Joy Hazell, Sea Grant Agent
Stephen H. Brown, Horticulture Agent
Kim Cooprider, Master Gardener
Lee County Extension, Fort Myers, Florida
(239) 533-4327, Hazellje@leegov.com
http://lee.ifas.ufl.edu/Marine/MarineHome.shtml

Uniola paniculata

Family: Poaceae

Sea Oats; seaside oats; araña; arroz de costa

Sea oats naturally help prevent beach erosion.

Sea Oats

Synonyms (Discarded Names): None found
Origin: Atlantic Coast from Virginia to Florida. The Gulf Coast from Florida to Tabasco, Mexico. Bahamas and Northwest Cuba
USDA Zone: 8a -12 (down to 10°F)
Growth Rate: Moderate
Flowering Months: Spring through Fall in Florida
Leaf Persistence: Evergreen
Salt Tolerance: High
Drought Tolerance: High
Soil: Acid; alkaline; sand
Nutritional Requirements: Low
Major Potential Pests: None known
Typical Height: 3-8 feet tall
Propagation: Buds around stems; seeds
Human hazards: None known
Uses: Dune stabilizer; landscape

Sea oats inflorescence commonly reach 7 to 8 feet high.

Sea oats spikelets make up the plant's inflorescence.

Natural Geographic Distribution

Sea oats, *Uniola paniculata*, is often the most recognized plant in Florida's coastal dune systems. It grows throughout the coastal areas of Florida. Sea oats occurs on the coastal sands and beach dunes along the Atlantic coast from southern Virginia to Florida and on the Gulf coast from Florida to central Mexico. It is also found in Cuba and the Bahamas.

Ecological Function

The species is often the dominant plant in beach and dune communities. It is an excellent pioneering species. Dense colonies are frequently observed in the coastal beach areas. Wide spreading fibrous roots allow the plant to utilize minute amounts of moisture in the upper soil while deep roots also explore the moist soil below. Its clumping habit collects, traps and holds sand blown by the wind. This results in dune formation and erosion control. It also provides excellent year round habitat and the seeds serve as a late fall and winter food source for small birds, mammals and insects. Chapter 161.242 of the Florida Statutes prohibits the cutting, harvesting, removal, or eradication of sea oats on any public land or from private land without the consent of the owner. The purpose of the statute is to protect the beaches and shores of the state from erosion by preserving natural vegetative cover to bind the sand.

Growing Conditions

Sea oats is highly drought, salt and heat tolerant. It thrives in full sun and in sandy, calcareous, well-drained soils. The species flourishes in disturbed areas that may be subjected to strong winds, tropical storms, drought and occasional inundation by sea water. While highly tolerant of drought conditions, sea oats does not tolerate water logging of roots; which can kill sea oats after only a few days. Sea oats can be found interspersed with other grasses and competing vegetation. It gains mineral nutrition from salt spray and beach sand as well as its own decaying organic matter.

