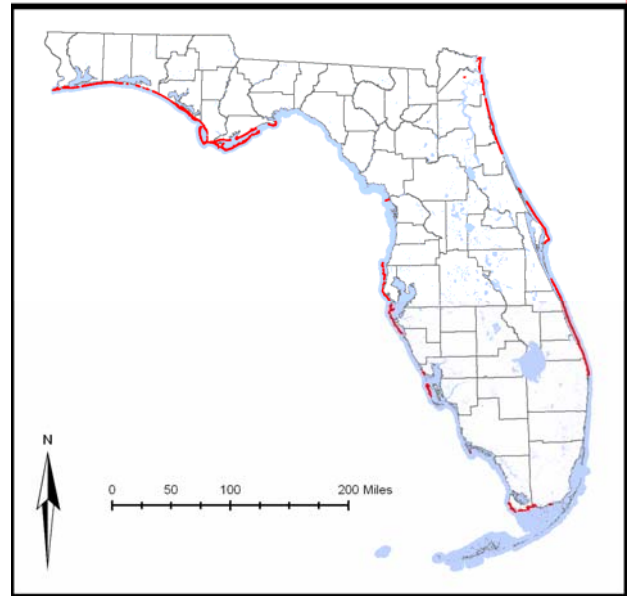


Coastal Strand



Status

Current condition: Poor and declining. According to the best available GIS information at this time (see Appendix D. GIS Data Tables), 14,855 acres (6,012 ha) of Coastal Strand habitat exist, of which 76% (11,317 ac; 4,580 ha) are in conservation or managed areas. Another 1% (90 ac; 36 ha) are in Florida Forever projects and 3% (471 ac; 191 ha) are in SHCA-designated lands. The remaining 20% (2,977 ac; 1,205 ha) are other private lands.



Some habitat distributions or locations may be misrepresented on this map due to size, resolution and insufficient data sources.

Habitat Description

FNAI types: Beach Dune, Coastal Berm, Coastal Grassland, Coastal Rock Barren, Coastal Strand

This habitat encompasses dunes and more landward areas typically described as coastal strand, as well as areas that may be described as upper beach and coastal rock formations. Coastal Strand is the vegetated zone that typically occurs between open beach and maritime hammock habitats. Coastal Strand occurs on deep, well-drained, sandy soils that are largely wind-deposited and washed or sorted by wave action to some extent. This habitat generally occurs in long, narrow bands along high-energy shorelines, parallel to the open waters of the Atlantic Ocean, Gulf of Mexico, and some coastal bays or sounds in both north and south Florida. Vegetation in this habitat is strongly affected by wind, wave action, and salt spray and consists of low-growing vines, grasses,

and other herbaceous plants and salt-tolerant shrub species that, in some areas, may form dense thickets. Pioneer or early successional herbaceous vegetation characterizes foredune and upper beach areas with a gradual change to woody shrub species on the more protected and stabilized areas farther landward. Typical plant species of Coastal Strand include beach morning glory, railroad vine, sea oats, saw palmetto, Spanish bayonet, yaupon holly, wax myrtle, and sea grape; in southern Florida, cocoplum, nickerbean, and other more tropical species are present.

Associated Species of Greatest Conservation Need

Mammals

- | | |
|--|----------------------------|
| • <i>Sigmodon hispidus exsputus</i> | Lower Keys Cotton Rat |
| • <i>Peromyscus polionotus allophrys</i> | Choctawhatchee Beach Mouse |
| • <i>Peromyscus polionotus leucocephalus</i> | Santa Rosa Beach Mouse |
| • <i>Peromyscus polionotus niveiventris</i> | Southeastern Beach Mouse |
| • <i>Peromyscus polionotus peninsularis</i> | St. Andrews Beach Mouse |
| • <i>Peromyscus polionotus phasma</i> | Anastasia Beach Mouse |
| • <i>Peromyscus polionotus trissyllepsis</i> | Perdido Key Beach Mouse |
| • <i>Podomys floridanus</i> | Florida Mouse |
| • <i>Ursus americanus floridanus</i> | Florida Black Bear |
| • <i>Procyon lotor auspicatus</i> | Key Vaca Raccoon |
| • <i>Spilogale putorius</i> | Spotted Skunk |
| • <i>Mephitis mephitis</i> | Striped Skunk |
| • <i>Puma concolor coryi</i> | Florida Panther |

