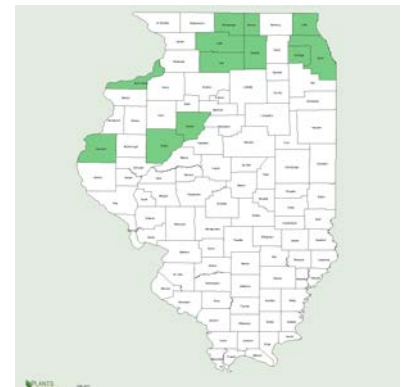
Culture: 60 days cold moist stratification (pm09). Available Fourth Corner Nursery.

Description: culms to 3'; leaves narrow; pistillate scales 3 x 1.5 mm; perigynia 3.5 x 1.5 mm; achenes 2 x 1.5 mm;  $N\ 2n = 56$ . key features: Key differences from *C pellita* are narrower leaves & a smooth stem, & they are not likely to grow together (ewf59). The inflorescence is similar to *C pellita*, but the teeth of the perigynia “nor” longer than 0.6 mm (ws92).

Comments: *C lasiocarpa* var *americana*, Blooms May 17 to May 27, mean week 12. Blooms May-June (m02).

“Resembles *C lanuginosa*. Common in wet places in the Sugar River sand area; also in low ground near Perryville (var *americana* Fern)” (ewf55) “much like *C pellita*, but less common (ewf59).

VHFS: [*C filiformis*, *C lasiocarpa*, *C lasiocarpa* Ehrh subsp. *americana* (Fern) D Löve & Bernard]. Also *C lanuginosa* Michx. Var *americana* also a synonym. The typical variety *lasiocarpa*, *FADEN-SEGGE*, is Eurasian. Hybrid *C lasiocarpa* Ehrhart X *C stricta* Lam.



*Carex lasiocarpa*

Seed photo courtesy of Bend Seed Extractory, Seeds of Success, <http://seedsofsuccess.smugmug.com>

**Carex lasiocarpa latifolia** see *C pellita*

**Carex laxiculmis** Schweinitz SPREADING SEDGE, aka *Carex à tiges faibles*, Weak-



Habitat: Rich woods (m02). A localized woodland sp, rich wooded bluffs of the Fox River (ws92). distribution/range: Occasional but scattered throughout Illinois. Very rare, sparingly in low woods, Ingersoll Park, west of Rockford (Fell, 1959).

Culture: Spp in the *C laxiflora* group are reported to have hydrophilic seeds (cu08).

Description: Perigynia 3 x 1.5 mm (ewf59).

Comments: status: phenology: Blooms May 03 to May 25, mean week 11; April – May (m02)

VHFS: Variety *copulata* (LH Bailey) Fernald has been reported from the Chicago area. The variety's more scabrous, darker green foliage suggest it is related to *C digitalis* (ws92). Gc63 do not separate it from the typical. The Freckmann Herbarium lists *C X copulata* (LH Bailey) Mack as a synonym.

Variety *laxiculmis* rich, moist woods, N 2n = 44, 46.

**Carex laxiflora** Lamarck BROAD LOOSE-FLOWER SEDGE, aka BEACH(?) WOOD SEDGE, BEECH WOOD SEDGE, WOOD SEDGE, (Latin *laxus*, wide, loose, spacious & *flos*, flower, for the loosely imbricated perigynia)

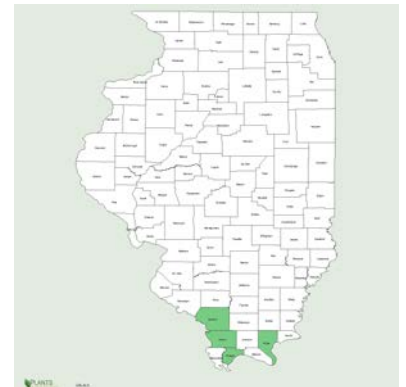
Habitat: Rich woods (m02). Rich, mesophytic beech maple forests, east of Chicago (ws92). In New England, rich woods (afne). distribution/range: Known only from a few cos. in the s tip of Illinois & in northeast Illinois, also Stark Co. LaPorte, Porter, & St. Joseph cos. Indiana, & Berrien Co. Michigan.

Culture: Spp in the *C laxiflora* group are reported to have hydrophilic seeds. (cu08).

Description: N 2n = 40. key features: Differs from *C blanda* in having bracteal sheaths b5eing completely smooth along the angles, while *C blanda* has angles distinctly serrulated. Occasional populations have leave blades to 1.6 mm wide (ws92).

Comments: status: phenology: Blooms April 26 to June 02, mean week 11; April – May (m02). Closely related to *C blanda*.

VHFS: Sw94 includes *C laxiflora patulifolia*. *C laxiflora* var *serrulata* FJ Hermann as a synonym.



Fell (1959) throws his hands in the air, writing “ Authors differ greatly in their handling of the members of this group. The plants in this area can be assigned to *C albursina*, *C blanda*, *C gracilescens*, or *C laxiculmis*. The division is made here & the word “*laxiflora*” is used only to designate the complex.”

- Carex laxiflora blanda** see *C blanda*
- Carex laxiflora gracillima** see *C gracilescens*
- Carex laxiflora latifolia** see *C albursina*
- Carex laxiflora serrulata** see *C blanda*

**Carex leavenworthii** Dewey LEAVENWORTH'S SEDGE, aka LAWN SEDGE, LEAVENWORTH'S BRACTED SEDGE, (*leavenworthii* for Dr Melines Conklin *Leavenworth*, 1796-1862, US Army surgeon, explorer, & amateur botanist who discovered *Carex leavenworthii*, & for whom Torrey named the genus *Leavenworthia*.) Subgenus *Vignea* Section *Bracteosae*. *C leavenworthii* is sometimes placed in the section *Muehlenbergianae*, which Kükenthal separated from *Bracteosae* on the basis of rhizome development & the basal structure of the perigynium (Hendrichs et al 2004)

Habitat: Dry, open woods, either sandy or calcareous (m02). Sandy woods also in calcareous habitats, & a weedy, vehicle traveled lake shore. distribution/range: Scattered in Illinois. “Very uncommon being found by us only in a low woods in Sugar River Forest Preserve” (ewf55). “Uncommon southern sp, from DeKalb & Winnebago Cos” (ewf59).

Culture: 973,230 (gnh14) seeds per pound.

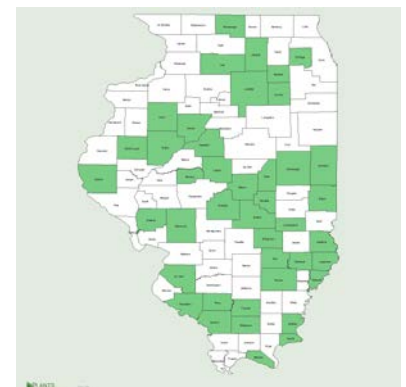
availability: Commercially available but limited. One source in 2014.

Initial datum indicates dormant seeding is strongly needed. Germ 21%. Dorm 70%.

Test 29 days. (#1).\*\*

Description: Perigynia 3 x 2 mm, beak 0.5 mm, pistillate scale 2 x 1 mm (ewf59) Perigynia flat ventrally, pistillate scales short pointed. Key difference from *C cephalophora* is the short stems & wide perigynia (ewf59).

Comments: status: phenology: Blooms April-June (m02). Genetic source Whiteside County.



Habitat: Wet, sunny or partially shaded sites. distribution/range: Native ne, n, & nw of Illinois.

Culture: Available Fourth Corner Nursery. Occasionally available in the Midwest.

Description: tufted; N. key features:

Comments: status: Threatened in Wisconsin phenology: Blooms

VHFS: Variety *lenticularis*, of shores, meadows, borders of alpine brooks, N 2n = 86-88. [*C lenticularis* var *albimontana* Dewey; *C l* var *blakei* Dewey, *C l* Michx var *eucycla* Fern & Wiegand, *C l* Michx var *merens* Howe].



*Carex lenticularis*

Seed photo courtesy of Bend Seed Extractory, Seeds of Success, <http://seedsofsuccess.smugmug.com>

**Carex leporina** Linnaeus. *HASSEN-SEGGE* see *C ovalis*

**Carex leptalea** Wahlenberg BRISTLY-STALKED SEDGE, aka BRISTLE-STALK SEDGE, LIVID SEDGE, DELICATE SEDGE, SLENDER BOG SEDGE, SLENDER SEDGE, (*leptaleus -a -um* Greek *leptaleos*, slender, delicate, tender, fine, from Greek *λεπτός*, *leptos*, fine, small, thin, delicate, for the weak leaves & culms) Subgenus *Primocarex* Section *Polytrichoidea*

Habitat: Bogs, fens, wet meadows (m02). Bogs & more commonly, calcareous fens (ws92). In New England, wet woods, swales, & marshy fields (afne).

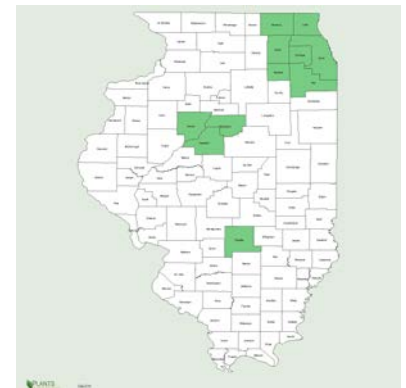
distribution/range: Known from several ne cos.; also Fayette, Ogle, Peoria, Tazewell, Vermillion, & Washington cos. (m02)

Culture:

Description: N 2n = 36. key features:

Comments: status: phenology: Blooms May 10 to May 28, mean week 11; May (m02). Identified at Nachusa Grasslands, seep area west of Doug's Knob, by Dick Young & John Durer.

VHFS: Var *harperi* (Fern) Weatherb & Grisc, a weak variety with perigynia mostly 3.5-5 mm long, has been reported from St Joseph Co, Indiana.



**Carex leptoneuria** (Fernald) Fernald FEW-NERVED WOOD SEDGE, aka NERVELESS WOODLAND SEDGE (*leptoneuria* from Greek *leptos*, slender, thin small weak, & Latin *nervus*, a sinew, nerve, tendon, for the weakly nerved perigynia)

Habitat: Hydromesophytic forests near Lake Michigan (ws92). In New England, low woods, clearings, & thickets (afne).

distribution/range: Porter Co, Indiana & Berrien Co, Michigan.

Culture:

Description: N 2n = 36. key features:

Comments: status: phenology: Blooms April 29 to May 30, mean week 10.

**Carex limosa** Linnaeus MUD SEDGE, aka GRACEFUL BOG SEDGE, MUCK SEDGE, (*limosus -a -um* pertaining to or of marshes or muddy places, growing in boggy places, from Latin *limosus*, mud filled, slimy, from its growth in mucky or peaty wetlands, from its growth in mucky or peaty wetlands)

Habitat: Sphagnum bogs (m02). In New England, bogs, meadows, & shores (afne).



Culture:

Description: key features:

Comments: status: phenology: Blooms May 17 to May 24, mean week 11. Blooms 15 June to 16 July (ws92). Blooms June – July (m02)

VHFS: [*C paupercula*, *C paupercula irrigua*]

**Carex X limula** (Fries) Raymond [*C aquatilis* var *aquatilis* X *C biglowii* subsp *biglowii*]

**Carex livida** (Wahlenberg) Willdenow LIVID SEDGE, aka PALE STIFF SEDGE, (*lividus -a -um* livid, bluish, leaden blue-gray.)

Habitat: In New England, calcareous meadows & bogs (afne). distribution/range:

Culture:

Description: N 2n = 32. key features:

Comments: status: phenology: Blooms

VHFS: [*C livida* var *grayana* (Dewey) Fern, *C livida* var *radicaulis* Paine]

**Carex longii** Mackenzie BROAD-SHOULDERED SEDGE, aka LONG'S SEDGE, (in honor of Bayard H Long, 1885-1969, American botanist) Subgenus *Vignae* Section *Ovales*

Habitat: Flatwoods, mesic sand prairies, wet woods (m02). Characteristic of mesophytic sand prairies, moist sandy depressions & acidic flats & flatwoods; low wet flatwoods, margins of a marsh, & disturbed sandy areas (ws92). In New England, wet, sandy or peaty soils (afne). distribution/range: Scattered throughout Illinois. Typically mapped with *C absolutescens*.

Culture:

Description: N 2n = 58, 62. key features:

Comments: status: phenology: Blooms April – June (m02). Blooms 11 May to 24 June (ws92)

*Carex longii* has overwintering vegetative stems that produce new shoots at the nodes. (Ball & Reznicek 2002) “In the southern part of the range, decumbent culms of *C longii* can root at their nodes during the fall, & produce flowering culms the following spring. A similar habit of vegetative spread is frequent in *C tribuloides*, less common in *C absolutescens*, *C ozarkana*, & *C projecta*, & rare in *C cristatella*, *C scoparia* & *C vexans*.” (Mastrogiuseppe et al 2002)

“Differs from the above (*C absolutescens*) in the spikes being closely aggregated; the scales narrower than the perigynia & about as long & the perigynia nerved ventrally. A very late sedge found by us only in Campbell bog in Rockton Twp. Not recognized in Jones' Flora of Illinois.” (ewf55)

VHFS: [*C absolutescens* in part] Sometimes included with *C absolutescens*.

**Carex longirostris** (*longirostris -is -e* longiros'tris (lon-ji-ROS-tris) New Latin, having a long beak, from *longus*, -a -um Latin adjective, long; tall, & from *rostrum -i n*, beak, snout; a Roman or Greek ship's prow.) see *C sprengelii*

**Carex louisianica** LH Bailey LOUISIANA SEDGE

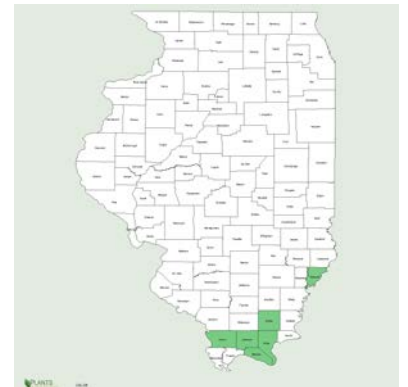
Habitat: Wet woods, wooded swamps, floodplains, & meadows (m02).

distribution/range: Confined to extreme s Illinois; also Wabash Co. S Illinois is the n limit of sp range.

Culture:

Description: key features:

Comments: status: phenology: Blooms May – October (m02)



**Carex lucorum** see *C pensylvanica*

**Carex lucorum** Willdenow BLUE RIDGE SEDGE. aka *CAREX DE FORÊTS*. FIRE SEDGE. LONG-BEAKED OAK SEDGE.

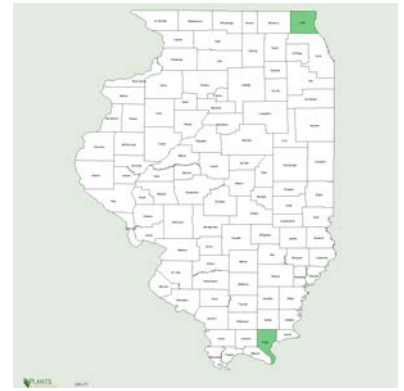
Habitat: Woods (m02). distribution/range: Very rare in Illinois, Pope Co.

Culture:

Description: Tufted perennial; roots with long slender rhizomes; N “The fact that *Carex lucorum* ( $2n = 40$ ) has a different chromosome number than *Carex pensylvanica* ( $2n = 36$ ) lends support to separate sp status” (Crins & Ball 1983). key features: *Carex lucorum* & *Carex pensylvanica* can be distinguished from other members of the *Carex* section *Montanae* (*Acrocystis*) by their long slender rhizomes. *C lucorum* can be differentiated from *C pensylvanica* by careful measurement of the perigynium beak. The beak of *C lucorum* measures 0.9-2.0 mm & is half to as long as the perigynium body, whereas that of *C pensylvanica* measures only 0.2-0.8 mm & is less than half the length of the perigynium body. (Crins & Ball 1983)

Comments: status: phenology: Blooms (April m02)

VHFS: *C lucorum* Willd ex Link var *lucorum*, acidic, often sandy, soils in open pine & oak woods & clearings,  $2n = 40$ . [*C michiganensis* Dewey, *C pensylvanica* Lam var *distans* Peck, *C pensylvanica* Lam var *lucorum* (Willd ex Link) Fern, *C pensylvanica* Lam var *separans* Peck]



### **Carex lunelliana** Mackenzie HEAVY SEDGE Section *Bracteosae*

Habitat: Sand. distribution/range:

Culture:

Description: Perigynia 4.5 x 2 mm, pistillate scale 4.5 x 2 mm. Ewf59 separated this from *C gravida* because of the more abruptly beaked perigynia, & the wider leaves, & the sand habitat.

Comments: See *C gravida*, of which this is a variety, for further discussion.

**Δ Carex lupuliformis** Sartwell ex Dewey (or Sartwell at times) \*CT, IN, IA, MI, NJ, NY, OH, WI FALSE HOP SEDGE, aka *CAREX FAUX-LUPULINA*, HOP-LIKE SEDGE, HOP SEDGE, KNOBBED HOP SEDGE, (*lupuliformis* hop-like in form or habit, from *Humulus lupulus*, the latter meaning a small wolf, after *C lupulina* & *-formis*, with the form of.) [obl]. Subgenus *Carex* Section *Lupulinae*

Habitat: Wet savannas & swamp white oak terraces. Savanna depressions & wooded morainic (moronic?) swamps, or morainal swamps. (sw94) Wet woods, wooded swamps marshes, meadows, & roadside ditches (m02). In New England, calcareous swamps, meadows, & marshes (afne). distribution/range: Scattered throughout Illinois. Rare in ne Illinois. Rare & local throughout much of its range.

Culture: Dormant seed or moist cold stratify, hull, seeds need light to germinate, scant soil cover. Most lots are highly dormant & require cold moist stratification. Hulled seed germinates somewhat in greenhouse with no treatment. (gni) 52,144 (lhn91); 58,824 (gni); 60,300 (gna03); 80,328 (gna05); 81,802\* (gnh02); 85,660 (gnh09); 87,770 (gns04); 90,079 (gna08); 97,758 (gnh11) seeds per pound.

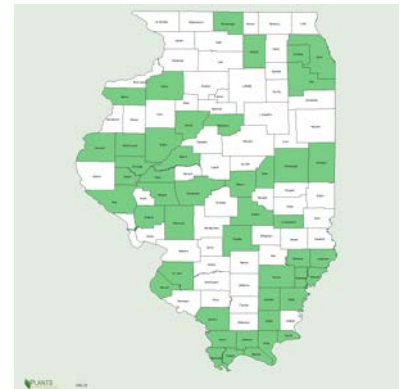
bottom line: Dormant seeding is best for field establishment, good results are possible some springs. Most lots are significantly to strongly benefited from dormant seeding. Flipflop, germ & dorm highly variable. Germ 21.9, 8.5, 1.0, sd 27.9, r1.0-78 (77)%. Dorm 65.1, 72, na, sd 29.2, r11-95 (84)%. Test 32, 35, 35, r16-41 days. (#10).\*\*

Description: Culms 1.4-2.0'; leaves sheaths; heads; staminate spikes usually one or two; perigynia ascending or slightly spreading, pale green, becoming yellowish-brown, beaks about as long as the bodies; achenes about as broad as long, tapering to the apex, angles knobbed, sides noticeably depressed, short thick stipe; N  $2n = ?$  key features:

Comments: status: Endangered in Connecticut, Massachusetts, & Wisconsin. Rare in Indiana, New Jersey, & New York. Special concern (threatened 2004) in Michigan. Threatened in Ohio. phenology: Blooms 5,6; June - October (m02). In northern Illinois, collect seeds in early August - early September. Wetland restoration, very ornamental. Cool season, spreading tussocks, calcareous soils. Seed source nursery production, genetic source terrace wooded wetland near Princeton, bureau Co.

VHFS: Ewf59 noted that in the upper Rock River Valley, both HOP SEDGES intergrade, but typical specimens of *C lupuliformis* are not found. Joann Gillespie, Country Wetlands Nursery, Ltd.. noted chronic problems of *lupulina* / *lupuliformis* confusion in Wisconsin (personal communication). Sw94 restrict *C lupuliformis* to those plants with manifest nipples or knobs.

“Distinction of this from the preceding (*C lupulina*) is by no means always clear. The beak of the perigynia varies as



[Basionym: *Carex lupulina* Muhlenberg ex Willdenow var *polystachia* Schweinitz & Torrey 1825]

**Δ *Carex lupulina*** Willdenow (or sometimes Muhlenberg ex Willdenow) COMMON HOP SEDGE, aka *CAREX HOUBLON*, HOP SEDGE, HOPS SEDGE, (*lupulinus* -a -um Latin hop-like in form or habit, for the similarity to the inflorescence of *Humulus lupulus*, from *lupulus*, a wolf, small wolf from plants' old name willow-wolf, from its habit of climbing over willows.) Obligate Wetland Subgenus *Carex* Section *Lupulinae*

Habitat: Wet meadows, wet savannas, upland swamps, alluvial prairies & woodlands, wooded swamp, old meanders, & bogs. Wet floodplain woodlands & terrace woodlands. Sloughs & river bottoms (ewf59). Wet woods, wooded swamps, meadows, wet prairies, bogs, roadside ditches (m02). In New England, wet woods, swamps, & meadows (afne).  
distribution/range: Common, throughout Illinois.

Cultivation Cold moist stratify for 60 days or dormant seed, needs light, sow on soil surface (Wade). 60 days cold moist stratification (pm09). Seeds germinate after about 60 days of cold, moist stratification. Seeds need light to break dormancy & germinate. Plant on top of growing media & do not cover. (he99) "Fall plant or cold stratify for 2 to 4 weeks for best results. Sow seeds on soil surface at 70°F & water." (ew12)

Dormant seed or moist cold stratify. Small seeds need light to germinate, scant soil cover. Preliminary test data indicates this sp benefits from cold moist stratification. Hulled seed germinates somewhat in greenhouse with no treatment. (gni)

17,600 (pm99); 35,000 (ecs); 46,279 (gnh15), 49,017\* (gnae11); 52,732 (gnae09); 52,800 (pm01); 56,000 (ew12); 58,153 (lhn91); 57,600 (aes10); 58,160 (jfn04); 73,606\* (gnae07); 77,487\* (gnh02) 81,376\* (gnh03); 88,43 (gnh11); 105,832 9 seeds per pound.

Cultivation: Space plants 1.0-1.5' on center. Wet soils, full sun to shade. Moderate shade tolerance. Low drought tolerance. No salt tolerance. pH 6.2-7.0

bottom line: Dormant seeding is best for field establishment, but good results are possible some springs. Most lots are significantly to strongly benefited from dormant seeding. Flipflop species, dorm increasing 2010-2014 crop. Germ 27.5, 15.5, 2.0, sd 26.8, r2.0-78 (76)%. Dorm 60.4, 72, na, sd 30.4, r11-95 (84)%. Test 34, 34, 35, r28-38 days. (#15).\*\*

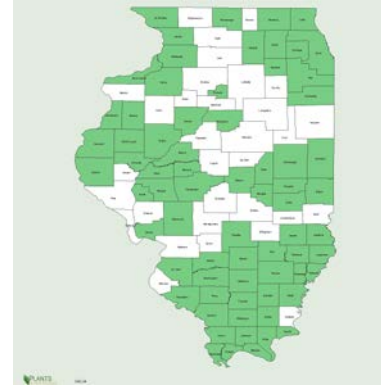
Description: Robust, caespitose, perennial, native sedge; roots 18" minimum depth; culms 1.0-1.5', 3-13 dm tall, to 4', bases often red & pinnate-fibrillose; leaves 5-13 mm wide; spikes upper staminate spikelet 1, pistillate spikelets 2-6, longer than thick, with 30-60 large crowded ascending perigynia; pistillate scales 10 x 1.5 mm; perigynia 13-20 mm long (15 x 6 mm), green to brown, large, greatly inflated, tough, bladder like, broadly ovoid, persistent into autumn, well adapted for floating into shore; achenes 4 x 2 mm, longer than broad, angles without knobs, slightly depressed sides; N 2n = ? key features: *C lupulina* & *C lupuliformis* are distinguished by the absence or presence of prominent knobs on the achenes. The achenes do not exceed 2.8 mm wide.

Comments: status: phenology: Blooms late May to July. In northern Illinois, collect seeds in late July - early October. Collect seeds in se Wisconsin in August - October (he99). Landscaping, wetland restoration, wet rain gardens, wet shade gardens, bog gardens, pond edges, specimen ornamental 'grass' plantings. Bunching, often forming large patches. Seed source nursery production, genetic source Fermi Lab. Most *C lupulina* in the trade has at least some knobbed achenes of *C lupuliformis*.

Associates: Larval host *Satyroides eurydice* EYED BROWN BUTTERFLY, which apparently can properly identify *C lupulina*. The butterfly has a brain the size of a pinpoint, apparently the minimum necessary to study sedges. Host of Pearly Butterfly? Seeds are food for waterfowl & other birds. Provides food & cover for wildlife.

"Common in swamps as in the slough swamp on Kishwaukee River at Killbuck Forest Preserve." (ewf55)

VHFS: The variety *pedunculata* A Gray has been reported from the Chicago area. *Carex lupulina* Willdenow X *Carex a* Wahlenberg. [*Carex lupulina* Willd var *pedunculata* A Gray, *C X macounii* Dewey]





*Carex lupulina*

**Δ *Carex lurida* Wahlenberg** \*IA SHALLOW SEDGE, aka BOTTLE BRUSH SEDGE, *CAREX LUISANT*, FALSE BOTTLEBRUSH SEDGE, LURID SEDGE, SALLOW SEDGE, (*luridus -a -um* lurid, pale, wan, sallow, ghastly, dingy, pale yellow, dirty yellow, brownish-yellow, from Latin adjective *luridus -a um*, pale yellow, (or better as sallow, wan, ghastly) from *luror, luroris* m., ghastliness, paleness; dirty brown in one source. In scientific use of a dingy brown or, sallow, having a sickly yellow or brownish yellow color, (oed); for the paleness of the yellow perigynia) obl Subgenus *Carex* Section *Vesicariae*.

Habitat: Seasonally inundated areas, swamps, deep marshes, bogs, peaty fens, particularly in sandy acidic soils (ws92); wet acid sites near streams. Wet ground sedge. In New England, swamps, wet woods, shores, meadows, & marshes, mostly in acidic soils (afne). distribution/range:

Culture: 60 days cold moist stratification (pm09). “Fall plant or cold stratify for 2 to 4 weeks for best results. Sow seeds on soil surface at 70°F & water.” (ew11) Sow at 20°C (68°F), if no germination in 3-4 wks, move to +2 to +4°C (34-39°F) for 2-4 wks, recycle (tchn).

Cold moist stratify, light (gni). 192,000 (pm01, jfn04, ew12); 214,759 (gnh13); 218,707 (gnh12); 228,370 (gnh15), 250,000 (ecs); 266,119\* (gnh02); 270,722 (gnh09); 272,919 (gna04); 302,400 (lhn91); 347,493 (gnaev06); 382,155 (gnaen11) seeds per pound.

cultivation: Space plants 1.0-1.25' on center. Wet to mesic soils, full sun to partial shade. Acid soils. Moderate shade tolerance. Low drought tolerance. No salt tolerance. pH 4.9-6.8

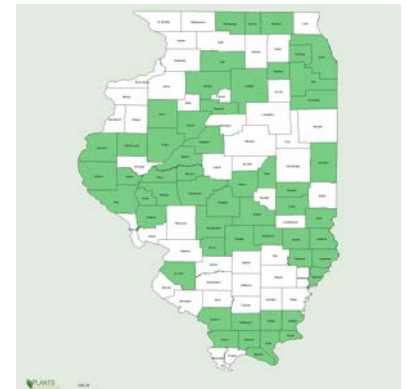
bottom line: Spring seeding works well 5 out of 7 years, but 90% dormant lots are known. Flipflop species. Germ 70.7, 89, na, sd 31.6, r8.0-99 (91)%. Dorm 17.4, 1.0, 0.0, sd 31.2, r0.0-90 (90)%. Test 35, 38, 41, r24-41 days. (#13).\*\*

Description: Robust, caespitose sedge, Fassett notes its resembles a small *C lupulina*, but also looks much like a large *C hystericina*; roots bases red brown, 16" minimum depth; culms to 3'; leaves 3-7 mm wide; sheaths pinnate fibrillose; heads staminate spikelets 1-3 above clustered, stalked, erect, or drooping, pistillate spikelets that are thick-cylindrical; spikes; staminate scales; pistillate scales abruptly narrowed near base (?) into a long awn; perigynia inflated, broadly ovoid, green to brown, 7-10 mm long, 2.2-3.5 mm thick, 8-12 nerved achenes; stigmas 3; N 2n = ? key features:

Comments: status: phenology: Blooms late May to early June. In northern Illinois, collect seeds in September. “Abundant, variable, & often weedy sp” (fna). Genetic source Kendall & DuPage Cos.

Associates: Food & cover for songbirds, ruffed grouse, chicks, ducks & moose (ecs).

VHFS: Known hybrids include *Carex comosa* Boott X *C lurida* Wahlenb, *C lupulina* Willd X *C lurida* Wahlenb, *C lurida* Wahlenb X *C mitchelliana* LA Curtis, & *C lurida* Wahlenb X *C rostrata* Stokes.







*Carex lurida*

**Carex magellanica** Lamark subsp **irrigua** (Wahlenberg) Hultónén BOREAL BOG SEDGE, aka BOG SEDGE, *CAREX CHÉTIF*, (*magellanicus -a -um* of or from the Straits of Magellan region, the southern tip of South America; from the Magellan Archipelago, Oceania.)

Habitat: In New England, sphagnous bogs, meadows, wet woods, & marshes (afne). distribution/range:

Culture:

Description: N 2n = ca. 60. key features:

Comments: status: phenology: Blooms

VHFS: [*C paupercula* Michx, *C paupercula* Michx var *irrigua* (Wahlenb) Fern, *C paupercula* Michx var *pallens* Fern] The second author of the subsp name may be seen as Hiitonen, Hultén, & Hittonen.

**Carex X mainensis** Porter ex Britton [*C saxatilis* L X *C vesicaria* L, *C X stenolepis* Porter ex Britt]

**Carex mariposana** LH Bailey ex Mackenzie MARIPOSA SEDGE,

Habitat: Meadows, 3,900-10,400 feet in elevation, California.

Culture:

Description:

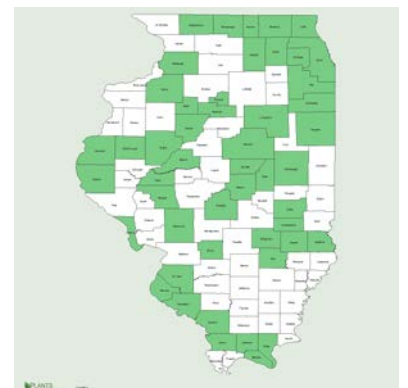
Comments: Being studied, but not much data. (Dyer, 2001) Literally, an internet citation (using the term loosely) with absolutely no relevant data.