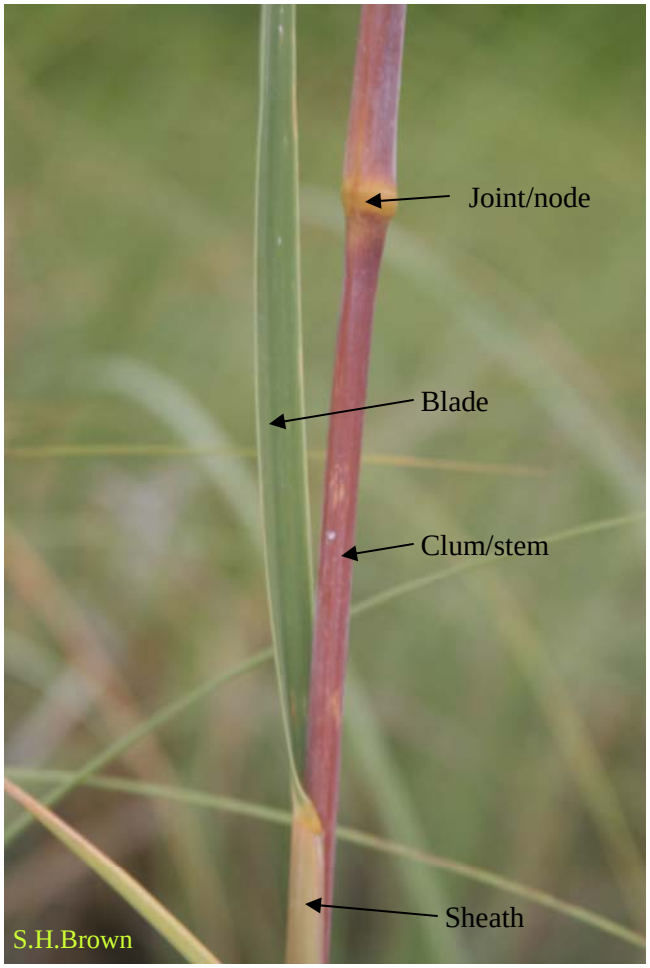
Sea oats traps and holds sand in coastal communities.

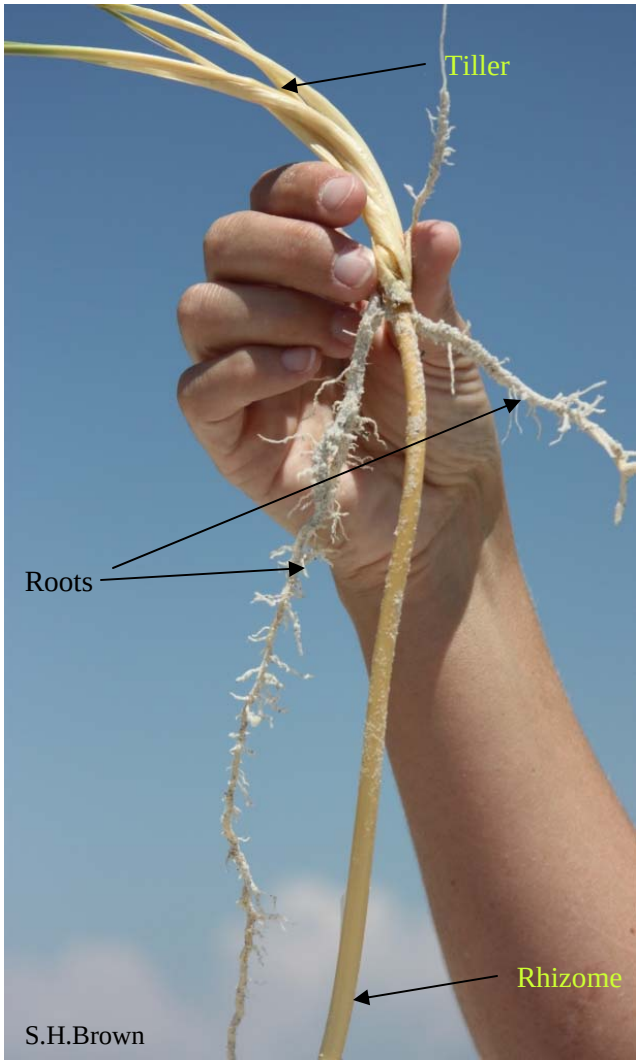
Dense colonies of non-flowering seas oats are observed in Miami-Dade County.

Growth Habits

Unlike many grasses, sea oats does not produce many seeds. It predominately spreads asexually by strong extensively creeping underground shoots called rhizomes. Buds are formed underground around the stem base, and the formation angle of the buds determines whether a tiller (aboveground shoot) or lignified rhizome develops. Acutely angled buds become tillers and right angled buds become rhizomes. Internodal portions of the rhizome decay leaving the nodal regions with associated buds to root and become new tillers. The flat or convolute (inward rolling) leaves are tapered into pointed tips. Leaf blades on the oldest tillers are typically 48 inches long and approximately 1/2 inch in width. When not in flower, the plant with its recurving blades appears a little more than waist high, about 40 inches in length. Plants can grow from one to two feet in the first year after establishment with dense cover possible in three growing seasons.

