



# Palmetto





# Beaches are wonderful places

Whether you are a resident of coastal or inland Florida, most of us live no more than an hour or two drive from a fascinating area of coastal shoreline. The attractions are as varied as the visitors themselves: occasional visitors who may only make the trek to see the monstrous waves and churning surf associated with tropical storms and hurricanes; frequent visitors like surfers and fishermen who are looking for just the right conditions to make their day; teenagers with earbuds soaking up rays; birders scanning the water's edge in search of shorebirds and seabirds; and beachcombers eager to find a treasure deposited by a recent storm or uncovered by beach erosion. For plant enthusiasts however, beaches and barrier islands have a particular appeal. In general, plant diversity is low enough that one needn't be overwhelmed with dozens of options – the harsh environmental conditions of intermittently heavy salt spray, sterile and saline sandy soils and highly variable water availability make conditions suitable for only a hardy assemblage of species that are adapted for life in this hostile environment. Radiant dune sunflowers (*Helianthus debilis*), edible shoreline seapurslane (*Sesuvium portulacastrum*), waving sea oats (*Uniola paniculata*) and others with individual adaptations for life on the beach all add to the enjoyment of botanizing at the seaside.

**Photos, right:** 1. Beachstar (*Cyperus pedunculatus*) 2. Beachstar flowers 3. Beach raking is a scourge of pioneer dune plants. 4. Burrowing four o'clock (*Okenia hypogaea*) is a sprawling vine-like plant that never reaches over a couple inches in height. 5. An *Okenia hypogaea* flower, close up. 6. Flowers of coastal mock vervain (*Glandularia maritima*) 7. Flowers of *Argusia gnaphalodes*. 8. FNPS members surround a large specimen of sea rosemary or sea lavender (*Argusia gnaphalodes*) on southeast Florida's Hutchinson Island. Photos by Greg Braun.







2



3



5



6



8



## Beaches are Wonderful Places

Florida and other states with sandy coastlines are faced with an interesting ecological, social and financial dilemma – deciding how to protect beaches and barrier islands and their flora and fauna in the current climate of increased demand for beach access, frequent damaging beach erosion events, and dwindling federal and state budgets for beach management activities.

The presence of several species of plants that exist solely on our beaches and dunes and which are designated by the federal government and/or Florida as endangered or threatened species add a botanically interesting aspect to beach management. Although enticing and descriptive names such as sea lavender, beachstar and burrowing four o'clock, may conjure up thoughts of tropical islands, romantic evenings on starlit nights and naps on a breeze-cooled beach chair, in reality, these species are plants that are highly-adapted for life on the harsh environment of Florida's beaches and dunes.

### Examples of Notable Threatened and Endangered Beach and Dune Species

Some of Florida's threatened and endangered barrier island plants inhabit maritime hammock, coastal strand or back-dune areas that are usually on private property and difficult to access. Several others though, have the interesting habitat of growing on otherwise un-vegetated areas of the beach. Although environmental stressors (e.g., lack of available fresh water, high amounts of salt spray) may be higher on the beach than in more well-protected back-dune communities, several of these plants, including the state-listed beachstar (*Cyperus pedunculatus*) thrive in pioneer zone areas where competition from other plants is limited (photos 1, 2). Rhizomatous strands of beachstar may extend for dozens of feet onto areas of open beach, where their low profile helps stabilize beaches by trapping wind-blown sand. A tiny plant, typically less than five inches tall, beachstar was designated by the state of Florida as a threatened species after it became apparent that a combination of natural (e.g., beach erosion) and human-related (e.g., beachfront development, foot-traffic) impacts were severely reducing the population and distribution of this species. Beachstar is restricted to southeast Florida, from Brevard through Miami-Dade counties, and is best seen on areas of extensive publicly-owned beaches where there is little or no active beach management. A scourge of pioneer plants is beach raking, an unfortunate and increasingly common technique through which beaches are swept clear of "unsightly debris" (photo 3).

Another state-listed endangered plant is burrowing four o'clock or beach peanut (*Okenia hypogaea*), a sprawling vine-like plant that never reaches over a couple inches in height (photos 4, 5). It can also be found as a pioneer plant on open beaches in southeast Florida, where it often extends waterward from a tap root located near the base of the primary dune. This member of the Nyctaginaceae, with small aesthetically-appealing lavender-pink flowers, blooms primarily during rainy season months. It

gets its common names from its tendency to have flowers that bend down after being pollinated, allowing the young fruit to ripen underground. An annual whose seeds appear to be primarily distributed by wind, populations of this species are highly variable from year to year.

