

Ecological site R150AY532TX Deep Sand

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General information

Provisional. A provisional ecological site description has undergone quality control and quality assurance review. It contains a working state and transition model and enough information to identify the ecological site.

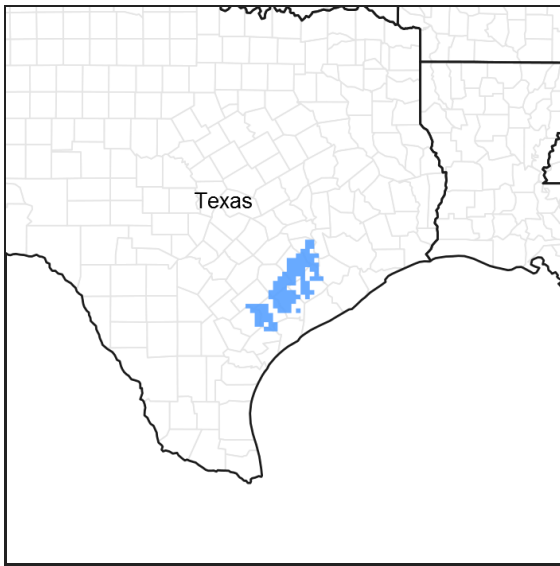


Figure 1. Mapped extent

Areas shown in blue indicate the maximum mapped extent of this ecological site. Other ecological sites likely occur within the highlighted areas. It is also possible for this ecological site to occur outside of highlighted areas if detailed soil survey has not been completed or recently updated.

MLRA notes

Major Land Resource Area (MLRA): 150A–Gulf Coast Prairies

MLRA 150A is in the West Gulf Coastal Plain Section of the Coastal Plain Province of the Atlantic Plain in Texas (83 percent) and Louisiana (17 percent). It makes up about 16,365 square miles (42,410 square kilometers). It is characterized by nearly level plains that have low local relief and are dissected by rivers and streams that flow toward the Gulf of Mexico. Elevation ranges from sea level to about 165 feet (0 to 50 meters) along the interior margin. It includes the towns of Crowley, Eunice, and Lake Charles, Louisiana, and Beaumont, Houston, Bay City, Victoria, Corpus Christi, Robstown, and Kingsville, Texas. Interstates 10 and 45 are in the northeastern part of the area, and Interstate 37 is in the southwestern part. U.S. Highways 90 and 190 are in the eastern part, in Louisiana. U.S. Highway 77 passes through Kingsville, Texas. The Attwater Prairie Chicken National Wildlife Refuge and the Fannin Battleground State Historic Site are in the part of the area in Texas.

Classification relationships

USDA-Natural Resources Conservation Service, 2006.
-Major Land Resource Area (MLRA) 150A

Ecological site concept

The Deep Sands are characterized by soils with sandy upper horizons deeper than 50 inches.

Associated sites

| | |
|-------------|---|
| R150AY535TX | Southern Loamy Prairie Loamy Prairie site is less wooded and more productive than the Deep Sand site. |
| R150AY543TX | Sandy Prairie Sandy Prairie site is less wooded and more productive than the Deep Sand site. |

Table 1. Dominant plant species

| | |
|------------|---------------|
| Tree | Not specified |
| Shrub | Not specified |
| Herbaceous | Not specified |

Physiographic features

These soils are on gently sloping terrace positions near large streams along stream channels and drainageways. Slopes range from 0 to 5 percent, but most are 0 to 2 percent. The elevation is 40 to 250 feet. The soils formed in noncalcareous sandy alluvium that is somewhat modified by wind action.

