USDA Natural Resources Conservation Service

Ecological site R150AY741TX
Northern Loamy Prairie

Last updated: 9/22/2023
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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 Northern Loamy Prairie is characterized by very deep loamy soils occurring on uplands. The site is correlated to areas with mean annual rainfall from 48 to 57 inches. This site is vegetatively productive and provide good grazing for livestock.

Associated sites

R150AY537TX	**Lowland** As named, the Lowland ecological site occurs on the lowest part of the landscape. It receives excess water from surround landforms and may stay wet for extended periods throughout the year.
R150AY740TX	**Northern Blackland** The Northern Blackland ecological site shows an intact grass community with small clumped dispersal of woody species. The soils are very deep, richly black in color, and characterized by their shrink-swell nature. The sites are widely distributed across the uplands and terraces throughout the region. The site is correlated to areas with mean annual rainfall that ranges from 48 to 57 inches.
R150AY542TX	**Sandy Loam** The Sandy Loam ecological site typically has a fine sandy loam or very fine sandy loam surface. Sandy clay loam subsoil horizons are generally present 15 to 18 inches below the surface.

Similar sites

R150AY535TX	**Southern Loamy Prairie** The Southern Loamy Prairie is characterized by very deep loamy soils occurring on uplands. They are vegetatively productive and provide good grazing for livestock. The site is correlated to areas with mean annual rainfall from 32 to 41 inches.
R150AY012LA	**Loamy Terrace Prairie** The site consists of very deep, moderately well drained to poorly drained, moderately to slowly permeable soils with loamy surfaces that formed in alluvium of the Pleistocene age. These areas were part of the tall grass prairie.
R150AY014LA	**Loamy Terrace Ridge** Loamy Terrace Ridges historically supported a tallgrass prairie. They are comprised of silt loam soils on convex areas with slopes up to 3 percent.

Table 1. Dominant plant species

Tree	Not specified
Shrub	(1) *Ilex vomitoria*
Herbaceous	(1) *Sorghastrum nutans* (2) *Panicum virgatum*

Physiographic features

This site was formed in loamy deposits derived from the Beaumont, Lissie, and Willis Formations. The nearly level to very gently sloping soils of this site are mostly on flats or rises of the upper Texas coastal plain and eastern Louisiana. Slopes are mainly less than 1 percent but range from 0 to 3 percent. Runoff varies due to soil features and slope. Elevations range from 10 to 250 feet.

Table 2. Representative physiographic features

Landforms	(1) Coastal plain > Flat
Runoff class	Low to high
Flooding duration	Very brief (4 to 48 hours)
Flooding frequency	None to rare
Ponding frequency	None
Elevation	3–76 m

Slope	0–3%
Water table depth	46–152 cm
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)	232-254 days
Freeze-free period (characteristic range)	326-365 days
Precipitation total (characteristic range)	1,219-1,473 mm
Frost-free period (actual range)	223-297 days
Freeze-free period (actual range)	223-365 days
Precipitation total (actual range)	1,118-1,524 mm
Frost-free period (average)	251 days
Freeze-free period (average)	337 days
Precipitation total (average)	1,346 mm

Climate stations used

- (1) BEAUMONT CITY [USC00410611], Vidor, TX
- (2) EL CAMPO [USC00412786], El Campo, TX
- (3) COLUMBUS [USC00411911], Columbus, TX
- (4) SEALY [USC00418160], Sealy, TX
- (5) NEW GULF [USC00416286], Boling, TX
- (6) ANGLETON 2 W [USC00410257], Angleton, TX
- (7) THOMPSONS 3 WSW [USC00418996], Richmond, TX
- (8) HOUSTON HOOKS MEM AP [USW00053910], Tomball, TX
- (9) ALVIN [USC00410204], Alvin, TX
- (10) HOUSTON NWSO [USC00414333], Dickinson, TX
- (11) HOUSTON HOBBY AP [USW00012918], Houston, TX
- (12) HOUSTON SAN JACINTO DA [USC00414328], Houston, TX
- (13) BAYTOWN [USC00410586], Crosby, TX
- (14) ANAHUAC [USC00410235], Anahuac, TX
- (15) BEAUMONT RSCH CTR [USC00410613], Beaumont, TX
- (16) PORT ARTHUR SE TX AP [USW00012917], Port Arthur, TX

Influencing water features

Water table depths will fluctuate according to the season of the year. Typically the water table will be highest during the winter and early spring when warm-season vegetation is not drawing moisture from the soil. The site is not influenced by flooding or ponding except for those sites that are less than 15 elevation and are subject to storm surge from tropical storm

Wetland description

Well drained and moderately well drained soils are non-hydric. Somewhat poorly and poorly drained sites are hydric. Some areas of the non-hydric soils may have small areas of hydric soils. Onsite investigation is necessary to determine exact local conditions.

