USDA Natural Resources Conservation Service

Ecological site R080BY152TX
Loamy 26-33" PZ

Last updated: 9/19/2023
Accessed: 04/27/2024

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): 080B–Texas North-Central Prairies

MLRA 80B consists of gently rolling, dissected plains with very steep hillsides and sideslopes and narrow flood plains associated with small streams. Loamy and clayey soils range from very shallow to deep and developed in sandstones, shales, and limestones of Pennsylvanian age.

Classification relationships

This ecological site is correlated to soil components at the Major Land Resource Area (MLRA) level which is further described in USDA Ag Handbook 296.

Ecological site concept

These sites occur on deep loamy soils on uplands. The reference vegetation consists of native tallgrasses with scattered forbs and very few shrubs. Without fire or other brush management, woody species may encroach and dominate the site.

Associated sites

R080BY151TX	**Loamy Bottomland 26-33" PZ** Loamy soils on floodplains.

Similar sites

R080BY146TX	**Clay Loam 26-33" PZ** Similar landforms. Calcareous clay loam soils.

Table 1. Dominant plant species

Tree	Not specified
Shrub	Not specified
Herbaceous	(1) *Sorghastrum nutans* (2) *Andropogon gerardii*

Physiographic features

This site occurs on linear base slopes and side slopes of ridges and dip slopes in the Texas North-Central Prairies. This site is characteristically a water distributing site. Slopes are typically less than 5 percent.

Table 2. Representative physiographic features

Landforms	(1) Hills > Ridge (2) Hills > Dip slope
Runoff class	Medium
Elevation	229–732 m
Slope	1–5%
Aspect	Aspect is not a significant factor

Climatic features

The climate is subtropical subhumid and is characterized by hot humid summers and relatively mild winters. Tropical maritime air controls the climate during spring, summer and fall. In winter and early spring, frequent surges of polar Canadian air cause sudden drops in temperatures and add considerable variety to the daily weather. The average first frost generally occurs about November 5 and the last freeze of the season usually occurs about March 19. The average frost free period ranges from 215 days in the northern counties, to 240 days in the south.

The average relative humidity in mid-afternoon is about 60 percent in the summer months. Humidity is higher at night, and the average at dawn is about 80 percent. The sun shines 75 percent of the time possible during the summer and 50 percent in winter. The prevailing wind direction is from the southwest and highest windspeeds occur during the spring months.

Approximately 75% of annual rainfall occurs between April 1 and October 31. Rainfall during the months of April through September typically occurs during thunderstorms which tend to be intense and brief, resulting in large amounts of rain in a short time. The wettest months of the year are May, June, September, and October. The driest months during the growing season are July and August. The winter months of November, December, January, and February are the driest months overall.

Average annual precipitation for the entire MLRA is approximately 28 inches. There is a noticeable difference in the average annual precipitation in the northern counties in comparison to the southern and western counties of this Major Land Resource Area. Jack, Clay, Young, and Palo Pinto Counties all have an average annual precipitation of more than 31 inches. Stephens, Eastland, McCulloch, and San Saba Counties all have an average annual precipitation of less than 28 inches.

Winters tend to be mild, with occasional periods of very cold temperatures which can be accompanied by strong northerly winds and freezing precipitation. Snow is infrequent and significant accumulations are rare. These periods

of very cold weather are generally short-lived. Summers tend to be hot and dry. Drought conditions are common during most summers. Air temperatures of more than 95oF are common from mid-June through September. In the northern counties nearest to the Red River, temperatures are generally slightly cooler during winter months and slightly warmer during summer months than in the other counties in the North Central Prairie.

Table 3. Representative climatic features

Frost-free period (characteristic range)	184-200 days
Freeze-free period (characteristic range)	211-225 days
Precipitation total (characteristic range)	762-813 mm
Frost-free period (actual range)	183-204 days
Freeze-free period (actual range)	210-226 days
Precipitation total (actual range)	737-838 mm
Frost-free period (average)	193 days
Freeze-free period (average)	217 days
Precipitation total (average)	787 mm

Climate stations used

- (1) SAN SABA 7NW [USC00417994], Richland Springs, TX
- (2) BROWNWOOD 2ENE [USC00411138], Early, TX
- (3) EASTLAND [USC00412715], Eastland, TX
- (4) MINERAL WELLS AP [USW00093985], Millsap, TX
- (5) BRECKENRIDGE [USC00411042], Breckenridge, TX
- (6) GRAHAM [USC00413668], Graham, TX
- (7) JACKSBORO [USC00414517], Jacksboro, TX

Influencing water features

These sites may receive runoff from adjacent upland areas but also shed some water downslope. The presence of good ground cover and deep rooted perennial plants can help facilitate water infiltration into the soil. These sites are not associated with wetlands.