Table 2. Representative physiographic features

| | |
|--------------------|------------------------------------|
| Landforms | (1) Stream terrace (2) Terrace |
| Flooding frequency | None |
| Ponding frequency | None |
| Elevation | 40–250 ft |
| Slope | 0–5% |
| Water table depth | 48–72 in |
| Aspect | Aspect is not a significant factor |

Climatic features

The climate of MLRA 150A is humid subtropical with mild winters. The average annual precipitation in the northern two-thirds of this area is 45 to 63 inches. It is 28 inches at the extreme southern tip of the area and 30 to 45 inches in the southwestern third of the area. The precipitation is fairly evenly distributed, but it is slightly higher in late summer and midsummer in the western part of the area and slightly higher in winter in the eastern part. Rainfall typically occurs as moderate intensity, tropical storms that produce large amounts of rain during the winter. The average annual temperature is 66 to 72 degrees F. The freeze-free period averages 325 days and ranges from 290 to 365 days, increasing in length to the southwest.

Table 3. Representative climatic features

| | |
|--|--------------|
| Frost-free period (characteristic range) | 232-259 days |
| Freeze-free period (characteristic range) | 289-365 days |
| Precipitation total (characteristic range) | 43-50 in |
| Frost-free period (actual range) | 219-265 days |
| Freeze-free period (actual range) | 210-365 days |
| Precipitation total (actual range) | 41-56 in |
| Frost-free period (average) | 246 days |

| | |
|-------------------------------|----------|
| Freeze-free period (average) | 328 days |
| Precipitation total (average) | 47 in |

Climate stations used

- (1) HOUSTON HOOKS MEM AP [USW00053910], Tomball, TX
- (2) VICTORIA RGNL AP [USW00012912], Victoria, TX
- (3) BAYTOWN [USC00410586], Crosby, TX
- (4) HOUSTON SUGARLAND MEM [USW00012977], Sugar Land, TX
- (5) SEALY [USC00418160], Sealy, TX
- (6) COLUMBUS [USC00411911], Columbus, TX
- (7) NEW GULF [USC00416286], Boling, TX
- (8) DANEVANG 1 W [USC00412266], El Campo, TX
- (9) PIERCE 1 E [USC00417020], El Campo, TX
- (10) VICTORIA FIRE DEPT #5 [USC00419361], Victoria, TX

Influencing water features

This site is moderately well to somewhat excessively drained. Permeability is moderate to rapid.

Soil features

The site is very deep, moderately well to somewhat excessively drained, and moderately to rapidly permeable sands. Soil reaction is moderately acid to neutral. Solum thickness is more than 80 inches. Runoff is negligible on slopes less than 1 percent, very low on 1 to 3 percent slopes, and low on 3 to 5 percent slopes. Soils correlated to this site include: Kenney, Kuy, and Rupley.

Table 4. Representative soil features

| | |
|---|---|
| Surface texture | (1) Loamy fine sand |
| Family particle size | (1) Sandy |
| Drainage class | Moderately well drained to somewhat excessively drained |
| Permeability class | Moderate to rapid |
| Soil depth | 72 in |
| Available water capacity (0-40in) | 3-5 in |
| Calcium carbonate equivalent (0-40in) | 0% |
| Electrical conductivity (0-40in) | 0-2 mmhos/cm |
| Sodium adsorption ratio (0-40in) | 0 |
| Soil reaction (1:1 water) (0-40in) | 5.6-7.3 |
| Subsurface fragment volume <=3" (Depth not specified) | 0-3% |

Ecological dynamics

The Deep Sand ecological site is comprised of small acreage areas dotted across the landscape. They are primarily associated with uplands adjacent to small streams. The soils are very deep sands and are excessively drained. Because of this, they can be quite droughty. The reference plant community is a Tall/Midgrass Savannah Community (1.1) that was in dynamic equilibrium with the ecological forces that formed them. Those forces included

grazing by native wild herbivores, natural and anthropogenic fire, and periodic drought and wet cycles. Historically, bison were the primary large ungulate that grazed the site. According to historical accounts, large numbers of bison grazed the Gulf Coast Prairie region. Weniger states, “when DeLeon came looking for LaSalle’s settlement in 1689, he wrote of the area now southern Victoria County as being all very pleasing; and we came across many buffalo.” When back in the same area in 1690 he reported, “we set out in the same direction over some plains which were covered with buffalo, to cross the arroyo of the French (Garcitas Creek).” The typical bison grazing pattern was short, but very intense followed by total deferment until the herds migrated back. Long deferments allowed the tallgrasses to recover carbohydrate reserves and produce a seed crop. A fire regime and frequency of 3 to 8 years, according to Lehmann, is probable and as important as grazing in shaping the plant community.

