

Coastal Landscaping on Perdido Key

The Keys to a
Beach Mouse Friendly Landscape



Produced by the
Escambia County Natural Resources Management Department

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2022

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Introduction

Welcome to Perdido Key!

Whether you're a new homeowner looking to design your dream landscape or a long-time homeowner looking to go native, this guide is for you.

Coastal landscaping often conjures pictures of beach resorts full of palm trees and other non-native tropical plants, many of which require constant care and attention to survive the conditions found on Perdido Key. And for properties that hold a Beach Mouse permit, all landscaping must use approved, native species.

Native plants provide food and shelter for wildlife, reduce maintenance costs, and help stabilize our coastal dune ecosystems. In this brochure we'll discuss the various plants and the way you can use them to create a landscape that is both beautiful and beneficial for native wildlife.

Contact Us!

For questions about this guide, permit requirements or coastal landscaping, contact our office below:

Escambia County Perdido Key Habitat Conservation Plan Office

Phone: (850) 595-3460

Email: smbolduc@myescambia.com

Website: www.myescambia.com/pkhcp

Acknowledgments



PENSACOLA & PERDIDO BAYS ESTUARY PROGRAM

This project was made possible with funding provided by the Pensacola and Perdido Bay Estuary Program's Community Grant Program.

We would also like to thank the following partners:

Perdido Key Area Chamber of Commerce

Escambia County Extension Office

Perdido Key Association

Escambia County Master Gardeners

Visit Pensacola



Understanding the Coastal Dune Ecosystem

Barrier islands are dynamic ecosystems. The constant stress of ocean winds and waves mean islands change a little bit every day. Storm events like hurricanes can cause big changes in a relatively short amount of time, over-washing dunes and dramatically changing island layouts. Coastal plants have adapted over millennia to endure and thrive in these tough conditions.



Soils are often sandy, with a high pH and little organic material.

They drain quickly, making it hard for plants to tap into recent rainfall.

Salt is carried on the wind and imbedded in the soil, threatening to desiccate and shred vulnerable plant tissues. With a shortage of large leafy trees, shade is hard to come by and plants can endure temperatures upwards of 100° for several months on end.

All these factors mean non-native plants have a hard time surviving on barrier islands without constant attention and care. Meanwhile, native plants are already adapted to these coastal conditions and can often be found growing on your property. These plants provide food and shelter for native wildlife, require minimal maintenance, and help connect habitats across the Key.

Coastal Ecosystems

Primary or Frontal Dune

The primary dune, also called the frontal dune, is the set of shifting sand dunes closest to the water. They are the first line of defense from the ocean's salt and wind and are constantly in danger of being over-washed or buried by storm surge.

Few plants can grow in these tough and ever-changing conditions. Primary dunes are typically dominated by grasses, like sea oats (*Uniola paniculata*) and beach grass (*Panicum amarum*), and low-profile ground covers like morning glory (*Ipomea sp*) and beach elder (*Iva imbricata*).



Gulf-front property owners will more than likely have primary dunes in their “backyard” or as part of the southern property limits.

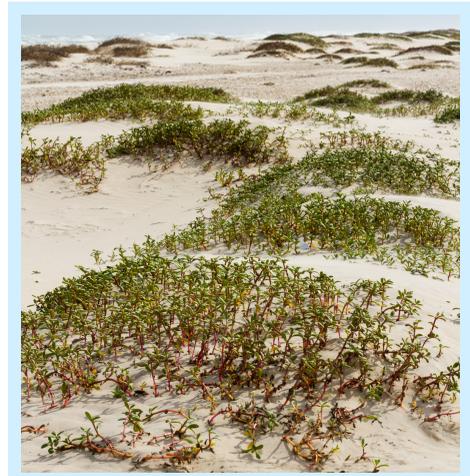
IMPORTANT: In Florida, beaches and primary dunes are protected by the Florida Department of Environmental Protection (FDEP). FDEP regulates what and where structures can be located in relation to our beaches. This includes construction permitting, but also dune management and restoration activities. Even on private property, state and federal regulations may limit what can be done to primary dunes and their associated vegetation.

Understanding the Coastal Dune Ecosystem

Secondary or Back Dune

The secondary dune or back dune sits behind the primary dune. These dunes are older and further away from the stress of the ocean waves and wind.

Plants may be more varied here and include small shrubs like Florida rosemary (*Ceratiola ericodes*) and woody goldenrod (*Chrysoma pauciflosculosa*), and small salt-tolerant trees like sand live oak (*Quercus geminata*).