Soil features

The soils are very deep, very dark gray to very dark grayish brown, very strongly acid to neutral loamy uplands. These soils have a thick loamy noneffervescent surface from 18 to 30 inches thick over slowly permeable loamy or clayey subsoils. The soils hold moderate amounts of water and are moderately fertile. Runoff is variable depending on soil features and slope. Soils correlated to this site include: Addicks, Algoa, Anahuac, Chesterville, Cyfair, Hockley, Katy, Meaton, Mockley, Morey, Orcadia, Spindletop, Viterbo, Wockley, and Yeaton.

Table 4. Representative soil features

Parent material	(1) Fluviomarine deposits–igneous, metamorphic and sedimentary rock
Surface texture	(1) Loam (2) Silt loam (3) Fine sandy loam
Family particle size	(1) Fine-loamy (2) Fine
Drainage class	Moderately well drained to somewhat poorly drained
Permeability class	Very slow to moderately slow
Soil depth	203 cm
Surface fragment cover <=3"	0%
Surface fragment cover >3"	0%
Available water capacity (0-152.4cm)	17.78–25.4 cm
Calcium carbonate equivalent (0-152.4cm)	0%
Electrical conductivity (0-152.4cm)	0–2 mmhos/cm
Sodium adsorption ratio (0-101.6cm)	0–6
Soil reaction (1:1 water) (0-101.6cm)	4.5–7.3
Subsurface fragment volume <=3" (0-152.4cm)	0%
Subsurface fragment volume >3" (0-152.4cm)	0%

Ecological dynamics

The pre-settlement plant community on the upper Texas and lower Louisiana Coastal Prairie was a tallgrass prairie interspersed with occasional mottes of live oak or loblolly pine. Soils, climate, fire, and grazing by native wild herbivores were the major influences. There are historic records that fires commonly occurred on the Coast but none that definitively describe the frequency, timing, or intensity of fires. Annual to bi-annual (late summer and late winter) fire frequencies are mentioned in historic accounts.

Under the influences mentioned above, this prairie site was dominated by tall and midgrasses. Major tallgrasses include little bluestem (*Schizachyrium scoparium*), yellow Indiangrass (*Sorghastrum nutans*), big bluestem (*Andropogon gerardii*), and switchgrass (*Panicum virgatum*). Dominant midgrass species include Florida paspalum

(*Paspalum floridanum*), marshhay cordgrass (*Spartina patens*), gulfhairawn muhly (*Muhlenbergia filipes*), brownseed paspalum (*Paspalum plicatulum*), bushy bluestem (*Andropogon glomeratus*), longspike tridens (*Tridens strictus*), and meadow dropseed (*Sporobolus compositus*). Perennial forbs include herbaceous mimosa (*Mimosa strigillosa*), bundleflower (Desmanthus spp.), button snake root (*Eryngium yuccifolium*), and gayfeather (Liatris spp.).