The reference plant community is a Tall/Midgrass Savannah with a scattered large live oak (*Quercus virginiana*) and occasional post oak (*Quercus stellata*). Major tallgrass species included big bluestem (*Andropogon gerardii*), yellow Indiangrass (*Sorghastrum nutans*), switchgrass (*Panicum virgatum*), and Florida paspalum (*Paspalum floridanum*). Dominant midgrasses were characterized by little bluestem (*Schizachyrium scoparium*), crinkle awn (*Trachypogon spicatus*), Texasgrass (*Vaseyochloa multinervosa*), and Pan American balsamscale (*Elionurus tripsacoides*). Perennial forbs included purple prairie clover (*Dalea purpurea*), golden prairie clover (*Dalea aurea*), snoutbeans (*Rhynchosia* spp.), sensitive briar (*Mimosa microphylla*), and woollywhite (*Hymenopappus* spp). Annual forbs occurred in relatively high numbers in wet years and following intense grazing events by bison. Woody plant encroachment was initially excluded by grassy competition and periodic intense fires.

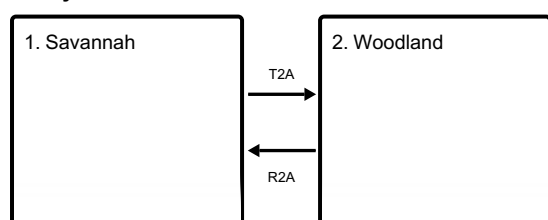
With the introduction of wild longhorn cattle in the mid-to-late 1700’s, and domestic cattle in the 1820’s, an era of heavy, semi-continuous grazing began. During the Spanish Mission era of the 1600 to 1700’s, in the San Antonio, Goliad, Refugio areas, vast herds of cattle, horses, sheep, and goats were used for meat production for the missions. According to Weniger, “Mission Espiritu Santo, near present Goliad, had a total of 16,000 cattle by 1768.” With no fences, these were free-roaming herds which allowed for escape and population increase in adjacent areas. A further example of large numbers of cattle by Weniger states, “One packery was established at Fulton, Texas in the 1860’s, which slaughtered 40,000 head of cattle during its operation. In the year 1874 alone, 102 million pounds of tallow and over 2.5 million dollars worth of cow hides were shipped from the Texas Coast.” This heavy grazing was exacerbated with the introduction of barbed wire and windmills in the 1880’s. Excessive grazing reduced or eliminated the tallgrass component of the grassland and some midgrasses. As the site transitions, less palatable species such as Pan American balsamscale, brownseed paspalum (*Paspalum plicatulum*), panicums, and paspalums increased, as did both perennial and annual forbs.

As the tall and midgrasses decrease in composition and biomass production decreases, fuel for fire decreases as well, resulting in less frequent and lower intensity fires. Continuous overuse by livestock and the reduction or cessation of fire allows woody plants to invade. These woody plants include live oak, blackjack oak (*Quercus marilandica*), post oak, yaupon (*Ilex vomitoria*), American beautyberry (*Callicarpa americana*), green briar (*Smilax* spp.), and mustang grape (*Vitis mustangensis*). Annual and perennial weeds also increase significantly.

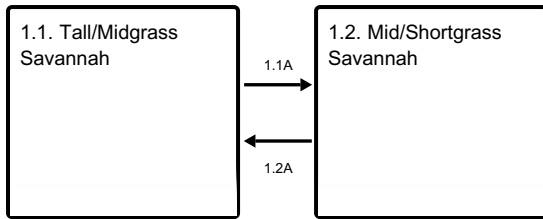
As state and transition thresholds are crossed, changes occur impacting plant composition, biomass production, litter accumulation, water infiltration, and water storage. These changes impact other natural ecological functions such as frequency and intensity of fire. The result converts the site from a true Tall/Midgrass Savannah to an Oak Woodland in most instances. In the heavily wooded state, canopy cover may exceed 100 percent due to the various layers of trees, shrubs, and woody vines. Herbaceous production may be totally eliminated. Once these thresholds have been crossed, restoration back to the reference plant community becomes much more difficult and expensive. Even though the plant community may be restored through the use of a combination of practices such as mechanical and herbicidal brush management, prescribed grazing and fire, this community cannot be maintained without the continuous use of these tools on a frequent basis.