Interdunal swales are visible between white dune ridges in Perdido Key State Park.

Photo provided by Darryl Boudreau, Northwest Florida Water Management District

Interdunal Swales

Sometimes interdunal swales form between dune ridges. These areas can range from small shallow ponds to moist grasslands, these areas can be a mix of typical wetland species and salt-tolerant species normally found on the coast.

Look for grasses like sand cordgrass (*Spartina bakerii*) and lovegrass (*Eragrostis sp.*) as well as a greater variety of trees and shrubs like wax myrtle (*Myrica cerifera*) and marsh elder (*Iva frutescens*).

Coastal Scrub/Maritime Forest

With enough time and distance from the ocean, scrubs and maritime forests may appear. Dominated by pines and oaks, with a varied understory, these are the climax communities of barrier island ecosystems.

Plants here may grow a little taller and bushier than their secondary dune neighbors, but still must deal with sandy soils, scorching temperatures, and an overabundance of salt.



On Perdido Key, coastal scrub and maritime forest ecosystems are often found north of Perdido Key Drive, closer to Old River.

Coastal Landscaping Design Guidelines

General Planting Guidelines

The coastal dune ecosystem is unlike no other. Successfully emulating this for the benefit of native habitats and wildlife requires a departure from standard landscaping design. But certain principles can still be used to create stunning and native-friendly yards that support a range of uses.

1. Plant Spacing

Spacing can vary wildly across the various ecosystems. However, in general, plants should be “bunched” in loose, same-species groups, leaving areas of bare sand between to best mimic the natural ecosystem. This also creates visual interest and allows the eye to rest when moving across the landscape.

For large areas of uniform coverage, seedlings planted on 12-inch to 18-inch centers will allow enough space for mature plants without hiding all the sand from view.



Here, beach elder (*Iva imbricata*) grows in widely-spaced patches on the beach face, while sea oats (*Uniola paniculata*) dominate the crest of the dunes.

2. Topography

Especially on Gulf-front parcels, consider using the natural topography to your advantage. Plant dune-loving plants on the tops of hills, allowing them to stabilize the sand. This will also create visual height and dimension to your landscape, especially when using showy grasses like sea oats (*Uniola paniculata*) and beach grass (*Panicum amarum*).

For new construction, adding additional sand to your landscape can help recreate natural topography. A few cubic yards of sand left to find its own shape and level can emulate natural dunes without too much effort.



Approved sand (left) from a local supplier was used to create these dunes. Sand was dumped and allowed to find its own level. It was then planted sea oats (*Uniola paniculata*) to replicate a natural system.



IMPORTANT: An Escambia County Barrier Island Sand Permit is required for all fill materials (sand, dirt, and rock) brought onto Perdido Key. Approved fill is limited to white, barrier island sand that mimics the natural substrate. Dirt, clay, and rock are considered prohibited materials and will not be approved. White Bahama Rock may be approved for limited applications.

Coastal Landscaping Design Guidelines

3. Using Color & Texture

Varying colors and textures across a landscape adds interest. Contrast the fine textures of sand cordgrass (*Spartina bakerii*) or sea oats (*Uniola paniculata*) with coarser textures like those of saw palmetto (*Serenoa repens*) or Spanish bayonet (*Yucca gloriosa*). Many bunching grasses produce seedheads in the late summer and early fall adding extra texture and movement to a landscape.



Keep color in mind when laying out your design. Some plants like dune sunflower (*Helianthis debilis*) can bloom continuously, lending a pop of color year-round. Others only bloom in the spring and summer so consider what the plant's foliage looks like when not in bloom.

Bold colors like yellows and red will draw the eye while greens and softer colors will blend into the background. The native white sand will contrast with most plants, so use this to your advantage.

Landscaping for Specific Uses

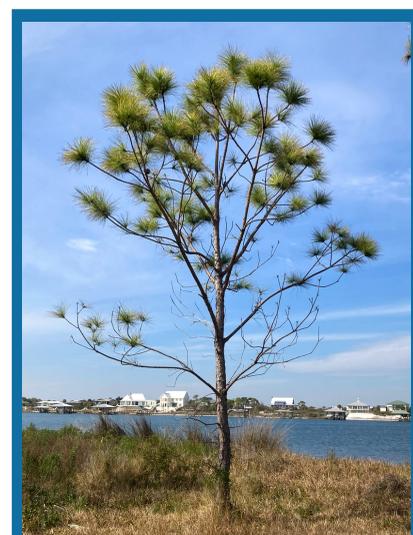
Xeriscaping

The sandy soils found across much of Perdido Key hold little to no water, not unlike a desert. Native plants have adapted to these tough conditions and can do reasonably well without regular watering once established. Using native plants decreases your landscapes reliance on water, and "smart watering" can help reduce your landscapes dependence on daily showers.