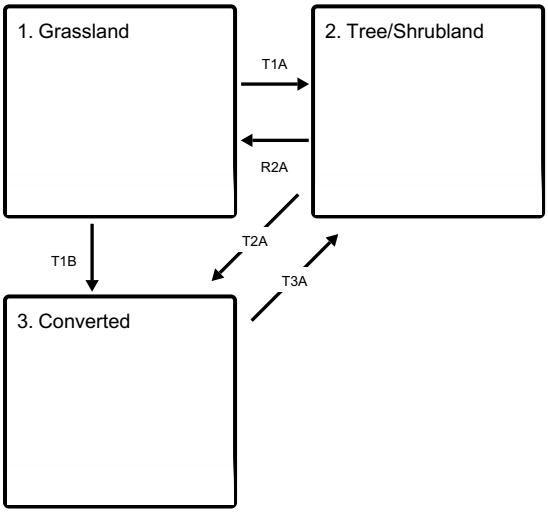
Excessive grazing by domestic livestock contributes to the reduction or elimination of big bluestem, yellow Indiangrass, switchgrass, and little bluestem. As the site deteriorates, species such as brownseed paspalum, marshhay cordgrass, bushy bluestem, knotroot bristlegrass (*Setaria parviflora*), longspike tridens, and carpet grass (Axonopus sp.). Nonnatives such as Dallisgrass (*Paspalum dilatatum*), smutgrass (*Sporobolus indicus*), bahiagrass (*Paspalum notatum*), and bermudagrass (*Cynodon dactylon*) increase. In addition to site degradation due to excessive grazing, farming to rice, corn, and grain sorghum has had a significant influence. Not only has the site changed through the loss of native plant communities from cultivation, but also through the change in soils, hydrology, and topography by land leveling, ditching, and leveeing.

Continued overuse of the site by livestock, lack of fire, or abandonment of cropping allows woody plants to invade. These woody pioneers include huisache (*Acacia farnesiana*),
yaupon (*Ilex vomitoria*), eastern baccharis (Baccharis halmifolia), wax myrtle (*Morella cerifera*), hackberry (Celtis sp.), common persimmon (*Diospyros virginiana*), and ash (Fraxinus sp.). Chinese tallow (*Triadica sebifera*) and McCartney rose (*Rosa bracteata*) are common nonnative invaders. As the plant community transitions from tall/midgrass prairie to mid/shortgrass prairie to shrub/tree complexes, changes occur in plant composition, biomass production, litter accumulation, and water infiltration. These changes influence most treatment alternatives including the ability to use fire as a management tool.

The resulting increase in woody plant density signifies that a threshold has been crossed. Once this threshold is crossed, restoration back towards the reference plant community becomes much more difficult and expensive. Even though a plant community similar may be restored by practices such as mechanical and herbicidal brush management, re-seeding, 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



T1A - absence of disturbance and natural regeneration over time, may be coupled with excessive grazing pressure

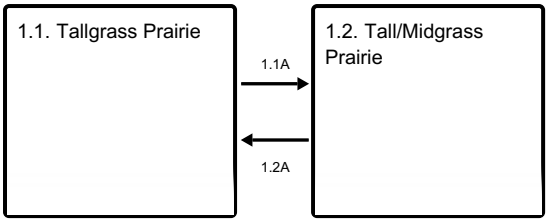
T1B - Extensive soil disturbance followed by the introduction of non-native species

R2A - Reintroduction of fire and regular disturbance return intervals

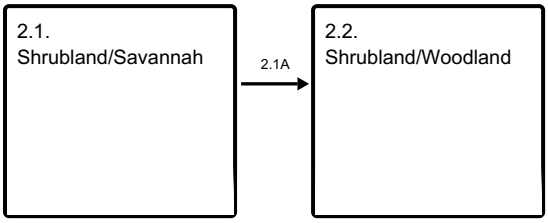
T2A - Extensive soil disturbance followed by the introduction of non-native species

T3A - Absence of disturbance and natural regeneration over time

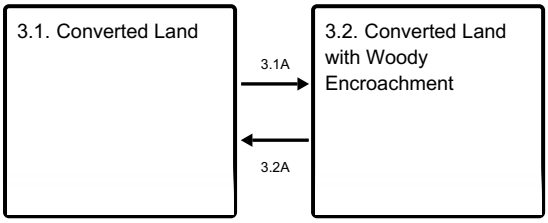
State 1 submodel, plant communities



State 2 submodel, plant communities



State 3 submodel, plant communities



State 1
Grassland

Dominant plant species

- little bluestem (*Schizachyrium scoparium*), grass
- Indiangrass (*Sorghastrum nutans*), grass

Community 1.1
Tallgrass Prairie

The reference plant community is a grassland composed of tall and midgrasses. Tallgrasses make up over 60 percent, midgrasses approximately 35 percent, and other associated grasses, forbs, shrubs, and trees make the remainder of the plant community. Annual forbs occur in varying amounts in response to disturbance from grazing, fire, or drought. Chronic overgrazing results in a reduction of biomass, reduced litter accumulation, loss of tallgrasses and some midgrasses, and less ability to use fire effectively for management. Some mid and shortgrasses increase because of this overgrazing. Prescribed grazing, prescribed burning, and/or the application of herbicides is necessary to keep invading woody species such as huisache, Macartney rose, yaupon, wax myrtle, and/or Chinese tallow from invading.