State and transition model

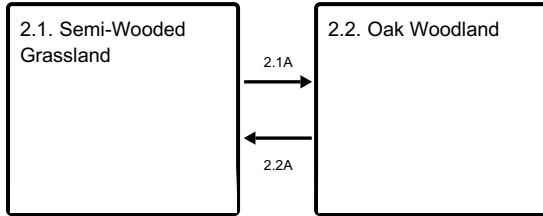
Ecosystem states



State 1 submodel, plant communities



State 2 submodel, plant communities



State 1 Savannah

Community 1.1 Tall/Midgrass Savannah

The reference plant community for the Deep Sand Site is a Tall/Midgrass Savannah Community (1.1) with a less than 15 percent canopy of primarily live oak trees. Tallgrasses most likely made up over 60 percent of herbaceous production, followed by midgrasses, shortgrasses, and forbs. Dominant tallgrasses included big bluestem, yellow Indiangrass, and switchgrass. Midgrasses such as little bluestem, Texasgrass, crinkleawn, and Pan American balsamscale made up a significant portion of the herbaceous composition. Perennial forbs such as prairie clover, sensitive briar, and woollywhite are important contributors. Annual forbs occur differing amounts in response to grazing intensity, fire, drought, or excessive precipitation. This savannah site was periodically heavily grazed by bison and both wild and domestic livestock. Continuous heavy grazing came with the advent of barbed wire and windmills in the mid to late 1800's. Overgrazing initially resulted in the reduction and then loss of the tallgrass component, creating loss of total biomass, reduced litter accumulations and reduction of fire frequency and intensity. If overgrazing continues, midgrasses replace tallgrasses, and some shortgrasses and annual forbs begin to dominate the community resulting in the Mid/Shortgrass Savannah Community (1.2).

Table 5. Annual production by plant type

| Plant Type | Low (Lb/Acre) | Representative Value (Lb/Acre) | High (Lb/Acre) |
|-----------------|---------------|--------------------------------|----------------|
| Grass/Grasslike | 1450 | 2900 | 4200 |
| Forb | 100 | 150 | 200 |
| Tree | 100 | 150 | 200 |
| Shrub/Vine | 50 | 75 | 100 |
| Total | 1700 | 3275 | 4700 |

Figure 9. Plant community growth curve (percent production by month). TX7606, Tall/Midgrass Prairie Community. Prairie Community composed of warm-season tall and midgrasses..

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1 | 2 | 4 | 12 | 24 | 23 | 8 | 5 | 12 | 4 | 3 | 2 |

Community 1.2 Mid/Shortgrass Savannah

This community is still a part of the reference state because remnants of some of the tallgrasses remain. However,

this is now a midgrass dominant community, with higher amounts of shortgrasses and forbs. This community will be dominated by such species as little bluestem, Texasgrass, brownseed paspalum, broomsedge bluestem (*Andropogon virginicus*), and Pan American balsamscale. The perennial and annual forb community will be more evident because of reduced competition for sunlight and moisture. Forbs like purple and golden prairie clover, woollywhite, snoutbeans, and sensitive briars will be much more common. Woody species such as post oak and blackjack oak, American beautyberry, and yaupon also begin to increase.

Pathway 1.1A **Community 1.1 to 1.2**

Heavy grazing, lack of fire, and no brush management transition this site to Community 1.2.

Pathway 1.2A **Community 1.2 to 1.1**

This community develops as a result of heavy grazing. The litter accumulation is reduced along with fine-fuel loads resulting in reduced fire intensity. This community can be converted relatively easily back to community 1.1 through the use of prescribed grazing, brush management, and prescribed burning. Brush management associated with restoration back to community 1.1 would typically be individual plant treatment (IPT).