Birds

- | | |
|----------------------------------|--------------------|
| • <i>Falco columbarius</i> | Merlin |
| • <i>Falco peregrinus</i> | Peregrine Falcon |
| • <i>Sterna anaethetus</i> | Bridled Tern |
| • <i>Sterna fuscata</i> | Sooty Tern |
| • <i>Anous stolidus</i> | Brown Noddy |
| • <i>Columbina passerine</i> | Common Ground-Dove |
| • <i>Aphelocoma coerulescens</i> | Florida Scrub-Jay |
| • <i>Passerina ciris ciris</i> | Painted Bunting |

Reptiles

- | | |
|-------------------------------------|-------------------------|
| • <i>Terrapene carolina major</i> | Gulf Coast Box Turtle |
| • <i>Terrapene carolina bauri</i> | Florida Box Turtle |
| • <i>Malaclemys terrapin</i> | Diamondback Terrapin |
| • <i>Gopherus polyphemus</i> | Gopher Tortoise |
| • <i>Chelonia mydas</i> | Green Turtle |
| • <i>Eretmochelys imbricata</i> | Hawksbill |
| • <i>Caretta caretta</i> | Loggerhead |
| • <i>Lepidochelys kempii</i> | Kemp's Ridley |
| • <i>Dermochelys coriacea</i> | Leatherback |
| • <i>Sceloporus woodi</i> | Florida Scrub Lizard |
| • <i>Eumeces egregius egregius</i> | Florida Keys Mole Skink |
| • <i>Eumeces egregius insularis</i> | Cedar Key Mole Skink |
| • <i>Heterodon platirhinos</i> | Eastern Hognose Snake |
| • <i>Heterodon simus</i> | Southern Hognose Snake |
| • <i>Drymarchon couperi</i> | Eastern Indigo Snake |

- *Lampropeltis getula* Common Kingsnake
- *Tantilla relicta pamlica* Coastal Dunes Crowned Snake
- *Crotalus adamanteus* Eastern Diamondback Rattlesnake

Invertebrates

- *Coenobita clypeatus* Land Hermit Crab
- *Stizocera floridana* Florida Forestiera Borer
- *Chelyoxenus xerobatis* Gopher Tortoise Hister Beetle
- *Anomala flavipennis okaloosensis* Panhandle Beach Anomala Scarab Beetle
- *Aphodius troglodytes* Gopher Tortoise Aphodius Commensal Scarab Beetle
- *Copris gopheri* Gopher Tortoise Copris Commensal Scarab Beetle
- *Onthophagus polyphemi polyphemi* Gopher Tortoise Onthophagus Commensal Scarab Beetle
- *Callophrys gryneus sweadneri* Sweadner's Juniper Hairstreak
- *Hemiargus thomasi bethunebakeri* Miami Blue
- *Anthanassa frisia* Cuban Crescent

Conservation Threats

Threats to Coastal Strand habitat that were also identified for multiple other habitats are addressed in the Chapter. Multiple Habitat Threats and Conservation Actions. These threats include:

- Climate variability
- Conversion to housing and urban development
- Conversion to recreation areas
- Incompatible fire
- Incompatible recreational activities
- Invasive animals
- Invasive plants
- Roads
- Shoreline hardening

Threats specific to Coastal Strand are similar to those for the Beach/Surf Zone habitat. Because of the importance of these habitats for coastal SGCN, such as sea turtles, shorebirds, and beach mice, habitat-specific threats such as light pollution, that can inhibit turtle nesting and increase predation for these and other species, were highlighted. Deposition of dredged materials for beach nourishment, dune restoration, and other purposes degrade these habitats and can directly impact these species, as can disturbance and predation by nuisance animals. Activities of residents and their pets living adjacent to or utilizing Coastal Strand to access beach habitats can cause degradation. Military base closures threaten potential loss of protection of Coastal Strand. Unlike the adjacent seaward habitat, conversion of Coastal Strand to golf courses remains a significant source of habitat loss.

The following stresses and sources of stress threaten this habitat:

Stresses		Habitat Stress Rank
A	Erosion/sedimentation	Very High
B	Fragmentation of habitats, communities, ecosystems	High
C	Altered soil structure and chemistry	High
D	Habitat degradation/disturbance	High

Stresses		Habitat Stress Rank
E	Altered species composition/dominance	High
F	Excessive depredation and/or parasitism	Medium
G	Insufficient size/extent of characteristic communities or ecosystems	Medium
H	Habitat destruction or conversion	Medium
I	Altered fire regime	Low

The sources of the stress, or threats, were used to generate conservation actions.