D Dyer, 2001 Propagation protocol for production of container *Carex mariposa* seeds: Lockeford Plant Material Center, Lockeford, California, In Native Plant Network, [URL:http://www.nativeplantnetwork.org](http://www.nativeplantnetwork.org) (accessed 9 July 2002). Moscow (ID): University of Idaho, College of Natural Resources, Forest Research Nursery.

**Δ Carex meadii** Dewey MEAD SEDGE, aka MEAD'S SEDGE, MEAD'S STIFF SEDGE, As if there were a MEAD'S LIMP SEDGE? (in honor of its discoverer, Dr. Samuel Barnum Mead MD, 1799-1880, a pioneer medical doctor who lived near Augusta, Hancock Co, Illinois. Frontier doctors were by necessity botanists, using many local plants for medicines.) [facu] (STIFF SEDGE referring to *Panicaceae*, or the *Tetanica* group, the *Panicaceae*) Subgenus *Carex* Section *Panicacea*

Habitat: Dry & sand prairies. High prairie & sand. Frequent in southern Wisconsin (ewf59). Prairie kames & hill prairies, also from fens & calcareous seep areas. Prairies, barrens, fens, & meadows (m2002). In New England, calcareous meadows, moist depressions, cedar glades (afne). distribution/range: Scattered in Illinois, but not common in the s ½ of Illinois. The colonies in our horse pasture are only one-half mile from Bureau co

Culture:. 60 days cold moist stratification (pm09). Dormant seed or moist cold stratify (120?)-light (Code C, D Ken Schaal). This sp uses a great deal of energy in vegetative reproduction, & some colonies may set much empty seed. Difficult from seed, highly dormant, or self incompatible & low viability? The early maturing seeds need to be tested for hydrophilicity 245 189 (onh14) 304 000 (on) 320 000 (on) seeds per pound



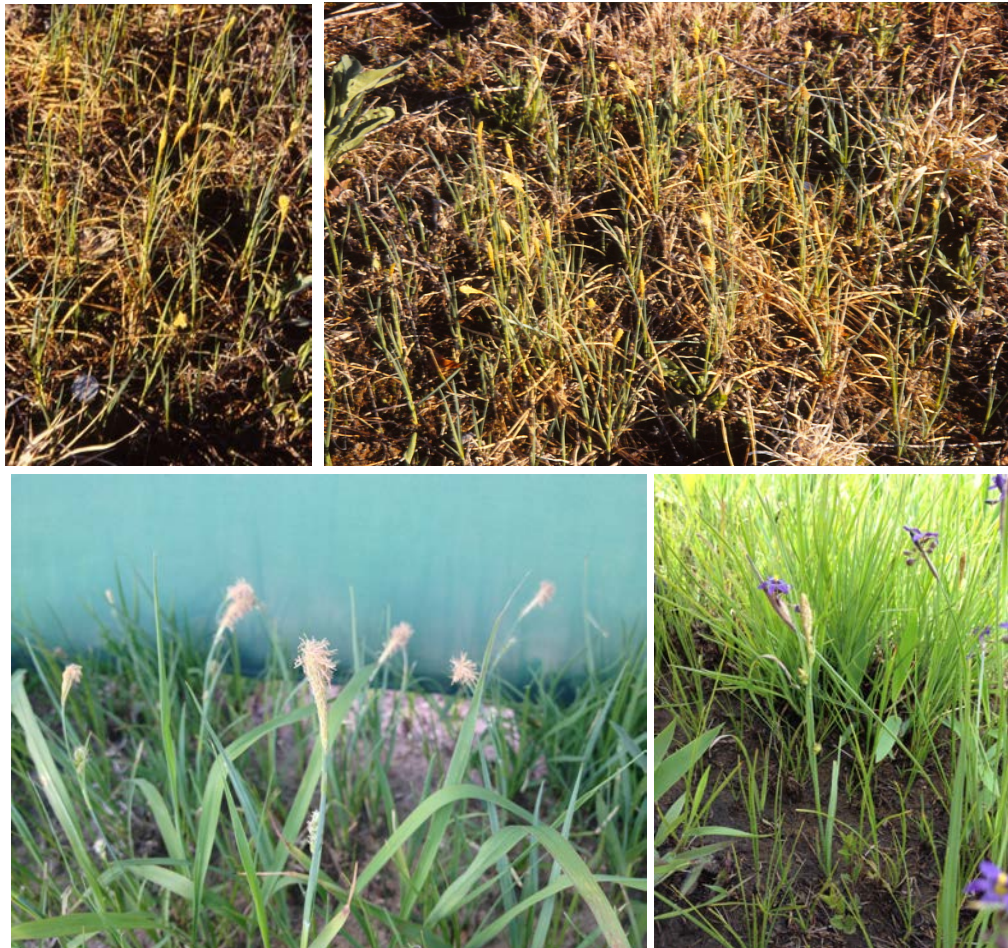
Description: Erect, perennial, native sedge; roots rhizomatous, forms quite open sod, interspersed with other spp; culms 0.8-2.0'; leaf blades blue green, 3-7 mm wide; spikes staminate spikelet long-stalked & round scaled, spikelets slender, elongate, 5-20 flowered, borne all along the leafy bracted culms as long as the leaves; pistillate scales 3.5 x 2 mm; perigynia 3-4.5 mm long (3.5 x 2.5 mm) 14-30 nerved, green, ovoid to bluntly triangular & somewhat asymmetrical; stigmas 3; N 2n = 56. key features: "Separating *Carex meadii* & *C tetanica* can be problematic, particularly in the Great Lakes region where they seem to intergrade with each other. *Carex meadii*, the more wide-ranging taxon, can tolerate drier habitats. In addition to the characters in the key, *C meadii* tends to be a coarser plant with more grayish green leaves, shorter peduncles (bearing the staminate & proximal pistillate spikes), & thicker spikes. The perigynia, including the proximal ones, are strongly aggregated & borne in more ranks within the spike. Also, the beaks of *C meadii* may be more distinct & sharply curved." (fna)

"Stouter than *C tetanica*, likely to be in wetter places & much less common. Kent Creek bottom on Cunningham road west of Rockford." (ewf55)

According to Ewf59, *C meadii* is more robust than *C tetanica*, & has a distinctive blue color that is conspicuous in grass, while *C tetanica* has green leaves & is hard to distinguish from grass. The former is a dry sedge & the latter is of wet places. *C meadii* forms large, open, clonal patches & has a distinctive bluish cast when flowering & fruiting.

Comments: status: phenology: Blooms late April - early June. Uncommon prairie sedge, a very distinctive blue-green in spring. This is also said to occur in fens & calcareous seeps, where it is difficult to distinguish from *C tetanica*. Maybe it really is *tetanica* in the wet. At least one or two guide books separate these spp this way, but I have seen *C tetanica* in a dry oak-opening hill prairie near Tiskilwa, Bureau Co

VHFS: [*C tetanica* Schkuhr var *meadii* (Dewey) LH Bailey]





*Carex meadii* in flower; *C meadii* & *Sisyrrinchium* sod

**Carex media** R Brown (or R Brown ex Richardson) \*MI, WI INTERMEDIATE SEDGE, aka *CAREX MOYEN*, SEDGE; CLOSEDHEAD SEDGE, (*medius -a -um* mid, in the middle, medium, intermedium, intermediate, between two types.) Section *Atratae*

Habitat: In New England, mossy woods, meadows, & shores, often in calcareous soils (afne). distribution/range: Circumboreal, ranges south into the Driftless Area of Iowa & Wisconsin.

Culture:

Description: N 2n = ? key features:

Comments: status: Threatened in Michigan. Endangered in Wisconsin. phenology: Blooms ? A Yupper sedge from Isle Royale & Keweenaw Co.

VHFS: New nomenclature is *Carex norvegica* Retz. ssp *inferalpina* (Wahlenb.) Hultén.

**Carex merritt-fernaldii** Mackenzie FERNALD'S SEDGE, aka *CAREX DE FERNALD*, FERNALD'S OVAL SEDGE, (*merritt-fernaldii* for Merritt Lyndon Fernald, 1873-1950.) Subgenus *Vignae* Section *Ovales*

Habitat: In New England, dry rocky or gravelly places, dryish meadows, on acidic soils (afne). distribution/range: N of Illinois.

Description: Similar to *C bicknellii*, plants caespitose, slender; culms 1-15 dm tall; spikes spikelets all alike, short sessile, staminate flowers confined to tapering spikelet bases; perigynia thin & scalelike, perigynia ovate, beaked, & 2.2 - 4.2 mm but narrower than *bicknellii*, dull brown & nerveless, wide with translucent margins or wings, wind dispersed, mostly appressed & all or all but the beaks hidden by the scales, becoming brown at maturity; stigmas 2; N 2n = 70, 74. key features: Diagnostic perigynia shapes not distinctive until about July, & then several perigynia must be observed to determine shape & proportions.

Comments: Some Chicago area references to this sp are actually *C molesta*.

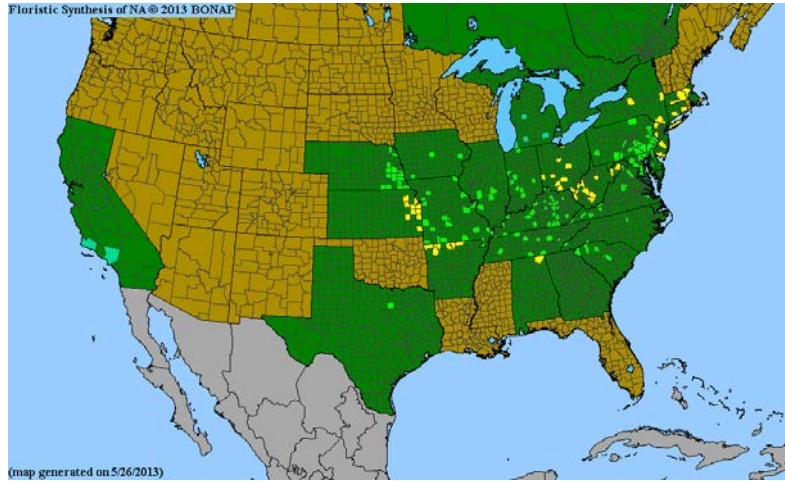
VHFS: [*Carex brevior* (Dewey) Mack var *pseudofestucea* Farw.]

**Carex mesochorea** Mackenzie MIDLAND SEDGE, aka *CAREX DE L'ARRIÈRE-PAYS*, (*mesochorea* middle country or middle region, by extension mid continental range, from Greek μέσος, *mesos*, middle, the half, & χώρα, *khora*, country place, region, from a sp mid continental range, cf epichoric.)

Habitat: Dry woods, fields (m02). Dry grasslands, roadsides, & railroads. In the Chicago region, known only from disturbed habitats & presumed an introduction. In New England, dry, open soil (afne). distribution/range: Infrequent, rare, Fayette, Macoupin, Shelby, & St. Clair cos. (Not listed in Ilpin.) Kalamazoo, Michigan & Berrien & St. Joseph cos.

Culture:

VHFS: [*Carex mediterranea* Mack, Bull Torrey Bot Club 33: 441. 1906, not CB Clarke ex Post 1896, *C cephalophora* Muhl ex Willd *mesochorea* (Mack) Gleason]



**Carex michauxiana** Boekeler \*WI MICHAUX SEDGE, aka *CAREX DE MICHAUX*, MICHAUX’S SEDGE, (*michauxianus -a -um* for Andre Michaux, 1746-1802, French botanist, or his son Francois Andre Michaux, 1770-1855, a botanist known for his work on North American trees, or a reference to both.) Subgenus *Carex* Section *Folliculatae*

Habitat: In New England, bogs, shores, & swamps, often acidic soils (afne). Bogs, fens, lakeshores, stream banks, open seeps, in sandy or peaty, often acidic soils. distribution/range: N of our area.

Culture:

Description: key features:

Comments: status: Threatened in Wisconsin. phenology: Blooms Fruits late spring-summer.

VHFS: [*Carex abacta* LH Bailey, *C rostrata* Michx, Fl Bor Amer. 2: 173. 1803, not Stokes 1787]

**Carex microptera** Mackenzie POPCORN SEDGE

Habitat: distribution/range:

Culture: Available Fourth Corner Nursery

Description: N 2n = 80, 90. key features:

Comments: status: phenology: Blooms

“In high montane habitats it is sometimes difficult to distinguish *Carex microptera* from *C haydeniana*” (fna).

VHFS:



*Carex microptera*

Seed photo courtesy of Bend Seed Extractory, Seeds of Success, <http://seedsofsuccess.smugmug.com>.

**Carex mirabilis** (*mirabilis* marvelous, extraordinary, wonderful.) see *C normalis*

Δ **Carex molesta** Mackenzie ex Bright, Trillia. 9: 4, 20. 1930 (as *modesta*). (or plain old Mackenzie in some sources) TROUBLESOME SEDGE, aka *CAREX DÉRANGEANT*, COMMON FIELD SEDGE, FIELD OVAL SEDGE, ROUND-HEADED SEDGE, (*molestus -a -um* Middle English *molesten*, from Old French *molester*, from Latin *molestare*, disturb, vex, annoy, worry, trouble past participle *molestus -a -um* troublesome disturbing irksome annoying unmanageable (taxonomically) from its

**Habitat:** Disturbed prairie, moist fields, ditches, disturbed wet depressions, upland swamps (ws92). Fields & low meadows; old fields, moist prairies, swamps, wet depressions, ditches (m99). Moist places (ewf59). Fields, roadsides, bottomlands, open woods, on dry to wet, often heavy, calcareous soil (fna). In New England, open areas, dry or moist, often, heavy calcareous soils (afne). **distribution/range:** Scattered throughout Illinois. It is one of the most widely distributed sp of the section Ovales in Illinois. Plants.usda.gov & Ilpin map it from 3 southern cos only! Cf Bonap. Somewhat weedy, introduced in California.



**Culture:** 60 days cold moist stratification (pm09). (Code C, D Ken Schaal). Moist cold stratify, light. Dormant seed in cold frame works well. Easy with no treatment (gni02), but dormancy rates are highly variable. Growth rate slow. Seedling vigor low. Vegetative spread rate slow. Slowly spreads from seed. 400,000 (pm01, aes10), 428,504 (gna05), 521,864 (gnh05), 533,333 (gni), 541,120 (gna05), 549,969 (gnh02), 563,741 (gna06), 580,192 (gna04), 586,942 (gnh02), 594,241 (gnh11), 602,522 (gna10), 606,417 (gnh13), 610,215 (gnh09), 660,262 (gnh11), 700,617 (gna07), 800,000 (gn), 1,328,011 (gnh13\*) seeds per pound.

**Cultivation:** Tolerant of coarse, medium, & fine textured soils. Anaerobic tolerance high. CaCO3 tolerance low. Drought tolerance medium. Fertility requirement low. Salinity tolerance none. Shade intolerant. pH 4.9-7.0.

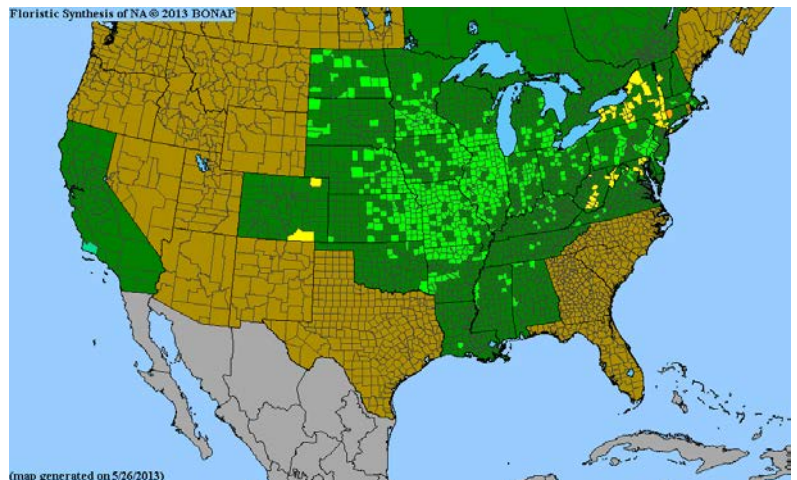
**bottom line:** Field establishment best by dormant seeding. Dormancy mechanisms vary widely (wildly) from year to year. Flipflop species. Crossover species. Germ 43.1, 49, 11, sd 31.7, r2.0-82 (80)%. Dorm 43.5, 26, 90, sd 33.1, r6.0-90 (84)%. Test 37, 39, 41, r19-48 days. (#16).\*\*

**Description:** Similar to *C breviar*, plants caespitose, slender; roots 10" minimum depth; culms 1-15 dm tall, vegetative culms few, inconspicuous; heads spikelets all alike, short sessile, mostly 3-4, round based & crowded at the culm tip; spikes staminate flowers confined to tapering spikelet bases; perigynia ovate, beaked, & 2.2 - 4.2 mm wide, more ovate & greener until ripe, & faintly nerved over inner face & scalelike, with translucent margins or wings, wind dispersed, mostly appressed & all or all but the beaks hidden by the scales, becoming brown at maturity; stigmas 2; N 2n = 68, 70. **key features:** Diagnostic perigynia shapes not distinctive until about July, & then several perigynia must be observed to determine shape & proportions.

**Comments: status:** Special concern in Connecticut. Threatened in New York. **phenology:** Blooms April-June. In northern Illinois, collect seeds in late June - late July. Seed source nursery production from genetic source railroad prairie, Mendota, LaSalle Co. *C molesta* has been a poorly understood sp in the Midwest, & has been confused with *C straminea*, *C breviar*, *C merritt-fernaldii*, & *C festucacea*.

“Differs from the above (*C breviar*) by having shorter scales & only the terminal spike at times clavate; these things are not important enough, according to Jones, to justify separation as a sp. About as common as the above but more likely to be found in moist places.” (ewf55) “Differs from *C breviar* in minor characteristics, & has been considered a variety” (ewf59).

**VHFS:** (*C breviar*, in part, *C festucacea breviar* in part, *C Merritt-Fernaldii* in part??)



*Carex molesta*

**Carex Muehlenbergii** Schkuhr ex Willdenow (sometimes seen as just Schkuhr, or Willdenow?) \*ME, VT

botany, pot luck dinners, & other natural sciences in his spare time, & New Latin *-ia*. He was the first president of Franklin College. The accepted spelling for *Carex muehlenbergii* & *Quercus muehlenbergii*, named for the same individual, has changed. His second name is sometimes seen as Henry.) The older correct spelling is *muehlenbergii*, which makes one wonder how to spell the grass genus. upl Section *Bracteosae*



**Habitat:** The common *Carex* of sandy soils. Dry & sand prairies, open, scrubby, black oak savannas, sandy disturbed ground; dry open sand barrens. Dry often sandy open soil (Swink 1990). In New England, dry fields & open woods, often on sand (afne). Common in sand areas, the variety *enervis* Boott. is the usual form in calcareous soils. (ewf59)

**Culture:** Cold moist stratify or dormant seed, light (Wade). 60 days cold moist stratification (pm09). Seeds germinate after about 60 days of cold, moist stratification.

Seeds need light to break dormancy & germinate. Plant on top of growing media & do not cover. (he99) Dormant seed or moist cold stratify, seeds need light to germinate. 172,340 (gnmh12), 173,527 (gnh13), 180,445 (gni04), 190,000 (jfn04), 192,000 (pm01), 216,000 (lhn91), 266,000 (gn), 275,485 (gn08), 275,653 (gnh09), 293,092 (gna06) seeds per pound.

**bottom line:** Field establish by dormant seeding for insurance. Adequate results are possible with 42% of lots 57-69% germ. Moderate flipflop with crossover tendencies. Germ 32, 10, 9.0, sd 27.7, r5.0-69 (64)%. Dorm 61.7, 78, na, sd 28.3, r18-90 (72)%. Test 33, 34, na, r27-38 days. (#8).\*\*

**Description:** Plants dark green, caespitose; roots short thick rootstock; culms 1.5-2.0', stems stiff, harshly scabrous above; leaves the stiff leaves folded, sickle shaped, wiry, gray-green, 2.5-4 mm wide, old leaves are conspicuous; sheaths ligule; heads dense green head of globose spikes; spikes spikelets short, sessile; staminate flowers at apex of each spikelet, a tiny club-shaped mass of whitish scales remaining after anthesis spikelets aggregated into a an ovoid head staminate scales; pistillate scales 3.5 x 1.5 mm; perigynia 4 x 2.5 mm, plano-convex, ovate, gray green, becoming yellow or dark red, usually with strong nerves on slightly convex inner face. Note spongy thickened at the base; stigmas 2; N. key features: Differs from *C gravida*, *aggregata*, *cephaloidea*, & *sparganioides* in having a tight, not septate leaf sheath. (*Lacking an upright collar where the blade comes off the sheath?*).

**Comments:** status: Threatened in Maine & Vermont. phenology: Blooms early May to early June. In northern Illinois, collect seeds in mid-June - late July. Collect seeds in se Wisconsin in August - September (he99). Landscaping, cool season. Seed source nursery remnants, Tampico Twp, Whiteside Co. "Our commonest sedge of sandy soils"

"A common sedge in the sand areas but very uncommon elsewhere" (ewf55)

**VHFS:** Ws92 list var *enervis* Boott, nerveless on the ventral face, as a rare variety in Chicago area. Wetter et al 2001 list vars. *enervis* Boott & *muehlenbergii* Schkuhr ex Willdenow from Wisconsin.

Var *muehlenbergii* MUEHLENBERG'S SEDGE, Dry woods, scrubby black oak woods, old fields, sand prairies, occasional to common throughout Illinois. Blooms May-July. Perigynia with conspicuous nerves on one or both faces, 3.0-3.5 mm long, 2.0-2.5 mm wide, achenes 2.0-2.2 mm long.

Var *austrina* Small [*C austrina* (Small) Mack] SOUTHERN SEDGE, native to the s US; adventive along a railroad in Champaign Co. Blooms May-June. Perigynia with conspicuous nerves on one or both faces, 3.5-4.0 mm long, 2.5-3 mm wide, achenes 2.2-2.5 mm long.

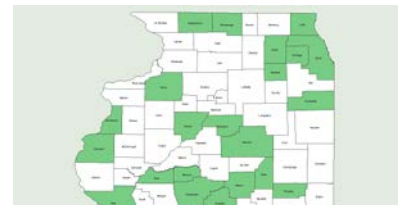
Var *enervis* Boott [*C plana* Mack] MUEHLENBERG'S SEDGE, aka *CAREX À UTRICULE LISSE*, dry woods, old fields, sand prairies, scattered throughout Illinois. Blooms May-July. Perigynia nerveless on both faces, 2.7-3.1 mm long. [*Carex onusta* Mack, *C plana* Mack]

**Carex muricata cephalantha** see *C echinata*

**Carex muricata sterilis** see *C sterilis*

Δ **Carex muskingumensis** Schweinitz MUSKINGUM SEDGE, aka PALM SEDGE, SWAMP OVAL SEDGE, SWAMP SEDGE, (*muskingumensis -is -e* from a Delaware Indian word meaning eye of the elk, or glare of an elk's eye, or by the riverside, or village on the riverbank, also the name of a Wyandot village, for the Muskingum River in east central Ohio, near the momentarily brought to fifteen minutes of fame Muskingum College, home of the Fighting Muskies, & alma mater of John Glenn. At times variously spelled as the Mouskindom, Mushkingum, or Muskingham River.) obl Subgenus *Vignae* Section *Ovales*.

**Habitat:** In woods along major streams, wet savannas, upland swamps, wooded depressions. wet woodland pockets. low woods. wet meadows. river bottoms: deciduous



meanders which are inundated in spring” (ws92). Low, swampy woods & floodplains along major streams, wooded depressions (m2002). distribution/range: Occasional throughout Illinois.

Culture: Sow at 20°C (68°F), if no germination in 3-4 wks, move to +2 to +4°C (34-39°F) for 2-4 wks, recycle (tchn). Dormant seed or moist cold stratify, seeds need light to germinate, scant soil cover. Fresh seed not necessary (gni). 56,700 (lhn91); 602,122 (gnh09); 643,059 (gna06); 716,088 (gnh06); 1,300,000 (jfn04) seeds per pound.

bottom line: Field establishment best by dormant seeding; seed is significantly to strongly dormant. Consistently significantly to strongly dormant (44.5-81%). Germ 24.5, 22.3, na, sd 8.9, r16-37.5 (21.5)%. Dorm 60.8, 58.8, na, sd 13.9, r44.5-81 (36.5)%. Test 33, 33, 33, r30-35 days. (#5).\*\*

Description: Plants caespitose, slender, somewhat larger, robust, very stiff, resembling a pumped-up, steroidal form of *C scoparia* plants; culms leafy, with slender pseudoculms prominent, 1.5-2.5' tall; leaves 2-10 mm wide; head spikelets all alike, short sessile, acute at both ends, 10-30 mm long 3-6 mm thick, staminate flowers confined to tapering spikelet bases; perigynia incurved- adpressed, lanceolate, 6-10 mm long, 1.2-2.2 mm wide, slenderly lanceolate, thin & scalelike, with translucent margins or wings, mostly appressed & all or all but the beaks hidden by the scales, becoming brown at maturity; stigmas 2; N 2n = 80. key features:

Comments: status: phenology: Blooms late April - early June. In northern Illinois, collect seeds in late June- late August. Useful in landscaping, early or cool season, ornamental, with many leafy sterile stems, widely available as an ornamental “grass” with several selections, floodplain & wetland restoration. When planted on 0.8-1.0; centers, it may be used as a moist, rich, shady ground cover. Seed source nursery production plots, genetic source SWAMP WHITE OAK terrace woodland near Princeton, Dover Twp, Bureau Co.

This sp tends to tenaciously hold some of its seed until mid fall, but some open-grown plants can start shattering in mid-July. A real bugger to combine. The ‘winged’ perigynia are said to be wind dispersed, but in a SWAMP WHITE OAK woods? A very large-seeded, steroidal-appearing *Ovales*.

This sedge resembles *C tribuloides* in growth habit (ewf59).



*Carex muskingumensis*

**Carex nebraskensis** Dewey NEBRASKA SEDGE, aka PLAINS TUSsock SEDGE, (*nebraskensis* -is -e of, from, or pertaining to Nebraska.) The specific epithet is also spelled *nebrascensis*. OBL Section *Acutae*.

Habitat: Adventive from further west along a railroad & several highways, saline or alkaline roadsides, in wet & often alkaline soils. Can thrive in dry sites as long as its roots remain wet. Best on medium fine to fine textured soils. 2,000-4,500'. distribution/range: Alkaline roadside, 3 miles south of Woodhull on I-74 southbound, left shoulder, North of Rio Road, south of the emergency turn around. Known from several I-74 cloverleaves in the city of Peoria (James Fabricius Alwill, IDOT, personal communication). Also DuPage & Kane cos. Sp is native from western Cascades to the Great Plains.

“Wet places, often where alkaline, from lowlands to mid montane elevations. It ranges from Washington to California, wholly east of the Cascades, east to South Dakota, Kansas, & Nebraska, & through the Rocky Mountain States to New Mexico.”

Culture: Scarify seeds with 100 grit sandpaper for 10 to 15 seconds. Cold moist stratify in a cloth or mesh bag with sphagnum peat moss for 30 to 32 days @ 3°C (37°F). Germinate 26°C (78°F) night & 37°C (98°F) daytime with 24 hour photoperiod. Perigynia is a source of dormancy in this sp. It is removed during scarification. There is also some physiological dormancy in the achenes, which is partially removed by 32 days cold moist stratification. Total germination was best with achenes scarified & stratified in sphagnum peat moss. (Hoag 2001, using seed from Jackpot, Nevada &

Seed tolerates dry storage at room temperature for 8-12 months (Hoag 2001).

Dormant seed or moist cold stratify. When seeded alone for pasture, drill 5 lb pls per acre in the fall or spring (Granite). Seed 1-2 lb/acre in fall or spring (rain).

cultivation: Neutral or basic soils. Low acid tolerance, medium salinity tolerance. Tolerant of disturbance.

bottom line: Seeds are strongly dormant, field establish by dormant seeding only. Consistently significantly to strongly dormant (49-89%). Germ 18.3, 12, na, sd 15, r4.0-39 (35)%. Dorm 73, 81, na, sd 17.3, r49-89 (50)%. Test 29, 30, 30, r27-30 days. (#3).\*\*

Description: Plants caespitose, slender, medium to tall, grass-like perennial sod-former; roots rhizomatous; culms 1-15 dm tall, spikelets all alike, short sessile; heads staminate flowers confined to tapering spikelet bases; perigynia thin & scalelike, with translucent margins or wings, wind dispersed, mostly appressed & all or all but the beaks hidden by the scales, becoming brown at maturity; stigmas 2; N. key features:

Comments: status: phenology: Blooms May-June. In northern Illinois, with adventive colonies, collect seeds in 2<sup>nd</sup> & 3<sup>rd</sup> week of June. Sod forming, good erosion control on alkaline roadsides, good palatability for livestock & valuable for providing forage & cover for waterfowl. Satisfactory forage values. Good wildlife values. Excellent for riparian reclamation where it is native. Probably much more common than herbarium records indicate. Seed source adventive colony, Kickapoo Twp, Peoria Co.

VHFS: [*Carex jamesii* Torrey, 1836 non Schwein. 1824, *C nebrascensis* Dewey var *eruciformis* Suksd, *C nebrascensis* Dewey var *praevia* LH Bailey, *C nebrascensis* Dewey var *ultiformis* LH Bailey]

JC Hoag, 2001 Propagation protocol for production of container *Carex nebrascensis* Dewey plants (germination techniques): Aberdeen, In Native Plant Network, [URL: http://www.nativeplantnetwork.org](http://www.nativeplantnetwork.org) (accessed 9 July 2002). Moscow (ID): University of Idaho, College of Natural Resources, Forest Research Nursery.

JC Hoag, RK Dumrose, & ME Sellers, 2001, Perigynium removal & cold-moist stratification improve germination of *Carex nebrascensis* (Nebraska sedge) Native Plant Journal 2(1).



*Carex nebrascensis*, nursery & I-74 verge

**Carex nigra** (Linnaeus) Reichard \*MI, WI SMOOTH BLACK SEDGE, aka BLACK SEDGE, *CAREX NOIR*, COMMON SEDGE, (*niger*, -*gra*, -*grum* (NIG-er) from Latin for black, blackness; shiny black, as opposed to *ater*, matt black.) Subgenus *Carex* Section *Acutae*.

Habitat: Eastern coastal (?) sp with disjuncts in Michigan & Wisconsin. In New England, it grows in wet meadows, swamps, open turfs, & swales (afne). Also in Central Europe.