State 2 **Woodland**

Community 2.1 **Semi-Wooded Grassland**

This community is created by excessive continuous grazing which removes the tallgrass component and greatly reduces the midgrass community. Big bluestem, yellow Indiangrass, and other tallgrasses are non-existent. Little bluestem, crinkleawn, and brownseed paspalum are found only in isolated scattered clumps. Shade tolerant species such as Texasgrass and purpletop (*Tridens flavus*) are present. Once canopy cover approaches 30 percent shade becomes a major driver to the herbaceous plant composition. The canopy will continue to increase regardless of grazing management. Litter and plant biomass are greatly reduced, thus significantly reducing fire frequency and intensity and allowing woody plants to increase. The grass community is dominated by Chloris species, fringleaf paspalum (*Paspalum setaceum*), Scribner's rosettegrass (*Dicanthelium oligosanthes*), purple three-awn (*Aristida purpurea*), panicums, and paspalums. Within the woody canopy such shade tolerant species as purpletop and Texasgrass still remain. Both perennial and annual forbs such as prairie clovers, snoutbean, woollywhite, sensitive briar, croton (*Croton* spp.), partridgepea (*Chamaecrista fasciculata*), frostweed (*Helianthemum* spp.), and many others become much more prevalent. Trees, shrubs, and vines have increased drastically and, in some places, form dense mottes. Blackjack and post oak now co-habit with live oak and understory/overstory shrubs and vines such as American beautyberry, yaupon, mustang grape, and poison ivy (*Toxicodendron radicans*) are very common.

Community 2.2 **Oak Woodland**

This community is now a closed canopy of hardwood trees, shrubs, and woody vines. It is a result of continued heavy grazing, no fire, and no brush management. At this point, there is almost no herbaceous production on the soil surface due to lack of sunlight. Oaks, yaupon, beautyberry, mustang grape, and poison ivy dominate. Fire is no longer an option unless leaf litter is burned following leaf fall. Multiple burns over time will be needed to restore grasses back into this plant community. Grazeable herbaceous forage in this community is non-existent.

Pathway 2.1A **Community 2.1 to 2.2**

Continued heavy grazing, lack of brush management, and lack of fire transition this site to Community 2.2.

Pathway 2.2A Community 2.2 to 2.1

This community can be restored back to community 2.1 or 1.2 with massive inputs of capital and labor. Mechanical and/or herbicidal brush management must be employed followed by prescribed burning and prescribed grazing. Due to residual woody seed sources and introduction of seed from adjacent sites by wildlife, continual inputs of herbicide and fire must be utilized to maintain this site once initial brush management is completed.

Transition T2A State 1 to 2

Continued heavy grazing, lack of fire, and lack of brush management transition the site to State 2. This is evident once the woody canopy is greater than 30 percent.

Restoration pathway R2A State 2 to 1

State 2 can be taken back to community 1.2 or possibly 1.1, but not without major inputs of energy and capital in the form of brush management, prescribed fire, and prescribed grazing. Once in this state, continual input will be required to convert to community 1.2 in order to maintain a Savannah State (1).