This is good, as buried irrigation lines can cause problems for burrowing wildlife such as the Perdido Key Beach Mouse and are only allowed within 12 inches of a hardened edge for properties with a beach mouse permit. Temporary surface drip irrigation is recommended to help plants establish themselves.

Keys to a "Smart Water" Garden:

- Group plants with similar water needs together
- Install a rain barrel to collect rainwater during Florida's wet summers
- Install a rain gauge so you know when plants have received adequate rainfall
- Surface drip irrigation targets water where plants need it most (not suitable for all applications) 5



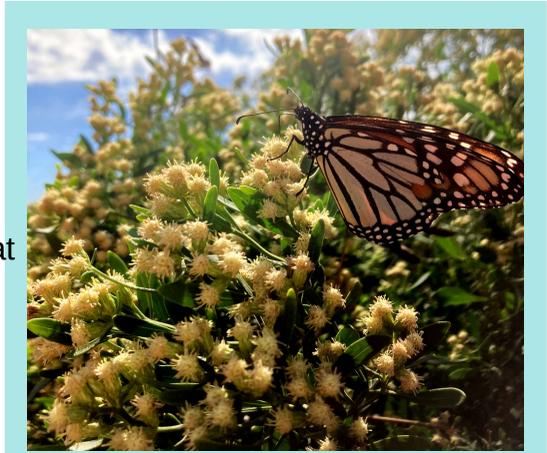
Native pines thrive in Perdido's sandy and salty soils, and can tolerate drought better than other tree species.

Wildlife & Pollinators

Pollinators love the beach too! Coastal plants support a wide range of bees, butterflies, and moths, including the very rare Gulf Coast Solitary Bee. Coastal flowers like dune sunflower (*Helianthis debilis*), Indian blanketflower (*Gaillardia pulchella*) and beach rosemary (*Conradina canescens*) not only look great but are an important source of nectar.

Keys to a Pollinator-Friendly Garden:

- Plant species in large clumps to make foraging easier
- Consider installing a puddler to provide a source of fresh water
- Use plants that bloom at different times of the year to provide year-round nectar and color in your garden
- Avoid the use of pesticides to keep pollinators healthy



Trees can benefit pollinators too! Here a Monarch enjoys the late fall blooms on a local Sea Myrtle (*Baccharis halimifolia*).



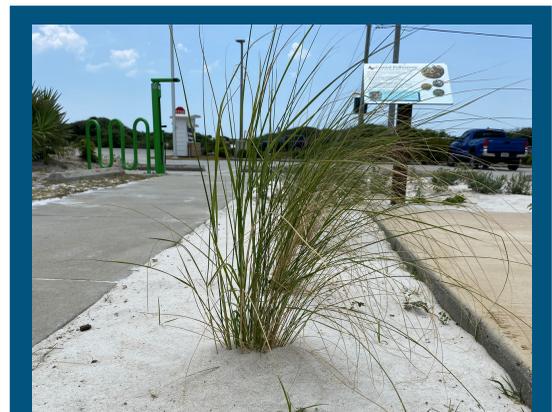
Feel free to supplement native plants with fruit and feeders, but make sure to use solutions free of artificial colors or dyes and don't use artificial sweeteners or honey.

A simple sugar-water solution in an easy and cheap way to attract pollinators. Clean feeders with soap and water every two weeks to prevent mold and bacteria growth

Sand Attenuation

The sandy soils on a barrier island are constantly shifting. Blown by the wind, tracked in on shoes and paws, it's easy to end up with sand everywhere.

Help prevent sand from accumulating where you don't want it by using plants with runners and fibrous root systems to help hold the sand in place. Denser plantings along paths and driveways can keep sand off walking surfaces. Plants can also help dissipate stormwater runoff and prevent scouring, keeping sand where you want it.



Bunching grasses like sand cordgrass (*Spartina bakerii*) are ideal to help control sand and keep it in place. This newly installed specimen will soon fill the available space, helping to keep sand off the sidewalks on either side.