Wetland description

NA

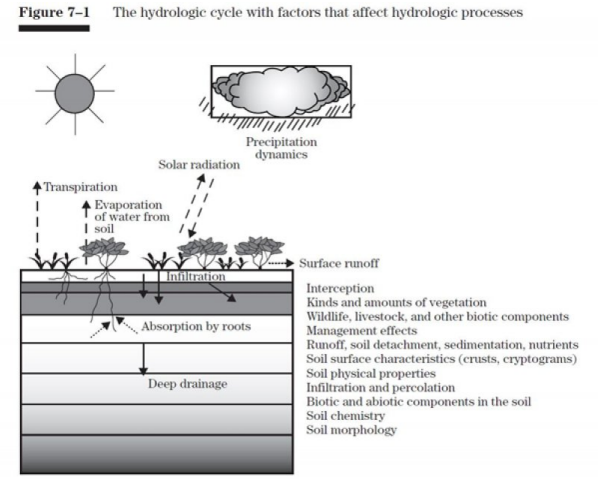


Figure 8.

Soil features

Representative soil components for this ecological site include: Anocon, Stoneburg

The site is characterized by moderately deep to very deep loamy well drained soils.

Table 4. Representative soil features

Parent material	(1) Slope alluvium–sandstone (2) Residuum–sandstone (3) Slope alluvium–claystone (4) Residuum–claystone
Surface texture	(1) Loam (2) Fine sandy loam
Drainage class	Well drained
Permeability class	Moderately slow
Soil depth	51 cm
Surface fragment cover <=3"	0–2%
Surface fragment cover >3"	0–2%
Available water capacity (0-101.6cm)	12.7–20.32 cm
Calcium carbonate equivalent (0-101.6cm)	0–5%
Electrical conductivity (0-101.6cm)	0–2 mmhos/cm
Sodium adsorption ratio (0-101.6cm)	0
Soil reaction (1:1 water) (0-101.6cm)	6.1–7.8
Subsurface fragment volume <=3" (Depth not specified)	0–12%
Subsurface fragment volume >3" (Depth not specified)	0–10%

Ecological dynamics

The reference plant community for the Loamy ecological site is a true tallgrass prairie. Evidence of the historic vegetation is found in the journals and records of explorers, military expeditions, and boundary survey teams. This was one of the sites that explorers and early pioneers often referred to as a “sea of grass”. Other early descriptions referred to this landscape having grass “belly deep to a horse” or “stirrup high” or “rising to the withers of my horse”.

Climate is a major factor influencing vegetation on the site. Long-term droughts lasting multiple years or growing seasons are infrequent, but when they do occur, they can have a negative impact on the vegetation. If abusive grazing occurs during or immediately following the drought period, the results can be devastating. The effects of erratic seasonal moisture and short-term dry spells lasting a few months are not as severe as those caused by long-term droughts. However, the lower the ecological status of the site at the time of the dry period, the greater the negative impact will be regardless of duration.

Fire was an important part of the ecosystem. Most ecosystems in the North Central Prairie developed in a 4 to 6 year regime of recurring fires. Many of these fires resulted from lightning strikes during thunderstorms. Native Americans also frequently set fires to manipulate the movement of bison and other animals, as well as a defensive or offensive technique when dealing with their enemies. These historic fires were usually severe because of the amount of grass fuel available to carry the fire. The intensity of fires kept shrubs and sapling trees suppressed and allowed grasses and forbs to flourish. Tallgrass species are fire tolerant and are enhanced by periodic burning.

Forbs usually increase for a year or two following these fires before the grasses become dominant again.

Lack of fire allows herbaceous vegetation to become senescent which may eventually lead to the loss of the most desirable species. Seedlings of non-native brush species and invasive weeds may encroach on the site from adjacent sites

Prior to settlement, this site was subject to periodic grazing and browsing by vast herds of bison, wild cattle, wild horses, and deer. At times these grazing and browsing episodes were intense and severe, but periods of heavy use were followed by long periods of non-use as the herds migrated to fresh grazing areas before returning to previously grazed areas. The grazed areas had an opportunity to rest, regrow, regain vigor, and reproduce prior to the next grazing event. Intervals between grazing periods were frequently influenced by the amount of time that had elapsed since the last fire on the area. Burned areas with fresh vegetation were preferred grazing sites of the free-ranging herds of bison, deer, wild horses, and other herbivores.