Culture: Sow at 18-22°C (64-71°F) for 2-4 wks, move to +2 to +4°C (34-39°F) for 4-6 wks, move to 5-12°C (41-53°F) for germination (tchn). Clone.

Description: N 2n = 83, 84, 85. key features: Differs from *C lenticularis* by the rhizomatous habit, dark green leaves, black scales & perigynia, & the short inflorescence bract. (fna)

Comments: Endangered in Michigan. Special concern Wisconsin. Sp is not uncommon in Midwest nursery trade as an ornamental grass-like plant. Self incompatible in our experience (landscape material is probably cloned?). *C nigra* seed is known to be infected with the smut *Anthracoidea heterospora* & the gall mite *Phytoptus carcis* (Ingvarsson & Ericson 1998, 2000).

VHFS: [*Carex acuta* auct non L, *C acuta* L var *nigra* L, *C goodenowii* J Gay, *C nigra* (L) Reichard var *strictiformis* (LH



PK Ingvarsson & L Ericson, 2000, Exploitative competition between two seed parasites on the common sedge, *Carex nigra*. *Oikos*, 91:2 November 2000, pp 362-370.

**Carex nigricans** Retz. (or CA Mey) BLACK ALPINE SEDGE (*nigricans* Latin blackish, turning black, from *nigricare*, to be blackish, from *niger*, black, & *-icans*, adjectival suffix indicating the process of becoming or resemblance sometimes so close to be almost identical.)

Habitat: In wet subalpine to alpine habitats. distribution/range: Siberia(?) to Alaska, south to California, east to the Rocky Mountain States.

Culture: Physiological seed dormancy. 50% germination with fall sown wintered over & allowed to germinate under fluctuating outdoor temperatures in full sun. Diurnal temperatures of 13° to 21°C daytime & 0° to 10°C night during germination. Media kept moist. Winter over under insulating foam cover & snow. (Evans 2001) 1,201,336 (Evans) seeds per pound.

Strongly rhizomatous, could be divided.

Description: 2n = 72.

Comments:

J Evans, 2001 Propagation protocol for production of container *Carex nigricans* Retz plants (490 ml containers): Glacier National Park, West Glacier, Montana, In Native Plant Network, URL: <http://www.nativeplantnetwork.org> (accessed 9 July 2002). Moscow (ID): University of Idaho, College of Natural Resources, Forest Research Nursery

**Carex nigromarginata** Schweinitz BLACK EDGE SEDGE, (*nigromarginatus -a -um* black margined, New Latin, from Latin *niger-a -um*, black, dark, unlucky, & *marginatus -a -um*, past participle of *marginare*, *marginavi*, *marginatus*, provide with a margin.) Subgenus *Carex* Section *Montanae*.

Habitat: Woods (m02). In New England, dry woods, thickets, & clearings on acidic soil (afne). distribution/range: Rare, confined to the s 1/2 of Illinois, also Montgomery & Wabash cos.

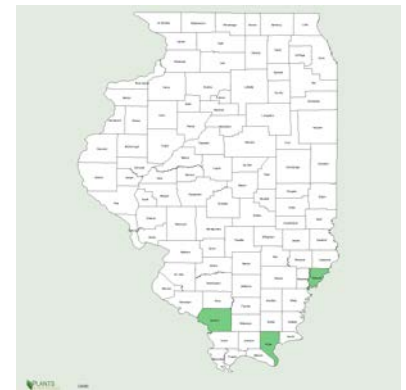
Culture:

Description: stigmas 3; N 2n = 36. key features:

Comments: status: phenology: Blooms April-May (m02).

Associates: Seeds are dispersed by ants. (Yatskievych 1999)

VHFS: [*C lucorum* Willdenow var *nigromarginata* (Schwein) Chapm]



**Carex nigro-marginata minor** see *C emmonsii*

**Carex nigro-marginata muhlenbergii** see *C albicans*

**Δ Carex normalis** Mackenzie GREATER STRAW SEDGE, aka INTERMEDIATE SEDGE, NORM'S SEDGE, NORMAL SEDGE, SPREADING OVAL SEDGE, SCALE WOOD SEDGE, (but a spreading oval becomes a circle, or an ellipse, so is it also ELLIPTICAL SEDGE?) (Latin *normalis -is -e*, made according to square, from *norma*, carpenters square, probably after Norm Abram, Master Carpenter, The New Yankee Workshop & This Old House, plus Al Borland, Assistant Tool Man, Tool Time (Norm + Al, get it? Nyuk Nyuk), from the angular sterile culms, with regular spreading leaves.) (*C mirabilis*) [fac] Subgenus *Vignae* Section *Ovales*

Habitat: Uncommon, wooded floodplains, pond edges, mesic savannas, riparian terraces, marshes, pond borders, open woods & meadows. Common in or near deciduous forests. Seep springs, mesic woods, floodplains, streambanks, mesic savannas, marshes, pond borders, moist fields, ditches (m02). Mesophytic savannas, marshes & along pond borders, moist fields (ws92). In New England, rich, open woods & thickets (afne). Common sedge of dry prairie roadsides (ewf59). distribution/range: Form *normalis*, with spikes continuous, is common throughout Illinois.

Culture: Moist cold stratify, light (Code C, D Ken Schaal). 60 days cold moist stratification (pm09). "Fall plant or cold stratify for 2 to 4 weeks for best results. Sow seeds on soil surface at 70°F & water" (ew12). 400 000 (pm01 ifn04 ew12 aes10).



(gnav02); 799,296 (gnh14), 800,000 (gn2k); 817,297 (gnh11); 848,000 (gn); 849,392 (gna03); 890,196 (gnh07); 930,328 (gnh06); 1,017,040 (ghh12); 1,134,000 (lhn91) seeds per pound.

cultivation: Space plants 1.5-2.0' on centers. Mesic soils, full sun to shade.

bottom line: Moderate stands can be established by spring seeding, but best by dormant seeding, 80% of lots are > 50% dorm. Moderate flipflop with crossover tendencies. Germ 22.9, 14, na, sd 18.3, r1.0-54 (53)%. Dorm 65.5, 65, 91, sd 24.2, r18-93 (75)%. Test 33, 33, 32, r20-41 days. (#18).\*\*

Description: Somewhat larger plants with slender pseudoculms, erect, herbaceous; roots caespitose; culms tufted slender, 1-15 dm tall, culms weak (but stout according to ewf59), aphyllopodic, leafy; leaves 2-10 mm wide; heads spikelets 3-10, rounded, usually crowded near straight culm apex, spikes all alike, short sessile, staminate flowers confined to tapering spikelet bases; pistillate scales 2.5 x 1 mm; perigynia 4 x 1.5 mm, ovate, thin & scalelike, beaked, 2-2.5 X as long as wide, nerved on inner face, green, finally becoming pale brown, somewhat divergent, perigynia less than 2 mm wide, slenderly lanceolate with translucent margins or wings, wind dispersed, mostly appressed & all or all but the beaks hidden by the scales, becoming brown at maturity; stigmas 2; N 2n = 68. key features: *C tenera* has narrower leaves. *C Bebbii* has fewer spikelets. *C projecta* has browner, narrower perigynia with bent beaks. *C cephaloidea* has delicately textured glossy perigynia. "The inner band is prolonged at the mouth of the sheath thus differing from *C brevior* & *C festucacea* which it resembles" (ewf59).

Comments: Blooms mid-May to early June. In northern Illinois, collect seeds in late June. Seed source nursery production, genetic source Big Rock Twp, Kane Co.

"A common roadside sedge found in dry places. A larger plant having wider leaves than *C tenera*." (ewf55)

VHFS: The rare forma *perlonga* (Fern) Fern, with discontinuous, moniliform spikes, is known from a marsh in Jackson Co. [*Carex mirabilis* Dewey]



*Carex normalis*

**Carex novae-angliae** Schweinitz \*MI, WI NEW ENGLAND SEDGE, aka *CAREX DE NOUVELLE-ANGLETERRE*, NEW ENGLAND OAK SEDGE, (*novae-angliae* (NO-vie -ANG-glee-ie) of or from New England, the northeastern USA.) Subgenus *Carex* Section *Montanae*.

Habitat: In New England, mixed deciduous woods, usually moist (afne). distribution/range: N & e of our area.

Culture:

Description: key features:

Comments: status: Threatened in Michigan. Special concern in Wisconsin. phenology: Blooms

VHFS:

**Carex oklahomensis** Mackenzie OKLAHOMA SEDGE,

Habitat: Seasonally saturated or inundated soils in wet meadows, marshes, & alluvial bottomlands (fna 2002). In New England, wet meadows & marshes (afne). distribution/range: Ark, Del, Kans, Ind, Ill, Md, Miss, Mo, Okla, NC, Tenn, Tex, Va.

Culture:

of the smooth sheath fronts.” (fna)

Comments: status: phenology: Fruits May - June.

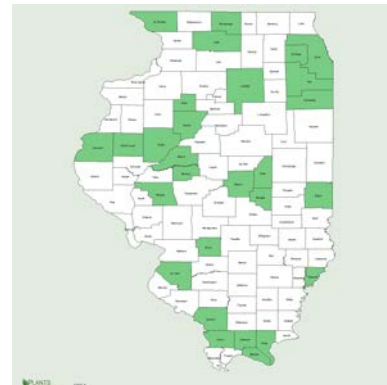
VHFS: [*C stipata* Muhl ex Willd var *oklahomensis* (Mack) Gleason]

**Carex oligocarpa** Schkuhr ex Willdenow \*MI (or just Schkuhr or just Willdenow?) FEW-FRUITED GRAY SEDGE, aka *CAREX À FRUITS CLAIRSEMÉS*, EASTERN FEW FRUITED SEDGE, FEW-FRUITED WOOD SEDGE, RICH WOODS SEDGE, SPARSE-FRUITED SEDGE, (*oligocarpus -a -um* few-fruited from Greek ὀλίγος, *oligos*, small, few, little, scanty, & Greek καρπός, *karpos*, fruit, for the loosely-flowered pistillate spikelets.) Subgenus *Carex* Section *Oligocarpa*.

Habitat: Maple-basswood forests. Woods (m02). Maple beech woods (ws92). In New England, calcareous woods (afne). “... found over the area in low woods, with either *C jamesii* or *C hitchcockiana*, but it is not common” (ewf59). distribution/range: Scattered throughout Illinois. “Not uncommon in Mulford woods & in Ingersoll & Memorial Parks in Rockford.” (ewf55)

Description: leaf blades only 2.5mm wide; perigynia only 4 (2-8) per spikelet; pistillate scales 6 x 2 mm; perigynia beaked, 3-4 mm long ( 4 x 2 mm), bluntly triangular (after Fassett); N 2n = ? key features: “It looks like a small form of *C grisea* but it is purple at the base, the inner band has a long tongue & the staminate spike is long peduncled.” (ewf59) Smaller than *C plantaginea*.

Comments: status: Special concern (threatened 2004) in Michigan phenology: Blooms May 24, mean week 12. Blooms May-June (m02)



**Carex oligosperma** Michaux FEWSEED SEDGE, aka FEW-SEEDED HOP SEDGE, FEW-SEEDED SEDGE, RUNNING BOG SEDGE, (*oligospermus -a -um* few-seeded, from Greek ὀλίγος, *oligos*, small, few, little, scanty, & σπέρμα, *sperma*, Greek seed, semen, male reproductive cells, the stem of σπείρειν, *speirein*, to sow, for the few seeded spikelets.)

Habitat: Bogs. Locally frequent in bogs (m02). In New England, sphagnum bogs, acid swamps, & shores (afne). distribution/range: Confined to the northeast corner of Illinois. Illinois is at the sw limit of sp range.

Culture:

Description: key features:

Comments: status: phenology: Blooms May 26, mean week 12. Blooms May-June. (m02)



**Carex X olney** Boott [*C bullata* Schkuhr ex Willd X *C utriculata* Boott]

**Carex obnupta** Bailey SLOUGH SEDGE, (*obnupta* “named for the type locality of Mt. Hamilton, site of UC's Lick Observatory”?? ([www.calflora.net/botanicalnames/pageO.html](http://www.calflora.net/botanicalnames/pageO.html)) the quote is unsure, *ob-* is upside down or reversed, *nuptia* relates to marriage, or a nup is a fool, so...) obl

Habitat: Western sp, wetlands, moist to wet sites; dunes, flats & marshes, generally near the coast 1,000-4,500', from sea level to 2000', low acid tolerance, medium salinity tolerance, fresh & saline soils. distribution/range: From San Luis Obispo Co, California to southern Alaska.

Culture: Soak seeds for 24 hours before sowing, 40% germination, emergence 30 days after sowing (Young 2001a). Seed 1 lb/acre in fall or spring (rain).

Description: Evergreen, sod forming; roots rhizomatous, vigorous; culms 24-36"; N 2n = ? key features:

Comments: Good erosion control, good wildlife values, satisfactory forage. Attractive in mass, for sun or shade, containerize for ornamental ponds. In shallow water creates important egg-laying habitat for amphibians. 10,000,000 (rain) seeds per pound

VHFS: Synonym [*C magnifica* Bailev ex Piper]

B Young, 2001, Propagation protocol for production of container *Carex opnupta* Bailey plants (490 ml container): Golden Gate National Parks, San Francisco, California, In Native Plant Network, URL: <http://www.nativeplantnetwork.org> (accessed 9 July 2002). Moscow (ID): University of Idaho, College of Natural Resources, Forest Research Nursery.

***Carex ovalis*** Goodenough OVAL SEDGE, aka *CAREX DES LIÈVRES*, EGGBRACT SEDGE, TRACY'S SEDGE, (*ovalis* -is -e oval, broadly elliptical, from Medieval Latin *ovalis*, from Late Latin, of an egg, from Latin *ovum* egg & -*alis* -al.) Subgenus *Vignae* Section *Ovales* fac

Habitat: In the NW, wetlands, & along streams, meadows, seasonally wet soils, 0-1100 meters. In New England, dry pastures & roadsides (afne). distribution/range: Native to Eurasia & NORTHWEST USA?.

Description: key features:

Comments: Introduced *Carex*, locally established in BC, NB, Nfld, Labr, NS, PEI, Maine, NH, NY, NC, Pa, Tenn, Wisconsin, & New Zealand. At one time, briefly seen in the seed trade as *Carex ovales*. As if we needed another Ovalian sedge. A USDA website wrongly says this is native in the eastern United States.

VHFS: [*C leporina* L misapplied] *C tracyi* Mack. *C ovalis* is also known from California, Nevada, Oregon, & Washington, where it is considered native & sometimes separated as *C tracyi* Mac.

***Carex oxylepis*** Torrey & Hooker SHARPSCALE SEDGE (*oxylepis* sharp-scaled, New Latin, from ancient Greek ὄξύ-, *oxy-*, sharp, & λεπίς, *lepidō-*, *lepis*, *lepidō-*, scale, flake.)

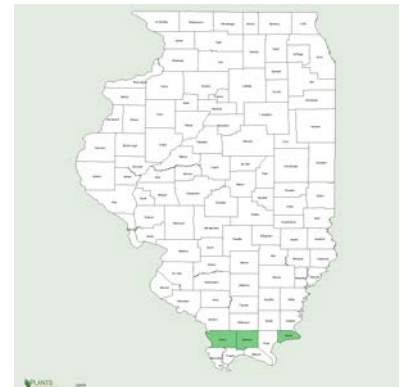
Habitat: Swampy woods. distribution/range: Rare, confined to the extreme s tip of Illinois, Hardin, Johnson, & Union cos.

Culture:

Description: key features:

Comments: status: phenology: Blooms April-May (m02). The typical variety has a glabrous perigynia.

VHFS: The very rare variety *pubescens* JK Underw, with pubescent perigynia, is known from swampy woods in Hardin Co.



***Carex ozarkana*** P Rother & Reznicek OZARK SEDGE Section *Ovales*

*Carex ozarkana* has overwintering vegetative stems that produce new shoots at the nodes. (Ball & Reznicek, 2002)

***Carex pallescens*** Linnaeus var **neogaea** Fern \*MI, WI PALE GREEN SEDGE, aka *CAREX PÂLE*, PALE SEDGE, (*pallescens* rather pale, becoming pale, Latin *palleo*, to be pale, & -*escens*, beginning to or becoming, for the pale green foliage, & Greek *neos*, new, young, & *geios*, the earth, land, for the New World.) Subgenus *Carex* Section *Virescentes* Upland

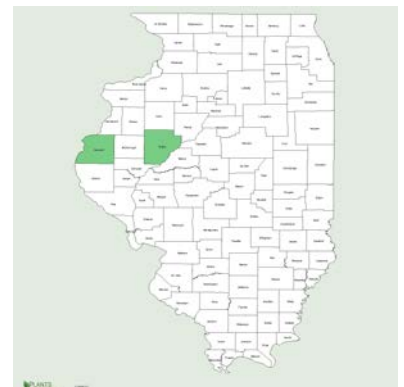
Habitat: Rocky barrens (m02). In UP Michigan, it grows in beech forests & moist or peaty meadows (ws92) distribution/range: Very rare, Fulton, Hancock, Johnson, McHenry, & Saline cos. The McHenry Co collection is labeled “Ringwood” & is considered doubtful, as are the Lake Co, Indiana reports from Pepoon & Peattie.

Culture:

Description: N 2n = 70. key features:

Comments: status: Special concern? (not listed in 2004) in Michigan. Special concern in Wisconsin. phenology: Blooms May-June (m02).

VHFS: M02 recognizes Illinois material as the sp not the variety. Afne lists the variety as synonymous with the sp, from meadows & thickets, 2n = 70.



***Carex panicea*** Linnaeus CARNATION SEDGE, aka GRASSLIKE SEDGE, Subgenus *Carex* Section *Panicea*

Habitat: In New England, meadows & acidic fields (afne). distribution/range: From Europe. Adventive New Jersey, new York & New England.

Culture:

Description: N 2n = 32. key features:

Comments: status: phenology:

VHFS:

**Carex pauciflora** Lightfoot FEWFLOWER SEDGE, aka *CAREX PAUCIFLORE*, FEW-FLOWERED BOG SEDGE, FEW-FLOWERED SEDGE, STAR SEDGE, (*pauciflorus* with few flowers, from classical Latin *pauci-*, combining form of *paucus*, few)

Habitat: In New England, sphagnum bogs (afne). distribution/range: Circumboreal, south to Michigan & Wisconsin.

Culture:

Description:  $N 2n = ca. 74, 76$ . key features:

Comments: status: phenology: Fruits late May - early September.

VHFS:

**Carex paupercula** see *C limosa*

**Carex paupercula irrigua** see *C limosa*

**Carex paysonis** Clokey PAYSON'S SEDGE,

Habitat: Pacific Northwest sp, from sw Alberta & BC, south to Utah & Nevada. Moist meadows to rocky slopes in subalpine to alpine habitats. distribution/range:

Culture: Physiological seed dormancy. Using seed from Logan Pass, 80 percent germination was achieved by sowing in late fall & irrigated for winter stratification, subject to diurnal temperature changes, medium kept slightly moist during germination. Plants flowered 3<sup>rd</sup> year in nursery. Square pots more appropriate than containers. (Wick et al 2001)

Inferred dormancy is physiological dormancy (bb02).

Description: shallow caespitose root system;

Comments: 2,030,368 seeds per kilogram (Wick et al 2001)

CC Baskin & JM Baskin, 2002 Propagation protocol for production of container *Carex paysonis* Clokey plants: University of Kentucky, Lexington, Kentucky, In Native Plant Network, [URL:http://www.nativeplantnetwork.org](http://www.nativeplantnetwork.org) (accessed 9 July 2002). Moscow (ID): University of Idaho, College of Natural Resources, Forest Research Nursery.

L Haggas, RW Brown, & RS Johnston, 1987, Light requirement for seed germination of Payson Sedge, Journal Range Management (40) 180-184

D Wick, J Evans, J Hosokawa, S Corey, & T Luna, 2001 Propagation protocol for production of container *Carex paysonis* Clokey plants (172 ml container): J Glacier National Park, West Glacier, Montana, In Native Plant Network, [URL:http://www.nativeplantnetwork.org](http://www.nativeplantnetwork.org) (accessed 9 July 2002). Moscow (ID): University of Idaho, College of Natural Resources, Forest Research Nursery.

**Carex peckii** Howe PECK'S SEDGE, aka *CAREX DE PECK*, (*peckii* for Charles Horton Peck, 1833-1917.)

Habitat: In New England, calcareous rocky slopes & rich open woods (afne). "Mainly calcareous soils on dry to mesic slopes, in partial shade in rich, deciduous or mixed deciduous-coniferous, open woods, bases of slopes, or full sun on exposed outcrops; 10–2000 m" (fna). distribution/range: Northern sp, ranging south to the Driftless Area of Iowa & Wisconsin, nest to, but not in Jo Daviess Co.

Culture:

Description:  $N 2n = 36$ . key features:

Comments: status: phenology: Fruiting mid May - mid July,

VHFS: [*Carex clivicola* Fern & Weatherby. *C nigromarginata* Schwein var *elliptica* (Boott) Gleason, *C nigromarginata* Schwein var *minor* (Boott) Gleason]

**Δ Carex pedunculata** Muhlenberg ex Willdenow (or just Muhl) LONGSTALK SEDGE, aka *CAREX PÉDONCULÉ* EARLY WOOD SEDGE, LONG STALKED SEDGE, PEDUNCULATE SEDGE, (*pedunculatus -a -um* with a peduncle, from Latin *pedunculus*, diminutive of *pes*, foot, from the notably pedunculate pistillate spikes) Section *Digitatae*

Habitat: Cool wet to dry woods (Fassett). Dry calcareous wooded ravine slopes, sloping clay bluffs, north-facing bank of ravine, dry upland slope (ws92). "Characteristic of hummocks at the bases of old growth beech trees" east of Chicago (sw94). Moist to dry mixed forests & woodland openings, on basic & acid substrates. ([www.eFloras.org](http://www.eFloras.org)). Dry calcareous slopes, moist ravines (m02). In New England, rich woods (afne). distribution/range: Rare, Cook, Jo Daviess, Kane, Lake, McHenry, & Winnebago cos. "This rare sedge has been found on the crest of moist dolomitic cliffs in Seward Bluffs & Rock Cut Forest Preserves, at the "dells" of Hall Creek & the south ledges of Kinnikinnick Creek in Winnebago Co. & White Pines



*C pedunculata* has a classic eastern North America eastern Asia disjunct distribution (Ball 1990).

**Culture:** The germination requirements of *C pedunculata* may represent an adaptation to ant dispersal. It requires light to germinate at maturity, but with dry storage, gains the ability to germinate in the dark. This would mimic gathering, consuming the elaiosome, & discarding the seed underground by ants. (Bond 1999)

**Description:** Small tufted sedges, solitary dense evergreen clumps; roots forming purple based lax mats; culms 5-15 (54) cm tall, plant bases brown to red purple; leaves stiff flat dark green blades 2-4.5 mm wide, only the tips dying back in winter, with reddish band at die-back point; sheaths strong red nonfibrillose basal sheath; heads staminate spikelet 1, usually pistillate at the base, some spikelets on peduncles 1-12 cm long from spathe-like sheaths (bracts) at plant base; pistillate scales 4.5 x 2 mm; perigynia 4 x 1+ mm minutely pubescent, with only 2 ribs; smooth, triangular with slender spongy stipe & minute beak. "the cuneate base pale, spongy" (ws92); stigmas 3;  $N 2n = 26$ . **key features:**

**Comments:** **status:** **phenology:** Blooms late March to mid April. Fruiting mid April to early July. "It is usually accompanied by *Cryptogramma stelleri*, *Oryzopsis racemosa*, & *Carex eburnea* here (the above locations) as it is in Apple River Canyon State Park in Jo Daviess Co. The early flowering & early dropping of fruit accounts for its being often overlooked. Once known it is easily recognized by the tufts of persistent foliage." (ewf59).

The **spongy base** of the perigynia is an elaiosome, attracting ants that distribute the seeds. In most treatments of *Carex* in North America, this is the only species said to have an elaiosome. Handel (1976) also notes the achenes are subtended by elaiosomes. At least four *Carex* spp in eastern North America have ant-dispersed seeds. Someone should investigate the other sedges with spongy-based perigynia as potential or incipient elaiosomes.

Characterized as a "Fugitive sp" colonizing openings in the woods & decreasing as other sp move in.

**VHFS:** The Korean plant is known as var *erythroblasts* (H L veill  & Vanoit) T Koyama.

SN Handel, 1976, Dispersal ecology of *Carex pedunculata* (Cyperaceae), a new North American myrmecore. American Journal of Botany, 63: 1071-1079

SN Handel, 1978, On the competitive relationship of three woodland sedges & it's bearing on the evolution of ant-dispersed *Carex pedunculata*. Evolution 32: 151-163

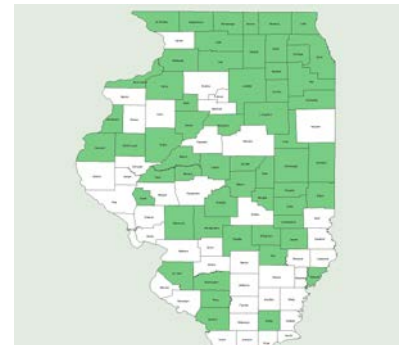


*Carex pedunculata* note the shriveled perigynia base

**Δ Carex pellita** Willdenow (or Muhlenberg ex Willdenow) BROAD LEAVED WOOLLY SEDGE, aka BULL SEDGE, *CAREX LAINEUX*, WOOLLY SEDGE, (*pellitus -a -um* skin, film-like, (?) from Latin *pellitus -a -um*, clothed, covered, or clad in skins, from *pellis, pellis* f, skin, hide.) Obligate Subgenus *Carex* Section *Hirtae* or *Carex* proper.

**Habitat:** Wet meadows, moist calcareous prairies, prairie fens, degraded wetlands, marshy areas, sandy sedge meadows (ws92). Usually in calcareous mineral soil in wet meadows, low prairies, & ditches, occasionally in upland fields. Wet prairies, fens, marshes, sedge meadows, & swamps (m02). In New England, meadows, marshes, shores, especially in calcareous soils (afne). "A common wet ground sedge found all over the area in ditches, sloughs, & wet prairies" (ewf59). **distribution/range:** Occasional to common throughout Illinois.

**Culture:** 60 days cold moist stratification (pm09). Dormant seed or moist cold stratify, small seeds need light to germinate, scant soil cover. (Code C, D Ken Schaal). Dormant seed with new crop seed, or moist cold stratify. 236,000 (wns01), 254,199



Seed, rhizomes, & divisions are used in propagation. Good seed crops are irregular. Limited market availability! Seeding rate not advisable, but directly related to the size of your bankroll. Most cost effective from plugs.

cultivation: Prefers moist soil. Tolerates 0-6" inundation early in the season. pH tolerances not available. Nutrient load tolerances moderate to high. Salt tolerance low. Siltation tolerance moderate. Full Sun.

bottom line: Mediocre establishment possible by spring seeding 25% of years (35-62% germ), but dormant seeding is best. Consistently significantly to strongly dormant (33-95%). Germ 19.3, 13.5, na, sd 18.9, r2.0-62 (60)%. Dorm 77.7, 71, na, sd 21.1, r33-95 (62)%. Test 38, 42, 42, r21-50 days. (#11).\*\*

Description: Closely resembling *C stricta*, but not forming tussocks, medium sized perennial rhizomatous sedge; culms 1-3', with numerous short pseudoculms, bases reddish; leaves blades M-shaped, 2.5-4.5 mm wide; sheaths pinnate fibrillose; heads bracts flat somewhat divergent; pistillate spikes 1-3, ascending, remote, 1-4 cm long; spikes staminate spikelets 1-3 1.5-2; staminate scales; pistillate scales 4.5 x 1.25 mm, often minutely fringed on margins; perigynia small, globose, pubescent, 3-4 (4) mm long & 1-2 (1.25) mm thick; achenes 1.5 x 1 mm; stigmas 3; N 2n = 78. key features:

Comments: status: phenology: Blooms April 26 to June 05, mean week 11. Flowers April-June (m02). Fruiting May - August. In northern Illinois, collect seeds in early June - early July. Wetland restoration, useful in upper shoreline zones & in vegetated swales. Cool season, calcareous soils. Seed source nursery production, genetic source Kane, DuPage, & Will Cos (Horlock), plus drainage ditches, Green River Lowland, Hamilton Twp, Lee Co.

Bob Horlock was Seedsman for The Natural Garden in the 1980s & early 1990s, & a pioneer in this industry. We were fortunate to have a friendly business relationship with Bob during the early years of our nursery. Bob's seeds were collected in DuPage, Kane, & Will Cos. We traded back & forth with him, & several of our production plots originate from his collections. Bob passed away in the early 1990s.

*C pellita* is considered nonmycorrhizal & has bulbous-based root hairs. The unusual root hairs may represent an adaptation for nonmycorrhizal growth. (Miller et al 1999). Zero of sixteen plants analyzed by Miller et al (1999) were mycorrhizal.

Associates: Seeds are eaten by waterfowl, sora & yellow rails, swamp & tree sparrows, & other songbirds.

VHFS: [*C lanuginosa* Michx, *C lasiocarpa* Erhart var *latifolia* (Boeck) Gilly, *C lasiocarpa*, in part]



*Carex pellita*

**Δ *Carex pensylvanica* Lamarck** PENNSYLVANIA or PENN SEDGE, aka *CAREX DE PENNSYLVANIE*, COMMON OAK SEDGE, EARLY SEDGE, YELLOW SEDGE, (of Pennsylvania) Upland Subgenus *Carex* Section *Montanae*

Habitat: Ubiquitous, in most native systems, including full sun, limited only by excessive soil moisture. One of the most abundant & widespread sedges, in most habitats except wet soils. Open woods & wooded slopes. Savannas, open woods (m02). Savannas, black oak savannas (ws92). In New England, open, dry soil & open woods (afne). Tolerates a wide range of light. "Perhaps our most common sedge" (ewf59). distribution/range: Occasional to common in the n ½ of Illinois, much rarer southward.