Maintaining Coastal Landscaping

Just like any landscaping, regular maintenance is required to keep coastal plants looking their best. Below are some general maintenance tips, but also special considerations for the coastal landscape.



Railroad Vine (*Ipomea sp.*) lines a driveway. Though ideal for holding sand in place, this aggressive grower needs constant trimming in the growing season as its runners can grow up to one foot a day in ideal conditions.

General Maintenance

Trim back shrubs and grasses in the fall and winter months and remove dead thatch and vegetation periodically. Aggressive groundcovers like dune sunflower (*Helianthis debilis*) and railroad vine (*Ipomea sp.*) may need frequent trimming throughout the growing season to avoid overtaking planting areas.

Plant Establishment & Watering

Once established, the native plants described in this guide should need infrequent watering. However, drought conditions, summer storms, and other circumstances may necessitate periodic watering to keep you landscape looking its best.

When possible, plan to install plantings in the late Fall (October-November) or early Spring (March-April). This ensures plants have enough time to put down roots before the first freeze or scorching summer temperatures arrive. Gently break up the root ball when planting and trim back plants to encourage maximum root growth.

Water plants daily for the first week after planting. Soil additives like Hydro-Gel can also be used to help sandy soils retain moisture longer. Surface drip irrigation is a great way to help plants get established, especially in the summer months.

Drip irrigation releases a small amount of water over a long period of time, directly into the plant's roots. Do-It-Yourself kits are often available at hardware stores, but some landscape companies may install it as part of their services.

IMPORTANT: Most drip irrigation is not meant to be permanent and may corrode or disintegrate over time. Check lines and fittings regularly and remove lines once plants are established.



Soil additives can help make water available for new plants between waterings or rain events.

Pest Management

A wide variety of wildlife can be found in our coastal ecosystems and some are more welcomed than others. To deter pests and unwanted guests follow these simple tips:

- Keep shrubs and bushes trimmed up off the ground and periodically thin out plants. This reduces hiding places and ensure a clean line of sight, especially in high traffic areas like decks, walkways, and patios.
- Remove and dispose of dead limbs, plant debris and cuttings promptly after yard work or site clearing.
- Don't leave pet food, bait, or other attractants outside, as this may attract unwanted visitors. Secure trash in a wildlife-proof trash can or inside a garage or shed.
- Place bird and squirrel feeders away from the house and keep nearby landscaping trimmed back.
- Flipped over buckets, wheelbarrows and other containers create ideal shady spots in the summertime. Store them on their sides or inside to remove potential hiding spots and always check inside before reaching in.



A variety of snakes can be found on Perdido Key, including the venomous Water Moccasin or Cottonmouth (left). Dense vegetation (right) creates ideal hiding places. Thin out vegetation near high traffic areas to reduce chance encounters.



IMPORTANT: Use of pesticides and rodenticides is prohibited under the Perdido Key Habitat Conservation Plan. Non-lethal traps and non-chemical deterrents are allowed. For dangerous wildlife or emergency situations, contact a wildlife removal professional.

Hurricanes & Storms

Hurricanes and other strong storm events are a fact of life on barrier islands. Many of the species described in this guide have adapted to frequent storms and will eventually regrow even after the most brutal of storms.

Plants may be “salt-burned” after a strong storm. Water frequently after the storm to remove salt buildup in the leaves and tissues and to help rinse the soil. Prune away dead or damaged branches and stems. Severely burned vegetation may take a whole growing season to recover, so be patient!

Plants buried by sand may resprout on their own except in extreme circumstances. When possible, gently uncover buried plants and give them plenty of water to help them recover.

Perdido Key Habitat Conservation Plan

Properties with federally-designated Perdido Key Beach Mouse habitat or properties that currently hold an Authorization of Coverage a.k.a. “Beach Mouse Permit” are required to abide by the rules and standards found in the Perdido Key Habitat Conservation Plan (HCP).

The programs and policies contained in the HCP ensure any activities carried out are done so in a way that protects beach mice, sea turtles, shorebirds, and the habitats they rely on. They cover all aspects of development from pre-construction siting, construction management, and post-construction use and habitation. An outline of the relevant standard and requirements is included below, but for more information visit

www.myescambia.com/pkhcp.