Sources of Stress		Habitat Source Rank	Related Stresses (see above)
1	Shoreline hardening	Very High	A, B, C, G
2	Conversion to housing and urban development	Very High	A, B, C, G
3	Sea level rise	High	A, B, E
4	Conversion to recreation areas	High	A, B, C, G
5	Incompatible recreational activities	High	A, B, C, D
6	Roads	High	A, B, C, G
7	Light pollution	High	D, E, F
8	Climate variability	High	A, B, G
9	Incompatible residential activities	High	D, E
10	Invasive plants	Medium	A, D, E
11	Invasive animals	Medium	D, E
12	Nuisance animals	Medium	F
13	Management of nature–inlet relocation and dredging	Medium	A, B, C
14	Channel modification/shipping lanes	Medium	A, B
15	Military activities	Medium	A, B, G
16	Degraded habitat	Low	F
17	Management of nature–nourishment	Low	E
18	Key predator/herbivore/pollinator losses	Low	E
19	Chemicals and toxins	Low	E
20	Nutrient loads–Urban	Low	E
21	Altered wind due to buildings	Low	E
22	Incompatible fire	Low	E
Statewide Threat Rank of Habitat		Very High	

Conservation Actions

Actions to abate the threats to Coastal Strand that were also identified as statewide threats (see list above in Conservation Threats section) may be found in the Chapter Multiple Habitat Threats and Conservation Actions.

Actions to abate specific threats that were identified for Coastal Strand are below. These actions were designed to reduce the impacts of light, dredged material, and humans and nuisance animals on coastal SGCN, reduce habitat loss to golf courses, and assure that the management and closure of military bases be implemented to retain critical habitat for Florida’s SGCN.

Conversion to Recreation Areas

Overall Rank	Planning and Standards	Feasibility	Benefits	Cost
M	Encourage incentives in county and regional planning for maintaining large tracts of native habitat in the development of recreational facilities.	M	M	H

Light Pollution

Overall Rank	Capacity Building	Feasibility	Benefits	Cost
H	Ensure through state and local cooperation that coastal lighting ordinances are updated as technology and information improves.	VH	M	L
Overall Rank	Education and Awareness	Feasibility	Benefits	Cost
M	Support cooperative education programs developed and/or implemented by utility companies and local governments for coastal property owners to ensure that light ordinances protecting coastal wildlife are followed (e.g., availability of automatic light shut-off features for beach lights).	VH	L	M
Overall Rank	Land/Water/Species Management	Feasibility	Benefits	Cost
M	Support and expand the coastal light replacement efforts of the U.S. Fish and Wildlife Service to be implemented statewide where sea turtle nesting and beach mice habitat exists.	H	M	H
Overall Rank	Policy	Feasibility	Benefits	Cost
H	Support incentives for retrofitting existing light features.	VH	M	H
M	Support installation of appropriate light technology for conservation of sea turtles and other coastal species on military lands, Kennedy Space Center, and ports (domestic security facilities) and continue application and enforcement on other public lands.	M	M	H

Incompatible Residential Activities

Overall Rank	Economic and Other Incentives	Feasibility	Benefits	Cost
M	Expand the scale of the Florida Yards and Neighborhoods program from certifying individual landowners to whole neighborhoods; certification should be renewed biennially and any time property ownership changes.	M	M	L

L	Provide incentives (through local governments) for covenants, codes and restrictions in residential areas that address issues of pesticide use, pet control, feeding of wildlife, household or yard waste disposal, landscape plants, irrigation use, prescribed fire tolerance, and light-use in coastal areas.	M	L	L
L	Identify and promote effective reward models for homeowners, maintenance companies, and municipalities for reducing impacts on neighboring conservation areas.	M	L	L
L	Provide incentives (through local governments) (e.g., fast track, density breaks) for developers that produce on-site, site-specific educational materials and standards that are maintained by homeowner associations.	M	L	L
Overall Rank	Education and Awareness	<i>Feasibility</i>	<i>Benefits</i>	<i>Cost</i>
M	Develop and fund continuing education courses for the landscape maintenance industry that includes appropriate use of chemicals, irrigation, plants, and disposal of yard waste.	H	M	M
L	Provide information to homeowners about the nearest access points and areas for off-road vehicle use and the impacts of creating new access routes on coastal habitats.	M	L	L
Overall Rank	Policy	<i>Feasibility</i>	<i>Benefits</i>	<i>Cost</i>
L	Encourage understanding of and compliance with leash laws in coastal strand and beach zones through increased patrols and information dissemination during nesting season. Utilize volunteers and others to help.	M	L	L