Table 5. Annual production by plant type

Plant Type	Low (Kg/Hectare)	Representative Value (Kg/Hectare)	High (Kg/Hectare)
Grass/Grasslike	4792	6921	9051
Forb	252	364	476
Shrub/Vine	–	–	11
Tree	–	–	11
Total	**5044**	**7285**	**9549**

Figure 9. Plant community growth curve (percent production by month). TX7605, Tallgrass Prairie Community. Prairie community composed of dominant warm-season tallgrasses with some warm-season midgrasses..

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

Community 1.2
Tall/Midgrass Prairie

This community develops as heavy continuous grazing begins to remove the tallgrass component of the reference community. As tallgrasses decrease, midgrasses such as meadow dropseed, brownseed paspalum, marshhay cordgrass, and longspike tridens increase. Annual and perennial forbs, sedges, flat sedges, and other grass-likes often increase. Continued heavy grazing contributes to further degradation and loss of more palatable midgrasses. Invasion of woody species begins. Prescribed grazing along with prescribed burning or weed control is necessary to move back towards the reference community. Where haying occurs, less frequent cutting (once per year) and timing of cutting (prior to July 1st) may improve species composition and vigor.

Pathway 1.1A
Community 1.1 to 1.2

Heavy continuous grazing and lack of fire will transition the site to Community 1.2.

Pathway 1.2A
Community 1.2 to 1.1

Prescribed grazing with correct stocking rates and a return of fire will transition Community 1.2 back to the reference community.

State 2
Tree/Shrubland

Dominant plant species

- sweet acacia (*Acacia farnesiana*), shrub
- yaupon (*Ilex vomitoria*), shrub

Community 2.1
Shrubland/Savannah

This community occurs because of continuous heavy grazing, loss of fire as a tool, greatly altered water and energy cycles, and invasion of woody plants. A threshold has been crossed from the reference state. If prescribed grazing is implemented, fire re-introduced, and seedling woody plants controlled, this community can be quite productive for cattle and wildlife and can be maintained indefinitely. To do so will require judicious grazing, periodic fire, and frequent applications of herbicide or mechanical treatments on an individual plant basis. This state can be utilized by a different set of wildlife like white-tailed deer because of the increased amount of woody cover and the increased production of both perennial and annual forbs. Grassland bird species will decline for the same reasons.

Community 2.2
Shrubland/Woodland

Over time, with continued heavy grazing or no fire or other brush management, the site will continue to transition into a huisache, hackberry, and ash woodland with canopies more than 25 percent. Chinese tallow is a nonnative species that commonly invades. The community may be a monoculture of one woody species or a combination of any of the species. The herbaceous community will be greatly reduced and may include gaping panicum, winter bentgrass, sedges, and flat sedges. Major inputs, both chemical and mechanical, are required to restore this community to grassland or savannah. A common practice is the use of aerially applied herbicides to reduce the canopy followed by prescribed fire or mechanical treatments to remove the woody vegetation and maintain semi-open wooded grassland for several years. Although these practices kill some of the woody vegetation, much of it remains and re-sprouts from the crown. Often with this community, mechanical treatments such as rootplowing, tree

dozing, and raking are employed and the land is converted to cropland or pasture.

Pathway 2.1A
Community 2.1 to 2.2

Abusive grazing, lack brush management, and lack of fire transition to Community 2.1.

State 3
Converted

Dominant plant species

- sweet acacia (*Acacia farnesiana*), shrub
- Bermudagrass (*Cynodon dactylon*), grass

Community 3.1
Converted Land

This community occurs when the site is manipulated through practices such as mechanical brush control, land leveling, cultivation, and pasture planting. If not converted to crops such as rice, corn, or grain sorghum, introduced grasses are planted for livestock forage. Introduced grasses adapted to the site include bermudagrass, bahiagrass, switchgrass, and yellow bluestems. Management practices like weed control, brush control, and fertility maintenance must be applied to keep this state in a cropable condition or as grassland. Invasion by woody species, sedges, and flatsedges is a continuous threat. Not only is there a long-lived seed source of Chinese tallow, huisache, yaupon, and other woody species, additional seed are brought in by grazing animals and domestic livestock.

