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## Central and South Texas Coastal Fringe Forest and Woodland

BpS Model/Description Version: Aug. 2020

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### Vegetation Type

Forest and Woodland

### Map Zones

36

### Geographic Range

This habitat type includes oak-mottes found on the South Texas Sand Sheet occurring in Kleberg, Brooks and Kenedy counties, as well as oak/redbay forests occurring on the Ingleside Barrier strandplain in Nueces, San Patricio, Aransas, Refugio and Calhoun counties.

On the Ingleside Barrier strandplain, it extends from the coast to about five miles inland, primarily on high sandy ridges adjacent to the bays. Due to its higher elevation, this Biophysical Setting (BpS) is less susceptible to tidal storm surges than adjacent habitats in lower elevations. On the deep sands (50-80in deep) of the South Texas Sand Sheet, found south of Corpus Christi, this type extends much further inland.

### Biophysical Site Description

The Ingleside Barrier Strandplain consists of ancient dunes along the bay shorelines and the vegetation is influenced by salt spray. The dominant soil type was mapped as the Galveston-Mustang-Dianola series and was described as nearly level to undulating, rapidly permeable, nonsaline sandy soils in low coastal areas (USDA Conservation Service and TAES 1984 and 1992).

### Vegetation Description

Generally, this system appears as a dense thicket dominated by live oak (*Quercus virginiana*), plateau oak (*Quercus fusiformis*), redbay (*Persea borbonia*) and yaupon (*Ilex vomitoria*). Darlington oak (*Quercus hemisphaerica*) may also be present. Additional understory species include wax mallow (*Malvaviscus arboreus*) and wax myrtle (*Morella cerifera*). Along the edge of mottes, beautyberry (*Callicarpa americana*), coral bean (*Erythrina herbacea*), lime prickly ash (*Zanthoxylum fagara*) and tickle-tongue (*Zanthoxylum hirsutum*) are present. Dominant vines include mustang grape (*Vitis mustangensis*), greenbriar (*Smilax* spp) and trumpet creeper (*Campsis radicans*). There is also a significant grass component in this community found in woodland openings and swales. Dominant species include seacoast bluestem (*Schizachyrium scoparium* var. *littoralis*), Indian grass (*Sorghastrum nutans*) and big bluestem (*Andropogon gerardii*), switchgrass (*Panicum virgatum*) and others. At the northern end of the BpS, netleaf hackberry (*Celtis laevigata* var. *reticulata*) and blackjack oak (*Q. marilandica*) are also scattered

throughout. Where it occurs on the south Texas sand sheet, redbay, coral bean, and beautyberry are not likely components of the community.

Conspicuous within this BpS are patches void of the dominant vegetation. These depressional areas are thought to have been created by aeolian forces and support ephemeral emergent wetlands. Common species found in these wetlands include bulrush (*Scirpus* spp.), spikerush (*Eleocharis* spp.), rushes (*Juncus* spp.), and sedges.

This BpS probably developed largely in the absence of frequent fire which allowed the overstory of large trees to develop.

### BpS Dominant and Indicator Species

| Symbol | Scientific Name              | Common Name           |
|--------|------------------------------|-----------------------|
| QUFU   | <i>Quercus fusiformis</i>    | Plateau oak           |
| QUVI   | <i>Quercus virginiana</i>    | Live oak              |
| PEBO   | <i>Persea borbonia</i>       | Redbay                |
| QUHE2  | <i>Quercus hemisphaerica</i> | Quercus hemisphaerica |
| MOCE2  | <i>Morella cerifera</i>      | Wax myrtle            |
| VIMU2  | <i>Vitis mustangensis</i>    | Mustang grape         |
| CAAM2  | <i>Callicarpa americana</i>  | American beautyberry  |
| ILVO   | <i>Ilex vomitoria</i>        | Yaupon                |

Species names are from the NRCS PLANTS database. Check species codes at <http://plants.usda.gov>.

### Disturbance Description

Disturbance to this ecosystem has a relatively low frequency and occurs as an extreme hurricane event or an extended drought followed by a fire. Wind from Category 5 hurricanes can remove canopy, while the associated tidal storm surge may cause sand deposition and increase soil salinity resulting in mortality of all vegetation types. Some mortality may still be expected from the effects of hurricanes under Category 5. There would be less mortality because of the presence of the barrier islands and the higher elevation where these systems occur.

Fire from adjacent habitats, mainly the Texas-Louisiana coastal prairie, possibly limited the expansion of this system. Though the system lacks ground fuel, it does contain enough ladder fuels, particularly on the edge of oak mottes, to carry fire under the right conditions.

### Fire Frequency

| Severity         | Avg FI | Percent of All Fires | Min FI | Max FI |
|------------------|--------|----------------------|--------|--------|
| Replacement      | 442    | 18                   |        |        |
| Moderate (Mixed) | 100    | 82                   |        |        |
| Low (Surface)    |        |                      |        |        |
| All Fires        | 82     | 100                  |        |        |

Fire interval is expressed in years for each fire severity class and for all types of fire combined (All Fires). Average FI is the central tendency modeled. Percent of all fires is the percent of all fires modeled in that severity class. Minimum and Maximum FIs show the relative range of fire intervals as estimated by model contributors, if known.