Less frequently sea oats reproduces sexually by seeds. Pollination is accomplished by wind. Flowering occurs with the formation of inflorescences in the second or third year after establishment. In Florida, sea oats begin to flower in spring with the seed ripening in fall. The floral structure of grasses is unique. The inflorescence



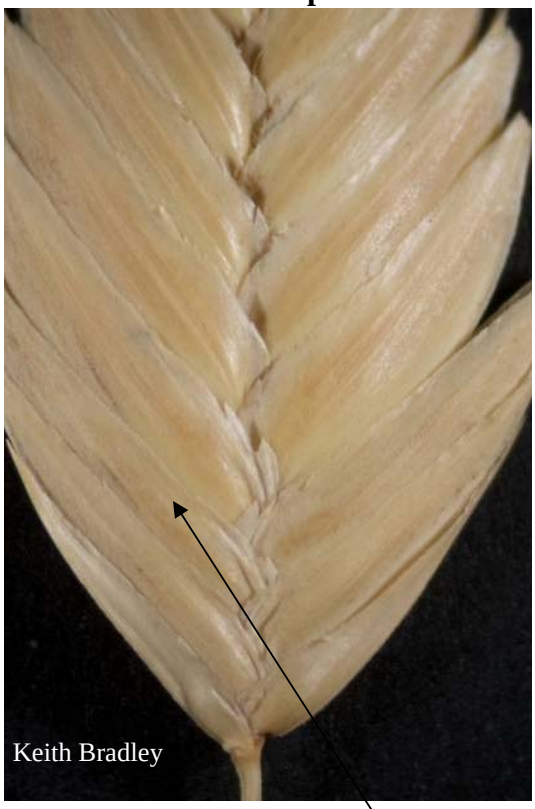


stem is called a culm and in sea oats the culm may extend three to eight feet tall and is topped by a multiple branching inflorescence called a panicle. The panicle is commonly 12 to 20 inches long and composed of many nodding groups of showy flower clusters called spikelets. The spikelets within the panicle are typically 1½ inches long and are composed of many scales called lemmas. Each of the scales has a flower (floret); except the bottom two which are called glumes. A sea oats spikelet may have up to 30 or more florets. However, the lower 2 to 8 florets are sterile. Once a floret is pollinated a caryopsis (seed) develops within the lemma resulting is small brown fruit smaller than grains of rice or oats from which the grass gets its name.

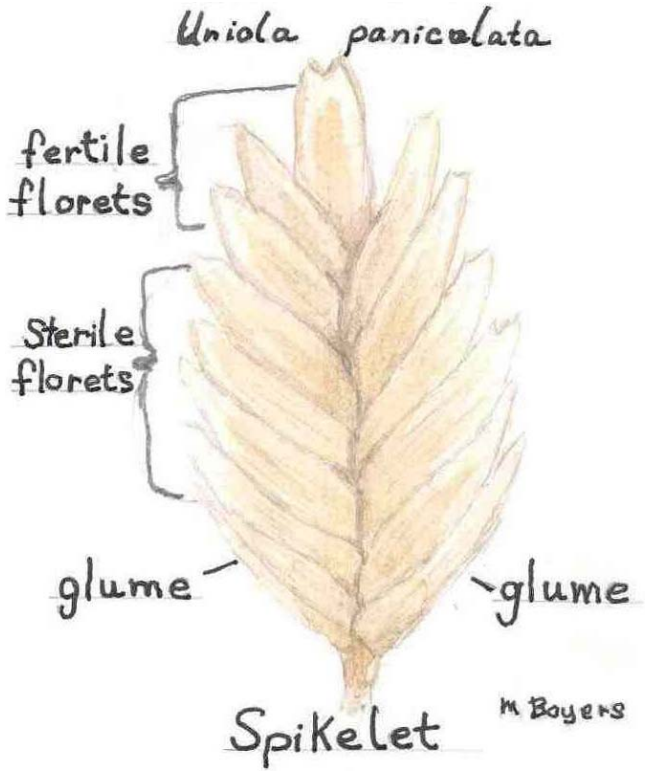
A sea oats panicle is made up of many spikelets.