Additional community tables

Table 6. Community 1.1 plant community composition

| Group | Common Name | Symbol | Scientific Name | Annual Production (Lb/Acre) | Foliar Cover (%) |
|------------------------|--------------------------|--------|--|-----------------------------|------------------|
| Grass/Grasslike | | | | | |
| 0 | Tallgrass | | | 400–700 | |
| | little bluestem | SCSCS | <i>Schizachyrium scoparium var. scoparium</i> | 400–700 | – |
| 1 | Tallgrasses | | | 800–3950 | |
| | big bluestem | ANGE | <i>Andropogon gerardii</i> | 500–1800 | – |
| | switchgrass | PAVI2 | <i>Panicum virgatum</i> | 800–950 | – |
| | Indiangrass | SONU2 | <i>Sorghastrum nutans</i> | 400–700 | – |
| | Florida paspalum | PAFL4 | <i>Paspalum floridanum</i> | 250–600 | – |
| 2 | Tall/midgrasses | | | 350–550 | |
| | Pan American balsamscale | ELTR4 | <i>Elionurus tripsacoides</i> | 100–350 | – |
| | purpletop tridens | TRFL2 | <i>Tridens flavus</i> | 100–250 | – |
| | Texasgrass | VAMU | <i>Vaseyochloa multinervosa</i> | 100–250 | – |
| | spiked crinkleawn | TRSP12 | <i>Trachypogon spicatus</i> | 75–200 | – |
| 3 | Midgrasses | | | 200–400 | |
| | brownseed paspalum | PAPL3 | <i>Paspalum plicatum</i> | 75–200 | – |
| | longspike tridens | TRST2 | <i>Tridens strictus</i> | 50–150 | – |
| | broomsedge bluestem | ANVI2 | <i>Andropogon virginicus</i> | 50–150 | – |
| | purple threeawn | ARPU9 | <i>Aristida purpurea</i> | 25–75 | – |
| 4 | Shortgrasses | | | 100–200 | |
| | hooded windmill grass | CHCU2 | <i>Chloris cucullata</i> | 50–75 | – |
| | windmill grass | CHLOR | <i>Chloris</i> | 25–50 | – |
| | Scribner's rosette grass | DIOLS | <i>Dichantherium oligosanthes var. scribnerianum</i> | 25–50 | – |

| | | | | | |
|-------------|-----------------------------|--------|--|---------|---|
| | thin paspalum | PASE5 | <i>Paspalum setaceum</i> | 5–50 | – |
| | fall witchgrass | DICO6 | <i>Digitaria cognata</i> | 5–25 | – |
| | crowgrass | PASPA2 | <i>Paspalum</i> | 5–20 | – |
| | panicgrass | PANIC | <i>Panicum</i> | 5–20 | – |
| | red grama | BOTR2 | <i>Bouteloua trifida</i> | 0–15 | – |
| Forb | | | | | |
| 5 | Forbs | | | 100–200 | |
| | Kairn's sensitive-briar | MILA15 | <i>Mimosa latidens</i> | 5–15 | – |
| | powderpuff | MIST2 | <i>Mimosa strigillosa</i> | 5–15 | – |
| | Carolina woollywhite | HYSC | <i>Hymenopappus scabiosaeus</i> | 5–15 | – |
| | hogwort | CRCA6 | <i>Croton capitatus</i> | 0–10 | – |
| | golden prairie clover | DAAU | <i>Dalea aurea</i> | 5–10 | – |
| | purple prairie clover | DAPU5 | <i>Dalea purpurea</i> | 5–10 | – |
| | Cuman ragweed | AMPS | <i>Ambrosia psilostachya</i> | 5–10 | – |
| | bluestem pricklypoppy | ARAL3 | <i>Argemone albiflora</i> | 5–10 | – |
| | purple poppymallow | CAIN2 | <i>Callirhoe involucrata</i> | 5–10 | – |
| | partridge pea | CHFA2 | <i>Chamaecrista fasciculata</i> | 5–10 | – |
| | Texas bullnettle | CNTE | <i>Cnidocolus texanus</i> | 5–10 | – |
| | Texas lupine | LUTE | <i>Lupinus texensis</i> | 5–10 | – |
| | wax mallow | MAARD | <i>Malva viscus arboreus var. drummondii</i> | 5–10 | – |
| | groundcherry | PHYSA | <i>Physalis</i> | 5–10 | – |
| | queen's-delight | STSY | <i>Stillingia sylvatica</i> | 1–10 | – |
| | stemless spiderwort | TRSU | <i>Tradescantia subacaulis</i> | 5–10 | – |
| | Texas vervain | VEHA | <i>Verbena halei</i> | 1–5 | – |
| | American snoutbean | RHAM | <i>Rhynchosia americana</i> | 2–5 | – |
| | Texas snoutbean | RHSE4 | <i>Rhynchosia senna</i> | 2–5 | – |
| | fanpetals | SIDA | <i>Sida</i> | 1–5 | – |
| | evening primrose | OENOT | <i>Oenothera</i> | 0–5 | – |
| | woodsorrel | OXALI | <i>Oxalis</i> | 1–5 | – |
| | phlox | PHLOX | <i>Phlox</i> | 1–5 | – |
| | Texas bindweed | COEQ | <i>Convolvulus equitans</i> | 0–5 | – |
| | low silverbush | ARHU5 | <i>Argythamnia humilis</i> | 0–5 | – |
| | cardinal's feather | ACRA | <i>Acalypha radians</i> | 2–5 | – |
| | Engelmann's daisy | ENPE4 | <i>Engelmannia peristenia</i> | 0–5 | – |
| | buckwheat | ERIOG | <i>Eriogonum</i> | 2–5 | – |
| | slender dwarf morning-glory | EVAL | <i>Evolvulus alsinoides</i> | 1–5 | – |
| | Texas croton | CRTE4 | <i>Croton texensis</i> | 0–5 | – |
| | Torrey's tievine | IPCOT | <i>Ipomoea cordatotriloba var. torreyana</i> | 0–5 | – |
| | sand phacelia | PHPA4 | <i>Phacelia patuliflora</i> | 1–4 | – |
| | viperina | ZOBR | <i>Zornia bracteata</i> | 1–3 | – |
| | coastal indigo | INMI | <i>Indigofera miniata</i> | 1–3 | – |
| | hoary milkpea | GACA | <i>Galactia canescens</i> | 1–3 | – |
| | geranium | GERAN | <i>Geranium</i> | 0–2 | – |

