



Palmetto



Carex

where are they?



Fig. 1 Grassy clumps of *Carex* on a creek side



Fig. 2 *C. chapmannii*



Fig. 3 *C. dasycarpa*



Fig. 4 *C. dasycarpa*

The Cyperaceae (SI-per-A-see-ee) or sedge family contains several genera including the genus *Carex* (KA-reks). More than 71 species of *Carex* grow in Florida, as listed in the online Atlas of Florida Vascular Plants, (www.florida.plantatlas.usf.edu/) and also in the book *Guide to the Vascular Plants of Florida* (Wunderlin and Hansen 2011). Florida has six planting zones, and sedges are restricted to specific habitats within these zones.

To the trained eye, *Carex* seem to be everywhere, but to a hiker they may appear to be grassy things, not as interesting or attractive as plants with bright flowers (Fig 1). Sedges such as *Carex* grow in every county of Florida, even southernmost Monroe County, except the Florida Keys. Storm surges with salt water seem to delineate how far inland *Carex* can grow until years of rainwater dilutes the salt to tolerable levels. While *Carex* are absent from saline environments, not all genera of the sedge family Cyperaceae are salt intolerant and flatsedges in the genus *Cyperus* grow along the Gulf Coast and in the Florida Keys as well.

Still, some *Carex* grow near the Gulf Coast along the Ozello Trail in Citrus County. Small and grass-like in appearance, they were disregarded and mowed, run over, dug up, and well, you get it, eliminated. I once

snatched an endangered *C. chapmannii* off a bulldozer rut where water pipes were to be buried the next day. That specimen with a diagnostic off-sided rhizome is now at the New York Botanic Garden Herbarium (Fig 2). The *Carex* along the Ozello Trail are calciphytes, meaning they grow in calcium rich soils overlying limestone bedrock.

Most *Carex* grow inland, away from the coast, and are habitat specific, meaning you won't find them anywhere else. As its common name implies, sandywoods sedge (*C. dasycarpa*) grows in hardwood forests on sandy soil (Fig 3). A small tuft, this rare plant grew with other plants in the herb layer near the campground in Manatee Springs. The campers probably never noticed. In Figure 4, each of sandywoods sedge's hairy perigynia enclose a single seed-like achene. The perigynium on the left was opened and its stalked achene is visible. By definition, an achene is a dry fruit with a single seed fused inside.

Another dry woodland sedge is one of the star sedges, named for the starry clusters of perigynia spaced along the culms (stems). This specimen of reflexed sedge (*C. retroflexa*) grew along the entrance to a boat ramp at Lake Lindsey in Hernando County. The grass-like tuft likely grew from hitchhiker perigynia that were stuck in grooves of trailer tires and were "human dispersed" as we botanists say, instead of by wind or water (Fig. 5).

The Goethe State Forest in Levy County has many *Carex* species that appear as patches of grasses, but are mostly *Carex* mixed with some woodland grasses (Fig 6). Prescribed fires burn the thatch and allow the herb layer to sprout and the *Carex*



Fig. 5 *C. retroflexa*



Figs. 6, 7, 8 *Carex* are found in a variety of habitats

to flourish. Slight depressions such as former logging roads will hold rainwater slightly longer and favor species such as *C. godfreyi* and *C. gholsonii*, both plants named for Florida botanists.

During drier years or droughts, the cypress swamps become dry enough for their peaty soil to support many sedges that grew around the drier edges. *C. gigantea* and *C. lupuliformis* are seen as upright green shoots behind the cypress knees in Figure 7.

Some *Carex* live as aquatic emergents in water along ponds or beside lakes or rivers where their roots are constantly wet. Figure 8 shows a lawn mowed to the edge of the Withlacoochee River. Here, the cypress knees have been cut down, but a fringe of *Carex* still persists behind the cypress trunks. *Carex* clumps have long rhizomes that bind themselves into the soil and stabilize the shore.

Continued on page 14

Carex (continued from page 13)

Wetland species often grow 2-3 feet tall and have conspicuous seed heads (Fig 9). Giant sedge (*C. gigantea*) has spikes with more horizontal sacs than false hop sedge (*C. lupuliformis*), that has more ascending sacs. As you might guess, they are related. Both species have a narrow terminal staminate (male) spike. The stamens bloomed much earlier and dehisced before the perigynia were mature.

Another wetland sedge, warty sedge (*C. verrucosa*), also has a terminal spike bright with yellow stamens while the lower spikes have white stigmas that accept the pollen (Fig 10). Since *Carex* are wind pollinated and have no nectaries, the bees leave them alone. Within weeks the matured spikes are full of perigynia with colorful scales (Fig 11).

How does one begin to learn the sedges? Botanists know, as birders do, to study illustrations before going on a hike, such as those in *Flora of North America, Volume 23: Cyperaceae*, 2002. If the area's sedges have been previously inventoried, take time to review what has already been discovered. Sedges are seldom included in plant field guides, so a stop at a ranger station or nature center may help if they have a photo board, or better yet, a herbarium where pressed *Carex* specimens can be viewed before setting out.

After my field research, collected specimens are not immediately placed in a plant press. First the leaves and culms are taped in a bunch and then labeled and placed in a cup of water in plastic bag. Later the plants are studied and imaged on a scanner with a centimeter ruler. Next, microscopic photos of structures such as perigynia and leaf sheaths are taken with a microscope-mounted digital camera.