Spikelets are commonly 1 1/2 inches long.

A sea oats spikelet



Scale: each scale has a floret.



Uses

Sea oats is valued as a dune stabilizer and less so as an ornamental grass. It is protected in the wild due to its superiority at preventing erosion. Collection of seeds and plants is strictly prohibited. Because sea oats spreads successfully by rhizomes, it can become invasive in the landscape. It can be easily cut back or surrounded by an underground barrier that the rhizomes cannot penetrate. However, the authors know of no ornamental landscape use of this plant. Indigenous people in the U.S. may have used the seeds as food, and some people in Central America still utilize them in the same way today. Cattle will graze it, but it is seldom grazed because of the critical nature of the sites on which it occurs.

Planting and Maintenance Guidelines

Plant from March through November south of Tampa Bay and Cape Canaveral and April through October northward. Plant above the limits of wave uprush. Space plants from four-inch pots one and one-half feet on center. Increase the spacing to three feet on center for plants from one-gallon pots. Plant in alternate staggering rows. Plant deep; the top of the root-ball should be four to six inches below the soil surface. Many plantings have failed because plants were not set deep enough. Fertilization is not required at planting as the plant can survive with virtually no nutrients. The plants should be watered immediately after planting and then weekly for the first few months. Although seas oats can be planted through much of the year, planting during the rainy season will reduce supplemental watering. Seedlings can be purchased from nurseries around Florida. Over time established plants will accumulate a lot of dead plant residue. Removal of the excess herbage will stimulate new growth.

New planting of sea oats on Bowman's Beach, Sanibel, in July. Plants are from one gallon pots planted four feet apart.

From the top of the root ball, plant four to six inches below the soil surface.

See the tillers follow the rhizome. Tiller arising from rhizomes. Rhizomes are horizontal plant stems.

References:

Bachman, Gary R. and Ted Whitwell. 2/1/97. Nursery Production of *Uniola panic*ulata (southern seaoats). Department of Horticulture, Clemson University, Clemson, South Carolina. http://www.clemson.edu/hort/sctop/bsec/bsec-05.php

Barnett, M.R. and D. Crewz, Principal Editors. 1997. Common Coastal Plants in Florida: A Guide to Planting and Maintenance. University Press of Florida.

Hill, K. 10/19/2001. *Uniola paniculata* (sea oats). Smithsonian Marine Station, Fort Pierce, Florida. http://www.sms.si.edu/irLspec/Uniola_panicu.htm

Workman, Richard, W. 1980. Growing Native: Native plants for landscape use in Coastal South Florida. The Sanibel-Captiva Conservation Foundation, Inc., Sanibel, Florida

Yates, H. Oliver. 2001. *Uniola paniculata*: Sea Oats. Grass Manual on the Web. The Flora of North America. http://herbarium.usu.edu/webmanual/

This fact sheet was reviewed by Dr. Mack Thetford, West Florida REC, Milton; Keith Bradley, Institute for Regional Conservation, Miami; Holly Downing, City of Sanibel Natural Resources; Jenny Evans, Sanibel-Captiva Conservation Foundation; Peggy Cruz, Lee County Extension Service; John Sibley, Lee County Master Gardener and owner of All Native Garden Center, Nursery & Landscapes, Fort Myers.