| | | | | | |
|-------------------|----------------------|--------|---|---------|---|
| | bristly nama | NAHI | <i>Nama hispidum</i> | 0–2 | – |
| Shrub/Vine | | | | | |
| 6 | Shrubs/Vines | | | 50–100 | |
| | mustang grape | VIMU2 | <i>Vitis mustangensis</i> | 50–100 | – |
| | American beautyberry | CAAM2 | <i>Callicarpa americana</i> | 10–50 | – |
| | yaupon | ILVO | <i>Ilex vomitoria</i> | 10–50 | – |
| | eastern poison ivy | TORAR | <i>Toxicodendron radicans ssp. radicans</i> | 25–50 | – |
| | pricklypear | OPUNT | <i>Opuntia</i> | 5–15 | – |
| | blackberry | RUBUS | <i>Rubus</i> | 5–15 | – |
| | greenbrier | SMILA2 | <i>Smilax</i> | 5–10 | – |
| | Carolina coralbead | COCA | <i>Cocculus carolinus</i> | 5–10 | – |
| | yucca | YUCCA | <i>Yucca</i> | 0–10 | – |
| Tree | | | | | |
| 7 | Trees | | | 100–200 | |
| | live oak | QUVI | <i>Quercus virginiana</i> | 50–200 | – |
| | post oak | QUST | <i>Quercus stellata</i> | 25–50 | – |
| | blackjack oak | QUMA3 | <i>Quercus marilandica</i> | 25–50 | – |
| | water oak | QUNI | <i>Quercus nigra</i> | 5–40 | – |
| | honey mesquite | PRGL2 | <i>Prosopis glandulosa</i> | 1–40 | – |
| | wingleaf soapberry | SASA4 | <i>Sapindus saponaria</i> | 5–30 | – |
| | lime pricklyash | ZAFA | <i>Zanthoxylum fagara</i> | 1–30 | – |
| | sweet acacia | ACFA | <i>Acacia farnesiana</i> | 0–30 | – |

Animal community

The Coastal Prairie communities support a wide array of animals. Cattle and many species of wildlife make extensive use of the site. White-tailed deer may be found scattered across the prairie and are found in heavier concentrations where woody cover exists. Feral hogs are present and at times abundant. Coyotes are abundant and fill the mammalian predator niche. Rodent populations rise during drier periods and fall during periods of inundation. Attwater's pocket gophers are abundant and have an important impact on the ecology of the site. The badger is present but not abundant in locations at the southern extent of the site. Locally unique species alligators and bullfrogs.