Culture: Clone, division. ? Cold moist stratify or dormant seed, light (Wade). Seeds germinate after about 60 days of cold, moist stratification. Seeds need light to break dormancy & germinate. Plant on top of growing media & do not cover. (he99) "Fall plant or cold stratify for 2 to 4 weeks for best results. Sow seeds on soil surface at 70°F & water." (ew12) 464,000 (jfn04); 472,000 (ew12); 480,000 (pm01); 752,000 (ew12)



Fresh seed should be dried briefly (one week maximum), cleaned, & stored in air-tight zip-lock bag in the refrigerator until sown (cu08).

cultivation: Space plants 0.67-1.0' centers. Full sun to full shade, mesic to xeric soils.

bottom line: Plant fresh or dormant with seed that has been properly stored. Fresh seed should be dried briefly (one week maximum), cleaned, stored in air-tight zip-lock bag in the refrigerator until sown (Cullina 2008). Preliminary data shows dormancy 69-84%. Germ 8.3, 6.0, na, sd 4.8, r4.0-15 (11)%. Dorm 77.7, 80, na, sd 6.3, r69-84 (15)%. Test 29-41 days. (#2).\*\*

Description: Native, small tufted sedges, in tufts connected by slender rhizomes, some say stolons; culms erect, 0.5-1.0(1.25)', to 16" on a good day, (35-54 cm), plant bases brown to red purple; leaves yellow green, 1-3 mm wide; sheaths with reddish brown longitudinal fibrils; heads; pistillate spikelets 1-3, globose, sessile, close to base of staminate spikelet; staminate spikelet 1, staminate spikelet 5-20 mm long, tapering to each end, with purplish brown, white edged scales; perigynia minutely pubescent, with only 2 ribs, 2.5 x 1.5 mm, globose, short-beaked, minutely pubescent, green to gray, often infected with black smut fungus (Fawcett). The stipe thick & pale; stigmas 3; N 2n = 36. key features:

Comments: status: phenology: Flowering early April to mid-May. Fruiting early May - late July. In northern Illinois, collect seeds in mid May - early June. Collect seeds in se Wisconsin in August - October(?) (he99). Colonial, said by one source to be stoloniferous? Landscaping, can be used in shade gardens, as a native turf or ground cover, as a living mulch, in xeriscaping, or as an interstitial plant amongst taller prairie spp to soak up the spring sunshine.

“Very early & very common in woods & open places. An important sand binder in the Sugar River area.” (ewf55)

Associates: Miller et al (1999) found *Carex pensylvanica* from Poplar Creek to be non AM mycorrhizal, & having dark septate fungi. One of eight plants analyzed were mycorrhizal, having hyphae, & dark septate hyphae.

*C pensylvanica* increases under grazing pressure in the Flint Hills (Herbel & Anderson 1959). Reported as deer resistant.

VHFS: Sw94 list several varieties & give a good synopsis of synonymy. [*C heliophila* & *C pensylvanica digyna*] Hybrid *C pensylvanica* Lam X *C umbellata* Schkuhr ex Willd.

[*Carex marginata* Willd, *C pensylvanica* Lam var *glumabunda* Peck, *C pensylvanica* L, *C pensylvanica* Lam var *marginata* (Willd) Dewey, *C pensylvanica* Lam var *pensylvanica*, *C stolonifera* Schwein]







*Carex pensylvanica*, initial green-up, in flower, & in fruit

**Carex phaeocephala** Piper DUNHEAD SEDGE, aka DUNEHEAD SEDGE<sub>2</sub>

Habitat: Alaska south through the Rockies to New Mexico, Alpine habitats, near or treeline in rocky soils, talus & scree slides & moraines. distribution/range:

Description: N 2n = 84.

Culture: Seeds are non dormant, germination occurs at 22° C (bb02). Alternatively, with seed from subalpine meadows, Sperry Chalet, 2200 meters, seed dormancy is classed as physiological dormancy, with germination of 50 to 80% with 5 months outdoor cold moist stratification, with fluctuating diurnal temperatures, & 2-4 true leaves 4 weeks after germination. Sp has a densely caespitose root system suited to division. Seed longevity is at least 5 years at 1 to 3 C° in sealed containers. (Potter et al 2001)

Comments: 1,141,360 seeds per kilogram (Kaye 1997)

CC Baskin & JM Baskin, 2002 Propagation protocol for production of container *Carex phaeocephala* Piper plants: University of Kentucky, Lexington, Kentucky, In Native Plant Network, [URL:http://www.nativeplantnetwork.org](http://www.nativeplantnetwork.org) (accessed 9 July 2002). Moscow (ID): University of Idaho, College of Natural Resources, Forest Research Nursery.

R Potter, T Luna, J Evans, S Corey, & D Wick 2001 Propagation protocol for production of container *Carex phaeocephala* Piper plants (160 ml conetainer): J Herbert Stone Nursery, Central Point, Oregon, In Native Plant Network, [URL:http://www.nativeplantnetwork.org](http://www.nativeplantnetwork.org) (accessed 9 July 2002). Moscow (ID): University of Idaho, College of Natural Resources, Forest Research Nursery

**Carex physorhyncha** Liebm ex Steud SEDGE, AKA STELLATE SEDGE

(*physorhyncha* New Latin, with a bladder-like beak or snout, from Greek φῦσα, *physa*, bladder, & Greek, ῥύγχος, *rhykhos* (*rhygchos*), horn, beak, snout.)

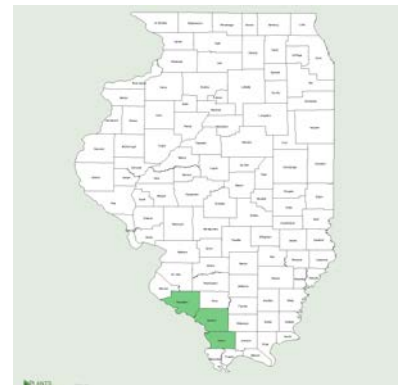
Habitat: Rocky woods, particularly in cherty soils. distribution/range: Confined to the southern ¼ of Illinois, also Effingham Co.

Culture:

Description: key features:

Comments: status: phenology: Blooms April-May (m02)

VHFS: [*Carex albicans* Willd var *australis* (LH Bailey) Rettig, *C emmonsii* Dewey ex Torr var *australis* (LH Bailey) J Rettig, *C physorhyncha* Liebm ex Steud, *varia* Muhl ex Willd, non Host var *australis* LH Bailey] Included in *C albicans* by pug14.



C

**C plana** Mack see *C muellenbergii enervis*

**Δ Carex plantaginea** Lamarck PANTAIN-LEAVED SEDGE, aka CAREX PLANTAIN, PANTAIN-LEAVED WOOD SEDGE, PLANTAINLEAF SEDGE, SEERSUCKER SEDGE, (*plantagineus* -a -um plantain-like, like *Plantago*, from *Plantago* & *-ineus*, denoting a close resemblance, for the plantain-like leaves.) upl Subgenus *Carex* Section *Laxiflora*. Habitat: Beech maple forests “climax forests” Rich woods (m02) “Rich moist



“Rich cove forests, mostly over mafic or calcareous rocks, montane alluvial forests” (w12b). In New England, rich, deciduous or mixed woods (afne). distribution/range: Very rare, Cook & Johnson cos.

Culture: Spp in the *C laxiflora* group are reported to have hydrophilic seeds. (cu08). Formerly available, but no currently known sources.

Description: Culms 0.8-1.3', basal sheaths strongly red purple; leaves 1-4 cm wide, yellowish to dark green, evergreen; spikes staminate spikelets long stalked, bladeless bracts; perigynia triangular, curved;  $N 2n = 50, 52$ . key features:

Comments: status: phenology: Blooms March 23 to May 01, mean week 6. Blooms March-April (m02). The evergreen basal leaves are not terribly fond of spring fire. It is very difficult for the plant to regrow the leaves & flower in early spring. Sp is even less fond of northwest Illinois droughts & can be short-lived. Seed source TNG.

Associates: Charm & ceremonial uses: Used as a charm against rattlesnakes by Menominee (sm23)

SN Handel, 1978, Self-compatibility in *Carex plantaginea* & *C platyphylla* (Cyperaceae), Bull Torrey Bot Club, 108: 434-437.



*Carex plantaginea*

**Carex platyphylla** J Carey \*MI, WI BROADLEAF SEDGE, aka BROAD-LEAVED SEDGE, BROAD-LEAVED WOOD SEDGE, *CAREX À LARGES FEUILLES*, THICKET SEDGE, (*platyphyllus* -a -um, *platyphyllos* broad-leaved, from Greek, πλατύς, *platys*, broad, flat, wide, level, & φύλλον, *phyllon*, leaf, from the broad leaves.) Subgenus *Carex* Section *Laxiflora*

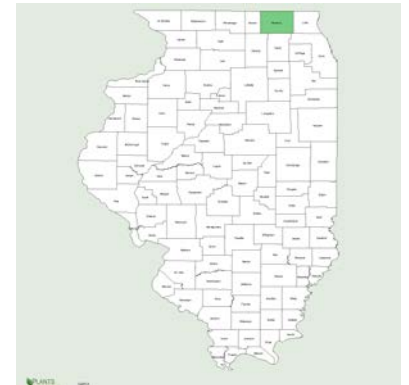
Habitat: Rich woods (m02). Mesophytic woods, usually dominated by beech & Maple (ws92). In New England, rich deciduous woods & rocky slopes (afne). In the se USA, “rich cove forests, mostly over mafic or calcareous rock” (w12b). distribution/range: Very rare, McHenry, Saline, & St. Clair cos Illinois, Berrien Co., Michigan, Door Co Wisconsin.

Culture: Spp in the *C laxiflora* group are reported to have hydrophilic seeds (cu08).

Description: Spikes the rachis strongly papillose (?);  $N 2n = 68, 70, n = 32 + (3), 33 + (3), 34 + (4)$ . key features:

Comments: status: Threatened in Michigan. Special concern in Wisconsin.

phenology: Blooms May (m02)



**Carex polygama** see *C buxbaumii*

**Carex praegracilis** W Boott CLUSTERED FIELD SEDGE, aka *CAREX TRÈS GRÊLE*, HIGHWAY, TOLLWAY, OR EXPRESSWAY SEDGE, MEADOW SEDGE, SLENDER SEDGE, SLIM SEDGE, (*praegracilis* -is -e very thin or graceful, from Latin *prae*-, before, in front, & *gracilis* -is -e, thin, slender, for the slender elongate culms.) facw Subgenus *Vignea* Section *Divisae*.

Habitat: Saline roadsides. Low prairies, roadsides, particularly where salt has been applied during the winter months, dry sterile soil, low areas of medians, & drainage swales (m02). Interstate highway areas of high salinity, lower areas of medians & drainage swales, also in Lake Co disturbed savanna (ws92). In New England, low, open ground & shores (afne). Formerly known from several dry prairies in the greater



distribution/range: Occasional in the n 1/5 of Illinois, also Christian Co. Sp is far more common than mapped.

Cultivation Cold moist stratification; clone. "Soak in water for 24 hours then 60-90 days cool moist stratification or plant outside in the fall keeping moist. Plant 1/8 inch deep." (Western Native Seed)

bottom line: Dormant seeding is required, seed is strongly dormant, 86-95%. Germ 7.0, 7.0, na, sd 4.0, r3.0-11(8.0)%. Dorm 90.5, 90.5, na, sd 4.5, r86-95 (9.0)%. Test 24, 24, na, r22-25 days. (#3).\*\*

Description: sympodial rhizomes; culms 8-30"; pistillate scales 3 x 1.2 mm; perigynia 4 x 1.5 mm; N 2n = ? key features:

Comments: status: phenology: Blooms late April to late May. In northern Illinois, collect seeds in late June- mid-July. Non-native, western halophyte. "Forms unisexual clones on roadsides. The clones may vary in length of leaves, height of stems, time of flowering, & amount of fruit." (ewf59) In Walnut Twp, Bureau Co it is now appearing on local blacktop roadsides. 47,000 (pm), 637,640 (gnhw14), 756,000 (lhn91), 1,816,000 seeds per pound.

"This we have found in a low prairie situation in DeKalb but we do not know of it in Winnebago Co." (ewf55)

VHFS: [*Carex camporum* Mack]

Why not call it SLENDER SEDGE like the real world does, & as it's specific epitaph suggests, or VERY SLENDER SEDGE?

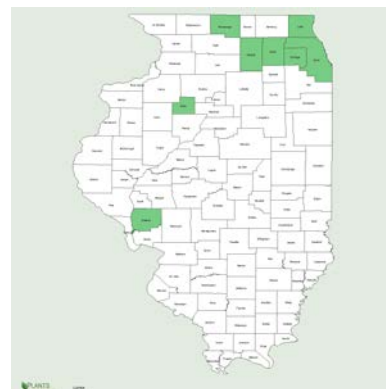


*Carex praegracilis*

Seed photo courtesy of Bend Seed Extractory, Seeds of Success, <http://seedsofsuccess.smugmug.com>.

▲ *Carex prairea* Dewey ex AW Wood (or seen as *C prairea* Dewey) FEN PANICLED SEDGE, aka *CAREX DES PRAIRIES*, PRAIRIE FEN SEDGE, PRAIRIE SEDGE, (*prairea* of the prairie) [obl] Subgenus *Vignae* Section *Heleoglochis* (formerly *Paniculatae*).

Habitat: Bogs & calcareous fens. Bogs, fens, drainage swales, floating sedge mats, meadows, wet prairies, swamps (m02). Bogs, calcareous fens, peaty, minerotrophic, floating sedge mat (ws92). "Wet meadows, peaty ground, usually in calcareous marshes, prairies, fens, & swales, often on borders of lakes & streams or in open conifer swamps (*Larix*, *Picea*, *Thuja*), also thickets & ditches; 0-1400 m" (fna). "Very uncommon being known to us only on the north branch of Kent Creek at Springfield avenue & in a shallow bog west of South Beloit." (ewf55) "A northern that is known only in a few wet places in Winnebago Co & a bog in DeKalb Co." (ewf59). In New England, calcareous bogs, meadows, & swamps (afne). In the se USA, calcareous wetlands (w12b). distribution/range: Occasional in northeast Illinois & in cos along the Illinois River.



wet

sp

Culture: Cold moist stratify for 60 days or dormant seed, needs light, sow on soil surface (Wade.) 60 days cold moist stratification (pm09). Cold moist stratify 360 days & it grows like dog hair (gni). 1,344,000 (pm01, aes10); 1,350,000 (jfn04) seeds per pound.

Description: Plants in dense tussocks (densely cespitose (ewf59)); stems, leaves long & slender, resembling *C stricta* leaves, 1.5-3.5 mm wide; sheaths slim leaf sheaths tinged with yellow or coppery brown, sheath mouth copper-tinged; heads inflorescence compound, of many tiny crowded sessile spikelets, each group of which resemble a single spikelet; pistillate scales 3 x 1.5 mm; perigynia 3 x 1.5 mm green to pale brown, plano convex, lanceolate, nerveless on the flat face, soon falling; N 2n = 66. key features:

Comments: status: phenology: Blooms May 10 to May 23, mean week 11, blooms 5. Blooms May-July (m02). Fruiting

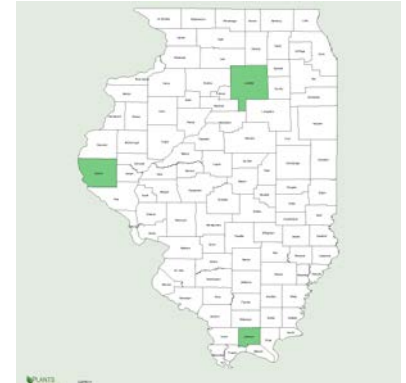
**Carex prasina** Wahlenberg \*WI DROOPING SEDGE, aka *CAREX VERT POIREAU*, LEEK GREEN SEDGE, LEEK SEDGE, (*prasinus -a -um* grass-green, green like a leek, from Greek *prasinus*, leek green, for the color of the leaves.) Obligate. Subgenus *Carex* Section *Gracillimae*.

Habitat: Wet mesic swamp forests near Lake Michigan. Rich woods (m02). “Rich, mesic deciduous forests, often along streams or in seepage areas, or in moist low ground associated with springs or fens” (fna). In New England, rich, low woods & meadows (afne). In the se USA, “rich forests, especially in seepage” (w12b).  
distribution/range: Scattered in the nw. ¼ of Illinois, also Johnson & Lawrence cos.

Culture: 800,000 (gni) seeds per pound.

Description: Erect, perennial, native sedge; culms 1.0-2.5’, usually longer than the leaves; sheaths lower green or brown; perigynia beaked, sharply 3-angled; N 2n = 60;  
key features:

Comments: status: Threatened in Wisconsin. phenology: Blooms May 08 to May 15, mean week 10. Blooms May. Blooms May-June (m02). Fruiting late spring to mid summer. “The compact growth form & attractive bluish green foliage in early summer make the taxon an ideal plant for cultivation near a shady pond or stream” (fna).



**Carex praticola** Rydberg MEADOW SEDGE (*praticolus -a -um* growing in a meadow, from Latin *pratium*, meadow, & *colo*, I inhabit, referring to an open, grassy habitat.)

Habitat: In New England, open woods, dry clearings, & meadows (afne). distribution/range: Native several hundred miles w & nw of Illinois, adventive in a cemetery in Cook Co. Also introduced in Ontario.

Culture:

Description: N 2n = 76, 78. key features:

Comments: status: phenology: Blooms May (m02)

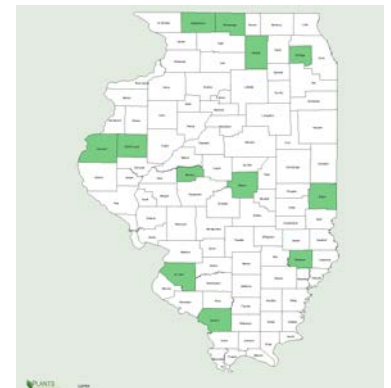
**Carex projecta** Mackenzie \* OH LOOSE-HEADED OVAL SEDGE, aka *CAREX À BEC ÉTALÉ*, MONILIFORM SEDGE NECKLACE SEDGE, (from Latin *projicio*, I throw at, push forth, from the moniliform inflorescence, with the spikelets extended or projected along it) facw+ Subgenus *Vignae* Section *Ovales*

Habitat: Open swamps, wet meadows, & mesophytic woods. Very common in damp woods & clearings in northern Wisconsin & floodplains of Mississippi & Wisconsin rivers (Fassett). Swampy woods, moist woods, riparian terraces (m02). Shaded moranic slopes & riparian terraces, intermittently inundated terrace of the Kankakee River, moist sandy woods, open wetlands (ws92). In New England, damp woods, thickets, meadows, & shores (afne). distribution/range: Scattered throughout Illinois. DeKalb & Winnebago Cos (ewf59).

Culture: Light, cold moist stratify or dormant seed (Wade). Grows well with no treatment, hulling improves germination (gni). 1,096,618 (gnh13); 1,434,439 (gih03); 1,580,487 (gnh11); 2,097,504 (jfn04); 2,208,000\* (pm) seeds per pound. Seed & plant availability circa 2010-2012 is poor, worse than it was 5-10 years ago. Seed & plants are in short supply to impossible to buy. 2015 the outlook is brighter.

bottom line: Dormant seed for insurance, as dormancy has increased of late. Flipflop species. Crossover sp? Germ 58.8, 72.5, na, sd 31.3, r6.0-84 (78)%. Dorm 33.8, 22.5, na, sd 33.1, r2.0-88 (86)%. Test 39, 37, 34, r34/49 days. (#7).\*\*

Description: Erect, perennial sedge, somewhat larger plants with slender pseudoculms, very similar to *C tribuloides*, but variable in size; roots short black fibrillose rhizomes; plants caespitose, culms slender, wiry, 1.5-3.0(4.0)’ (0.5-0.9(1.2) m tall, angles harshly scabrous, leafy sterile shoots common; leaves 2-10 mm wide, lax, to 5 mm wide, often equaling or exceeding the inflorescence; sheaths; heads axis of inflorescence flexible or arching; spikes spikelets all alike, short sessile, somewhat spaced staminate flowers confined to tapering spikelet bases; pistillate scales short, blunt; perigynia less than 2 mm wide, slenderly lanceolate, thin & scale-like, with translucent margins or wings, wings not abruptly narrowed, occasionally crinkly margined, beaks tending to be bent backwards a little & can be C-shape in cross section, in apex of spikelet, wind dispersed, mostly appressed & all or all but the beaks hidden by the scales, becoming brown at maturity; stigmas 2; N 2n = 64. key features: Similar to *C tribuloides* perigynia & achene, but differs in its separated moniliform spikes. Diagnostic perigynia shapes not distinctive until about July, & then several perigynia must be observed to determine shape & proportions. “In many respects *Carex projecta* is intermediate between *C cristatella* & *C tribuloides*; it is sometimes difficult to distinguish from those spp. However. when all three spp occur together. *C proiecta* flowers & fruits

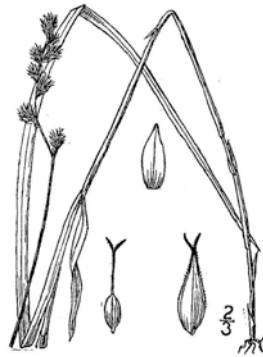


Comments: status: Threatened in Ohio. phenology: Blooms May-June. In northern Illinois, collect seeds in July. Seed source nursery production, genetic source DeKalb Co.

“This may be a variety as the prolonged spike is the main feature which separates it from the preceding (*C projecta*). Prairie slough east of Rockford, Kishwaukee River slough near Killbuck Forest Preserve & on an old drainage ditch west of Yale bridge. Also in DeKalb Co.” (ewf55) “ This uncommon sedge looks somewhat like *C tribuloides* but is of a more lax habit.” (ewf59)

*Carex projecta* has over wintering vegetative stems that root & produce new shoots at the nodes. (Ball & Reznicek 2002)

VHFS: [*C tribuloides* var *reducta*]



*Carex projecta*, new production plot

Line drawing Britton & Brown (1913) courtesy of Kentucky Native Plant Society.

**Carex protracta** see *C projecta*

**Carex pseudo-cyperus** Linnaeus CYPERUS-LIKE SEDGE, aka CYPERUS SEDGE, FALSE BRISTLY SEDGE, erroneously as CYPRESS-LIKE SEDGE (BY THE GOOD FOLK THAT GAVE US MULTIFLORA ROSE, KUDZU, \$ AUTUMN OLIVE), (*pseudo-cyperus* New Latin “false” cyperus, false flat sedge, from Greek ψευδής, *pseudes*, false, & *Cyperus*, for its resemblance to a flat sedge) Subgenus *Carex* Section *Pseudo-cyperae*

Habitat: Swamps, marshes, around ponds (ws92). In New England, shores, swamps, & bogs (afne). distribution/range: Native north & east of our area, but cited by Deam from Lake Co, Indiana.

Culture: ①60 days cold moist stratification. Surface sow, seeds are very small or need light to naturally break dormancy & germinate (pm09). Sow at 20°C (68°F), if no germination in 3-4 wks, move to +2 to +4°C (34-39°F) for 2-4 wks, recycle (tchn).

Description: Erect, perennial, native sedge, one of the porcupine sedges;  $N 2n = 66$ ; key features: It differs from *C hystericina*, *C lurida*, & *C baileyi* with its noninflated perigynia. *C comosa* is very similar, & has a non-inflated perigynia, *C pseudo-cyperus* has perigynia only 3-5 mm long & the teeth of the beak are straight rather than spreading. (m05) It is a smaller & more slender plant than *C comosa*.

Comments: status: phenology: Blooms June-August. Voss (1972) states that occasional specimens are close to *C comosa*.

**Carex X pseudohelvola** Kihlman [*C canescens* L subsp *canescens* X *C mackenziei* VI Kreczetowicz]

**Carex pubescens** see *C hirtifolia*

**Δ Carex radiata** (Wahlenberg) Small EASTERN STAR SEDGE, aka *CAREX RAYONNANT*, STAR SEDGE, STRAIGHT-STYLED WOOD SEDGE, TUFTED WOOD SEDGE, (*radiatus -a -um* radiate, rayed, with rays, radiating in form, from Latin *radius*, a ray, spoke of a wheel, for the radially spreading perigynia) [FAC-] Subgenus *Vignea* Section *Bracteosae*

Habitat: Moist, mesophytic woodlands, usually near moist depressions, usually in moister areas than the closely related *C rosea*. Woods, both mesic & dry, disturbed areas. (m02). In New England, moist woods (afne). distribution/range: Common from Cook Co eastward, while *C rosea* is common from Cook Co westward (S&W94). Scattered throughout Illinois. Map info not available at pugs14 or Ilpin.

Culture: ①60 days cold moist stratification (pm09). (Code C, D Ken Schaal). Seed is dormant as a door nail. *Carex*

for 11 months at -20°C. Hmmm, only viability, not germination. Kew is high powered, right? 716,088 (gnih07); 800,000 seeds per pound, nursery production. 5.93 grams per 1000 seeds.

bottom line: Hand plant fresh or dormant with seed that has been properly stored. Fresh seed should be dried briefly (one week maximum), cleaned, stored in air-tight zip-lock bag in the refrigerator until sown (Cullina 2008). Limited data shows strongly dormant seed (74-91%). Recalcitrant? Germ 6.3, 1.0, na, sd 8.3, r0.0-18 (180%. Dorm 82.7, 83, na, sd 6.9 r74-91 (17)%. Test 27-29 days. (#3).\*\*

Description: culms 0.67-2.0+; perigynia 3-7, radiating in all directions, 2.5-3.8 mm long, to 1.5 mm wide, rounded or *broadly cuneate at the spongy base, spongy-thickened at base*, the body filled by the achene, nerveless on both faces, the beak serrulate, mostly 0.5-0.8 mm long, typically shorter than the elongate stigmas; N 2n = 58. key features:

Comments: status: phenology: Blooms late April 26 to late May. In northern Illinois, collect seeds in early June. Useful in landscaping, shade gardens, as a shady ground cover, plant on 0.67' centers.

VHFS: [Formerly called *C rosea*, including var *minor* & *radiata*. *C rosea* Schkuhr misapplied. *C stellulata* Goodenough var *radiata* Wahlenberg, Kongl Vetensk Acad Nya Handl. 24:147. 1803, *C rosea* Schkuhr ex Willd var *radiata* (Wahlenberg) Dewey]

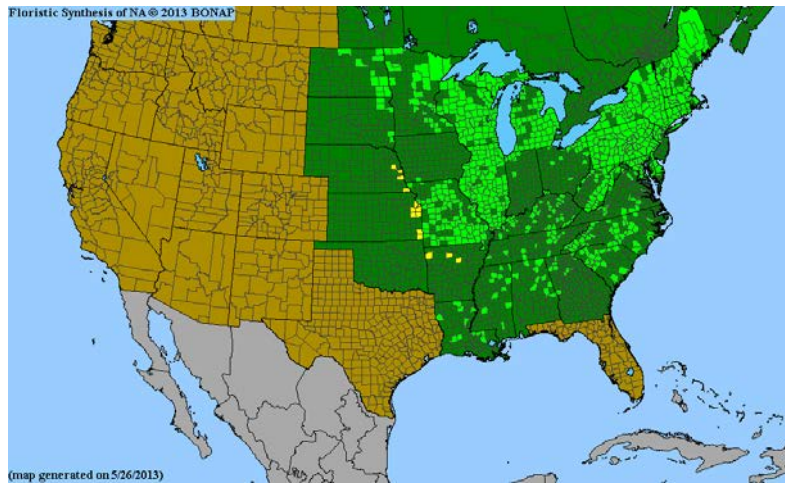
The following is from Ilpin as *Carex rosea* Schk.

Taxonomy Comments:

“SCSV.2 - > - *Carex radiata* (Wahlenb) Small; *C rosea* has been used to cover plants assigned to *C radiata*; *Carex flaccidula* Steud. The type of *C rosea* is included in the type of *C flaccidula*. *C rosea* cannot be accepted.”

Distinguishing characteristic comments:

“Pistillate flowers 1-9 in a spike; spikes pistillate or mixed, globose, nearly so, or as broad-broader than long. Leaf blades mostly 0.5-3.5 mm. wide. Spikes separated along the culm.”



*Carex radiata*, a geo-politically correct sedge, cf Iowa, Illinois, & Indiana?

***Carex reniformis*** (Bailey) Small KIDNEYSHAPE SEDGE, aka ROUND-FRUITED SEDGE, (*reniformis* -is -e kidney-shaped, with the form of a kidney) obligate

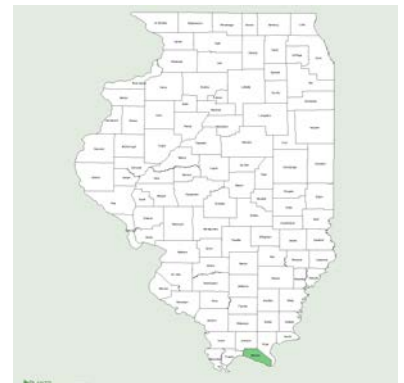
Habitat: Wet depressions in woods. Wet ground. distribution/range: Very rare, Massac Co.

Culture:

Description: N. key features: The very broad, widely winged perigynia are distinctive.

Comments: status: phenology: Blooms June to September. Blooms May (m02)

VHFS: [*C straminea* Willd var *reniformis* Bailey]



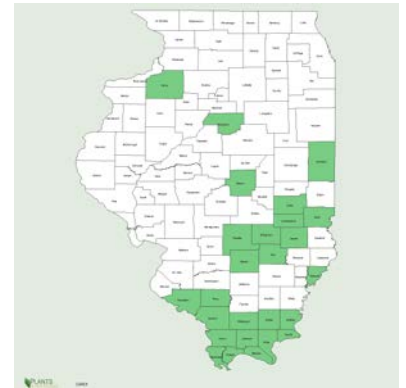
**Carex retroflexa** Muhlenberg (or Muhl ex Willd) REFLEXED SEDGE (*retroflexus -a -um* reflexed, bent-backwards.)

Habitat: Low wooded ridges, bluffs, & dry woods (m02). In New England, dry, rocky, open, deciduous woods (afne). distribution/range: Occasional to common in the s ½ of Illinois, scattered in the n ½ .

Culture:

Description: N 2n = 40. key features:

Comments: status: phenology: Blooms April to June (m02)



**Carex retroflexa texensis** see *C. texensis*

**Δ Carex retrorsa** Schweinitz DEFLEXED BOTTLE BRUSH SEDGE, aka HOOKED SEDGE, KNOT SHEATH SEDGE, RETRORSE SEDGE, (*retrorsus -a -um* New Latin bent backward or downward, from Latin adverb *retrorsus* (*retrorsum*), contraction of *retroversus*, back, backwards, in reverse order, for the deflexed or downward pointing lower perigynia.) OBL Subgenus *Carex* Section *Vesicariae*

Habitat: Stream terraces, riverine wet meadows; wet woods & adjacent lowlands. In New England, alluvial woods, low grounds, swamps, & shores (afne). distribution/range: Occasional in the n ½ of Illinois, also in Coles, Richland, & Union cos. Found in Whiteside Co in 2010, & again not mapped.

Culture: 60 days cold moist stratification (pm09). Dormant seed or cold moist stratify, light. 176,000 (pm); 221,052 (gnhm12); 225,198 (gnim2009) seeds per pound. *C. retrorsa* may be short-lived in plantings & is often difficult to find seed & plants.