Approved Plant List

Properties that receive an Authorization of Coverage or “Beach Mouse Permit” must use approved native species in all landscaping and do so in a way that benefits wildlife and our natural dune habitats. The plant list will look very different from “Florida-Friendly” or other native plant lists, as it is limited to those species found within the coastal dune ecosystem and benefit coastal wildlife. The list in its full form is attached as Appendix A.

Herbicides, Pesticides, and other Chemical Treatments

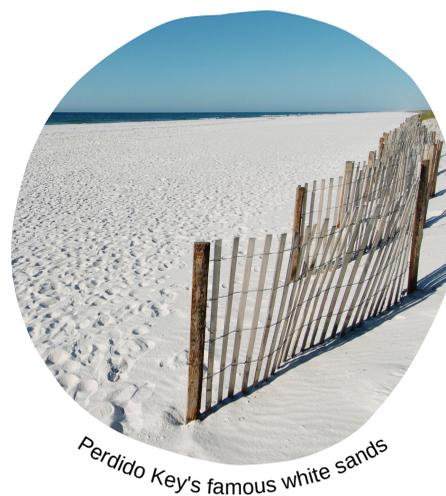
In general, chemical treatments like herbicides and pesticides are prohibited for properties covered by the HCP. This is to prevent unwanted impacts to native vegetation and wildlife. Mechanical treatments and deterrents are allowed and select chemical treatments may be approved by the HCP staff. Contact our office for more information and specific guidelines.

Prohibited Materials

Key to the preservation of coastal ecosystems is preserving natural substrates as much as possible. Below is a list of prohibited materials designed to protect the white sand beaches and coastal dune ecosystems the area is famous for. Prohibited materials included below have the potential to stain natural sands, migrate into dune ecosystems, or transport invasive plants and pests. Select applications may be approved by HCP staff but require justification and additional conservation measures.

Prohibited Materials:

- Dirt, clay, or other non-white sand fill materials
- Loose rock and gravel
- Sod, mulch, pine-straw and other non-native groundcovers



Appendix A- Approved Plant Guide

Using this Guide

The tables below are designed to provide a brief overview of the plants approved for use through the Perdido Key Habitat Conservation Plan. Additional plants not included on this list may be approved for use with staff consultation.

Example Table

Height and/or Form of mature plants

Specific Landscaping Uses
 Xeriscaping  Sand Attenuation  Wildlife & Pollinators

Common Name	Scientific Name	Ht	Found In				Notes
Sand Pine	<i>Pinus clausa</i>	20'	Scrub/Forest	X			Prolific cones

Where in the coastal ecosystem this plant naturally occurs:
 Frontal Dune, Back Dune, Interdunal or Coastal Scrub/Forest

Additional information including flowers and fruit, growth patterns and maintenance concerns.

Trees

Common Name	Scientific Name	Ht	Found In				Notes
Sand Pine	<i>Pinus clausa</i>	20'	Scrub/Forest	X			Prolific cones
Slash Pine	<i>Pinus ellioti</i>	80-100'	Scrub/Forest	X			May not be suitable for exposed locations
Sand Live Oak	<i>Quercus geminata</i>	30'	Back Dune Scrub/Forest	X	X		May not be suitable for exposed locations
Myrtle Oak	<i>Quercus myrtifolia</i>	40-50'	Scrub/Forest				May not be suitable for exposed locations

Small Trees & Medium Shrubs

Common Name	Scientific Name	Ht	Found In				Notes
Beautyberry	<i>Callicarpa americana</i>	5'	Scrub/Forest	X		X	Deep purple berries in late summer/early fall. Can be shaped into small tree.
Yaupon Holly	<i>Ilex vomitoria</i>	20'	Scrub/Forest	X		X	Evergreen, red berries in summer months
Marsh Elder	<i>Iva frutescens</i>	11'	Interdunal				Good for planting against buildings tolerates wet and brackish soils.

Small Trees & Medium Shrubs

Common Name	Scientific Name	Ht	Found In				Notes
Winged Sumac	<i>Rhus copalina</i>	10'	Interdunal	X		X	Fall color, red berries in winter
Saw Palmetto	<i>Serenoa repens</i>	10'	Scrub/Forest	X	X	X	Can be used for natural barriers, but needs regular pruning
Wax Myrtle	<i>Myrica cerifera</i>	20'	Interdunal Scrub/Forest	X		X	Aromatic leaves and blue/grey berries, handles salt well