My specimens and images of *Carex* are part of the University of South Florida's Plant Atlas website. After the pressed plants are dried and labeled, they

are mailed in newsprint reinforced with cardboard. Specimens are also sent to herbaria at the University of Florida and Florida State University. Many herbaria now make scanned images of *Carex* and other plant specimens on labeled herbarium sheets accessible on their websites.

Collecting plants is prohibited in nature preserves unless one has permission, usually with research in mind. I was granted permission to collect in the National Fish and Wildlife Preserves in the Lower Suwannee River Refuge in Levy and Dixie Counties and Three Sisters Springs in Citrus County. The updated inventories that resulted from my collections were worthwhile, in spite of mosquitoes, wood ticks, and pseudo-scorpions under my clothing. For this botanist, a hot shower cures all memory of sweaty hardships. ☀

About the Author

Linda Curtis is a retired botany instructor and retired botanist who enjoys Florida's beautiful natural areas. Her article *Sedges, Do We Know Them?* was published in *Palmetto* 25:2, April 2008. She is a member of the Citrus County Chapter of the Florida Native Plant Society.

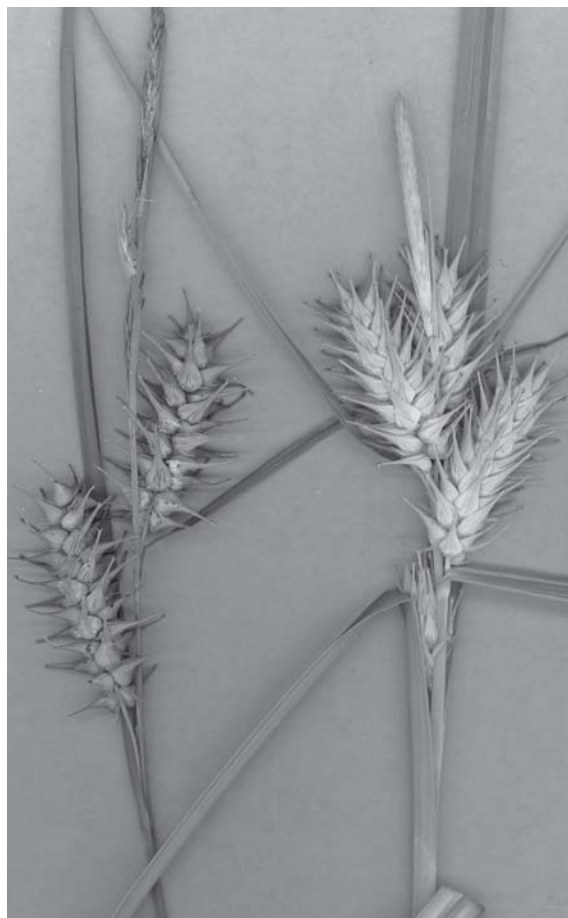


Fig. 9 L-R: *Carex gigantea* and *C. lupuliformis*



Fig. 10 *C. verrucosa* in stamen and stigma bloom

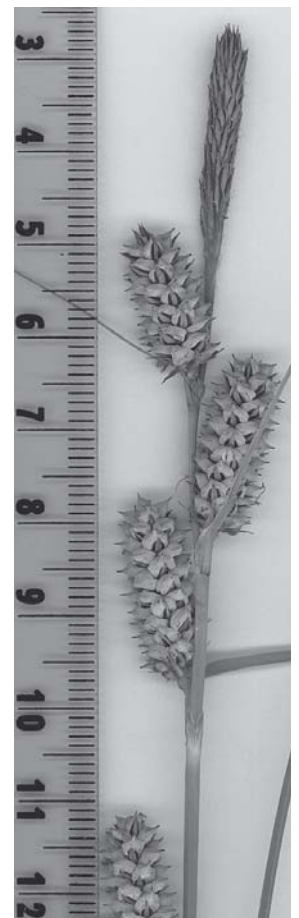


Fig. 11 *C. verrucosa* with matured perigynia, stamens and stigmas gone



The Florida Native Plant Society
PO Box 278
Melbourne FL 32902-0278

The Palmetto

(ISSN 0276-4164) Copyright 2014, Florida Native Plant Society, all rights reserved. No part of the contents of this magazine may be reproduced by any means without written consent of the editor. *The Palmetto* is published four times a year by the Florida Native Plant Society (FNPS) as a benefit to members. The observations and opinions expressed in attributed columns and articles are those of the respective authors and should not be interpreted as representing the official views of the Florida Native Plant Society or the editor, except where otherwise stated.

Editorial Content

We welcome articles on native plant species and related conservation topics, as well as high-quality botanical illustrations and photographs. Contact the editor for guidelines, deadlines and other information.

Editor: Marjorie Shropshire, Visual Key Creative, Inc. palmetto@fnps.org • (772) 285-4286 • 1876 NW Fork Road, Stuart, FL 34994

The purpose of the Florida Native Plant Society is to conserve, preserve, and restore the native plants and native plant communities of Florida.

Official definition of native plant:

For most purposes, the phrase Florida native plant refers to those species occurring within the state boundaries prior to European contact, according to the best available scientific and historical documentation. More specifically, it includes those species understood as indigenous, occurring in natural associations in habitats that existed prior to significant human impacts and alterations of the landscape.

For more Information:

<http://fnps.org>

To become a member, contact your local Chapter Representative, call, write, or e-mail FNPS, or join online at www.fnps.org/join

Follow FNPS online:

Blog: <http://fnpsblog.blogspot.com/>

Facebook: www.facebook.com/FNPSfans

Twitter: twitter.com/FNPSonline

LinkedIn: Groups, Florida Native Plant Society