Community 3.2
Converted Land with Woody Encroachment

When these pastures quit receiving annual management, the native grasses that once occupied the site along with numerous annual forbs and woody plants begin appearing on the site. Without the fertilizer, the native grasses become reestablished on the area. As the dominant grasses change from the seeded grasses to native species, the site produces large amounts of annual forbs and usually has a weedy appearance. Brush management and prescribed fire will be needed to keep the brush from becoming dominant. The use of fire will hasten the process back toward the native grasses although the non-natives will always be a component. Once the Converted Site has been established to the non-native plants, even replanting of the native plants would meet with limited success as far as completely returning to the reference plant community. The site may resemble the reference community, but if soil degradation is severe enough, full restoration may be impossible.

Pathway 3.1A
Community 3.1 to 3.2

With heavy grazing and no brush control, woody species will encroach the site.

Pathway 3.2A
Community 3.2 to 3.1

Seedling brush control, prescribed grazing, and possibly prescribed fire will transition the community back to 3.1.

Transition T1A
State 1 to 2

Heavy grazing, lack of fire, and brush invasion over 10 percent canopy signal the transition to State 2.

Transition T1B
State 1 to 3

Conversion signals this transition by preparing a seedbed and planting to pasture.

Restoration pathway R2A
State 2 to 1

Restoration occurs when brush management reduces the canopy cover below 10 percent, prescribed grazing restores correct stocking rates, and once grasses have created enough biomass, prescribed fire returns.

Transition T2A
State 2 to 3

Conversion signals this transition by clearing brush, preparing a seedbed, and planting to pasture.

Transition T3A
State 3 to 2

Without brush control to manage encroaching woody seedlings, the site will transition to State 2.

Additional community tables

Table 6. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production (Kg/Hectare)	Foliar Cover (%)
Grass/Grasslike					
1	**Tallgrasses**			3222–6215	
	big bluestem	ANGE	*Andropogon gerardii*	2875–5431	–
	switchgrass	PAVI2	*Panicum virgatum*	2875–5431	–
	little bluestem	SCSCS	*Schizachyrium scoparium var. scoparium*	2875–5431	–
	Indiangrass	SONU2	*Sorghastrum nutans*	2875–5431	–
2	**Midgrasses**			1233–2242	
	buffalograss	BODA2	*Bouteloua dactyloides*	958–1810	–
	silver beardgrass	BOLAT	*Bothriochloa laguroides ssp. torreyana*	958–1810	–
	gulfhairawn muhly	MUFI3	*Muhlenbergia filipes*	958–1810	–
	Florida paspalum	PAFL4	*Paspalum floridanum*	958–1810	–
	brownseed paspalum	PAPL3	*Paspalum plicatulum*	958–1810	–
	marsh bristlegrass	SEPA10	*Setaria parviflora*	958–1810	–
	Drummond's dropseed	SPCOD3	*Sporobolus compositus var. drummondii*	958–1810	–
	saltmeadow cordgrass	SPPA	*Spartina patens*	958–1810	–
	gulf cordgrass	SPSP	*Spartina spartinae*	958–1810	–
	white tridens	TRAL2	*Tridens albescens*	958–1810	–
	longspike tridens	TRST2	*Tridens strictus*	958–1810	–
3	**Cool-season grasses**			336–560	
	winter bentgrass	AGHY	*Agrostis hyemalis*	224–448	–
	sedge	CAREX	*Carex*	224–448	–
	flatsedge	CYPER	*Cyperus*	224–448	–
	fall witchgrass	DICO6	*Digitaria cognata*	224–448	–
	Scribner's rosette grass	DIOLS	*Dichanthelium oligosanthes var. scribnerianum*	224–448	–

