

## 10. Coastal Dune Grassland/Shrub Thicket

**Rarity Rank:** S1S2/G2G3

**Synonyms:** Maritime Grassland, Dune Meadow, Dune Grass

**Ecological Systems:**

CES203.469 Louisiana Beach

CES203.471 Southeastern Coastal Plain Interdunal Wetland

CES203.544 Upper Texas Coast Beach

### **General Description:**

(Note: Coastal Dune Grasslands and Coastal Dune Shrub Thickets are described as distinct communities in the LNHP Natural Communities of Louisiana. They are considered together here due to their floristic similarity and similarity in management needs.)



**Coastal Dune Grassland** occurs on beach dunes and relatively elevated backshore areas (ridges) above intertidal beaches on barrier islands and on the mainland. The dunes of Louisiana's barrier islands and mainland beaches are poorly developed because of the high frequency of overwash associated with hurricanes and storms, and a limited amount of eolian-transported sand. The sites are normally xeric (excessively drained) owing to the fact that they are elevated above the highest flood mark (except during hurricanes). These sites are exposed to moderate to high amounts of salt spray. In addition, limited nutrient availability and substrate instability also affect coastal dune vegetation.

The vegetative cover ranges from sparse to fairly dense and is dominated by salt spray tolerant grasses, which may include *Spartina patens* (wiregrass, usually present and often dominant), *Uniola paniculata* (sea oats), *Panicum amarum* (beach panic), *Triplasis purpurea* (purple sandgrass), *Paspalum vaginatum* (jointgrass), *Schizachyrium maritimum* (seacoast bluestem), *Distichlis spicata* (saltgrass), *Cenchrus* spp (sandburs), *Chloris petraea* (finger grass), *Sporobolus virginicus* (coast dropseed), *Eragrostis oxylepis* (red lovegrass), and *Andropogon* spp. (broomsedges). Forbs are common in this community and may form forb-dominated zones, particularly on the gulfward side of the dune. Forbs include *Batis maritima* (salt wort), *Ipomea stolonifera* (beach morning-glory), *I. pes-caprae* (goat-foot morning-glory), *Heliotropium currasivicum* (seaside heliotrope), *Strophostyles helvola* (sand wild bean), *Agalinis maritima* (seaside false foxglove), *Iva imbricata* (sumpweed), *Solidago sempervirens* (seaside goldenrod), *Cakile* spp. (sea rockets), *Croton punctatus* (punctate goatweed), *Hydrocotyle bonariensis* (large leaf pennywort), *Heterotheca subaxillaris* (camphor weed), *Sesuvium portulacastrum* (sea purselane), *Pluchea camphorata* (camphor-weed), *Sabatia stellaris* (seastar rose-gentian), *Atriplex arenaria* (quelite), *Aphanostephus skirrobasis* (lazy daisy), *Salicornia*

spp. (glassworts), *Sueda linearis* (annual seepweed), *Centrosema virginianum* (butterfly pea) and *Lippia nodiflora* (common frog-fruit). Shrubs from adjacent Coastal Dune Shrub Thickets may occur as scattered individuals in this community. These sites are subject to frequent storm overwash with salt water flooding and sand deposition. These events frequently give rise to what are called "barrier flats". Dune swales may be extensive and are considered as inclusions in this natural community. Dunes and ridges may be shifted or eroded by storm floods, destroying vegetation.

If dunes remain stable, allowing natural succession to progress, then **Coastal Dune Shrub Thickets** are formed. These occur on established sand dunes and beach ridges on barrier islands and the mainland coast. Coastal dune shrub thickets are of very limited extent in Louisiana due to relatively poorly developed coastal dunes. The sites are typically xeric to xeric/mesic and moderately exposed to salt spray. This community normally appears as a relatively dense stand of shrubs. A variety of salt-tolerant shrubs may occur including *Morella cerifera* (wax myrtle), *Ilex vomitoria* (yaupon), *Iva* spp. (marsh elder), *Baccharis halimifolia* (saltbush), *Acacia smallii* (acacia), and *Zanthoxylum clava-herculis* (toothache tree). The shrubs are often covered with a dense growth of lichens. Vines, such as *Smilax* spp. (greenbriers) and *Vitis mustangensis* (wild grape), are often present. This community may be destroyed by sand dune migration or erosion and may be replaced by Coastal Dune Grassland.