Nuisance Animals

Overall Rank	Education and Awareness	<i>Feasibility</i>	<i>Benefits</i>	<i>Cost</i>
M	Identify important habitat areas for nesting and loafing shorebirds (of Greatest Conservation Need), and encourage people and their pets to avoid them (as appropriate) through targeted education, signage, and patrols.	VH	L	M
L	Educate public landowners with responsibilities for coastal zone wildlife conservation about USDA protocols for raccoon management.	H	L	L
Overall Rank	Land/Water/Species Management	<i>Feasibility</i>	<i>Benefits</i>	<i>Cost</i>
M	Increase funding to implement existing sea turtle management practices regarding prevention of egg and hatchling predation. Promote the use of volunteer groups in association with the FWC to provide more capacity for implementation.	VH	L	M
Overall Rank	Planning and Standards	<i>Feasibility</i>	<i>Benefits</i>	<i>Cost</i>
M	Integrate feral animal management into public land management.	H	M	M
L	Develop and implement techniques for waste management in areas where SGCN or habitats are subject to high depredation or disturbance rates due to exotic or nuisance populations attracted or sustained by garbage.	M	L	L
Overall Rank	Policy	<i>Feasibility</i>	<i>Benefits</i>	<i>Cost</i>
M	Assist counties, municipalities, and homeowners associations to develop and implement curbside pick-up of yard and household waste.	H	M	M
L	Promote increased awareness and understanding of potential impacts of outdoor pet feeding on wildlife, and encourage homeowners to feed pets indoors.	L	M	M

L	Through cost-sharing and other incentive programs with local governments, ensure that home and business owners have wildlife-proof garbage containers.	H	L	H
L	Work with Homeowner Associations to amend their bylaws to address outdoor feeding of feral cats and raccoons.	M	L	L

Management of Nature–Dredging

Overall Rank	Capacity Building	Feasibility	Benefits	Cost
M	Develop statewide, system-specific dredge material disposal plans that identify long-term disposal sites, specify dredge deposition practices, and minimize or offset impacts to all coastal wildlife. Tie the overall statewide dredge material management plan to port expansion management plan (recommended in Incompatible Industrial Operations).	M	M	M
Overall Rank	Education and Awareness	Feasibility	Benefits	Cost
L	Develop educational programs about the importance of natural coastal processes and the economic cost of continually battling the natural movement of sand—direct these programs toward both the public and their elected officials.	H	L	L
Overall Rank	Planning and Standards	Feasibility	Benefits	Cost
L	Develop one or several coalitions of local groups statewide to identify local restoration projects where dredge material can be used.	M	L	L
Overall Rank	Policy	Feasibility	Benefits	Cost
L	Develop and promote incentive programs to encourage avoidance of areas where development is dependent upon beach dredging/nourishment.	L	M	M
L	Promote long-term monitoring of impacts for dredging and nourishment projects.	M	L	L
Overall Rank	Research	Feasibility	Benefits	Cost
L	Compare the cost of conducting dredge/nourishment projects in perpetuity to spending equal state/federal dollars on acquiring lands subject to erosion (barrier islands) and putting those lands into uses that are not dependent upon dredging.	H	L	L
L	Fund research on the impacts of beach nourishment on wildlife. For example, how invertebrate and benthic communities are impacted by nourishment projects and the cumulative impacts of repeated nourishment.	H	L	L
L	Establish a database of locations and timing of dredge/nourishment projects so that effects of repeated nourishment may be identified.	H	L	L

Military Activities

Overall Rank	Capacity Building	Feasibility	Benefits	Cost
H	Establish a permanent consultative group of multi-agency wildlife and habitat professionals that work with USDOD on development of any statewide plans for base expansion, increased usage, and growth or closure needs to enhance positive or minimize any negative impacts on wildlife and conservation lands.	M	H	M
Overall Rank	Land/Water Protection	Feasibility	Benefits	Cost
VH	Work to develop partnerships to encourage conservation of significant habitats on lands encompassed by federal/state base closures.	H	VH	VH

H	Work with the USDOD to develop management and mitigation alternatives for any loss or degradation of Coastal Strand habitat from military activities on barrier islands.	VH	M	VH
Overall Rank	Land/Water/Species Management	<i>Feasibility</i>	<i>Benefits</i>	Cost
M	Create a cooperative program to ensure consistent implementation of management plans on federal lands with sufficient capacity for conservation management of wildlife and habitats on military lands in Florida (e.g., prescribed fire, invasive species control, monitoring). Agreements should include that USDOD provides sufficient access to critical habitats for management and monitoring purposes (e.g., identify a procedure for routine access to restricted areas for these purposes). (State agencies, NGO conservation organizations, and USDOD)	M	M	M
Overall Rank	Planning and Standards	<i>Feasibility</i>	<i>Benefits</i>	Cost
M	Work to develop partnerships to encourage implementation of comprehensive management and mitigation plans that protect high-quality habitats and natural resources.	H	M	M