Small Shrubs, Grasses & Groudcovers

Common Name	Scientific Name	Form	Found In				Notes
Sandhill Milkweed	<i>Asclepias humistrata</i>	Shrub	All	X		X	Monarch host plant, but difficult to find commercially
Crossvine	<i>Bignonia capreolata</i>	Vine	Interdunal Scrub/Forest			X	Showy red-yellow blooms. May not be suitable for exposed locations
Sea Rocket	<i>Cakile constricta</i>	Shrub	Frontal Dune	X			Small white and pink blooms, not available commercially.
Florida Rosemary	<i>Ceratiola ericoides</i>	Shrub	Back Dune Scrub/Forest	X	X	X	Evergreen, Difficult to find commercially
Woody Goldenrod	<i>Chrysoma pauciflosculosa</i>	Shrub	All	X		X	Evergreen, Showy yellow blooms in fall
Beach Heather	<i>Chrysopsis canescens</i>	Shrub	Frontal Dune Back Dune	X		X	Yellow blooms, can be weedy in appearance
Cruise's Golden Aster	<i>Chrysopsis gosypina</i>	Shrub	All, except interdunal	X		X	Yellow blooms, difficult to find commercially
Beach Rosemary	<i>Conradina canescens</i>	Shrub	All, except interdunal	X	X		Small lavender-white blooms in spring/early summer.
Sedge	<i>Cyperus sp.</i>	Grass	Interdunal				
Lovegrass	<i>Eragrostis spectabilis</i>	Grass	Interdunal	X	X		Purple seed heads in Fall.
Blanket Flower	<i>Gaillardia pulchella</i>	Grdcvr	All	X	X	X	Showy red-yellow blooms in summer
Dune Sunflower	<i>Helianthis debilis</i>	Grdcvr	All	X	X	X	Yellow blooms, year round. Aggressive; needs regular pruning.

Appendix A- Approved Plant Guide

Small Shrubs, Grasses & Groudcovers

Common Name	Scientific Name	Form	Found In				Notes
Aster (Camphor Weed)	<i>Heterotheca subaxillaris</i>	Grdcvr	Back Dune Scrub/Forest	X			Yellow blooms in spring and summer. Can be weedy in appearance.
Pennywort	<i>Hydrocotyle bonariensis</i>	Grdcvr	All		X		Good groundcover.
Beach Morning Glory	<i>Ipomea iperati</i>	Grdcvr	Frontal Dune Back Dune	X	X	X	White flowers, aggressive runners, needs regular pruning
Railroad Vine	<i>Ipomea pes-caprea</i>	Grdcvr	Frontal Dune Back Dune	X	X	X	Purple flowers, aggressive runners, needs regular pruning
Beach Elder	<i>Iva Imbricata</i>	Shrub	Frontal Dune Back Dune	X	X		Rounded, clumping growing pattern
Gopher Apple	<i>Licania michauxii</i>	Grdcvr	Scrub/Forest	X	X	X	Food source for gopher tortoises and other small mammals
Evening Primrose	<i>Oenothera humifusa</i>	Grdcvr	Frontal Dune Back Dune	X	X	X	yellow flowers on long runners. Food source for beach mice
Beach Grass	<i>Panicum amarum</i>	Grass	All	X	X		Blue-green color, tall upright growth. Food source for beach mice.
Large-leave Jointweed	<i>Polygonella macophylla</i>	Shrub	Forest/Scrub	X		X	Rare, not available commercially
Bluestem	<i>Schizachyrium sp.</i>	Grass	All	X	X		Short grass, can be green or purple-brown in color
Sand Cordgrass	<i>Spartina bakerii</i>	Grass	Scrub/Forest	X	X		Forms tall, dense clumps. Ideal for borders and transition areas.
Seaside Goldenrod	<i>Solidgao sempervirens</i>	Shrub	Interdunal Scrub/Forest	X		X	Tall, upright growth. Showy yellow blooms in fall
Spiderwort	<i>Tradescantia ohioensis</i>	Grass	Interdunal Scrub/Forest		X		Short clumping grass with purple-blue blooms in spring.
Sea Oat	<i>Uniola paniculata</i>	Grass	Frontal Dune	X	X	X	Dune stabilizer, produce golden seed heads in fall. Food source for beach mice.
Spanish Dagger	<i>Yucca gloriosa</i>	Shrub	Scrub/Forest	X		X	Leaves are tipped with sharp spines, may not be suitable for all locations.

Landscape Notes

Use these blank pages to make notes about your own landscape or to brainstorm potential landscape designs.