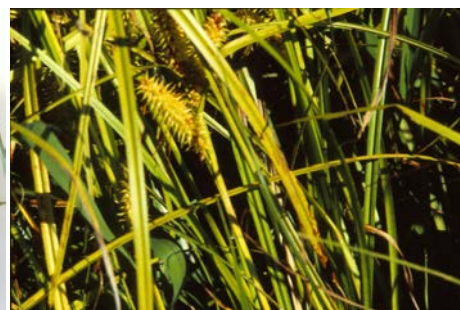
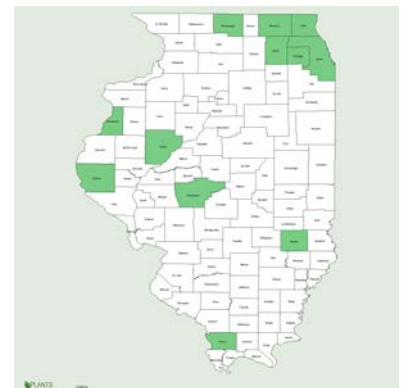
bottom line: Limited test data indicates dormant seeding is strongly necessary. Consistently strongly dormant (82-95%). Germ 4.5, 4.5, na, sd 2.1, r2.0-7.0 (5.0)%. Dorm 88.3, 88, na, sd 5.1, r82-95 (13)%. Test 31, 30, 30 r25-37 days. (#8).\*\*

Description: Caespitose sedge, variable in size of plant, spikelets, & perigynia; culms bases often red & pinnate-fibrillose; leaves 3-8 mm wide; sheaths with raised septa between the veins; heads pistillate spikelets crowded at the top of the culm, sometimes hiding the staminate spikelets; spikes; staminate scales; pistillate scales 5 x 2 mm; perigynia horizontally spreading, the lower reflexed, large, 5 x 2mm, 5-10 mm long, greatly inflated, green or tan, with delicate papery texture, curved back or at the least divergent from the axis, persistent into autumn; well adapted for floating into shore; N 2n = ? key features:

Comments: status: phenology: Blooms June 11. Blooms May-July (m02). Seed source nursery production, Whiteside Co, & southern Wisconsin. Plants may be short-lived (3-5 years) in wetland restorations.

*C. retrorsa* seed may form part of a short term persistent soil seed bank, with a longevity of >1yr to < 5 yr (Thompson et al 1997). Storage behavior is Orthodox?. Seed oil content 4.8%, protein content 11.3%.

“Uncommon. Sugar River sloughs at the Forest preserve & west of Yale Bridge, Coon Creek slough south of Rockton-Shirland road, Kishwaukee Rive slough at Killbuck Forest Preserve & in a prairie slough at Alpine & Sandy Hollow roads east of Rockford.” (ewf55) It often grows with & can be confused with the Hop sedges. Robust sedge of sloughs & stream bottoms, abundant in places (ewf59).

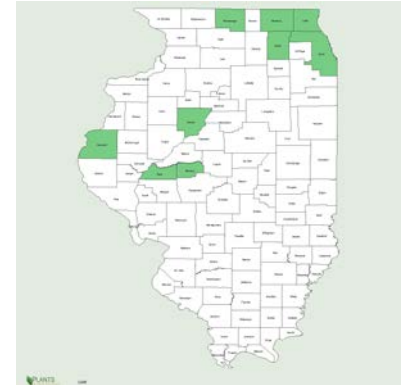


**Carex richardsonii** R Brown \*MI, WI PRAIRIE HUMMOCK SEDGE, aka *CAREX DE RICHARDSON*, EARLY PRAIRIE SEDGE, RICHARDSON'S SEDGE, (*richardsonii* named for Sir John *Richardson*, 1787-1865, British (Scottish) surgeon, naturalist, & boreal & arctic North American explorer, who discovered the sp.) Subgenus *Carex* Section *Digitatae*

Habitat: Rare. Dry hill prairies & kames. Limestone prairies & calcareous beach dunes (Fawcett). Rocky areas, hill prairies, sand dunes (m02). In New England, calcareous rocks & open woods (afne). "It is a rare boreal sp which is found in this area only on the gravel hills which border Rock River. In Beach Park in Lake Co it grows on rather moist sand." (ewf59). distribution/range: Localized. Occasional in the n ½ of Illinois.

Sp is not in the native plant trade.

Description: Small tufted sedges; cespitose from short stout rhizome; culms 5-15 (54) cm tall, plant bases brown to red purple, closely resembling *C pensylvanica*, but with tiny purple sheathing bract at base of flowering culm; leaves 2-4 mm wide, stiff, flat, drying to yellowish white; staminate spikelet; pistillate scales 3.5 x 1.5 mm; perigynia subterete to trigonous, triangular, obovoid, to 2.5 mm long 3 x 1.5 mm, minutely pubescent to pubescent, beak short, entire, about as long as thick with only 2 ribs, *the body tapered into a spongy stipe*; stigmas 3; N 2n = 52. key features: Closely resembling *C pensylvanica*, but with tiny purple sheathing bract at base of flowering culm.



Comments: status: Special concern in Michigan (threatened 2004) & Wisconsin. phenology: Blooms April 20 to May 15, mean week 9, Flowering April to May-June. Blooms April-May (m02)

"A very conspicuous early sedge that forms large mats. It grows with *C umbellata* & flowers at the same time. The gravel hills & bluffs that border Rock River." (ewf55) "A small mat forming plant that is conspicuous because of its early flowering where there is little other vegetation." (ewf59)

**Carex richii** see *C straminea*

**Carex riparia** see *C lacustris*

**Carex riparia lacustris** see *C lacustris*

Δ **Carex rosea** Schkuhr ex Willdenow (or just Schkuhr) (*C convoluta* Mackenzie) CURLY-STYLED WOOD SEDGE, aka ROSY SEDGE, STAR SEDGE, STELLATE SEDGE, TUFTED WOOD SEDGE, (Latin *roseus -a -um*, of roses, for the rosulate-spreading perigynia (*rosulate*, from late Latin *rosula*, diminutive of *rosa*, rose).) UPL Subgenus *Vignea* Section *Bracteosae*

Habitat: Mesic woodland, common, in rich woods, resembles *C convoluta*, but narrower, softer leaves. Mesic woods (m02). In New England, dry, open woods (afne). Forests, dry savannahs, & open oak woods. distribution/range: Occasional throughout Illinois.

Culture: ①60 days cold moist stratification (pm09). Dormant seed or moist cold stratify, light. Seed is dormant as a doorknob. ②Kew notes storage behavior is Orthodox p, with 89-96% germination after 140 days imbibing on 1% agar at 5°C. 348,800 (aes10); 348,924 (lhn91); 606,141 (gniam08); 648,108 (gnia04); 848,000 (pm01); 850,000 (jfn04) seeds per pound.

Cultivation: Clay soil tolerant by some (timber clays perhaps).

bottom line: Hand plant fresh or dormant with seed that has been properly stored.

Fresh seed should be dried briefly (one week maximum), cleaned, & stored in air-tight zip-lock bag in the refrigerator until sown (Cullina 2008). Limited data shows strongly dormant seed (75-92%). Recalcitrant? Germ 3.0, 4.0, 4.0, sd 1.4, r1.0-4.0 (3.0)%. Dorm 83.7, 84, na, sd 6.9, r75-92 (17)%. Test 31, 31, na, r30-32 days. (#3).\*\*

Description: Native, erect, perennial sedge; roots densely caespitose bunching; culms slender, wiry, 0.5-1.0' (or 8 dm) smooth or scaberulous below the inflorescence, equal to or shorter than the inflorescence; leaf blades 1.7-3 mm wide, margins scaberulous; sheaths smooth, tight, with hyaline ventral band; heads spike 2.5-6 cm long; spikes 4-7, androgynous, about as long as wide, perigynia radiating in all directions at maturity, lowest 2-4 remote; staminate scales; pistillate scales scarious, ovate, obtuse, not reaching the base of the beak; perigynia lanceolate 3.5-4.5 mm long, serrulate beak about 1 mm long, body nerveless on both bases, *spongy-thickened & wrinkled below the middle*; achenes; stigmas shorter than to about as long as the beak, thick, dark red; N 2n = 52. key features:

Comments: phenology: Blooms late April to early June. In northern Illinois. collect seeds in early June. Great in shaded





can be quite confusing. View references to these spp that lack herbarium specimens with caution. This sp had been known as *C convoluta* Mackenzie & *C radiata* had been known as *C rosea*. *C radiata* & *C rosea*, here are used as in Sw94.

Associates: Miller et al (1999) found *Carex rosea* from Poplar Creek to be mycorrhizal, & having dark septate fungi. Five of nine plants analyzed by were mycorrhizal, having arbuscles, vesicles, hyphae, & dark septate hyphae. Walnut tolerant.

VHFS: [*Carex convoluta* Mack, *C flaccidula* Steud, *C rosea* Schkuhr ex Willd var *pusilla* Peck & Howe]

*Carex convoluta* Mack see *C rosea* maybe.

Common in dry to wet deciduous woods.

Plants caespitose plants solitary; leaves 1-3 mm wide, spikelets short, sessile; spikelets star-shaped, far apart with 1-10 (20) flowers; staminate flowers at apex of each spikelet, a tiny club-shaped mass of whitish scales remaining after anthesis; perigynia plano-convex, ovate, nerveless on flat face except *C muehlenbergia*, green at maturity, but becoming yellowish to red when dehiscent perigynia divergent, at maturity inflated on the lower 1/3 of the flat inner face, 3-4.5 mm long (4 x 1.5 mm, beak 1 mm), becoming yellow, spongy-thickened at base. Scale 2 x 1 mm, stigmas 2. Leaves resemble those of *C pensylvanica* but radiate from solitary clumps.

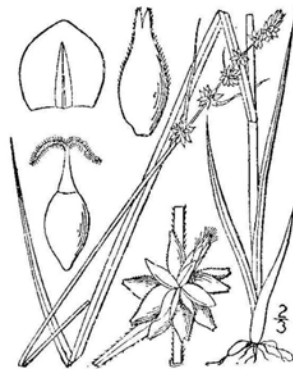
*C rosea* Schkuhr "A common woodland plant that grows in small profusely fruiting tufts. Perigynia 3.5 x 1.5 mm. Pistillate scales 1.5 x 1 mm." (ewf59) "A common woodland sedge." (ewf55)

"Similar to *C rosea* & found in the same situations. Dry oak woods on Lovesee place northeast of Roscoe." (Fell 1955 as *C convoluta* Mack.)

The following is from Ilpin as *C convoluta* Mack. key features: Spikes are widely separated on culm apex, the lowest, spike with long, setaceous, subtending bract; bracts above are smaller. Sp is closely related to *C rosea*. Sp is similar in habit to *C rosea*, "rich wooded ravines, slopes & alleys (sic), not subject to flooding". Synonym *Carex flaccidula* Steud.

The following is from Ilpin as *C rosea* Schk. key features: Pistillate flowers 1-9 in a spike; spikes pistillate or mixed, globose, nearly so, or as broad-broader than long. Leaf blades mostly 0.5-3.5 mm. wide. Spikes separated along the culm. SCSV.2 - > - *Carex radiata* (Wahlenb) Small; *C rosea* has been used to cover plants assigned to *C radiata*; *Carex flaccidula* Steud. The type of *C rosea* is included in the type of *C flaccidula*. *C rosea* cannot be accepted

DK Evans, 1976, Taxonomy of the *Carex rosea* - *C retroflexa* complex in Illinois. PhD diss. Carbondale: Southern Illinois University.





*Carex rosea*

Line drawing Britton & Brown (1913) courtesy of Kentucky Native Plant Society.

**Carex rosea minor** see *C radiata*

**Carex rosea radiata** see *C radiata*

**Carex rossii** \*MI ROSS SEDGE, aka ROSS' SEDGE, aka SHORTSTEMMED SEDGE, Subgenus *Carex* Section *Montanae*

Habitat: In the west, dry forest & meadows, 7,000 to 10,000 feet.

Culture: Dyer (2002), collected plants material from Yosemite National Park, divided plants, 15 minute soak in Vitamin B-1 solution to help prevent shock, & put potted divisions into cold frames then lathe houses.

Description:

Comments: Threatened in Michigan

D Dyer, 2001 Propagation protocol for production of container *Carex rossii* cuttings: Lockeford Plant Material Center, Lockeford, California, In Native Plant Network, [URL:http://www.nativeplantnetwork.org](http://www.nativeplantnetwork.org) (accessed 9 July 2002). Moscow (ID): University of Idaho, College of Natural Resources, Forest Research Nursery.

**Δ Carex rostrata** Stokes BEAKED SEDGE, aka NORTHERN YELLOW LAKE SEDGE, (*rostratus -a -um* rostrate, beaked, from Latin *rostratus*, beaked, referring to the shape of a beak, for the beaked perigynia)

Habitat: Shallow water or wet soils around waterways. Bogs, sloughs, around ponds & lakes, swamps (Mohlenbrock, 2005) In New England, shores, swamps, & bogs (afne). Wet meadows from low to moderately high elevations. "Very common throughout its range." "A robust northern plant that grows in Sugar & Pecatonica river sloughs & in the prairie slough in the Searle Tract on North Central Avenue, Rockford." (ewf59) Best in moderately fine to fine textured soils. Neutral to basic soils (Granite) Shallow water & wet soils. 2,000-4,500'. Low acid tolerance. Medium salinity tolerance. distribution/range: Mapped from Illinois by pug14, but not bonap 2014.

Culture: When planted alone for pasture in the Rockies, drill 7 lb pls per acre in fall or spring (gran). Plant 1-2 lb/acre in fall or spring (rain).

Description: Medium to tall grass-like perennial sod-former; roots coarse, strongly rhizomatous, sod forming, forming large monotypic stands to 10 m across; culms new shoots evergreen, numerous pseudoculms 0.5-1.5 m high, 13-36"+, usually taller than the fruiting culms, bases reddish & pinnate fibrillose; leaves pale or yellow green, 3-8 mm wide, dried leaves show numerous cross veins more prominently than other spp; sheaths; heads; spikes spikelets yellowish, brown, or red-tinted ascending, cylindrical, 2.5 cm long scattered on erect culms, the lower 1-4 pistillate, the upper 2-5 staminate; staminate scales; pistillate scales acute, pistillate scales 5 x 0.5 mm; perigynia 5.5 x 2.5 mm, 50-130 per spikelet, somewhat inflated, 16 nerved; variable in size & shape, but usually broadly ovate & more abruptly tapering than its close relatives; achenes 2 x 1.5 mm; stigmas 3; N 2n = 60. key features:

Comments: status: phenology: Blooms July to September. Cool season, good erosion control, Satisfactory forage. Moderately palatable, provides good habitat for wildlife. Good wildlife values. Wetland & riparian restoration. Very good xeriscaping. Huh? (?rain). 360,000 (wns2001); 362,500 to 440,000 (gran, rain) seeds per pound.

"We have found this widespread sp only in a Coon Creek slough south of Rockton-Shirland road & in a Pecatonica River slough north of Pecatonica. In vegetative features it resembles *C lacustris*. Ours is var *utriculata* (Boott) Bailey." (ewf55)

JM Bernard, 1975, The life history & population dynamics of *Carex rostrata*, Canadian Journal of Botany 64:1045-1048



*Carex rostrata*

Seed photo courtesy of Bend Seed Extractory, Seeds of Success, <http://seedsofsuccess.smugmug.com>.

**Carex rostrata** see also *C utriculata*

**Carex rostrata utriculata** see *C utriculata*

**Carex rugosperma tonsa** see *C tonsa*

**Δ Carex sartwellii** Dewey RUNNING MARSH SEDGE, aka *CAREX DE SARTWELL*, SARTWELL'S SEDGE, (discovered by Henry Parker Sartwell, 1792-1867, American botanist) [obl] Subgenus *Vignea* Section *Intermediae*

Habitat: Moist to wet meadows, open swamps, shallow water; wet meadows. Calcareous wetlands (Swink 1990). Moist calcareous meadows. Low wet prairies & calcareous meadows, creek & river bottoms, marshes, dunes, peaty swamps, open cold bogs (m02). distribution/range: Common? Occasional in the n ½ of Illinois, also St. Clair & Washington cos.

Culture: ①Dormant seed, light. 737,013 (gnha13); 800,000 (agrecol carsar31H50); 824,720 (lhn91); 831,502 (gnhm11); 880,000 (agrecol08) seeds per pound.

bottom line: Dormant seeding is best, with 30% of lots significantly to strongly dormant, the remainder 12% dorm or less. Flipflop, typically strong germ. Germ 65.8, 82, na, sd 28.4, r14-92 (78)%. Dorm 25, 12, ns, sd 26, t1.0-71 (71)%. Test 31, 32, 32, r29-32 days. (#9).\*\*

Description: Plants slender, forming dense bright green beds 1-10 m across; strongly colonial from long dense rhizomes; culms 2.0-3.0' (2-6 dm) tall, solitary culms solitary or a few together scattered along coarse black rhizomes, pseudo culms numerous, tall slender; leaves lower strongly aphyllopodic, leaves 1.5-4.5 mm wide; sheaths green striate (vertical stripes) on all 3 faces & slightly prolonged at apex above blade into a collar; inflorescence 1-3 cm long, of 6-30 crowded spikelets, upper ones progressively smaller; spikes spikelets all similar, short sessile, crowded near culm apex, brown; staminate scales; pistillate scales 3.5 mm x 1.5 mm; perigynia small, brown, 4 x 2 mm, ovate, flat short beaked, 2.5-4.5 mm long, 4-9 nerved on convex inner face, spongy at the base; stigmas 2; N 2n = 62. key features:

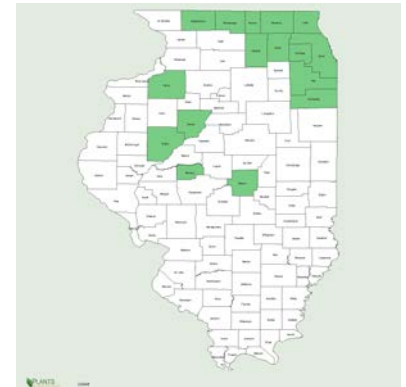
Comments: status: phenology: Blooms late April to early June. In northern Illinois, collect seeds in mid- to late June. Calcareous soils. Seed source DuPage Co Forest Preserve District contract growing. *C pellita* plugs are often sold as *C sartwellii*.

This sp is sometimes confused with the rare European adventive, *C disticha* Hudson (Catling et al 1988). *C disticha* has more prominent spikes, reddish-brown pistillate scales, & longer & wider perigynia, 4-5.5 mm., with beaks, 1-2 mm., about as long as the body.

“Uncommon. The boggy places in Kent & Coon Creek bottoms, the low prairies west of Yale bridge & south of Killbuck & in like situations in DeKalb, Ogle, & Stephenson cos.” (ewf55) A northern sedge found in wet prairies & slough borders (ewf59).

VHFS: The seldom acknowledged variety *stenorryncha* Herman, is known from Lake & St. Joseph Cos., Indiana, & has perigynia longer than 4 mm & no wider than 1.3 mm.

Not to be confused with *C sartwelliana* Olney, YOSEMITE SEDGE. Apparently, Sartwell got around.





*Carex Sartwellii*

**Carex X saxenii** Raymond [*C paleacea* Schreb ex Wahlenb X *C recta* Boott]

**Carex scabrata** Schweinitz EASTERN ROUGH SEDGE, aka ROUGH SEDGE, ROUGH WOOD SEDGE, (Latin *scabratus -a -um*, roughened, for the scabrous perigynia) Obligate

Habitat: Springy areas, hydromesophytic swamps (ws92). In New England, wet woods (afne). distribution/range: Near Chicago, highly localized at the south end of Lake Michigan.

Culture:

Description: N 2n = 54. key features:

Comments: status: phenology: Blooms May 12, mean week 10.

VHFS: Hybrids include *C crinita* Lam X *C scabrata* Schwein & *C gynandra* Schwein X *C scabrata* Schwein.

**Carex schweintzii** Dewey ex Schweinitz \*WI SCHWEINITZ'S SEDGE Subgenus *Carex* Section *Vesicariae*

Habitat: In New England, calcareous swamps, meadows, & shores (afne). distribution/range:

Culture:

Description: N 2n = ? key features:

Comments: status: Threatened in Wisconsin. phenology: Blooms

VHFS:

**Carex scirpoidea** Michaux \*MI BULRUSH SEDGE, aka CANADIAN SINGLE-SPIKE SEDGE, DOWNY SEDGE, NORTHERN SINGLE-SPIKE SEDGE, Subgenus *Primocarex* Section *Scirpinae*

Habitat: distribution/range:

Culture:

Description: N. key features:

Comments: status: Threatened in Michigan. phenology: Blooms

VHFS: In New England, subsp *scirpoidea* 2n = ?, rocky ledges at high altitudes, often in calcareous soil.

**Carex scirpoides** see *C interior*

**Carex scirpoides capillacea** see *C atlantica capillacea*

Δ **Carex scoparia** Schkuhr ex Willdenow BROOM SEDGE, aka *CAREX À BALAIS*, LANCE FRUITED OVAL SEDGE, BLUNT BROOM SEDGE, POINTED BROOM SEDGE, POINTED MARSH SEDGE, (*scoparius -a -um* broom or sweeper, broom-like, from Latin *scoparius*, sweeper, broom, a sweeper, from Latin *scopa*, broom, for the many stramineous culms resembling broom straws, or for resemblance of tufts of stems to a crude broom.) facu Subgenus *Vignae* Section *Ovales*

Habitat: Wet meadows, very common in open wetlands, sandy lake shores, fields, & moist calcareous prairies. Common in wet prairies, also in calcareous fens & moist calcareous prairies. Wet open woods, wet prairies, wet meadows, seeps, calcareous fens. "Wet to dry, open habitats, usually on acidic, often sandy soils." (fna) "Bogs, swamp forests, marshes, seepy ledges, ditches; common" (w08). Swamps & moist to dry open ground (ess). "Common in such boggy places as south

**Culture:** ①Cold moist stratify or dormant seed, light (Wade). 60 days cold moist stratification (pm09). Easy from dry stored seed, dry storage 70° (180 days), light. "Fall plant or cold stratify for 2 to 4 weeks for best results. Sow seeds on soil surface at 70°F & water." (ew12) 1,096,618 (gnhm09), 1,196,311 (gnam08), 1,200,000 (ew12), 1,220,430 (gnh13), 1,303,448 (gnh11), 1,310,982 (gnh12), 1,328,000 (aes10), 1,332,000 (jfn04), 1,344,000 (pm01&ecs), 1,355,224 (gna06a), 1,412,131 (gna10), 1,516,722 (gnh06), 1,609,929 (gna09), 1,684,601 (gna06b), 1,759,689 (gnhj03) seeds per pound.

Grows well in the greenhouse with no pretreatment. Self sows prodigiously in rich, open ground (*in situ* 240 bushel Corn Belt soils, not urban, bulldozer-smear, wannabe topsoil). (gni)

**Cultivation:** Space plants 1.0-2.0 on center. Wet soils, full sun to partial shade. Shade tolerant. No drought tolerance. Low salt tolerance. pH 4.6-6.9.

**bottom line:** Spring seeding works most years, but 33% of the time, you will be doomed to mediocrity or worse. Alas & alack. Flipflop species, crossover tendency, typically no to slight dormancy. Germ 67, 80.3, 41, sd 29.1, r8.0-97 (89)%. Dorm 23.7, 7.8, 0.0, sd 28.3, r0.0-85 (850)%. Test 35, 35, 32, r14-64 days (#19).\*\*

**Description:** Plants caespitose (densely caespitose Fell 1959); roots 8" minimum depth; culms without pseudoculms, slender, 0.8-2.5+, 1-5 (15) dm tall; leaves blades 1-4 mm wide; sheaths; heads; spikes spikelets all alike, short, sessile, tapered to an acute point at each end, 12-14 mm long, crowded or remote on the culm, staminate flowers confined to tapering spikelet bases; pistillate scales 3.5 x 1 mm; perigynia less than 2 mm wide except rarely in *scoparia*, perigynia thin & scalelike, with translucent margins or wings, wind dispersed, mostly appressed, & all or all but the beaks hidden by the scales, becoming brown at maturity; perigynia 5.5 x 2 mm, incurved, broadest at or above the upper end of the achene, lanceolate to narrowly rhombic, (3X as long as wide, appearing depressed over achene on inner face; stigmas 2; N 2n = 56, 58, 60, 68. **key features:**

**Comments:** status: phenology: Blooms mid-May to mid-June. In northern Illinois, collect seeds in late June - late July. Common plants, cool season, calcareous, bunching. Great in landscaping, aggressive from seed, wetland restoration, wildlife plantings, rain gardens, & bog gardens. Fell (1959) notes the sp is subject to vegetative variations. Seed source nursery production, naturalized wetlands, genetic source Brooklyn Twp, Lee Co. Historically, some seed lots have been very low in viable seed.

**Associates:** Two of two plants analyzed by Miller et al (1999) were mycorrhizal, having vesicles & hyphae. Larval host. Provides food & cover for songbirds, ruffed grouse chicks, ducks, & moose. Reported to be deer resistant. Walnut tolerant.

**VHFS:** Sw94 cite form *condensa* (Fern) Kük, which has spikes to 1.5 cm long & up to 2.5 cm wide caused by an abbreviated axis & divergent spikelets. The typical variety *scoparia* has congested spikes. The variety *moniliformis* Tuckerm has remote spikes & is scattered in Illinois in wet meadows & marshes. Wetter et al (2001) list the hybrid *C scoparia* (cf) Schkuhr ex Willd X *C tribuloides* Wahlenberg from Wisconsin. Hybrids *C bebbii* (LH Bailey) Olney ex Fern X *C scoparia* Schkuhr ex Willd var *scoparia*, *C hormathodes* Fern X *C scoparia* Schkuhr ex Willd, *C scoparia* Schkuhr ex Willd var *scoparia* X *C straminea* Willd, *C scoparia* Schkuhr ex Willd var *scoparia* X *C tinctoria* (Fern) Fern.

Var *scoparia* 2n = 56, 58, 60, 68, open areas, usually in acidic, often sandy soil. Var *tessellata* Fern & Weigand, 2n = ?, sandy, acidic soil.



*Carex scoparia*

**Carex seorsa** Willdenow \*MI WEAK STELLATE SEDGE, aka SWAMP STAR SEDGE, TUFTED SWAMP SEDGE, (*seorsus -a -um* Latin *seorsum*, apart, separated, separately.) Subgenus *Vignae* Section *Stellulatae* [obligate]  
Habitat: Boes hydromesophytic swamps (ws97) In New England wet woods swamps & bogs (afne) distribution/range:

Description: N 2n = ? key features:

Comments: status: Threatened in Michigan. phenology: Blooms April 29 to June 11, mean week 11.

VHFS:

**Carex X setacea** Dewey see *C vulpinoidea* & *C annectens* ???

**Carex setacea ambigua** see *C vulpinoidea*

**Δ Carex shortiana** Dewey SHORT'S SEDGE (discovered by Charles Wilkins *Short*, 1794-1863, physician & botanist, one of the earliest botanists to publish an article about the Illinois prairie.) [fac] Subgenus *Carex* Section *Shortianae*

Habitat: Seasonally inundated, wet woods, dry savanna. The heads of ravines running into Lake Michigan, springy areas. Mesic woods, bottomlands, at the head of ravines, wet meadows. distribution/range: Common in the s ½ of Illinois, occasional to rare elsewhere. The first place I ever saw this sedge, it was hugging a tombstone on an open-wooded, high & dry bluff in Springdale Cemetery in Peoria.

Culture: ①60 days cold moist stratification (pm09). Dormant seed or moist cold stratify, scant cover, seeds need light to germinate. 250,898 (gnaj03); 269,676 (gnh02); 272,000 (pm01); 277,167 (gnhm13); 278,357 (gna04); 321,302 (gnhag10); 378,000 (lhn91); 369,707 (gnh09); 383,122 (gnam08); 389,032 (gnam07); 390,706 (gnh11); 444,400 (gn2k) seeds per pound.

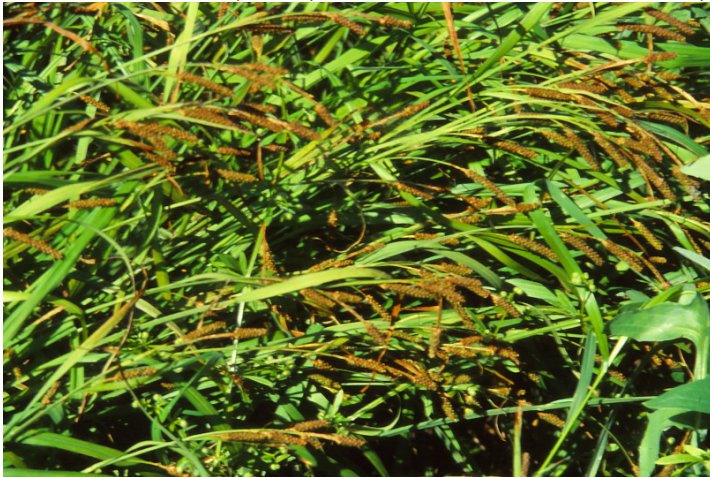
bottom line: Field establishment is best by dormant seeding. 20% of lots work by spring seeding, & will germinate immediately after drying & cleaning. This seed may have a short shelf-life, or a degree of recalcitrance. Flip flop species, typically strongly dormant. Buy early & buy often. Germ 25.2, 8.0, 8.0, sd 32.4, r3.0-99 (96)%. Dorm 59.5, 70.5, 88, sd 31.2, r0.0-92 (92)%. Test 32, 29, 40, r10-50 days. (#20).\*\*

Description: culms 1.5-3.5'; key features:

Comments: status: phenology: Blooms May - early June. In northern Illinois, collect seeds in early June. Landscaping, attractive brown seed heads. Self sows & weakly naturalizes. Production plots are short lived. Seed source nursery production plots, genetic source Cook Co.

“It is notable among tristigmatic carices in having all the spikes gynecandrous, the lateral ones conspicuously repeating the pattern of the terminal spike.” (Cochrane 2002)

TS Cochrane, 2002, *Carex* Linnaeus sect *Shortianae*, Flora of North America vol. 23.





*Carex shortiana*

**Carex siccata** Dewey DRYSPIKE SEDGE, aka *CAREX SEC*, HAY SEDGE, HILLSIDE SEDGE, RUNNING SAVANNA SEDGE, Subgenus *Vignea* See *C foenea*

Habitat: Dry, sterile or sandy soil, in open places in light shade (GC). In New England, open, sandy woods, fields, & rock outcrops (afne). distribution/range:

Culture:

Description: N 2n = 70. key features:

Comments: status: phenology: Blooms

“(C *foenea* Willd) Almost always in dry & usually in sandy places. Sugar River Forest Preserve, the sandy area south of Rock Cut, a dry bank on River road south of Cherry Valley & a dry prairie situation on Mulford road near Kishwaukee River Forest preserve. We have also collected it in Boone, DeKalb, & Stephenson cos.” (ewf55)

VHFS: [*C foenea* Willd misapplied]

**Carex socialis** Mohlenbrock & Schwegman COLONIAL SEDGE, aka LOW WOODLAND SEDGE, (*socialis -is -e* sociable, companionable, growing in colonies.)

