Ecological site R150AY014LA
Loamy Terrace Ridge

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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.

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

Loamy Terrace Ridges historically supported a tallgrass prairie. They are comprised of silt loam soils on convex areas with slopes up to 3 percent.

Associated sites

R150AY013LA	**Clayey Terrace Prairie** This site is on low broad flats having clayey-textured soils.
R150AY012LA	**Loamy Terrace Prairie** The Loamy Terrace Prairie Site has lighter surface textures, are more level, and are wetter.

Similar sites

R150AY741TX	**Northern Loamy Prairie** This site is characterized by very deep loamy soils occurring on uplands. They are vegetatively productive and provide good grazing for livestock.

Table 1. Dominant plant species

Tree	(1) *Pinus taeda*
Shrub	Not specified
Herbaceous	(1) *Schizachyrium scoparium* (2) *Panicum virgatum*

Physiographic features

These nearly level to very gently sloping soils occur on flat coastal plains terrace ridges. The slope ranges from 0 to 3 percent. The water table fluctuates throughout the year but can be 7 to 21 inches below the surface, especially during the late fall and early winter.

Table 2. Representative physiographic features

Landforms	(1) Coastal plain > Terrace
Runoff class	High to very high
Flooding frequency	None
Ponding frequency	None
Elevation	0 – 20 m
Slope	0 – 10 %
Water table depth	20 – 180 cm

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)	240-240 days
Freeze-free period (characteristic range)	270-310 days
Precipitation total (characteristic range)	1,500-1,550 mm

Frost-free period (actual range)	230-240 days
Freeze-free period (actual range)	270-350 days
Precipitation total (actual range)	1,470-1,550 mm
Frost-free period (average)	240 days
Freeze-free period (average)	300 days
Precipitation total (average)	1,520 mm

- (1) EUNICE [USC00162981], Eunice, LA
- (2) CROWLEY 2 NE [USC00162212], Crowley, LA
- (3) JENNINGS [USC00164700], Jennings, LA
- (4) LAKE CHARLES [USW00003937], Lake Charles, LA

Influencing water features

Water does not regularly pond or flood the sites, but due to the increased clay content, puddles may form after intense rains.

Wetland description

This site has non-hydric soils. A few areas may have hydric minor components. Onsite investigation is necessary to determine exact local conditions.

Soil features

The sites consist of very deep, somewhat poorly drained, slowly to very slowly permeable soils that formed in clayey fluviomarine deposits of the Pleistocene age. Soils correlated to this site include: Crowley, Kaplan, and Mamou.

Table 4. Representative soil features

Parent material	(1) Fluviomarine deposits – igneous, metamorphic and sedimentary rock
Surface texture	(1) Silt loam
Family particle size	(1) Fine (2) Fine-silty
Drainage class	Somewhat poorly drained
Permeability class	Slow to very slow

Soil depth	200 cm
Surface fragment cover <=3"	Not specified
Surface fragment cover >3"	Not specified
Available water capacity (0-152.4cm)	25.4 – 30.48 cm
Electrical conductivity (0-152.4cm)	Not specified
Sodium adsorption ratio (0-152.4cm)	Not specified
Soil reaction (1:1 water) (0-50.8cm)	4.5 – 7.3
Subsurface fragment volume <=3" (50.8-152.4cm)	0 – 10 %
Subsurface fragment volume >3" (50.8-152.4cm)	Not specified

Ecological dynamics

The pre-settlement plant community of the Loamy Terrace Ridge was a tallgrass prairie. Soils, climate, fire, and grazing by native wild herbivores were the major influences on the plant community. Historically, bison were the primary large ungulates that grazed the site. There are historic records that fires commonly occurred, but none that definitively describe the frequency, timing, or intensity of fires. It has been postulated fires occurred as frequent as every 2 to 5 years.

Under the influences mentioned above, this prairie was dominated by tallgrasses. Major tallgrass species include little bluestem (Schizachyrium scoparium), yellow Indiangrass (Sorghastrum nutans), big bluestem (Andropogon gerardii), switchgrass (Panicum virgatum), and eastern gamagrass (Tripsacum dactyloides). Perennial forbs are an important part of the composition and include ashy sunflower (Helianthus mollis), button snake root (Eryngium yuccifolium), gayfeather (Liatris spp.), and goldenrod (Solidago spp.). The species composition varies to include species from several families and will vary along the moisture gradient. The micro-highs and lows contribute to the diverse plant community; the micro-highs are slightly drier and the micro-lows slightly wetter. Elevation differences between highs and lows range from 6 to 15 inches. Vegetation tolerant of moist soil grows on the lower elevations of the while less water-tolerant vegetation grows on the higher elevations.

Excessive grazing by domestic livestock contributes to the reduction or elimination of eastern gamagrass, big bluestem, yellow

Indiangrass, switchgrass, and little bluestem. As the site transitions, species such as brownseed paspalum (Paspalum plicatulum), bushy bluestem (Andropogon glomeratus), knotroot bristlegrass (Setaria parviflora), smutgrass (Sporobolus indicus), and shorter-stature species increase. In addition to site transistion due to excessive grazing, farming 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 by livestock, lack of fire, or abandonment of cropping allows woody plants to invade. These woody pioneers include eastern baccharis (Baccharis halamifolia), hackberry (Celtis sp.), ash (Fraxinus sp.), and Chinese tallow (Triadica sebifera).

As the plant community transitions from the Tallgrass Prairie Community (1.1) to the other states, changes occur in plant composition, biomass production, litter accumulation, and water infiltration and storage. 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 can establish, the reference community may never be fully restored. Although a combination of practices such as brush management, re-seeding, prescribed grazing, and fire are required for restoration. Also, the expansive soil disturbance associated with transition to a converted state removes soil micro environmental factors that can prevent total restoration.

State and transition model

Additional community tables

Table 5. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production ()	Foliar Cover (%)

Table 6. Community 1.2 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production ()	Foliar Cover (%)

Table 7. Community 2.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production ()	Foliar Cover (%)

Table 8. Community 2.2 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production ()	Foliar Cover (%)

Table 9. Community 3.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production ()	Foliar Cover (%)

Table 10. Community 3.2 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production ()	Foliar Cover (%)

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.

Inventory data references

This site description was developed as part of the provisional ecological site initiative using historic soil survey manuscripts, available range site descriptions, and low intensity field sampling.

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Approval

Bryan Christensen, 9/22/2023

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	09/13/2026
Approved by	
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):**

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

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

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

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

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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:

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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:**