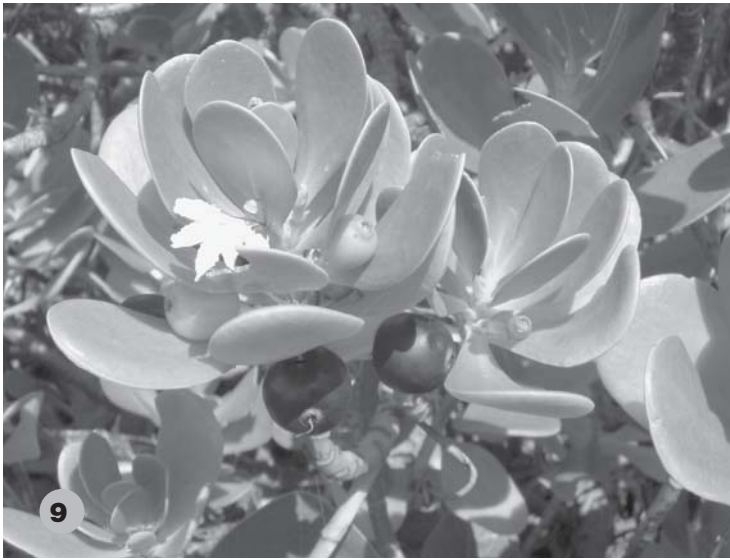
Not all of Florida's threatened and endangered beach plants are restricted to freeze-resistant coastal areas of the southern peninsula. Two closely-related members of the Verbenaceae, coastal mock vervain (*Glandularia maritima*) (photo 6), and Tampa mock vervain (*Glandularia tampensis*) range further north at least as far as Volusia and St. Johns counties on the east coast and Levy County on the west. Both are designated by the state as endangered, and may be found in foredune, primary dune or back-dune communities. Further north, Cruise's goldenaster (*Chrysopsis gossypina*), state-listed as endangered, is present on coastal dunes in the Panhandle from Walton to Escambia counties.

Not all of Florida's threatened and endangered beach plants are diminutive groundcover species. Sea rosemary or sea lavender (*Argusia gnaphalodes*) is a robust shrub that may reach heights of 5 – 6 feet or more, in spite of the nearly sterile soil conditions in which it grows. During February 2012, members of the Cocoplum Chapter of FNPS (Martin County) found several of these showy plants during a field trip on Hutchinson Island (photos 7, 8). State-listed as endangered, sea rosemary is a visually-attractive member of the Boraginaceae that is readily identifiable due to its unusual silvery-gray tomentose leaves and circinate flowers. Generally a species of tropical distribution, individual sea rosemary plants are intermittently distributed to the central peninsula on Florida's east coast and on the west coast at least as far north as Lee County. This species is attractive enough to be used as an ornamental, but is not presently available from most native plant nurseries.

### Competition Between Natives and Non-natives on the Beach

Although beachfront development and beach erosion are the primary threats to some protected plants, even beaches aren't immune from threats from invasive exotics. Two closely related species of *Scaevola* occasionally demonstrate the competition between native species and non-native invasives. Beachberry or inkberry (*Scaevola plumieri*) has a tropical distribution and is listed by the state of Florida as threatened (photo 9). A close relative, beach naupaka (*Scaevola taccada*) (photo 10) is a non-native that is designated as a Category I invasive by the Florida Exotic Pest Plant Council (FLEPPC). Introduced as an ornamental landscape plant that could survive Florida's hostile beachfront environment, beach naupaka is out-competing the native inkberry at some beach-front locations from Cape Canaveral to Tampa Bay.

Like many other low-growing species, populations of some state and federally-listed beach and dune species are also being compromised as they get shaded out by more aggressive native



Beach plants are nonetheless protected by state and federal laws, and add to the floral diversity and enjoyment of beach goers. Let's all hope there is some middle ground through which these gems of biological diversity can be retained, in spite of the one-two punch of natural and human-related threats to their continued existence.

Beaches are wonderful places. The next time you visit one, take a closer look at the plants around you – there just may be an endangered plant at your feet!



and/or non-native species. Beach clustervine (*Jacquemontia reclinata*) is a creeping vine that is designated as endangered at both the state and federal levels (photo 11). Documented in the U.S. only on beaches and dunes on barrier islands on Florida's east coast from Miami-Dade through Martin counties, the disappearance of this low-growing species may be related to the spreading of sea grape and other native dune species that has taken place in recent years, and as the effectiveness of protecting dune vegetation from being trampled has increased.

### Protecting Biodiversity While Managing Beaches

An interesting challenge that has presented itself in recent years is how to deal with the presence of protected plants when they are situated in the footprint of beach nourishment projects. In some instances, governmental entities have been proactive in working around populations of protected species when they would otherwise be buried during state-funded or federally-funded beach nourishment. Relocation of beach plants is a problematic endeavor, and *in-situ* preservation of protected individual plants presents logistic challenges.

### About the Author

Greg Braun is a professional ecologist and owner of Sustainable Ecosystems International, an environmental consulting company that specializes in avian and estuarine ecology and protected species management. He serves on the Board of Directors of the Cocoplum Chapter of FNPS (Martin County), and can be reached at [dgregbraun@aol.com](mailto:dgregbraun@aol.com).

### Further Reading

For more information about state-listed and federally-listed threatened and endangered plants see the *Field Guide to the Rare Plants of Florida*, by Linda G. Chafin, available from the Florida Natural Areas Inventory ([fnai.org/fieldguide/](http://fnai.org/fieldguide/)), and *Notes on Florida's Endangered and Threatened Plants*, by Richard Weaver and Patti Anderson.

Plant names and spatial distribution information included in this article are consistent with the information provided in the *Guide to the Vascular Plants of Florida – Second Edition* by Richard P. Wunderlin and Bruce F. Hansen and the on-line *Atlas of Florida Vascular Plants*, Wunderlin, R. P., and B. F. Hansen. 2008. [www.plantatlas.usf.edu/](http://www.plantatlas.usf.edu/).



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](mailto: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](http://www.fnps.org/join)

#### **Follow FNPS online:**

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

Facebook: [www.facebook.com/FNPSfans](http://www.facebook.com/FNPSfans)

Twitter: [twitter.com/FNPSonline](https://twitter.com/FNPSonline)

LinkedIn: Groups, Florida Native Plant Society