### Scale Description

Today this system is relatively limited in extent. It is believed that historically this type would also have been limited in size and extent based on topography and soils.

### Adjacency or Identification Concerns

Not to be confused with Central Texas Coast Live Oak Savanna that is found adjacent to this system but is more susceptible to fire events. Oak mottes of the Central Texas Coast Live Oak Savanna are characterized by the presence of a high grass component and mid-shrub overstory that is not found in this system. This system is also adjacent to the South Texas Sand Sheet Grassland (1442).

### Issues or Problems

Urban development of barrier islands and along the coast has reduced the historic range of this system on the central coast. Small pockets of this habitat type can be found along the Aransas National Wildlife Refuge, Goose Island State Park, and south towards Ingleside in San Patricio County. Further development along the coastal area could result in this already limited system disappearing altogether.

### Native Uncharacteristic Conditions

### Comments

## Succession Classes

### Mapping Rules

| Upper Layer Lifeform | Height (m) | Canopy Cover (%) |       |       |       |       |       |       |       |       |        |
|----------------------|------------|------------------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
|                      |            | 0-10             | 11-20 | 21-30 | 31-40 | 41-50 | 51-60 | 61-70 | 71-80 | 81-90 | 91-100 |
| Herb                 | 0-0.5      | A                | A     | A     | A     | A     | A     | A     | A     | A     | A      |
| Herb                 | 0.5-1.0    | A                | A     | A     | A     | A     | A     | A     | A     | A     | A      |
| Herb                 | >1.0       | A                | A     | A     | A     | A     | A     | A     | A     | A     | A      |
| Shrub                | 0-0.5      | A                | A     | A     | A     | A     | A     | A     | A     | A     | A      |
| Shrub                | 0.5-1.0    | A                | A     | A     | A     | A     | A     | A     | A     | A     | A      |
| Shrub                | 1.0-3.0    | A                | A     | A     | A     | A     | A     | A     | A     | A     | A      |
| Shrub                | >3.0       | A                | A     | A     | A     | A     | A     | A     | A     | A     | A      |
| Tree                 | 0-5        | A                | A     | A     | A     | A     | A     | A     | A     | A     | A      |
| Tree                 | 5-10       | A                | A     | A     | A     | A     | A     | A     | A     | A     | A      |
| Tree                 | 10-25      | B                | B     | B     | B     | B     | B     | B     | B     | B     | B      |
| Tree                 | 25-50      | B                | B     | B     | B     | B     | B     | B     | B     | B     | B      |
| Tree                 | >50        | B                | B     | B     | B     | B     | B     | B     | B     | B     | B      |

Succession class letters A-E are described in the Succession Class Description section. Some classes use a leafform distinction where a qualifier is added to the class letter: Brdl (broadleaf), Con (conifer), or Mix (mixed conifer and broadleaf). UN refers to uncharacteristic native or a combination of height and cover that would not be expected under the reference condition. NP refers to not possible or a combination of height and cover which is not physiologically possible for the species in the BpS.

### Description

**Class A**      **26**      **Early Development 1 - All Structures**

### Indicator Species

| Symbol | Scientific Name    | Common Name | Canopy Position |
|--------|--------------------|-------------|-----------------|
| QUFU   | Quercus fusiformis | Plateau oak | Upper           |



|                           |            |            |       |     |     |   |
|---------------------------|------------|------------|-------|-----|-----|---|
| Wind or Weather or Stress | Early1:ALL | Early1:ALL | 0.002 | 500 | Yes | 0 |
| Replacement Fire          | Early1:ALL | Early1:ALL | 0.003 | 333 | Yes | 0 |
| Mixed Fire                | Early1:ALL | Early1:ALL | 0.01  | 100 | No  | 0 |
| Wind or Weather or Stress | Late1:CLS  | Early1:ALL | 0.002 | 500 | Yes | 0 |
| Replacement Fire          | Late1:CLS  | Early1:ALL | 0.002 | 500 | Yes | 0 |
| Wind or Weather or Stress | Late1:CLS  | Late1:CLS  | 0.01  | 100 | No  | 0 |
| Mixed Fire                | Late1:CLS  | Late1:CLS  | 0.01  | 100 | No  | 0 |

## References

McAlister, Wayne H. and Martha K. McAlister. 1995. Aransas: A Naturalist's Guide. University of Texas Press, Austin, TX.

NatureServe. 2007. International Ecological Classification Standard: Terrestrial Ecological Classifications. NatureServe Central Databases. Arlington, VA, U.S.A. Data current as of 10 February 2007.

USDA Soil Conservation Service and TAES. 1984. Soil Survey of Refugio County, Texas.

USDA Soil Conservation Service and TAES. 1992. Soil Survey of Nueces County, Texas.