	Virginia wildrye	ELVI3	*Elymus virginicus*	224–448	–
	gaping grass	STHI3	*Steinchisma hians*	224–448	–
Forb					
4	**Perennial Forbs**			224–448	
	Cuman ragweed	AMPS	*Ambrosia psilostachya*	224–420	–
	spiny chloracantha	CHSP11	*Chloracantha spinosa*	224–420	–
	whitemouth dayflower	COER	*Commelina erecta*	224–420	–
	wedgeleaf prairie clover	DAEM2	*Dalea emarginata*	224–420	–
	Illinois bundleflower	DEIL	*Desmanthus illinoensis*	224–420	–
	velvet bundleflower	DEVE2	*Desmanthus velutinus*	224–420	–
	blacksamson echinacea	ECAN2	*Echinacea angustifolia*	224–420	–
	Engelmann's daisy	ENPE4	*Engelmannia peristenia*	224–420	–
	button eryngo	ERYU	*Eryngium yuccifolium*	224–420	–
	coastal indigo	INMI	*Indigofera miniata*	224–420	–
	dotted blazing star	LIPU	*Liatris punctata*	224–420	–
	littleleaf sensitive-briar	MIMI22	*Mimosa microphylla*	224–420	–
	powderpuff	MIST2	*Mimosa strigillosa*	224–420	–
	yellow puff	NELU2	*Neptunia lutea*	224–420	–
	fogfruit	PHYLA	*Phyla*	224–420	–
	white milkwort	POAL4	*Polygala alba*	224–420	–
	upright prairie coneflower	RACO3	*Ratibida columnifera*	224–420	–
	violet wild petunia	RUNU	*Ruellia nudiflora*	224–420	–
	Baldwin's ironweed	VEBA	*Vernonia baldwinii*	224–420	–
5	**Annual Forbs**			28–56	
	great ragweed	AMTR	*Ambrosia trifida*	28–56	–
	partridge pea	CHFAF	*Chamaecrista fasciculata var. fasciculata*	28–56	–
	beeblossom	GAURA	*Gaura*	28–56	–
	Dakota mock vervain	GLBIB	*Glandularia bipinnatifida var. bipinnatifida*	28–56	–
	annual marsh elder	IVAN2	*Iva annua*	28–56	–
	bagpod	SEVE	*Sesbania vesicaria*	28–56	–
	eastern annual saltmarsh aster	SYSU5	*Symphyotrichum subulatum*	28–56	–
	herb of the cross	VEOF	*Verbena officinalis*	28–56	–
Shrub/Vine					
6	**Shrubs/Vines**			0–11	
	eastern baccharis	BAHA	*Baccharis halimifolia*	0–11	–
	yaupon	ILVO	*Ilex vomitoria*	0–11	–
	wax myrtle	MOCE2	*Morella cerifera*	0–11	–
	southern dewberry	RUTR	*Rubus trivialis*	0–11	–
	greenbrier	SMILA2	*Smilax*	0–11	–
Tree					
7	**Trees**			0–11	
	netleaf hackberry	CELAR	*Celtis laevigata var. reticulata*	0–11	–

	green ash	FRPE	*Fraxinus pennsylvanica*	0–11	–
	loblolly pine	PITA	*Pinus taeda*	0–11	–
	live oak	QUVI	*Quercus virginiana*	0–11	–

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

Peak rainfall periods occur in May and June from thunderstorms and in September and October from tropical systems. Rainfall events may be high (3 to 5 inches per event) and intense. Because of the flat topography of this site, erosion is minimal.

Recreational uses

The site may be used for hunting, camping, hiking, horseback riding, or off-road vehicle use.

Inventory data references

Vegetative data for this site was obtained from existing Range Site Descriptions and SCS-417 data. SCS-417's were available for this site in five different counties. Extensive field work was done on-site to catalog the plant community. Several range-trained personnel with state and federal agencies and in private enterprise were consulted on the plant communities as well. Personal contact with ranchers and foreman was utilized to ascertain the use of plants by both cattle and wildlife.

Other references

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Approval

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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)	

Contact for lead author	
Date	05/13/2025
Approved by	Bryan Christensen
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

1. **Number and extent of rills:**

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

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

4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):**

5. **Number of gullies and erosion associated with gullies:**

6. **Extent of wind scoured, blowouts and/or depositional areas:**

7. **Amount of litter movement (describe size and distance expected to travel):**

8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):**

9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):**

10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:**

11. **Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site):**

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:

Sub-dominant:

Other:

Additional:

---

13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):**

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14. **Average percent litter cover (%) and depth (in):**

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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):**

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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:**

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17. **Perennial plant reproductive capability:**