Habitat: Wet woods, often in floodplains. Lowland deciduous woods, often on clay soils. distribution/range: Not common, confined to the s 1/2 of Illinois.

Culture:

Description: Perigynia “*base of body spongy, thickened, longitudinally striate adaxially, spongy region 1–1.5 mm, margins serrulate distally*” (fna); N 2n = 58. key features:

Comments: status: phenology: Blooms April-June (m02). Fruiting mid-late spring. According to MS Word’s Autocorrection this may be seen as *Carex socialism*.

**Carex sparganioides** Muhlenberg ex Willdenow BURR-REED SEDGE, aka BUR SEDGE, *CAREX FAUX-RUBANIER*, LOOSE-HEADED BRACKETED SEDGE, (*sparganioides* New Latin like or resembling *Sparganium*, from *Sparganium*, & Greek *-oides*, with the form of, for the resemblance of the inflorescence to bur reeds.) Subgenus *Vignea* Section *Bracteosae*.

Habitat: Maple basswood forests. Woodland or forest sedge. Beech & sugar maple woods, degraded woodland remnants. Dry to moist deciduous or mixed forests. Dry or moist woods (m02). “Dry to moist deciduous & mixed forests, forest edges, on neutral or basic soils; 50–300 m” (fna). In New England, rich woods (afne). Neutral or basic soils. distribution/range: Scattered throughout Illinois.

Culture: 60 days cold moist stratification (pm09). 436,748 (gnm10); 453,600 (lhn91); 477,392 (gnam11) seeds per pound.

bottom line: 2/3rds of lots are significantly dormant, 27-29%, 1/3rd are nondormant. Germ 65, 66, na, sd 20.8, r39-90 (51)%. Dorm 18.7, 27, na, sd 13.2, r0.0-29 (29)%. Test 31, 39, na, r7.0-46 days. (#6).\*\*

Description: Similar to *C. convoluta* (see *C. rosea*) but plants much more robust caespitose: culms to 6 dm tall: leaves 5-9

perigynia 4 x 2 mm, plano-convex, ovate, nerveless on flat face except, green at maturity, but becoming yellowish to red when dehiscent; stigmas 2; N 2n = 46, 48. key features:

Comments: status: phenology: Blooms May 19 to May 30, mean week 12. Blooms May-July (m02). Fruiting late spring-early summer. Genetic source oak woods south of Yorktown, Bureau & Henry cos.

According to Fell (1959), it persists for many years after the removal of the forest. "A late flowering, stiff, thin stemmed sedge of woods & roadsides which has an interrupted inflorescence" (ewf55). "A common, robust distinctive looking sedge having one or a few stiff stems, an interrupted head & lax leaves mostly clothing the base of the stem" (ewf59).

VHFS: Sometimes seen as *C sparganioides* Muhl.

**Carex sparganioides aggregata** see *C aggregata*

**Carex sparganioides cephaloidea** see *C cephaloidea*

**Carex spectabilis** Dewey SHOWY SEDGE (*spectabilis* -is -e spectacular from Latin *spectabilis*, notable, spectacle, that may be seen, worth seeing, notable, remarkable, showy.)

Habitat: Western North America & eastern Asia, from the Yukon to western Montana & California, moist meadows in subalpine to alpine habitats. distribution/range:

Culture: Dormancy is physiological dormancy. Wick et al (2001), using seed from Logan Pass @ 2200 meters, had 80-90% germination using 5 month outdoor cold moist stratification. Flats were overwintered outdoors under foam insulation & snow. Germination occurred the second year also. Plants were fertilized with 13-13-13 during the growing season & 10-20-20 during August & September.

Description:

Comments: 2,030,368 seeds per kg (Wick et al 2001)

D Wick, J Hosokawa, S Corey, & T Luna, 2001, Propagation protocol for production of container *Carex spectabilis* Dewey plants (172 ml container): Glacier National Park, West Glacier, Montana, In Native Plant Network, [URL:http://www.nativeplantnetwork.org](http://www.nativeplantnetwork.org) (accessed 9 July 2002). Moscow (ID): University of Idaho, College of Natural Resources, Forest Research Nursery.

**Carex spicata** Hudson SPIKE BRACKETED SEDGE, aka PRICKLE SEDGE, (*spicatus* -a -um (spee-KAH-tus) with flowers in a spike, spicate, bearing a spike, from Latin *spicatus*, past participle, *spico*, to grow ears, spikes, like wheat or corn (in an Old World sense), for the spicate inflorescence) Upland

Habitat: Disturbed ground, partly shaded ground. Rarely adventive in disturbed soils (m02). In New England, dry fields, roadsides, & open woods (afne). distribution/range: Introduced from Europe & Asia, widely distributed in Eurasia & North Africa. DeKalb & DuPage cos.

Culture:

Description: *perigynia corky-thickened at the base*; N 2n = 58, 60. key features: "morphologically characterized by the *swollen spongy basal* part of the perigynia" (Hendricks et al 2004)

Comments: status: phenology: Blooms May 10 to May 16, mean week 10. Blooms May (m02)

VHFS: [*C muricata* misapplied]

**Δ Carex sprengei** Dewey ex Sprengel (or just Dewey) LONG-BEAKED SEDGE aka *CAREX DE SPRENGEL*, SPRENGEL'S SEDGE, (*sprengelii* after Kurt Polykarp Joachim *Sprengel* (1766-1833), Prussian (or Pomerania) botanist & physician. His first name is sometimes dumbed-down to Curt.) The common name used by Fell 1959. [facu] Subgenus *Carex* Section *Longirostres*

Habitat: Seasonally wet savannas, moist woods, on terraces & near streams, dry savannas, & sandy thickets; moist woods, steep banks, wooded terraces, rich wooded ravine slopes. "Conspicuous plant that grows in large patches in upland woods (ewf59). Moist woods, wooded terraces (m02). In New England, rocky woods, alluvial thickets, & river terraces, often in calcareous soil (afne). We have seen this sp persisting in full sun on the northeast face of grassy dunes near Wacktown Timber, New Bedford, Bureau Co. distribution/range: Common in the n ½ of Illinois, also Washington Co.

Culture: Ⓞ Cold moist stratify or dormant seed, light (Wade). 60 days cold moist stratification (pm09). Seeds germinate after about 60 days of cold, moist stratification. Seeds need light to break dormancy & germinate. Plant on top of growing media & do not cover. (he99) Dormant seed or moist cold stratify-light. 157,420 (gnapm08), 160,000 (pm01, aes10), 205,621 (gnh15), 211,754 (gnhm09), 215,166 (gnh09), 217,850 (gnh13), 234,747 (gnia04), 242,586 (gnam10), 254,342 (gna05) seeds per pound.



bottom line: Dormant seeding is absolutely necessary for field establishment. Consistently strongly dormant (55-88%). Germ 9.3, 8.0, 1.0, sd 10.7, r0.0-35 (35)%. Dorm 64.2, 65.5, 88, sd 21.2, r10-88 (78)%. Test 42, 38, na, r22-53 days. (#11).\*\*

Description: Forming dense tussocks or fairy rings 1-5 dm across; 1.5-2.0'; leaves abundant, yellow green, 2.0-4.5 mm wide, old leaves forming copious tufts of gray brown fibrils at base of plant; pistillate scales 6.0 x 1.5 mm; perigynia 6 x 2.5 mm 5-7 mm long, with abrupt linear beaks long as the globose body; N 2n = 42. key features:

Comments: status: phenology: Blooms May 06 to May 24, mean week 10, blooms 4,5. In northern Illinois, collect seeds in late May - mid-June. Collect seeds in se Wisconsin in July - August (he99). Landscaping, ornamental, bunching, calcareous soils. Seed source nursery production, genetic source Wacktown, Greenville Twp, Bureau Co. Old plants die off in the center of the clump, forming fairy rings. Incipient fairy rings are clearly evident in our naturalized plantings after 12 growing seasons.

“An early & conspicuous sedge common in woods & on roadsides. (*C longirostris* Torr)” (ewf55).

Associates: Larval host. Miller et al (1999) found *Carex sprengelii* to be non AM mycorrhizal, with a dense covering of root hairs (without bulbous bases). Zero of four plants analyzed by Miller et al (1999) were mycorrhizal.

VHFS: [*C longirostris* Torr, not Krock]



*Carex sprengelii*, with incipient fairy rings in then 12 year old plants

**Δ *Carex squarrosa* L \*MI, OH** SQUARROSE SEDGE, aka NARROW-LEAVED CAT-TAIL SEDGE, (*squarrosus -a -um* rough, scurfy, with protruding scales, with leaves spreading at right angles, with parts spreading, or even recurved at the ends, from Latin *squarrosus*, rough, scurfy, for the overall rough-looking appearance of the spikelets, with wide spreading perigynia beaks.) Obligate Subgenus *Carex* Section *Squarrosae* (all spp in this section have obconic or obovoid perigynia abruptly contracted into a beak).

Habitat: Morainic depressions & upland swamps, wooded terraces of till plain streams, upland swampy depressions. Streambanks, moist woods, & marshes (ecs). Low woods, swamps, along streams, wet meadows (m02). Shade tolerant. No drought tolerance. No salt tolerance. pH 5.6-7.3. distribution/range: Scattered throughout Illinois but more common in the s cos. A southern sedge, in the Bebb collection (ewf59).

Culture: 60 days cold moist stratification (pm09). Moist cold stratify (60 to 90), light. Moist cold stratification. Small seeds need light to germinate, scant soil cover. (KS BPN). Somewhat inflated perigynia, for green house work, hull seed or very light cover with milled soil or seeds will not hydrate. 200,353 (gna05), 201,464 (gna06), 228,765 (gnavs02), 229,333 (gn), 278,069 (gna05b), 324,750 9gnh13), 348,160 (gnh09), 401,776 (jfn04) seeds per pound.

bottom line: Dormant seeding is the safest method for field establishment. 50% of lots are strongly dormant. Flipflop & crossover species, trending towards strong dormancy. 50% of lots can be spring planted, but that is F work & there is only 'A's & 'F's in life, so ... So, do ya feel lucky punk? Huh, do ya? Germ 50.3, 56.5, na, sd 32.4, r7.0-92 (85)%. Dorm 42, 34, na, sd 34.8, r0.0-88 (88)%. Test 36, 36, 35, r28-46 days. (#7).\*\*

Description: Native, bunch type, erect, perennial sedge; roots 8" minimum depth; culms 1-3'; N 2n = 56. key features:

Comments: status: Special Concern in Michigan & Ohio. phenology: Blooms late May to early June. In northern Illinois, collect seeds in early July - late August. Excellent in real, rich-soil, rain gardens without dipstick sub-drainage. Seed source nursery production from wooded wetland, Kane, DuPage Co, Ill., on side of Farmi Lab. & the Illinois River bottoms near



*Carex squarrosa*

**Carex stellulata** see *C sterilis*

**Carex stellulata cephalantha** see *C echinata*

**Carex stenophylla** Wahlenberg var **enervis** (CA Mey) Kükenth NEEDLELEAF SEDGE, aka SPIKE RUSH SEDGE, (from the Greek *stenos*, narrow, straight, & *phyllon*, leaf, for the straight, filiform leaves. Latin *ex*, beyond, out, without, & *nervus*, sinew, tendon for the nerveless perigynia) Subgenus *Vignea* Section *Divisae*

Habitat: Western sedge found in gravel bluff prairie in Greater Rockford Airport, & in a gravelly, clayey prairie near Montgomery. Gravel bluff prairies (m02) distribution/range: Very rare, Kane & Winnebago cos.

Description: roots running from filiform rhizomes, long, slender, brownish sympodial rhizomes; pistillate scales 3.5 x 1.5 mm; perigynia 3 x 1 mm, beak 1 mm, teeth 0.5 mm; key features:

Comments: status: phenology: Blooms May – July (m02). Found growing with *C heliophila*, *C praegracilis*, & *C muehlenbergii*. “Flowers at same time as *C heliophila* & from a distance patches can be easily confused.” (Some of us might find them confusing up close & personal)

VHFS: [*C eleocharis* Bailey, C?] The variety *stenophylla* is Eurasian.

**▲ Carex sterilis** Willdenow DIOECIOUS SEDGE, aka COMMON TUFTED FEN SEDGE, FEN STAR SEDGE, STERILE SEDGE, (*sterilis* sterile, infertile, from the Latin *sterilis* –*is* -*e*, unfruitful, for the frequent staminate inflorescences) Subgenus *Vignae* Section *Stellulatae*

Habitat: Wet places, fens & wet limey sands. Mostly in wet, very acid or very alkaline soils in the sun. Characteristic tufted sedge of marly or mineral soil seeps & fens & of calcareous springy meadows (sw94). Wet meadows, fens, & marly seeps (m02). In New England, wet, calcareous soils (afne). “Always in very wet places & is known from Winnebago, Boone, & DeKalb cos” (ewf59). distribution/range: Confined to the n ½ of Illinois; also Coles. St. Clair, & Washington cos.

Culture: Cold moist stratify 60 days or dormant seed, light (Wade). 60 days cold moist stratification (pm09). Moist cold

Description: Similar to *C interior*, forming larger, denser, more wiry tussocks; plants small, slender, caespitose stems tufted; roots; culm angles scabrous above; leaves 1-3 mm wide; sheaths aphyllopodic; heads often dioecious; spikelets all similar, sessile, as broad as long, with staminate scales at bases, spikelets mostly 4 per culm; pistillate scales acute, 2 x 1 mm; perigynia 2.5 x 1.5 mm, divergent or reflexed, giving spikelet a star shape when viewed from above perigynia more broadly ovate & reddish, beak half to as long as the triangular body; N 2n = ? key features:

Comments: status: phenology: Blooms late April to late May. In northern Illinois, collect seeds in early June. Calcophile.

“Much like the above (*C interior*) & found, though less commonly, in the same places. Plants that are entirely staminate or entirely pistillate are occasionally found & are confusing. It is also found in Boone & DeKalb cos.” (ewf55) “This resembles *C rosea* & also *C interior*. Much less common than the former & perhaps more common than the latter to which it is related.” (ewf59)

VHFS: [*C elachycarpa* Fern, *C muricata* L var *sterilis* (Carey) Gleason, *C stellulata*, *C X minganinsularum* Raymond, *Kobresia elachycarpa* (Fern) Fern]

**Δ *Carex stipata* Muhlenberg ex Willdenow** OWL-FRUIT SEDGE, aka AWL-FRUITED SEDGE, AWL SEDGE, *CAREX STIPITÉ*, PRICKLY SEDGE, SAWBEAK SEDGE, SOFT SEDGE, SPONGY SEDGE, STALKGRAIN SEDGE, STALKED GRAIN SEDGE (the weak succulent stem), & last & but certainly not least, COMMON FOX SEDGE, a very bogus, or at least a very confusing, name based on the supposed resemblance of the infructescence to a fox's tail. (*stipatus -a -um* from Latin *stipatus -a -um*, compressed, surrounded, for the easily compressed culms. It is also accurately translated as crowded, from Latin *stīpāt-*, base of the participle stem of *stīpāre*, to crowd, to accompany in crowds, a possible reference to the crowded spikes. See *stipo*, *stipare*, *stipavi*, *stipatus*, crowd, press together, compress, surround closely; to crowd a place; to press round a person, accompany, attend.) Obligate Subgenus *Vignae* Section *Vulpinae*

Habitat: Common sedge of wet places. Low, open ground, wet ditches, wet meadows, bogs; in all types of wetlands; prefers moist soil. Wet meadows, marshes, swamps, fens, wet ditches, & bogs (m02). distribution/range: Occasional to common throughout Illinois.

Culture: Cold moist stratify or dormant seed, light (Wade). 60 days cold moist stratification (pm09). “Sow fresh, fall sow, or moist cold treatment. Light cover. Excellent germination.” (mfd93). Seeds germinate after about 60 days of cold, moist stratification. Seeds need light to break dormancy & germinate. Plant on top of growing media & do not cover. (Heon et al 1999)

Others say dormant seed or moist cold stratify, light. Fresh seed was once the battle cry, but is not necessary. Most lots germinate well from dry stored seed & spring sown with no treatment, ranging from 77% to 92% germination, but dormant seeding is necessary with 30% of lots. Our 2006 crop seed had 91% germination 2% dormancy, just weeks after harvest. Seeds may potentially germinate the same season they are produced. 498,901 (gnh07), 520,941 (gna04), 526,971 (gna06), 532,864 (gna03), 541,121 (gna08), 544,000 (pm01&ecs), 546,329 (gnh01), 553,658 (gna05), 560,000 (ew12), 566,400 (aes10), 567,000 (lhn91), 570,000 (jfn04), 572,870 (gnh02), 583,033 (gnh13), 663,743 (gnh09), 685,801 (gnh132), 877,369 (gnaen11), 1,100,000 (wns01) seeds per pound. In seed mixes plant up to 0.125 lb pls per acre (us97).

Cultivation: Plant plugs on 1-1.5' centers. Saturated to moist soils, full sun to full shade. Partial to full sun. Shade tolerant. Low drought tolerance. Tolerates inundation to 6.0", tolerant of some water level fluctuations. Nutrient load tolerance high. Salt tolerance low to moderate. Siltation tolerance moderate.

bottom line: Dormant seeding is best for field establishment. Spring seeding can fail, but then again, fresh seed may potentially work well. Flipflop & crossover species, trending towards strong dormancy. Germ 47.9, 43.5, 18, sd 28.8, r3.0-92 (89)%. Dorm 29.5, 6.0, 0.0, sd 33.4, r0.0-91 (91)%. Test 39, 35, 34, r30-74 days. (#27).\*\*

Description: Perennial sedge, caespitose, forming solid clumps; roots 8" minimum depth; culms stout, but thick & flaccid, easily compressed & crimped, 2-4 mm wide, often 2 mm or more wide a couple of centimeters below the inflorescence, triangular, soft, septate, scabrous, 1.25-3.0(4.0)' tall; leaf blades lax, 4-10 mm wide septate, the middle & upper ventral bands becoming rugose-puckered, thin & easily torn at the summit; sheaths cross-wrinkled, & easily broken on inner side as in *C vulpinoidea*; heads inflorescences 1.5-10 cm long; spikelets several, in dense, spiciform panicles 2-10 cm long, inflorescence compound, of many tiny crowded sessile spikelets, each group of which resemble a single spikelet; staminate scales; pistillate scales 2.5 x 1.0 mm, ovate; acute, acuminate, or cuspidate, about equaling the base of the beak; perigynia spreading or ascending, 5.0 x 1.5 mm, 3.5-5.0 mm long, beak 2.5 mm, plano-convex, nerveless on the flat face, strongly few nerved on both faces, 3.0-8.0 mm long, lanceolate, shiny green to brown, pale, inflated, with green, serrulate beak as long or longer than the body, *spongy thickened at the base*, maturing in June; N 2n = 52 (marked down to 2n = 48 in Japan. If you can find a lower advertised chromosome count, Wal-Mart will match it at the check out counter). key features: Thick soft stems are distinctive.

Comments: status: phenology: Blooms late April to late May. In northern Illinois. collect seeds 2<sup>nd</sup> to 4<sup>th</sup> week in June.

heads in spring. Cool season, bunching, & calcareous soils. Seed sources nursery production plots genetic source Blackberry Twp, Kane, Co, & DuPage & Will cos (Horlock), & drainage ditches, Green River Lowland, Tampico Twp, Whiteside Co.

Bob Horlock was Seedsman for The Natural Garden in the 1980s & early 1990s, & a pioneer in this industry. We were fortunate to have a friendly business relationship with Bob during the early years of our nursery. Bob's seeds were collected in DuPage, Kane, & Will Cos. We traded back & forth with him, & several of our production plots originate from his collections. Bob passed away in the early 1990s.

“A common, rather late sedge that is easily recognized by its thick soft stems, friable sheaths & the yellow green color of the soft leaves. There is a marked variation in the size of the plant, width of the leaves, etc.” (ewf55)

Associates: Larval host. Provides food & cover for wildlife. Provides food for sora & yellow rails, swamp sparrows, tree sparrows, snipe & other songbirds. Deer resistant. Seven of seven plants analyzed by Miller et al (1999) were mycorrhizal, having arbuscles, vesicles, & hyphae.

ethnobotany:

VHFS: “Robust plants with large heads, long perigynia & wide leaves suggest var *maxima* Chapman“ (ewf59) which is reported from Porter Co (sw94). Variety *maxima* has larger leaves more than 1 cm & perigynia 5-6 mm long.

In New England, var *stipata*, 2n = 52, swamps, marshes, alluvial bottoms, meadows, & bogs, (afne).



*Carex stipata*

Seed photo courtesy of Bend Seed Extractory, Seeds of Success, <http://seedsofsuccess.smugmug.com>.

**Δ *Carex straminea*** Willdenow ex Schkuhr (or just Willdenow?) \*IN, MI AWNED OVAL SEDGE, aka EASTERN STRAW SEDGE, STRAW COLORED SEDGE, STRAW SEDGE, (*stramineus* -a -um straw-colored, like straw, from Latin *stramineus*, made of straw, straw-colored, for the color & texture of the plant) Obligate Subgenus *Vignae* Section *Ovales*

Habitat: Pin Oak savannas, peaty prairie zone around acid bogs. Low wet areas. Wet savannas, also along a railroad (m02). In New England, swamps, fresh water marshes, meadows, & swales, in sandy or peaty, acidic soils (afne).

distribution/range: Rare in Illinois, Menard, Ogle, & Winnebago cos.

87% dormant. (gni no date) Curbstone data indicates there are germination inhibitors in the perigynia of this sp. (Break to Twilight Zone theme in the background, do-do do-do; do-dod-do-do, &c.

bottom line: Dormant seed unhulled seed, spring plant hulled seed. Run from any one mentioning dehulled seed, run like the wind. Run fast, run far, do not look back. Someone said they fear a man of one book, especially when it is not a dictionary. Flipflop species. Germ 29.8, 12.5, na, sd 37.9, r0.0-94 (94)%. Dorm 62.8, 80.5, na, sd 36.7, r0.0-90 (90)%. Test 27, 36, na, r19-37 days. (#5).\*\*

Description: N 2n = 74. key features:

Comments: status: Special Concern in Wisconsin. Threatened in Indiana. Endangered (special concern? 1992) in Michigan. phenology: Blooms June – July (m02). Fruiting early summer (fna). 1,164,103 (gnh06); 1,587,413 (gnh09); 1,600,000 (gn00, jfn04); 1,601,410 (gnh02); 1,876,033 (hulled gna07); 2,119,626 (hulled gnh13\*) seeds per pound.

“Uncommon. Sandy roadsides south of Rock Cut & north of Shirland; the CB&Q right-of-way south of Killbuck Creek. Striate sheaths, awned scales & a flexuous inflorescence characterize this sp.” (ewf55)

VHFS: [*Carex richii* (Fern) Mack, *C straminea* Willd ex Schkuhr var *straminea*]

Hybrid *C scoparia* Schkuhr ex Willd var *scoparia* X *C straminea* Willd.



Line drawing Britton & Brown (1913) courtesy of Kentucky Native Plant Society. Photo Robert H. Mohlenbrock USDA-NRCS PLANTS Database - Not copyrighted image. 2<sup>nd</sup> line drawing Mark Mohlenbrock, USDA-NRCS PLANTS Database / USDA NRCS. *Wetland flora: Field office illustrated guide to plant species*. USDA Natural Resources Conservation Service. Not copyrighted image. Seed photo Steve Hurst USDA-NRCS PLANTS Database. - Not copyrighted image.

**Carex striatula** Michaux LINED SEDGE,

Habitat: Rich woods (m02). In New England, rich, deciduous or mixed woods (afne). distribution/range: Rare, confined to the s 3 tiers of Illinois cos.

Culture: Spp in the *C laxiflora* group are reported to have hydrophilic seeds (cu08).

Description: N 2n = 36, 40. key features:

Comments: status: phenology: Blooms April - May

Δ *Carex stricta* Lamarck COMMON TUSsock SEDGE, aka HUMMOCK SEDGE, MEADOW SEDGE, PRAIRIE SEDGE, SEDGE, TUSsock SEDGE, UPRIGHT SEDGE, UPTIGHT SEDGE, (*strictus -a -um, -strictus* strict, upright, erect, tight, rigid, from Latin *strictus*, drawn tight, bound up, maybe from the fibrillose lower sheaths appearing as laced together) obl Subgenus *Carex* Section *Acutae*

Habitat: Characteristic of prairie sloughs, but also found in other wet areas. Abundant sp, conspicuous or dominant in respective habitats, fens & wet meadows; open acid or alkaline peaty shores & meadows, often where water levels fluctuate slightly (Fassett); One of the most common marsh & wet meadow sedges. Swamps, streambanks, & wet meadows (ecs). Common in sedge meadows & fens. Sedge meadows, fens, marshes (m02). In New England, swamps, shores, & meadows (afne). Shade tolerant. Low drought tolerance. No salt tolerance. pH 3.5-7.0. distribution/range: Occasional to common in the n ¾ of Illinois, apparently absent elsewhere. Considered an Ice Age relict in Missouri.

Culture: “Sow fresh, fall sow, or moist cold treatment. Light to very light cover. Very good germination” (mfd93). Cold moist stratify or dormant seed, light (Wade). 60 days cold moist stratification (pm09). Seeds germinate after about 60 days of cold, moist stratification. Seeds need light to break dormancy & germinate. Plant on top of growing media & do not cover. (he99) “Fall plant or cold stratify for 2 to 4 weeks for best results. Sow seeds on soil surface at 70°F & water.” (ew12) Good seed is hard to find. Viable seed germinates so-so (~30% tops) in greenhouse with no treatment (gni). Fresh seed is not necessary, dormant seed or moist cold stratify. Small seeds need light to germinate, scant soil cover. 848,000 (pm01), 857,600 (ew12), 866,412 (gnaj06), 917,172 (gnam07), 981,622 (gnoa10), 999,119 (gnhe13), 1,085,167 (gnhm13), 1,135,000 (gnhj02), 1,343,195 (gnhj14), 1,800,000 (ecs), 3,000,000 (lhn91, jfn04), 3,008,000 (aes10) seeds per pound.

cultivation: Space plants 1.25-1.5'. Continually wet soils, full sun to partial shade.

bottom line: Field establishment from dormant seeding only. Rare lots may grow from spring seedlings. Infrequent flipflop species. Germ 24.4, 20, na, sd 23.9, r1.0-88 (87)%. Dorm 55, 53, 53, sd 24.3, r0.0-84 (84)%. Test 34, 34, 29, r27-46 days. (#23).\*\*

Description: Native, perennial sedge, usually forming very dense tussocks, but occasionally in uniform stands; 1.5-3.0' on mounds of peat to 2 dm high; roots 18” minimum depth; culms 30-150 cm tall, to 3'; bases slender, reddish, pinnate-fibrillose; leaves slightly M-shaped, long & slender 2-4.5 mm wide, wiry, strongly glaucous toward the tips when young, later green, lowest leaves reduced to bladeless sheaths, which split ventrally, becoming pinnately fibrillose sheaths, ligule acute, as high as wide, longer than width of blade forming sharp “V”; heads; spikes inflorescence arching, with 3-9 slender, many flowered pistillate spikelets below several slender staminate; pistillate scales purplish rounded, usually longer than the perigynia, but rarely much shorter; perigynia ascending, ovate, longer than broad when young, somewhat flattened, 2-3 mm long 1-1.6 mm wide, pale green becoming brown when falling, faintly nerved, 2 nerved, but never 3 nerved, *sometimes aborted by fungi*; (emphasis added) achenes flattened; stigmas 2; N 2n = 68. key features

Comments: status: phenology: Blooms April 26 to June 01, mean week 11. Blooms April – June (m02). In northern Illinois, collect seeds 1<sup>st</sup> to 3<sup>rd</sup> week in June. Collect seeds in se Wisconsin in July - August (Heon et al 1999). Bunching, plants often forming dense tussocks, also spread by elongate rhizomes. Tussocks are formed by vertically growing rhizomes! In wetland restoration, this sp is grossly over specified in very inappropriate habitats. It is a conservative, clean ground-water sedge, not dip-stick-ditch weed as it is used. Seed source fen remnant Campton Twp, Kane Co & sedge meadow remnants, Bureau, Lee, & Hume & Montmorency Twps, Whiteside cos.

“A very common hummock forming sedge found in marshes & other wet places throughout the Co.” (ewf55) “It is the most common member of the group which includes *C haydenii*, *C emoryi*, & *C substricta*.” (ewf59)

Associates: Larval host of *Euphyes conspicua* BLACK DASH SKIPPER, *Poanes massasoit* MULBERRY WING, & *Satyrodes eurydice*, EYED BROWN BUTTERFLY. Provides food & cover for wildlife. *C stricta* is considered nonmycorrhizal & has bulbous-based root hairs. The unusual root hairs may represent an adaptation for nonmycorrhizal growth. (Miller et al 1999) Zero of thirteen plants analyzed by Miller et al (1999) were mycorrhizal.

VHFS: The most common element in Chicago is var *strictior* (Dewey) Carey, which has glaucous younger leaves & typically sheaths with scaberulous-puberulent hyaline ventral bands. [including *C stricta angustata*] [*C stricta* var *strictior* (Dewey) J Carey]

Hybrids *Carex lasiocarpa* Ehrh X *C stricta* Lama & *C paleacea* Schreb ex Wahlenb X *C stricta* Lam.



*Carex stricta*

**Carex stricta decora** see *C haydenii*

**Carex stricta elongata** see *C emoryi*

**Carex styloflexa** Buckley BENT SEDGE

Habitat: Rich woods, low woods (m02). In New England, moist, rich woods & springheads (afne). distribution/range: Rare, confined to the s 1/6 of Illinois.

Culture:

Description: N 2n = 48. key features:

Comments: status: phenology: Blooms April – May (m02).

VHFS:

**Carex suberecta** (Olney) Britton PRAIRIE STRAW SEDGE, aka POINTED FEN SEDGE, WEDGE FRUITED OVAL SEDGE, (*suberectus* -a -um somewhat erect, from Latin *sub*, under, below, almost, less so than a similar plant, & *erectus*, erect, for the elongate, ascending culms.) Subgenus *Vignae* Section *Ovales*

Habitat: Open marshes & prairies, fens, marly fens, & moist dolomitic flats. Marshes, fens, wet prairies, wet meadows (m02). distribution/range: Occasional in the n 2/3 of Illinois, apparently absent in the s 1/3 (m02). “Found by us only on the bank of Killbuck Creek at US Rt. No. 51.” (ewf55) “Uncommon, but known from a number of low prairie situations in Ogle, DeKalb, & Winnebago Cos.” (ewf59)

Description: **describe ligule**; pistillate scales 4 x 1.5 mm; perigynia 5 x 2.5 mm; N 2n = 72. key features

Comments: status: Special concern in Wisconsin. phenology: Blooms May 11 to June 02, mean week 12. Blooms May – June (m02). Seed source fen & sedge meadow remnants, Bureau, Lee, & Whiteside cos.