#### ***Current Extent and Status:***

Coastal dune grassland and shrub thickets are estimated to have occupied less than 2,000 acres each in presettlement times and for both communities, 50 to 75% is thought to remain today (Smith 1993). The most extensive examples of coastal dune grasslands are on the Chandeleur Islands, Timablier Islands, Isle Dernieres, and on the Chenier Plain from about Rutherford Beach (east of Cameron) westward to near the Texas state line. This habitat also occurs along other barrier islands and shorelines subject to high wave energy. The Chandeleur Islands are part of Breton NWR. Five islands in the Isle Dernieres chain (Wine, Whiskey, East, Trinity, and Raccoon) comprise LDWF's Isle Dernieres Barrier Islands Refuge.



Grand Isle supports some extensive coastal dune shrub thickets specifically on the east and west ends of the island. A considerable portion of this habitat is captured by Grand Isle State Park. None of the Cameron Parish coastal dune grassland/shrub thicket habitat falls within a conservation area.

COASTAL DUNE – GRASSLAND SHRUB THICKET SPECIES OF CONSERVATION CONCERN (11)		
<b>BIRDS</b>	Grasshopper Sparrow	<b>MAMMALS</b>
Brown Pelican		Eastern Spotted Skunk
Northern Harrier	<b>BUTTERFLIES</b>	
Wilson’s Plover	Wild Indigo Duskywing	<b>REPTILES</b>
Short-eared Owl	Great Southern White	Western Slender Glass Lizard
Loggerhead Shrike		Eastern Glass Lizard

**Priority Species Research and Survey Needs:**

Northern Harrier: Conduct surveys to determine their current distribution and winter abundance in coastal areas.

Wild Indigo Duskywing and Great Southern White: Conduct surveys to determine their current distribution and abundance for inclusion in LNHP database.

Eastern Glass Lizard: This species has not been observed outside of the Grand Isle population in nearly thirty years, despite adequate habitat. Conduct surveys to determine if Grand Isle population is extant.

**Species Conservation Strategies:**

1. Brown Pelican: Continue with long-term monitoring of nesting colonies.
2. Waterbirds and Shorebirds: Work with LCA, CWPPRA to incorporate strategies specifically targeting important waterbird and shorebird nesting areas in all future coastal restoration efforts.

**Threats Affecting Habitat:**

The following table illustrates the threats identified for this habitat type and the sources of these threats. This represents all threats and sources of threats identified across all ecoregions of the state where this habitat occurs.

Source of Threat	Threat			
	Altered Composition/ Structure	Habitat Destruction or Conversion	Habitat Disturbance	Habitat Fragmentation
Development/maintenance of pipelines, roads or utilities		XXX	XXX	XXX
Fire suppression	XXX			
Grazing practices	XXX		XXX	
Invasive/alien species	XXX			
Recreational use/vehicles	XXX		XXX	
Residential development		XXX	XXX	XXX
Shoreline erosion		XXX		XXX

***Habitat Conservation Strategies:***

1. Partner with NGOs, private landowners, etc. to promote protection of coastal dune grasslands and shrub thickets and continue to encourage landowners to enroll this habitat type in the Natural Areas Registry Program.
2. Promote education about invasive plant species within this habitat and methods to eradicate or control invasives.
3. Support NRCS and LDNR efforts for shoreline stabilization and habitat restoration.
4. Work with local governments to recommend limits on recreational vehicle use of this habitat.
5. Work with appropriate planning commissions to provide LNHP data that illustrates locations of this habitat type.
6. Work with NRCS Plant Materials Center and BTNEP to develop viable cultivars for coastal dune restoration efforts.
7. Work with the legislature to develop tax incentives and conservation easements or leases for landowners to encourage conservation of this habitat type.

***References:***

- LNHP. 1986-2004. The natural communities of Louisiana. Louisiana Natural Heritage Program, Louisiana Department of Wildlife and Fisheries, Baton Rouge, LA.
- MONTZ, G. N. 1977. A vegetational study of the Timbalier and Isle Dernieres barrier islands, Louisiana. The Proceedings of the Louisiana Academy of Sciences 40:59-69.
- . 1981. Final Report. Annotated checklist of plants on the coastal beaches, islands and barrier islands of Louisiana. U.S. Army Corps of Engineers, New Orleans, LA.
- SMITH, L. M. 1993. Estimated presettlement and current acres of natural plant communities in Louisiana. Louisiana Natural Heritage Program, Louisiana Department of Wildlife and Fisheries, Baton Rouge, LA.