The region is a major flyway for waterfowl and migrating birds. Hundreds of thousands of ducks, geese, and sandhill cranes abound during winter. Two important endangered species occur in the area, the whooping crane and Attwater's prairie chicken. Many other species of avian predators including northern harriers, ferruginous hawks, red-tailed hawks, white-tailed kites, kestrels, and, occasionally, swallow-tailed kites utilize the vast grasslands. Many species of grassland birds use the site, including blue grosbeaks, dickcissels, eastern meadowlarks, several sparrows, including, vesper sparrow, lark sparrow, savannah sparrow, grasshopper sparrow, and Le Conte's sparrow.

Hydrological functions

The Savannah and Woodland States use all the water from rainfall events that occur. Research has shown that the evapotranspiration rate on the across all communities is nearly the same.

Recreational uses

White-tailed deer, Rio Grande turkey, and feral hogs are hunted on the site. This site may also be used for bird watching. In the wooded state, this site makes ideal campgrounds if a limited amount of woody vegetation is

removed.

Wood products

In the Woodland State, this site produces an abundance of oak firewood.

Other references

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Rangeland health reference sheet

Interpreting Indicators of Rangeland Health is a qualitative assessment protocol used to determine ecosystem condition based on benchmark characteristics described in the Reference Sheet. A suite of 17 (or more) indicators are typically considered in an assessment. The ecological site(s) representative of an assessment location must be known prior to applying the protocol and must be verified based on soils and climate. Current plant community cannot be used to identify the ecological site.

| | |
|---|---|
| Author(s)/participant(s) | Vivian Garcia, Zone RMS, NRCS, Corpus Christi, TX |
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| Composition (Indicators 10 and 12) based on | Annual Production |

Indicators

1. **Number and extent of rills:** None.

2. **Presence of water flow patterns:** Uncommon.

3. **Number and height of erosional pedestals or terracettes:** Uncommon.

4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** Expect no more than 30 percent bare ground distributed in small patches.

5. **Number of gullies and erosion associated with gullies:** None.

-
6. **Extent of wind scoured, blowouts and/or depositional areas:** None.
-
7. **Amount of litter movement (describe size and distance expected to travel):** This site has highly permeable soils with high infiltration rates. Only small-sized litter will move short distances during intense storms.
-
8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):** Soil surface is resistant to erosion. Stability class range is expected to be 2 to 3.
-
9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** 40 to 78 inches thick with light brownish gray to very pale brown loamy fine sand, weak medium subangular blocky structure, loose, very friable, common fine roots, and clear smooth boundary. SOM is 0.5 to 1.0 percent.
-
10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Under reference conditions, the savannah of trees, shrubs, vines, grasses, and forbs along with adequate litter and little bare ground provides for maximum infiltration and little runoff under normal rainfall events.
-
11. **Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site):** None.
-
12. **Functional/Structural Groups (list in order of descending dominance by above-ground annual-production or live foliar cover using symbols: >>, >, = to indicate much greater than, greater than, and equal to):**
- Dominant: Warm-season tallgrasses
- Sub-dominant: Warm-season midgrasses Trees
- Other: Shrubs/Vines Forbs
- Additional:
-
13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** There should be little mortality or decadence for any functional group of the reference community.
-
14. **Average percent litter cover (%) and depth (in):** Litter is primarily herbaceous.
-
15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** 2,000 to 4,500 pounds per acre.

16. **Potential invasive (including noxious) species (native and non-native).** List species which **BOTH** characterize degraded states and have the potential to become a dominant or co-dominant species on the ecological site if their future establishment and growth is not actively controlled by management interventions. Species that become dominant for only one to several years (e.g., short-term response to drought or wildfire) are not invasive plants. Note that unlike other indicators, we are describing what is **NOT** expected in the reference state for the ecological site: Bahiagrass, post oak, blackjack oak, American beautyberry, and yaupon.

17. **Perennial plant reproductive capability:** All plants should be capable of reproduction except during periods of prolonged drought conditions, heavy natural herbivory, or intense wildfires.