VHFS: [*Carex tenera* Dewey var *suberecta* Olney]

**Carex X subimpressa** Clokey SEDGE Subgenus *Carex* Section *Paludosae*

Habitat: Marshes, low wet meadows. Marshes (m02) distribution/range: Very local, Jackson, Monroe, & Montcalm cos. in Michigan, & Macon, Montgomery, & St. Clair cos. in Illinois, & into Missouri & Kansas.

Culture: Clone, achenes rarely formed

Description: Hybrid (?) between *C hyanolepis* & *C pellita*, as of 1994, unknown from the Chicago region. Similar to *C trichocarpa*, but with obscure nerves on the perigynia & shorter teeth on the perigynia beak. key features: “Versus *Carex lanuginosa*, this sp is more robust. Versus *C hyanolepis*, this sp is less robust. The grass-green leaves are similar in color to those of *C lanuginosa*. Culm mostly exceeding the glabrous, narrow (less than 6 mm) leaves, culms not persistent, pistillate spikes long, 1-9 cm, staminate spikes usually long pedunculate. Perigynia spreading-ascending, ovoid-lanceoloid, obscurely nerved, beaked, the beak toothed, the whole perigynium densely pubescent.” (Ilpin)

Comments: status: phenology: Blooms May 09, mean week 9. Blooms June (m02). 6-7. According to Voss, 1972, this sp is of uncertain status, & is often suspected of being a hybrid. Our stock came from a downstate railroad colony rescued from decline & destruction by Ken Schaal. Our material starts flowering in late April, as does its parents, contrary to

VHFS: [*Carex impressa* X *C lanuginosa*, *C hyalinolepis* X *C pellita*]

**Carex substricta** (Kük) Mack See *C aquatilis altior*

**Carex X subviridula** (Kük) Fern [*C flava* L X *C viridula* Michx subsp *viridula* var *viridula*]

**Carex X sullivantii** Boott [*C gracillima* Schwein X *C hirtifolia* Mack]

**Carex Swanii** (Fernald) Mackenzie DOWNY GREEN SEDGE, aka *CAREX DE SWAN*, HAIRY SAVANNA SEDGE, SWAN SEDGE, SWAN'S SEDGE, (*swanii* for Charles Walter (Wally) Swan, 1838-1921, a naval surgeon & early member of the New England Botanical Club.) facu Subgenus *Carex* Section *Virescentes*.

**Habitat:** Dry woods & fields (ecs). Dry, mesic & wet mesic savanna; dry sand (Fassett). Black Oak savanna & hydromesophytic swamp forests of the Lake Michigan dunes. Savannas, dry woods, swamp forests (m02). “Dry to wet-mesic forests, scrub; 0–1000 m” (fna). In New England, woods, often dry, thickets & clearings (afne). “An eastern plant that is often found in Indiana but which is rare in Illinois. It grows on the edge of a prairie slough on the Nimtz farm near Rock Cut Forest Preserve in Winnebago Co.” (ewf59).  
**distribution/range:** Scattered throughout Illinois but not particularly common. Known but not mapped from Frymire's Timber, near Victoria, Copley Twp, Knox Co.

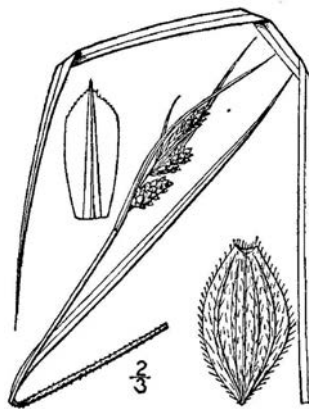
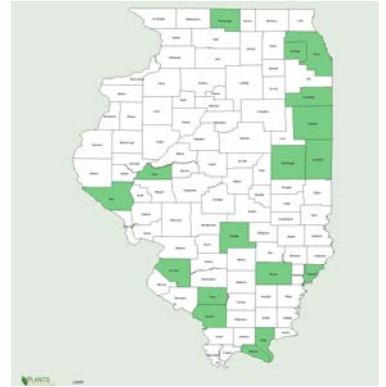
**Culture:** Dormant seed or moist cold stratify-light. Difficult. 378,000 (lhn91); 686,760 (gnav01); 800,000 (gn) seeds per pound.

**bottom line:** Limited datum indicates field establishment from dormant seeding only. Germ 12%. Dorm 76%. Test 34 days. (#1).\*\*

**Description:** Plants caespitose, tufted from short rhizomes, erect to spreading; roots; culms; (0.5)1.5-2.5', reddish purple at the base; leaves pubescent, 1-4 mm wide; spikes bracts usually sheathless, spikelets usually crowded near culm tip, short, cylindrical, erect, terminal spikelet pistillate at tip; pistillate scales 2.0 x 1.0 mm; perigynia 2.0 x 1.0 mm, small, green, pubescent; stigmas; N 2n = 54. **key features:**

**Comments:** **status:** Special concern in Wisconsin. **phenology:** Blooms mid May to mid June. Fruiting late spring to early summer. In northern Illinois, collect seeds 1<sup>st</sup> to 3<sup>rd</sup> week in June. Genetic source near Victoria, Copley Twp, Knox Co.

VHFS: [*Carex virescens* Muhl ex Willd var *swanii* Fern]



*Carex Swanii*

**Carex syncocephala** J Carey \*WI MANYHEAD SEDGE, aka *CAREX COMPACT*, MANY-HEADED OVAL SEDGE, (*syncocephalus* possibly meaning with heads cut short, or clipped.)

**Habitat:** In New England, open sandy or peaty shores (afne). **distribution/range:**

**Culture:**

**Description:** N 2n = 64. **key features:**



**Carex tenella** see *C disperma*

**Carex tenera** Dewey MARSH STRAW SEDGE, aka FLEXED SEDGE, NARROW LEAVED OVAL SEDGE, REMOTE SEDGE, QUILL SEDGE, (*tener, tenera, tenerum* New Latin, slender, tender, soft, from Latin adjective *tener*, soft, tender, or delicate, probably from the weak appearance of flexed, slender inflorescence axis.) Subgenus *Vignae* Section *Ovales*

Habitat: Wet to mesic savannas & nearby prairies, swampy depressions, & mesophytic bluffs (Mohlenbrock 1999). Wet to mesic savannas & near by open areas, swampy depressions. Floodplain woods, wet meadows, mesic prairies, swampy depressions, & wet ditches (m02) “Uncommon sedge of prairie roadsides & edge of woods...” (ewf59). distribution/range: Occasional to common throughout Illinois.

Culture: 60 days cold moist stratification (pm09). 320,000 (pm03); 801,412 (gnam08); 878,993 (gna04); 936,082 (gna06) seeds per pound. Occasionally available from Taylor Creek, in Jim Steffen’s garden at Chicago Botanical Gardens, & a grower in central Illinois, via Prairie Moon.

bottom line: Dormant seed only, seed is significantly dormant. Germ 19.7, 12. na, sd 19.9, r0.0-47 (47)%. Dorm 44, 42, 42, sd 2.8, r42-48 (6.0)%. Test 36, 35, na, r23-42 days. (#3).\*\*

Description: Erect, herbaceous, perennial, native sedge, common, plants caespitose, slender, culms 1-15 dm tall, without pseudoculms; leaf blades narrow, 1-4 mm wide; spikes staminate flowers confined to tapering spikelet bases spikelets all alike, short sessile, spikelets remote on arching zigzag culm, markedly moniliform inflorescence; perigynia ovate, 2-2.5x as long as wide, 4.5 x 2.5 mm, 3-4 mm long, 1.5-2 mm wide, rather long beaked, nerved on inner face less than 2 mm wide, thin & scale-like, with translucent margins or wings, mostly appressed & all or all but the beaks hidden by the scales, becoming brown at maturity; stigmas 2; N 2n = 52, 54, 56. key features:

Comments: status: phenology: Blooms May 16 to June 05, mean week 12. Blooms May – June (m02). Seed source CBG Cook Co.

“Common in damp & dry open places, usually the edge of woods & on prairies. The moniliform head is usually nodding.” (ewf55) “Often called *C straminea*.” (ewf59)?

Associates: *C tenera* is considered nonmycorrhizal & has bulbous-based root hairs. The unusual root hairs may represent an adaptation for nonmycorrhizal growth. (Miller et al 1999). Zero of two plants analyzed by Miller et al (1999) were mycorrhizal. Seeds are wind dispersed.

VHFS: [*C straminea*]

Wetter, et al 2001 lists var *echinoides* (Fern) Weigand, & var *tenera* NARROW LEAFED OVAL SEDGE for Wisconsin. Swink & Wilhelm (1994) list var *echinoides*, w/ larger perigynia 4.-4.4 mm long & more tapering, elongate, spreading beaks as occasional in Chicago region.

Var *tenera*, 2n = 52, 54, 56, meadows & open woods. Hybrid *C tenera* Dewey X *C tinctoria* (Fern) Fern.

Occasionally seems to hybridize with *C normalis* (Fassett).

**Carex tenuiflora** Wahlenberg \*WI SMALL HEADED BOG SEDGE, aka SPARSEFLOWER SEDGE, (*tenuiflorus -a -um* with slender flowers, from Latin *tenuis*, thin, slender, or narrow, & *flos*, flower) Obligate

Habitat: Bogs & swamp forests (ws92). In New England, sphagnum bogs & mossy woods (afne). distribution/range:

Culture:

Description: N key features:

Comments: status: Special concern in Wisconsin. phenology: Blooms

**Carex tetanica** Schkuhr \*NC, VA RIGID SEDGE, aka COMMON STIFF SEDGE, RIGID SEDGE, RUNNING PRAIRIE SEDGE, (as opposed to UNCOMMON STIFF SEDGE or COMMON LIMP SEDGE) (from Greek *tetanos*, stiff, stretched, & *ikos*, belonging to, for the stiff straight pistillate spikes.) Subgenus *Carex* Section *Panicea*.

Habitat: Wet prairies, meadows & fens, wet calcareous prairies, wet calcareous flats, & peaty fens. Wet prairies, fens, wet meadows (m02). In New England, calcareous bogs (afne). In the SE, moist forests, rare. distribution/range: Occasional in the n ½ of Illinois. Because of the confusion with *Carex meadii*, the range of this sp is not clear.

Sp is not in the native seed or plant trade!

Description: roots colonial, long rhizomatous; leaf blades blue green, 2-4.5 mm wide sheaths; spikes staminate spikelet long-stalked & round scaled, spikelets slender, elongate, 5-20 flowered, borne all along the leafy bracted culms as long as the leaves; staminate scales very round or blunt at apex; pistillate scales 3 x 2 mm; perigynia 3.5 x 1.5 mm 14-30 nerved, green, ovoid to bluntly triangular & somewhat asymmetrical; stigmas 3; N 2n = ? key features

Comments: status: Rare in North Carolina. Watch List in Virginia. phenology: Blooms May 10 to May 29. mean week 11.

grass.” (ewf59). Seed source west side of Daisy Hill Prairie, Tiskilwa, Bureau Co, Illinois, United States of America, 4<sup>th</sup> Planet (Earth), Sol System, Milky Way Galaxy, & Mind of God.

“Common on prairies. South of Harrison, the high prairie on Samuelson road east of Camp Grant, the gravel prairies east of Rt. No. 173. It grows typically on high prairie but is found on low prairies where it is less stoloniferous & more inclined to be loosely caespitose.” (ewf55)

One of two plants analyzed by Miller et al (1999) were mycorrhizal, having vesicles & hyphae.

VHFS: [*Carex tetanica* Shuckr var *tetanica*]

**Carex tetanica meadii** see *C meadii*

**Carex tetanica woodii** see *C woodii*

**Δ Carex texensis** (Torrey ex LH Bailey) LH Bailey TEXAS SEDGE, (*texensis -is -e* Texan, of or from Texas, USA.)

Subgenus *Vignea* Section *Bracteosae*.

Habitat: Occasional as a lawn weed, mesic-dry, rocky or sandy woods. Disturbed soil, particularly in lawns & cemeteries (m02). distribution/range: Rare & scattered in Illinois, apparently absent from the n 1/3 of Illinois.

Culture: Moist cold stratify. Small seeds need light to germinate, scant soil cover. (Code C, D Ken Schaal). 384,000 (pm01); 756,000 (lhn01); 800,000 (gni) seeds per pound. Available Bluestem Prairie Nursery.

Description: Caespitose; culms slender, taller than the leaves, smooth; leaves up to 1.5 mm wide; sheaths pale green, lower stramineous to brown; heads spikelets 2-8; spikes androgynous, moniliform spikes 0.5-3 cm long; pistillate scales ovate, surpassing the base of the beak; perigynia plano-convex, lanceolate, 2.5-3 mm, smooth margined, widely spreading to deflexed, *spongy-thickened at base, the spongy portion to 1 mm long*; stigmas filiform, longer than the beak; N. key features:

Comments: status: phenology: Blooms April - June (m02). In northern Illinois, collect seeds in 1<sup>st</sup> 1/2 of June. Known from Springdale Cemetery, Peoria. Useful in landscaping, a delicate “bonsai ornamental grass”, tolerant of foot traffic (<http://pss.uvm.edu/pss123/grscarex.html> )

VHFS: Sometimes seen as *Carex texensis* (Torr) LH Bailey. [*C retroflexa* Muhl var *texensis* BC, or *C retroflexa* Muhl var *texensis* (GS Torrey) Fern, *C rosea* Schkuhr ex Willd var *texensis* Torr ex LH Bailey,]

**Carex tinctoria** (Fernald) Fernald \* MI TINGED SEDGE, aka *CAREX COLORÉ*, TINGED OVAL SEDGE, (*tinctoria -a -um* colored, dyed, used in dying, from Latin *tinctoria*, from *tingo*, to wet; to dye)

Habitat: In New England, fields & open woods (afne). distribution/range: Rare & local in the Great Lakes Region.

Culture:

Description: N 2n = 36 + IV key features:

Comments: status: Special concern in Michigan. phenology: Blooms

VHFS: [*Carex mirabilis* Dewey var *tinctoria* Fern]

afne lists the hybrids *C scoparia* Schkuhr ex Willd var *scoparia* X *C tinctoria* (Fern) Fern & *C tenera* Dewey X *C tinctoria* (Fern) Fern.

**Carex tonsa** (Fernald) EP Bicknell SHAVED SEDGE, aka STIFF SAND SEDGE, (*tonsus -a -um* clipt, sheared, shaven, smooth, from Latin *tonsus*, from *tondeo, tondere*, to shave, for the often hairless perigynia) Section *Montanae*

Habitat: Sterile sandy soil, sand prairies, deep droughty sand. Sand dunes, sand prairies, & rocky woods (m02).

distribution/range: Not common, known from the cos in extreme northwest Illinois, also Lake, Mason, & Pope cos.

Culture: Available from Chesapeake Native Nursery.

Description: densely caespitose; culms short, capillary, much exceeded by the leaves; leaves blades stiff, often conduplicate (folded together), scabrous, the larger are 2.3 - 4.5 mm wide; sheaths lower usually fibrous, & buried in the sand, sheaths reddish or buried ones pale; heads; staminate spikelets usually one, elevated above the pistillate; pistillate spikelets mostly crowded at the base of the plant, or rarely with 1-few elevated & proximal to the staminate; staminate scales; pistillate scales acuminate, often as long or longer than the perigynia; perigynia 3-5 mm long, achene tightly filling the body, *spongy-stipitate*, short pubescent above the middle or commonly glabrous, sometimes faintly few nerved, topped by a two sided bidentate beak 1-3 mm long; N 2n = 32. key features:

Comments: status: phenology: Blooms March 2 to May 01, mean week 6. Blooms April – May (m02). Gleason & Conquist (1960) note this sp can intergrade with *C umbellata* but, in ne Illinois, they are distinct (sw94). Sp reported from Green River SFWA.

VHFS: Var *rugosperma* (Mack) Crins. PARACHUTE SEDGE.

[*C rugosperma* Mack var *tonsa* (Fern) Voss. *C umbellata* in part]

Var *tonsa* 2n = 32, dry sandy fields & roadsides. Var *rugosperma* (Mack) Crins 2n = ?, dry, sandy fields & roadsides. [*Carex rugosperma* Mackenzie]

**Carex torta** Boott ex Tuckerman (or F Boott) \* GA TWISTED SEDGE, aka BEAKED RIVERBANK SEDGE, *CAREX TORDU*, STREAMBED SEDGE, (Latin *tortus*, a twisting, winding, for the short twisted beak of the perigynia. obligate Subgenus *Carex*, formerly Section *Acutae*, now *Phacocystis*)

Habitat: In & along streams, often in rocky streambeds subject to continuously flowing water. Along & in streams (m02). In New England, streambanks (afne). distribution/range: Southern ¼ of Illinois & Whiteside Co (m99). Presumably along banks of Kankakee River in Lake Co, Indiana (sw94)

Culture: bottom line: Limited data shows dormant seeding is significantly necessary. Germ 19%. Dorm 59%. Test 42 days. (#1).\*\*

Description: Perigynia distinctive nerveless, with small twisted beak & purple black pistillate scales with hyaline margins (Mohlenbrock 1999); stigmas N 2n = 66. key features:

Comments: status: Special Concern in Georgia. phenology: Blooms April – June (m02). Fruiting June. An early maturing, diminutive *C stricta*-looking sedge. 807,829 (gnihwpa2003); 815,081 (gnigb2003); 822,464 (gnih2006) seeds per pound.

Significant potential in erosion control, but the genotype Nazis won't use it, but they cheerfully & blindly embrace the biogeographical atrocities of some nurseries with colorful catalogues. Perhaps if we showed a few color photos ...

VHFS: Hybrid *C crinita* Lama X *C torta* Boott.

**Carex torreyi** Tuckermann RED-SHEATHED GREEN SEDGE, aka TORREY'S SEDGE, (*torreyi* for Dr. John Torrey, 1796-1873, a chemist & leading American botanist & with Asa Gray, co-author of *The Flora of North America*.)

Habitat: distribution/range:

Culture:

Description: key features:

Comments: status: Special concern in Wisconsin. phenology: Blooms Fruits summer.

Associates:

VHFS: [*Carex abbreviata* JD Prescott]

**Δ Carex tribuloides** Wahlenberg (Val in m02) AWL-FRUITED OVAL SEDGE, aka BLUNT BROOM SEDGE, BRISTLEBRACT SEDGE, TUFTED MARSH SEDGE, (*tribuloides* from Latin *tribulus*, three-pointed, a caltrop, from Greek *tribolos*, any of various prickly plants, or a threshing board studded with spike, & *-oides*, with the form of. Alternately *tri*, 3, *bulbus*, bulb, & *-oides*, like, resemble.) FACW+ Subgenus *Vignae* Section *Ovales*.

Habitat: Wet meadows & wet woods. Alluvial, upland swamp, peaty marshes, flat peaty fens, wet prairies, wet woods & moist meadows; river floodplains & oxbows. Hummocks & rotted logs on higher river terraces. Sw94 notes its range is nearly identical with the closely related *C projecta*, but *C projecta* is mostly in mesophytic woods & *C tribuloides* is more often in open, peaty marshes & wet prairies. Wet woods, swamps, wet ditches, peaty marshes, swales, wet prairies, wet meadows, peaty fens, oxbows, shores of lakes & ponds (m02). distribution/range: Common throughout Illinois.

Culture: ①60 days cold moist stratification. Surface sow, seeds are very small or need light to naturally break dormancy & germinate (pm09). Dormant seed or moist cold stratify, light.

cultivation: Space plants 1.25-1.5' centers. Wet to mesic soils, full sun to partial shade. Shade tolerant. Low drought tolerance. No salt tolerance. pH 4.8-7.0.

bottom line: Dormant seeding is best; dormancy mechanisms highly variable, ranging from almost totally dormant to non dormant lots. Spring works well some years. Flipflop, germ & dorm highly variable. Germ 44.3, 32, 20, sd 37, r2.0-95 (93)%. Dorm 41.9, 44, 0.0, sd 37.8, r 0.0-93 (93)%. Test 38, 39, na, r28-47 days. (#12).\*\*

Description: Somewhat larger plants with slender pseudoculms, less robust than *C muskingumensis*, plants caespitose, tufted (ewf59); roots 8" minimum depth; culms slender, 1.5-3.0'; leaves 2-10 mm wide; sheaths aphyllopodic; heads inflorescence stiff, rather crowded, spikelets 6-12 mm long, blunt all alike, short sessile; spikes staminate flowers confined to tapering spikelet bases; perigynia 5 x 1.5 mm, incurved-adpressed, lanceolate, 3X long as wide, broadest above type of achene, the marginal wing slightly but abruptly narrowed above the middle thin & scale-like, with translucent margins or wings, perigynia less than 2 mm wide, mostly appressed & all or all but the beaks hidden by the scales, becoming brown at maturity; stigmas 2; N 2n = 70. key features:

Comments: status: phenology: Blooms late May to late June. In northern Illinois, collect seeds in late July - early August. Useful in landscaping. wetland restoration. & moist rain gardens. Closely related to *C projecta*. which is typical of

(jfn04); 1,904,000 (ew12); 1,920,000 (ecs); seeds per pound. Seed source Hamilton Twp, Lee Co. George Milner at V3 reports this fairly reliable from dormant seedlings in the field.

“A rather common sedge of wet places which matures late.” (ewf55) “Matures late. The numerous long, leafy sterile stems develop after flowering time.” (ewf59).

*Carex tribuloides* has overwintering vegetative stems that produce new shoots at the nodes (Ball & Reznicek 2002).

Associates: Wind dispersed! Indeed! Provides food & cover for wildlife.

ethnobotany:

VHFS: Wetter et al 2001 lists var *tribuloides* Wahlenb for Wisconsin. Var *tribuloides* 2n = 70, bottomlands, swales, & meadows.



*Carex tribuloides*

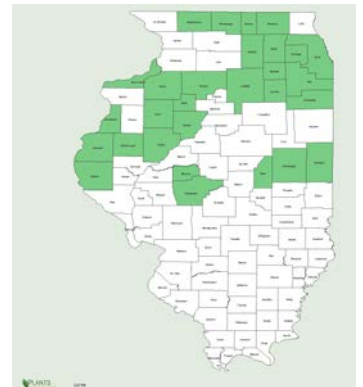
**Carex X trichina** Fernald [*C tenuiflora* Wahlenb X *C trisperma* Dewey]

**Carex triceps hirsuta** see *C hirsutella*

**Δ Carex trichocarpa** Schkuhr (or Muhlenberg ex Willdenow ???, of just Muhlenberg, or just Willdenow) \*CT, MA HAIRY FRUIT SEDGE, aka *CAREX À FRUITS VELUS*, HAIRY-FRUITED LAKE SEDGE, RIGID SEDGE, (from Greek *trichos*, a hair, & *karpos*, fruit, for the hairy perigynia) obl Subgenus *Carex* Section *Paludosae*.

Habitat: A common slough sedge, seldom fruiting. Wet meadows & sloughs-mesic savanna, marshes & wet meadows. Shallow water & wet soils; calcareous soils; open stream valleys & low prairies. Moist calcareous meadows & sloughs, moist thickets, & seeps. Calcareous meadows, sloughs, seeps, marshes (m02). In New England, calcareous marshes, bottomlands, & meadows (afne). distribution/range: Occasional to frequent in the n ½ of Illinois; also Washington Co.

Culture: 60 days cold moist stratification (pm09). “Most often does not produce viable seed & is best started by vegetative methods” (aes2010) Dormant seed or moist cold stratify, light, or cloning. Seed rarely & unreliably available, clone; some lots may be of low viability & mostly dormant (gni). Growth rate rapid. Seedling vigor low. Vegetative spread rate none according to the USDA, but it spreads quickly & aggressively underground, forming large clones. 154,285 (gnihe13); 170,293 (gnhm11); 284,372 (gnam10); 378,000 (lhn91); 384,000 (aes10) seeds per pound.



cultivation: Tolerant of fine & medium textured soils. Anaerobic tolerance high. CaCO3 tolerance medium. Drought tolerance none. Fertility requirement medium. Salinity tolerance none. Shade tolerance intermediate. pH 5.7-7.0.

bottom line: Dormant seeding is mandatory, but plugging one flat per acre is most cost effective. Limited data shows strongly dormant seed 82-91%. Germ 5.5, 5.5, na, sd 2.5, r3.0-8.0 (5.5)%. Dorm 96.5, 86.5, na, sd 4.5, r82-91 (90%). Test 28, 28, na, r27-28 days. (#5).\*\*

Description: Very similar to *C atherodes*, erect, coarse, perennial, native sedge; roots aggressively rhizomatous, forming large monotypic, dense, non-flowering beds, to 10 m across; culms numerous, pseudoculms 0.5-1.5 m high, usually taller than the fruiting culms, bases reddish & pinnate fibrillose; leaves 4-7 mm wide, M-shaped; sheaths mouth of sheath is deeply concave with a *deep purple (reddish) V (or blotch) on the side opposite leaf blade*, (one of the few carices you can ID

beak 3 mm long, or beak 6-9 mm long, teeth 2 mm, ovoid, somewhat inflated, short-white-hairy (pubescent); stigmas 3. N 2n = ? key features: According to ewf, the bright purple sheath mouth & *the frequent absence of fruiting stems* are distinctive. Comments: status: Special Concern in Connecticut & Threatened in Massachusetts. phenology: Blooms May - June. Fruiting May - July. In northern Illinois, collect seeds in June. Wetland restoration, excellent erosion control, & robust rain gardens. Many colonies may not produce crops every year, with good crops every 3-5 years if you are lucky. Seed source wet railroad remnants, Providence Moraine at Wyand, BNRR west of Arlington, & isolated upland basins in Hartz's Sedge Meadow, Gold Twp, all in Bureau Co. Occasional lots from McHenry Co.

“A common wet soil sedge that fruits in early June. The spikes are greatly overtopped & hidden by the long leaves. Large patches are often completely sterile. The purple sheath mouth is distinctive.” (ewf55)  
Associates: Larval host *Satyroides eurydice* EYED BROWN BUTTERFLY, & *Euphyes bimacula* TWO-SPOTTED SKIPPER. Deer resistant.

**Carex trisperma** Dewey \* IL THREE-SEEDED SEDGE, aka *CAREX TRISPERME*, THREE-FRUITED SEDGE, THREE-SEEDED BOG SEDGE, (from Greek *treis*, three & *sperma*, seed, for the few seeded spikes)

Habitat: Sphagnum bogs. Tamarack swamps, sphagnum bogs (m02). In New England, sphagnum, wet woods & bogs (afne). distribution/range: Very rare, Lake Co Illinois.

Culture:

Description: N 2n = 60. key features:

Comments: status: Endangered in Illinois phenology: Blooms May 17 to May 24, mean week 12. Blooms June - July (m02). Fruiting June - August.

VHFS: [*C trisperma* var *billingsii* OW Knight]

Var *trisperma* ranges over most of the ne ¼ of the lower 48 states. Var *billingsii* OW Knight is known from Pennsylvania & New Jersey to Maine.

**Δ Carex tuckermanii** Dewey (or Boott) \*CT, IL, MD, MA, NJ TUCKERMAN'S SEDGE, aka BENT SEEDED HOP SEDGE, *CAREX DE TUCKERMAN*, (Edward *Tuckerman*, 1817-1886, American botanist & lichenologist) Subgenus *Carex* Section *Vesicariae*

Habitat: Plant of the northern wet woods. Upland glacial depressions in mesic savannas; wet hollows & meadows, floodplain forests. Streambanks, moist woods, & marshes (ecs). “Upland depressions in wet savannas”??????, or should it be wet depressions in upland savannas (rh02). In New England, meadows, shores, & swamps (afne). distribution/range: Rare, confined to the northeast corner of Illinois; also Hancock Co.

Culture: Cold moist stratify for 60 days or dormant seed, needs light, sow on soil surface (Wade). 60 days cold moist stratification (pm09). Germination moderate, should remove perigynia or give light cover (dl). Germinates sporadically in greenhouse w/o cold stratification. (gni) 60,000 (pm2001); 64,000 (pm); 87,885\* (gniavs2002) seeds per pound.

Description: Bunch type spreading from short rhizomes; roots forms large tussocks; culms 1-3'; leaves w/ many long leaves 2-6mm wide; sheaths; heads pistillate spikelets short to long-cylindrical, often arching, scattered on the culm; perigynia 7-10mm long, 4-6 mm wide, often more than 5 mm broad, broadly short-ovoid, shiny, becoming light brown; achenes unsymmetrical, invaginated on one side (as if collapsed), “bent”, or with a dent in one side stigmas; N 2n = ? key features:

Comments: status: Special concern in Connecticut. Endangered in Illinois, Maryland, Massachusetts, & New Jersey. phenology: Blooms April - June (m02). Fruiting June - August. Wetland restoration, provides food for wildlife. Seed source nursery production, from se Minnesota, & southern Wisconsin.

The ripe seed head looks like a shiny brown hornworm. Specimens are in the Bebb collection in Rockford College & Chicago Natural History Museum (ewf59).

**Carex tumulicola** Mackenzie FOOTHILL SEDGE, aka SPLITAWN SEDGE, (*tumulicolus -a -um* dwelling on mounds or hillocks, from *tumus*, an artificial hill or mound over a grave, & *cola*, from *incola*, dweller, inhabitant from *-cola/-colus* suffix, Latin; akin to Latin *tumēre* to swell)

Habitat: Dry sunny meadows & open forests. distribution/range:

Culture: Fourth Corner Nursery.

Description: N key features:

Comments: status: phenology: Fruiting late spring to early summer.

VHFS:

**Δ Carex tvphina** Michaux \* CT. ME. MA. MI. NY. PA CATTAIL SEDGE. (*tvphinus -a -um* (tee-FEE-nus) like *Tvpha*

Habitat: Moist or wet woods, marshes, & fens. Deciduous floodplain forests of large rivers (Fassett). Bottomland woods, swamps, & wet meadows (m02). In New England, shores, meadows, & wet woods (afne). distribution/range: Occasional in the s ½ of Illinois, usually infrequent elsewhere. Known from the fen section of Hartz's Sedge Meadow, Gold Twp, Bureau Co.