As the region was settled, fire was reduced or eliminated and grasslands were fenced off to control movement and facilitate grazing by domestic livestock. As a result of abusive grazing or lack of grazing and/or the elimination of fire, in association with extreme climatic events, the tallgrass plant community has been eliminated or severely reduced on most Loamy sites.

Further deterioration leads to the loss of the perennial warm-season midgrass and forb plant community and an increase in short grasses, annuals, and bare ground. This provides the opportunity for less desirable woody species such as mesquite and juniper to encroach from adjacent sites.

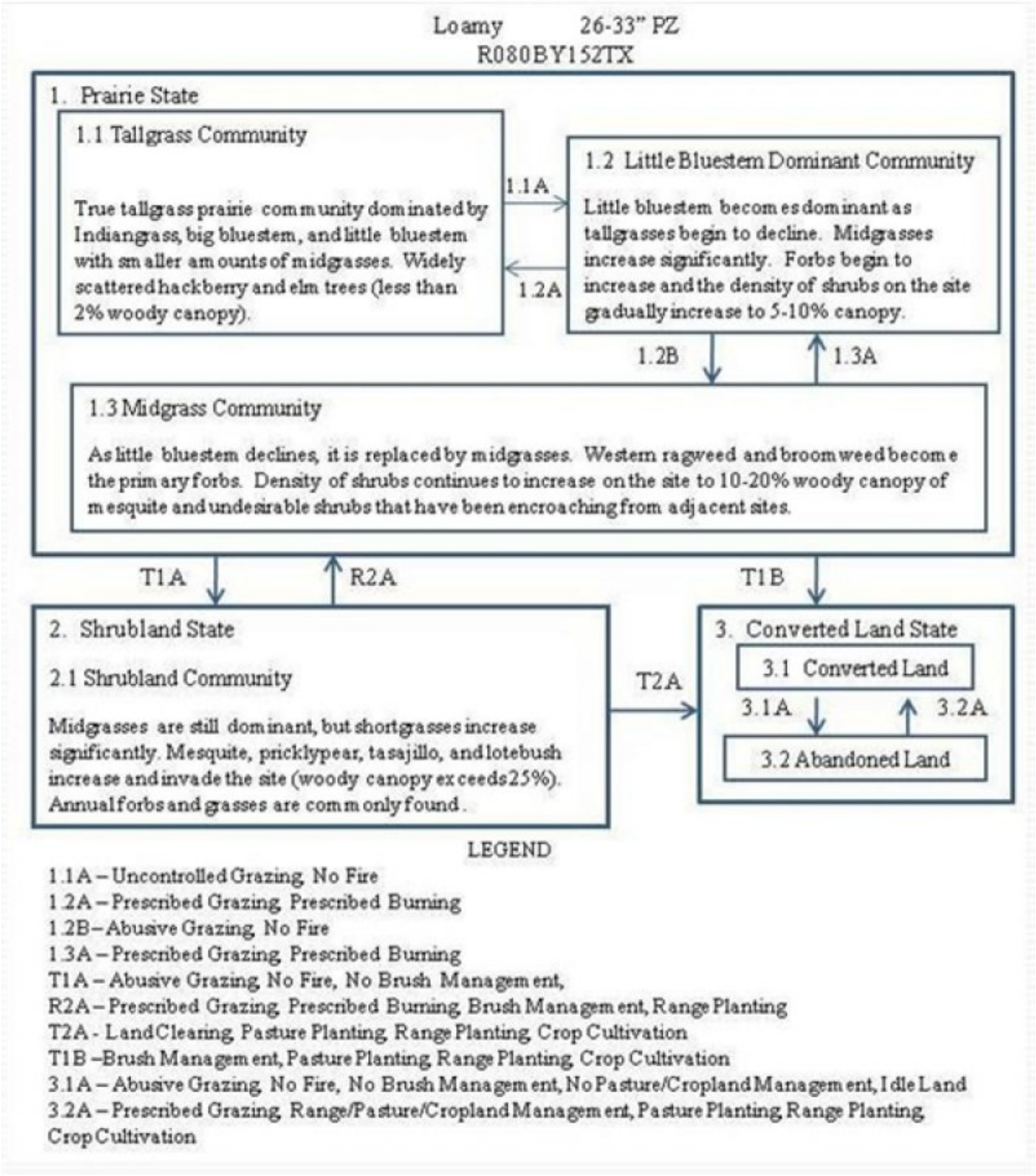
Selective individual removal of undesirable trees and shrubs is relatively easy and more practical when brush plants initially appear on the site. The increase of brush can be fairly rapid and the plants per acre will soon become too numerous for individual control to be feasible. Once woody plants become mature or develop into dense stands, control is expensive, uneconomical, impractical, and difficult to achieve. Brush management is most successful using a systems approach. Initial treatment by mechanical methods can be followed by using approved herbicides, and using prescribed fire as a maintenance technique. Prescribed grazing with a reasonable stocking rate can sustain the grass species composition and production at a near reference level.