Culture: Cold moist stratify or dormant seed (Wade). 60 days cold moist stratification (pm09). "Fall plant or cold stratify for 2 to 4 weeks for best results. Sow seeds on soil surface at 70°F & water." (ew12) Growth rate moderate. Seedling vigor low. Vegetative spread rate none. 224,000 (pm01); 235,200 (ew12); 240,000 (aes10); 241,811 (gn06); 246,000 (jfn04); 453,600 (lhn91); 652,299 (gnian)

cultivation: Space plants 1.0-1.5'. Continually wet soils, full sun to partial shade. Tolerant of fine & medium textured soils. Anaerobic tolerance high. CaCO<sub>3</sub> tolerance medium. Drought tolerance none. Fertility requirement medium. Salinity tolerance none. pH 5.7-7.0.

bottom line: Test data indicate mixed dormancy mechanisms, field sow dormant for insurance. Flipflop, germ & dorm highly variable. Germ 50.5, 50.5, na, r9.0-92 (83)%. Dorm 41, 41, na, r2.0-80 (78)%. Test 31, 31, na r28-33 days. (#2).\*\*

Description: Very similar to *C squarrosa*. Plants ≈ 5 dm tall; culms densely tufted; leaves 5-9 mm wide, upper leaves taller than stems; perigynia 30-60 per spikelet, divergent, inflated, the body obovoid, abruptly beaked; N 2n = ? key features:

Comments: status: Special concern in Connecticut. Possibly extirpated in Maine. Threatened in Massachusetts, Michigan, & New York. Endangered in Pennsylvania. phenology: Blooms June - September (m02). Suited for rain gardens. Coming soon to a seed room near you.

VHFS: [*Carex squarrosa* L var *typhina* (Michx) Nutt, *C typhinoides* Schwein]

***Carex umbellata*** Schkuhr ex Willdenow (or just Schkuhr) \*NH PARASOL SEDGE, aka *CAREX EN OMBELLE*, EARLY OAK SEDGE, HIDDEN SEDGE, LAX SAND SEDGE, SAND SEDGE, (*umbellatus -a -um* (um-bel-AH-tus) in umbells, umbrella-like flower heads, umbelliferous, from Latin *umbella*, *umbell*, umbrella, "a little shadow", & *-atus*, possessive of or likeness of something, for the flowers appearing to be in umbels.) (Pensylvanica group Fassett) Subgenus *Carex* Section *Montanae*

Habitat: Sandy soil, dry mesic prairies, dry prairie kames, antedunal prairies of Illinois Beach State Park, & the old beach ridges north of Gary. Dry, rocky woods (m02). In New England, dry soil in open woods, clearings & fields (afne) distribution/range: Very rare, Jackson & Randolph cos.

Description: Small tufted sedges, densely caespitose; roots spreading by short tillers; culms slender, shorter than the leaves, sharply triangular & scabrous on the angles, 5-15 (54) cm tall, bases brown to red purple leaves blades lax to stiff, to 2.5 mm wide, scabrous, sheaths; staminate spikelet 1; pistillate scales 4.5 x 1.5 mm, acute to short acuminate, shorter than to a little longer the perigynium; perigynia minutely pubescent, with only 2 ribs (one strong nerve on each face), perigynia 4 mm (less than 3.4 mm) x 1.5 mm, the body obtusely trigonous to subterete, contracted to a bidentate beak to 1 mm long, *the stipe thick, spongy, & cuneate*; stigmas 3; N 2n = 30, 32. key features: Similar to *C abdita*, but with larger, sometimes glabrous perigynia (less than 3.4 mm long, 3-4 mm long, with beak 1-2 mm long) & coarser stiffer growth, leaves 1-4 mm wide. This sedge is common in open sands, not covering to ground with sod like *C pensylvanica*, blooming slightly earlier than *C pensylvanica*.

Comments: status: Endangered in New Hampshire. phenology: Blooms April 12 to May 04, mean week 08. Blooms April (m02). Flowering April to May-June (or 3-6 Ilpin).

"An early mat-forming sedge that is abundant on the gravel hills east of Ill Rt No 173 & to a less extent on the sand hills north of Shirland. It is also in Ogle & Boone cos." (ewf55) In ewf59 *C umbellata* Schk. "An early mat forming found, but not abundantly, on dry prairie hilltops in all the cos of the area & on sand hills in northern Winnebago Co

I have seen bumblebees working a gravel kame in Lee Co when this is the only sp blooming. The seeds of this sp are ant-dispersed (Ilpin, Handel 1978).

VHFS: Sw94 note all the Chicago material is referable to *C abdita*, but most current authors include it in *C umbellata*. Hybrid *Carex pensylvanica* Lamarck X *Carex umbellata* Schkuhr ex Willdenow. See also *C tonsa*. [*C abdita* EP Bicknell]

***Carex unilateralis*** Mackenzie LATERAL SEDGE, aka MACKENZIE LATERAL SEDGE, (*unilateralis* one-sided)

Habitat: Shallow wetlands. distribution/range: Western

Culture: Available Fourth Corner Nursery



*Carex unilateralis*

Seed photo courtesy of Bend Seed Extractory, Seeds of Success, <http://seedsofsuccess.smugmug.com>.

**Δ *Carex utriculata* Boott.** COMMON YELLOW LAKE SEDGE, aka BLADDER SEDGE, BEAKED SEDGE, CAREX UTRICULÉ, NORTHWEST TERRITORY SEDGE, (*utriculatus -a -um* New Latin, bladder-like, of the form of a skinny-tube, sack, or bladder, bearing inflated bladder-like organs or appendages, or with a small bladdery one-seeded fruit from Latin *utriculatus -a -um*, shaped like a little bag, from Latin *utriculus* small bag diminutive of *uter* leather bag or a skinny bottle, for the perigynia, & *-atus -a -um*, Latin *-atus*, suffix indicating possession, likeness, or 'provided with', used with noun bases. Utricle is a European term for perigynia.) obl Subgenus *Carex* Section *Vesicariae*.

Habitat: Marshes & shallow water, acidic areas of bogs, minerotrophic borders of bogs. Marshes, bogs, sometimes in standing water (m02). "Open swamps, wet thickets, marshes, sedge meadows, bogs, fens, stream, pond, & lakeshores; 0–3500 m" (fna). In New England, swamps, marshes, meadows, bogs, & shores (afne). distribution/range: Occasional. Not common, confined to northeast Illinois; also St Clair Co.

Culture: Clone, dormant seed or moist cold stratify. 160,000 (pm01, ew12); 161,840 (jfn04); 186,831 (gnam06); 228,571 (gn2k); 353,583 (gnhm11) seeds per pound. Our counts are on Prairie Moon Seed. Go Figure! Sporadically in the trade, difficult to find at best. Available from Prairie Moon, Everwilde, & Fourth Corner Nursery.

cultivation: Space plants 1.0-2.0. Continually wet soils, full sun.

bottom line: Preliminary shows germ up to 92% & dorm up to 80%. Dormant seed for insurance. Very strongly dormant. Germ 4.0, 4.0, 4.0, sd 0.0, r4.0-4.0 (0.0)%. Dorm 85, 85, na, sd 5.0, r80-90 (10)%. Test 37, 37, na, r27-47 days. (#3).\*\*

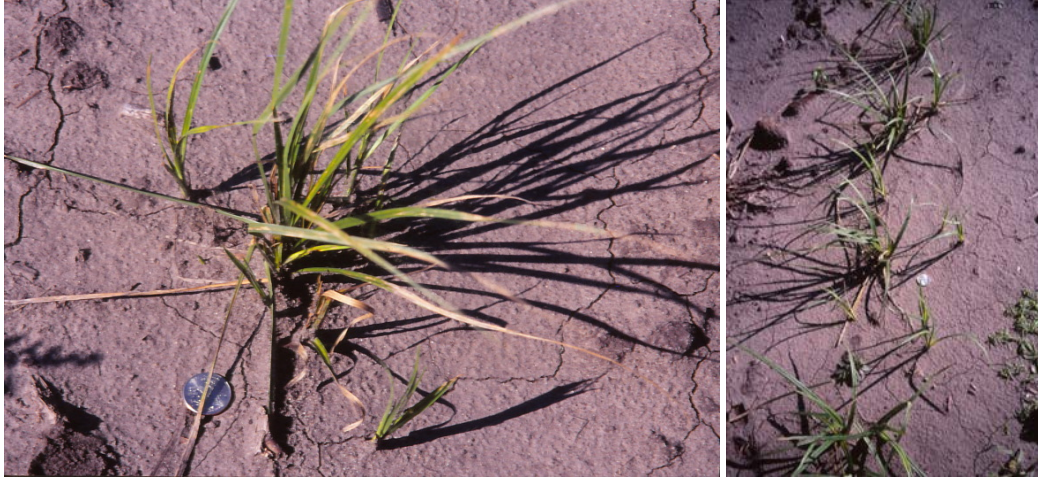
DE Steinfeld, (2002), using seed from the high Cascade Mts, placed seed in linen bags in cool running water for 2 days & layered bags between sphagnum moss @ 35° F for thirty days. Emergence was within 10 days. Daytime temperatures were between 90° & 95°F & nighttime temperatures were 70°F. Seedlings were placed in a cattle trough in a dilute solution of Excal 21-5-20 @ 100 ppm N.

Seedlings were fall planted in a constructed basin under irrigation. When some seedlings were 1.5 feet tall, the basin was flooded. Seedlings smaller than 1.5 feet died. (emphasis added).

Description: roots clump forming with long rhizomes & ?stolons(?) on perennially wet sites; culms trigonous, 0.8-3.0'; N 2n = ?; key features:

Comments: status: phenology: Blooms May 20 to May 24, mean week 11. Blooms May – June (m02). fruiting June - August. Attractive foliage & seed heads. In shallow water creates important egg-laying habitat for amphibians. Can be short lived in less than ideal hydrology. Propagators store this & other carices in closed lid jars in a refrigerator @ 35°F (2°C).

VHFS: This sp has been considered an insignificant variety of *Carex rostrata*. [*Carex inflata* Huds var *utriculata* (Boott) Druce, *C rhyngophysa* Fisch, CA Mey & Avé-Lall, *C rostrata* Stokes var *utriculata* (Boott) L Bailey, *C rostrata*]



*Carex utriculata* from lined out 200 cell plugs

**Carex vaginata** Tauscher \*ME, NY, VT, WI SHEATHED SEDGE

Habitat: In New England, calcareous bogs, swamps, & boggy woods (afne). distribution/range: Northern Wisconsin

Culture:

Description: N 2n = 32. key features:

Comments: status: Special concern in Maine & Wisconsin. Endangered in New York & Vermont. phenology: Blooms

VHFS: [*Carex saltuensis* Bailey]

**Carex varia** see *C albicans*

**Carex vesicaria** Linnaeus var **monile** (Tuckerman) Fernald \*MD BLISTER SEDGE, aka BLADDER SEDGE, *CAREX VESICULEUX*, INFLATED SEDGE, LESSER BLADDER SEDGE, TUFTED LAKE SEDGE, (*vesicarius -a -um* Latin *vesicarius*, relating to a bladder, or a remedy for a bladder ailment, from Latin *vesīca*, bladder, blister, for the inflated perigynia, & Latin *monile*, a necklace or collar, for the beaded appearance of the pistillate inflorescence) Subgenus *Carex* Section *Vesicariae*

Habitat: Upland swamps & depressions, wet prairies; pond edges & various wetlands. Upland swamps & depressions, wet meadows (m02). distribution/range: Occasional in the n ½ of Illinois, extending southward to Lawrence, St. Clair, Wabash, & Washington cos. Ditch weed in southern Lee County.

Cultivation 60 days cold moist stratification (pm09). Growth rate moderate. Seedling vigor low. Vegetative spread rate moderate. Moderate shade tolerance. Low drought tolerance. Anaerobic tolerance high. CaCO<sub>3</sub> tolerance medium. Drought tolerance low. Fertility requirement medium. Salinity tolerance low. Shade tolerance intermediate. pH 4.5-7.5.

bottom line: Field establishment by dormant seeding only, typically >80% dormant seed. Very strongly dormant. Germ 9.0, 9.0, na, r8.0-10 (2.0)%. Dorm 82, 82, na, r80-84 (4.0)%. Test 42 days. (#2).\*\*

Description: Similar to *C tuckermannii*; roots mat-forming, or clump-forming by short rhizomes? 16" minimum depth; culms 1-3'; leaves reticulate?; spikelets straight & narrowly cylindrical; pistillate scales 6.5 x 0.5 mm; perigynia 6.5 x 3.0 mm, very shiny ovoid, straw yellow, 2-3.5 mm wide, neatly arranged in a braided pattern in side view; achenes straight; N. key features: The shininess of the perigynia distinguishes this sp from *C rostrata* & *C laeviconica*.

Comments: status: Threatened in Maryland. phenology: Blooms May - June. In northern Illinois, collect seeds in mid-June. Wetland restoration, provides food & cover for wildlife. 165,936 (gnih2006); 192,000 [*monile* (jfn2004)]; 216,000?; 378,000 (lhn91); 417,600 seeds per pound. Seed source wet roadsides, Gold Twp, Bureau Co., St Marys Road prairie, Lee Co, & DuPage Co. "Uncommon. In old drainage ditches east of Sugar River Forest Preserve & west of Yale Bridge, in Coon Creek bottom & in the prairie slough south of Killbuck Forest Preserve. A widespread & variable sp." (ewf55)

Associates: Pollen is a moderate allergen.

VHFS: [*C monile* Tuck] Chicago area material is referred to var *monile* (Tuck) Fern. "North, east, & west of Chicago there are 5 other varieties of *C vesicaria*." (sw94). Var *distenta* Fries occurs in New England & Wisconsin; var *jejuna* Fern occurs in New England, Michigan, & Wisconsin; var *laurentiana* Fern LAURENT'S SEDGE occurs in Maine; var *monile* (Tuck) Fern occurs in the northeast ¼ of the United States; var *raeana* (Boott) Fern occurs in Maine, New Hampshire, Minnesota, & North Dakota; var *vesicaria* occurs in the trans-Rocky Mountain west.

"There is great variation in the length & thickness of the spikes & in other vegetative characteristics. "(ewf59).

In New England *C vesicaria* L. 2n = 70 74 82 88 swamps meadows marshes shores with synonyms [*C vesicaria*





*Carex vesicaria*

Seed photo courtesy of Bend Seed Extractory, Seeds of Success, <http://seedsofsuccess.smugmug.com>.

**Carex virescens** Muhlenberg ex Willdenow (or Muhlenberg or Willdenow) HAIRY-FRUITED SEDGE, aka *CAREX VIRESCENT*, HAIRY GREEN SEDGE, RIBBED SEDGE, (*virescens* Latin turning or becoming green or greenish, greening, from *virescens*, becoming green, or flourishing, from Latin *viresco*, *virescere*, to grow green.) upland

**Habitat:** Dry sandy oak woods on stable Lake Michigan dunes, sandy prairie, wooded bluffs, slopes, & riverbanks. Dry woods (m02). In New England, dry woods & clearings (afne). **distribution/range:** Not common, apparently confined to the s ½ of Illinois; also Vermillion Co.

**Culture:**

**Description:** N 2n = 60. **key features:**

**Comments:** **status:** **phenology:** Blooms May 16 to May 23, mean week 11. Blooms May – June (m02). Fruiting late spring-early summer. Uncommon

**VHFS:** *Carex costata* Schwein, *C virescens* Muhl ex Willd var *costata* (Schwein) Dewey  
Hybrid *C gracillima* Schwein X *C virescens* Muhl ex Willd.

**Carex viridula** Michaux \*CT, IL, PA LITTLE GREEN SEDGE, aka *CAREX VERDÂTRE*, GREEN YELLOW SEDGE, GREENISH SEDGE, SMALL GREEN SEDGE, (*viridulus -a -um* rather green, somewhat green, greenish, for the persistently green perigynia) obligate

**Habitat:** Calcareous pond shores & pannes near Lake Michigan, shallow peat of open calcareous seeps & fens, low flat gravelly prairies near a permanent water level. Calcareous pond shores, pannes, seeps, fens, & flat gravelly prairies (m02).

**distribution/range:** Not common, confined to the extreme northeast cos of Illinois. North America, Europe, Asia, & Africa.

**Culture:** Sp is not in the native plant trade.

**Description:** **key features:**

**Comments:** **status:** Endangered in Connecticut & Pennsylvania. Threatened in Illinois.

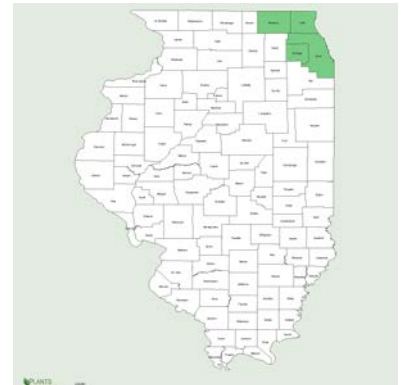
**phenology:** Blooms May 04 to September 28, mean week 20. Blooms May – September (m02). Sp is known to fruit first year from seed & to not persist (Ball & Reznicek in fna).

**VHFS:** Forma *intermedia* (Dudley) Hermann has largely pistillate terminal spikelets.

Subsp *viridula* var *viridula*, 2n = 70, 72, shores, often calcareous, springy places. Subsp *oedocarpa* (Andersson) B Schmid, 2n = 68, 70, shores & meadows in acidic soils, native to Europe & northwest Africa [*C demissa* Hornemann] (occurs in New Jersey, Connecticut, Rhode Island, New Hampshire, Vermont, & Maine)

Ssp. *brachyrrhyncha* (Celak) B Schmid var *elatior* (Schlecht) Crins occurs in Maine.  
Hybrid *C cryptolepis* Mack X *C viridula* Michx subsp *viridula* var *viridula*.

[For var *viridula*: *C oederi* auct., non Retz [misapplied], *C oederi* Retz. ssp., *viridula* (Michx.) Hultén, *C oederi* Retz var *recterostrata* (Victorin) Dorn, *C serotina* Mérat, *C oederi pumila*. For ssp. *oedocarpa*: *C demissa* Hornem. For ssp. *brachyrrhyncha* var *elatior*: *C flava* L var *lepidocarpa* (Tausch) Gord, *C flava* L var *nelmesiana* (Raymond) Boivin, *C lepidocarpa* Tausch]



**Δ Carex vulpinoidea** Michaux the original, the one, the only & still FOX SEDGE, aka *CAREX VULPINOÏDE*, COMMON FOX-TAIL SEDGE, FOXTAIL SEDGE, now called by infidels BROWN FOX SEDGE (*vulpinoideus -a -um* New Latin, from the English vulpine, of or like a fox, relating to a fox, from Latin *vulpinus*, of or pertaining to a fox, from *vulpes*, earlier *volpes* (genitive

Habitat: Common in wet places. Wet meadows, upland swamp; in all wetlands, rarely old fields. Swamps, wet meadows, low areas, moist open ground (m02). In New England, low, open ground, shores, meadows, & marshes (afne).  
distribution/range: Common, in every Illinois co. Naturalized in parts of Europe.

Cultivation Cold moist stratify or dormant seed, light (Wade). 60 days cold moist stratification. Surface sow, seeds are very small or need light to naturally break dormancy & germinate (pm09). Seeds germinate after about 60 days of cold, moist stratification. Seeds need light to break dormancy & germinate. Plant on top of growing media & do not cover. (he99) “Fall plant or cold stratify for 2 to 4 weeks for best results. Sow seeds on soil surface at 70°F & water.” (ew12) Readily established from seed. Seed responds to dormant seeding or cold dry storage. Sow on top of soil or very light cover. Dormant seed or moist cold stratify, & light. 1,254,144 (gnh09); 1,290,000 (rain); 1,297,000 (ecs); 1,438,989 (gna05); 1,440,000 (pn02, wns01); 1,486,088 (gnh02); 1,554,795 (gnh11); 1,600,000 (pm01); 1,604,240 (gna08, gna10); 1,650,909 (gnh12); 1,681,481 (gnae08); 1,808,000 (ew12); 2,000,000 (jfn04); 2,268,000 (lhn91), 2,272,000 (aes10) seeds per pound. Alone plant 1 lb/acre in fall or spring (Ranier). In mixes, plant 0.13- 1.0 lb pls per acre. Seeds, bare root plants, & plugs readily available.

Cultivation: Plant on 1.0-1.5’ centers. Wet to mesic soils, full sun to partial shade. Bare root material must be planted by the Friday before June 15, while plugs may be planted up to Labor Day. If you must plant after Labor Day, you should not wear white. Prefers seasonal water depths of 6” or less, does not tolerate extended inundation, but tolerates some fluctuations. Low acid tolerance, medium salinity tolerance. Tolerant of standing water in spring & early summer. Partial to full sun. Moderate shade tolerance. Low drought tolerance. Nutrient load tolerance moderate to high. No (ecs) salt tolerance to low or moderate, noted as salt tolerant by AES (2010). Siltation tolerance moderate. pH tolerance not available.

bottom line: 2/3 of lots have no to slight or modest amounts of dormant seed & can be planted dormant or spring. 1/3 of lots strongly benefit from dormant seeding. 25% of lots have less than 25% germ. Flipflop species, with crossover tendencies. Six lots since 2008 are over 62% dorm. Germ 53.6, 62.5, na, sd 28.2, r6.0-95 (89)%. Dorm 28.8, 14, 0.0, sd 31.5, r0.0-88 (88)%. Test 34, 35, 39, r17-50 days. (#29).\*\*

Description: Native, perennial sedge, plants caespitose; roots 16” minimum depth; culms 1-2 mm thick, wiry, 24-36+”; leaf blades 1-5 mm wide; sheaths cross-wrinkled; heads; spikes; inflorescence compound, of many tiny crowded sessile spikelets, each group of which resemble a single spikelet; inflorescence 2-15 cm long, with many protruding threadlike bracts & awned scale tips; perigynia 2.5 x 1 mm, green to brown, plano-convex, 1.7-4 mm long, ovate dull green to brown, flattened with 2 corky wings, beak 1/2 to 1/3 as long as body, green & brown, nerveless on the flat face; stigmas 2; N 2n = 52. key features: The leaves are longer than the culms, separating this sp from *C annectens* (m05).

Comments: status: phenology: Blooms early May to late June. Fruiting in July - August. In northern Illinois, collect seeds in late June- early August. Collect seeds in se Wisconsin in July - September (he99). Bunch type, successional. Wetland restoration, good erosion control, rain gardens, useful in upper shoreline zone & in vegetated swales. “Very good for xeriscaping.” (rain??). (HUH? *Just reporting what I read. Lets all xeriscape with wetland plants.*) Seed source nursery production plots with genetic source drainage ditches & farmed wetlands, Green River Lowland, Hamilton Twp, Lee Co, & Blackberry Twp, Kane co.

“Common fox-tail sedge, growing abundantly in moist places. The leaves are longer than the stems.” (ewf55)

Associates: Larval host. Good wildlife values. Provides food for sora & yellow rails, swamp sparrows, tree sparrows, snipe, & other songbirds. Reported as deer resistant. Satisfactory forage. Eight of ten plants analyzed by Miller et al (1999) were mycorrhizal, having arbuscles, vesicles, hyphae, & intra-radical spores.

VHFS: Var *vulpinoidea* grows in all the lower 48 states except Utah. Var *pycnocephala* FJ Herm grows in Indiana, Michigan, & Minnesota.

[*C setacea* Dewey] Ewf59 describes *C setacea* as “Apparently a form of *C vulpinoidea* with slender perigynia & long bracts so it is doubtful if it deserves a special name. Not uncommon over the area.” “Occasional plants of the preceding (*C vulpinoidea*) are found which answer the description of this. Not being considered a valid sp it is not recognized by Jones.” (ewf55)



*Carex vulpinoidea*

**Carex vulpinoidea ambigua** see *C annectens* & *C annectens xanthocarpa*

**Carex weigandii** Mackenzie \*ME, MA, MI, NH, NY, PA WEIGAND'S SEDGE, aka *CAREX DE WIEGAND* (*weigandii* for Karl McKay *Wiegand*, 1873-1942.) Section *Stellulatae*

Habitat: In New England, bogs & sphagnum areas (afne). distribution/range:

Culture:

Description: key features:

Comments: status: Special concern in Maine. Endangered in Massachusetts & New York. Threatened in Michigan & New Hampshire, & Pennsylvania. phenology: Blooms

VHFS:

**Carex willdenowii** Schkuhr (ex Willdenow) \*CT, IL, NY WILLDENOW'S SEDGE (*willdenowii* for Carl Ludwig Willdenow, 1765-1812, German botanist, director of the Berlin Botanical Garden, & publisher of many of Muehlenberg's new spp.)

Habitat: Rocky woods (m02). In New England, dry, rocky, acidic woods. distribution/range: not common, confined to the s 1/8 of Illinois; also Iroquois Co.

Culture:

Description: N 2n = 62, 78; key features:

Comments: status: Special concern in Connecticut. Threatened in Illinois & New York. phenology: Blooms April – May (m02). Fruiting April - late July.

VHFS: *Carex willdenowii* Schkuhr ex Willd var *willdenowii* Schkuhr ex Willd. [superfluous autonym]

**Carex woodii** Dewey \*CT, GA, IL, NC, SC WOOD'S SEDGE, aka PRETTY SEDGE, WOOD'S STIFF SEDGE, (*woodii* for William A *Wood*, a physician, one of the discoverers of *Carex Woodii*, or Alphonso W Wood, 1810-1881.) [Upland] Section *Paniccae*

Habitat: Mesophytic beech or sugar maple forests. Mesic woods (m02). In the SE, moist slopes & cove forests over mafic rocks, ultramafic rocks, or felsic rocks (w07). distribution/range: Rare in the northeast corner of Illinois; absent elsewhere except for Jo Daviess & Winnebago cos.

Culture:

Description: key features:

Comments: status: Special concern in Connecticut & Georgia. Threatened in Illinois. Rare in North & South Carolina. phenology: Blooms April 12 to May 05, mean week 8. Blooms April – May (m02). This sp forms clonal patches similar to *C pennsylvanica*, but the perigynia is glabrous, the achene fills the perigynia, & the foliage has a paler green cast (w07).

VHFS: [*Carex colorata* Mackenzie, *C tetanica* Schkuhr var *woodii* (Dewey) Wood, *C tetanica* Schkuhr var *woodii* (Dewey) LH Bailey]

“A very unusual sedge which we have found in woods bordering Rock River west of Rockton. The preceding sp (*C tetanica*) when growing in damp shaded places is very similar. This is probably best considered a variety of *C tetanica*. (*C tetanica* var *woodii* (Dewey) Bailey)” (ewf55)

*Te audire no possum, musa sapienum fixa est in aura*

Endnotes & abbreviations. The following math functions violate Abbey's 1<sup>st</sup> Law, which see.

++ The listed numbers are seed count mean, seed count median, seed count mode, seed count standard deviation, seed count max, seed count min, seed count range.

\*\* The listed numbers are Germ mean, germ median, germ mode, germ standard deviation, germ range (range); Dorm mean, dorm median, dorm mode, dorm standard deviation, dorm range (range); Test mean, test median, test mode, test range. (#germ test : tz etc)

Reference abbreviations May 04 2014

CEPPC California Exotic Pest Plant Council  
CIPC California Invasive Plant Council  
SEPPC Southeast Exotic Pest Plant Council  
SWSS Southern Weed Science Society  
RBG Kew RBG Kew, Wakehurst Place  
aes10 (AES 2010)  
afvp (Atlas of Florida Vascular Plants)  
anef (Angelo & Boufford: Atlas of New England flora)  
apl (Applewood)  
asfg (Audubon Society Field Guide)  
wade (Alan Wade, nd, various years, 95, &c)  
bsh (Baker Seed Herbarium, California)  
bb02 (Baskin & Baskin 2002, 2001, &c.)  
nlb05 Britton 1905  
cb03 (CC Baskin 2003, 2001, &c.)  
crfg California Rare Fruit Growers  
csvd (Currah, Smreciu, & Van Dyk 1983)  
tchn tomclothier.hort.net (-4°C 24°F stratification being corrected)  
cu00 (or cu02, &c, Cullina 2000, 2002, 2008)  
nd91 (Norm Deno, 1991, 1993)  
den28 (Densmore 1928)  
do63 (Dobbs 1963)  
mfd93 (Mary Fisher Dunham 1993)  
dh87 (Dirr & Heusser 1987)  
drwfp (Directory of Resources on Wildflower Propagation)  
ecs (Ernst Conservation Seeds catalog)  
ew12 (Everwilde 2012) also ew11  
ewf55 (Egbert W Fell 1955)  
ewf59 (Egbert W Fell 1959)  
fh (Robert W Freckmann Herbarium)  
fna (Flora of North America project)  
foc (Flora of China online)  
fop (Flora of Pakistan online)  
gni (Genesis Nursery, Inc)  
gc63 (Gleason & Cronquist 1963, 1991)  
gran (Granite Seeds)  
he99 (Heon et al 1999)  
hk83 (Hartman & Kester 1983)  
hpi (Hill Prairies of Illinois  
(Hilty website)  
Ipin (Illinois Plant Information network)  
jf55 (Jones & Fuller 1955)  
ilh (H. Hudson Seedsman (if the phone doesn't ring its me))

lbj (Lady Bird Johnson Wildflower Center Native Plant Information Network)  
m14 (Mohlenbrock 2014) also m86, m99, m02, m05, m06, &c  
mbg (Missouri Botanic Garden)  
msue (Michigan State University Extension)  
nae Native American Ethnobotany (Moerman, University of Michigan Dearborn)  
now36 (Nowosad et al 1936)  
nyfa (New York Flora Atlas)  
orghp (Ontario Rock Garden Hardy Plant Society)  
ppc (Philips Petroleum Company)  
pots (Plants of the Southwest 2000)  
pm09 (Prairie Moon 2009) also pm02, pm11, &c  
pnnd (Prairie Nursery no date)  
pph (Prairie Propagation Handbook)  
ppi (Prairie Plants of Illinois)  
psdg (Plants of South Dakota Grasslands)  
pug13 (plants.usda.gov accessed 2013, 2014)  
oed Oxford English Dictionary online  
rain (Ranier Seeds)  
rrn97 (Reeseville Ridge Nursery 1997)  
rvw11 (Reznicek et al 2011)  
rs ma (Ray Schulenburg Morton Arboretum)  
rhs Royal Horticultural Society  
sh94 (Shirley Shirley 1994) & don't call me Shirley  
sk08 (Stuppy & Kessler 2008)  
sm23 (Smith 1923) also sm32, sm33, sm28, &c.  
sw79 (Swink & Wilhelm 1979)  
sw94 (Swink & Wilhelm 1994)  
tlp (Time Life Perennials)  
tlw (Time Life Wildflowers)  
tpg The Prairie Garden  
uconn (UConn Plant Database)  
us97 (USDA 1997)  
w12b (Weakley Nov 2012 ) also w07-12  
wfatp (Vance & Vance 1979)  
wfn (Wildflowers of Nebraska)  
wfnp Wildflowers Northern Prairies)  
ws92 (Wilhelm & Swink 1992)  
w73 (Alphonso Wood 1873)  
ry64 (Richard Yarnell 1964)  
yy92 (Young & Young 1992)  
*Reliquum etiam non scriptum est.*