Changes in plant communities and vegetation states on the Loamy site are result of the combined influences of natural events (rainfall, temperature, droughts, etc.) and the accompanying management systems implemented on the area (prescribed fire, grazing management, and brush management).

Rangeland Health Reference Worksheets have been posted for this site on the Texas NRCS website (www.tx.nrcs.usda.gov) in Section II of the eFOTG under (F) Ecological Site Descriptions.

State and Transitional Pathways:
The State and Transition Diagram which follows provides information on some of the most typical pathways that the vegetation on this site can follow as the result of natural events, management inputs, and application of conservation treatments. There may be other plant communities that can exist on this site under certain conditions. Consultation with local experts and professionals is recommended prior to application of practices or management strategies in order to ensure that specific objectives will be met.

State and transition model



State 1
Prairie State - Reference

The Loamy ecological site is a true Tallgrass Prairie Community. These gently rolling, almost treeless prairies amazed early explorers and pioneers travelling through this region. They often referred to these prairies as a “sea of grass”. In pristine conditions, the site is dominated by tallgrasses. Midgrasses are also significant components of the site. Forbs were common to the site. Trees and shrubs were infrequent on the Loamy site in reference conditions. Annual production ranges from 3000 to 6500 pounds per acre. As Indiangrass and big bluestem decline because of uncontrolled grazing or other disturbances, they are initially replaced by little bluestem, which eventually dominates the site and gives rise to Little Bluestem Dominant Community. Midgrasses and forbs begin to increase.

Shrubs begin to encroach from adjacent sites. This little bluestem dominant community is the one that is most commonly associated with the Loamy ecological site today. Prescribed burning and prescribed grazing is needed to enable the site to return to the true tallgrass prairie community. Continuous grazing, particularly when coupled with increased stocking rates, increases the dominance of little bluestem. Annual production ranges from 2400 to 6000 pounds per acre. The Midgrass Community is comprised of various midgrass species. Western ragweed and broomweed become the dominant forbs. The density of shrubs and other woody plants continues to increase on the site. Annual production ranges from 1700 to 3300 pounds per acre.

Dominant plant species

- Indiangrass (*Sorghastrum nutans*), grass
- big bluestem (*Andropogon gerardii*), grass

Community 1.1
Tallgrass Community

Figure 9. 1.1 Tallgrass Community

The reference plant community for the Loamy ecological site is a true tallgrass prairie. These gently rolling, almost treeless prairies amazed early explorers and pioneers travelling through this region. They often referred to these prairies as a “sea of grass”. In reference conditions, the site is dominated by tallgrasses including Indiangrass, big bluestem, little bluestem, and switchgrass. Midgrasses including sideoats grama, Canada wildrye, vine mesquite, blue grama, and Texas wintergrass are also significant components of the site. The most common forbs are Engelmann daisy, heath aster, prairieclover, sagewort, gayfeather, basketflower, and plains blackfoot daisy. Trees and shrubs were infrequent on the Loamy Prairie site in pristine conditions. This was an open prairie with only an occasional individual hackberry or elm widely scattered across the landscape. Annual production ranges from 3000 to 6500 pounds per acre.

Table 5. Annual production by plant type

Plant Type	Low (Kg/Hectare)	Representative Value (Kg/Hectare)	High (Kg/Hectare)
Grass/Grasslike	3026	5044	6949
Forb	168	224	280
Shrub/Vine	168	112	56
Total	**3362**	**5380**	**7285**

Figure 11. Plant community growth curve (percent production by month). TX3040, Tallgrass Prairie Community. True tallgrass prairie with Indiangrass, big bluestem, and little bluestem as co-dominants. .

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2	2	3	14	22	20	7	4	13	8	3	2

Community 1.2
Little Bluestem Dominant Community

Figure 12. 1.2 Little Bluestem Dominant Community

As Indiangrass and big bluestem decline because of uncontrolled grazing or other disturbances, they are initially replaced by little bluestem, which eventually dominates the site. Midgrasses and forbs begin to increase. Shrubs begin to encroach from adjacent sites. This little bluestem dominant plant community is the one that is most commonly associated with the Loamy ecological site today. Prescribed burning and prescribed grazing is needed to enable the site to return to the true tallgrass prairie plant community. Continuous grazing, particularly when coupled with increased stocking rates, increases the dominance of little bluestem. Annual production ranges from 2400 to 6000 pounds per acre.

Table 6. Annual production by plant type

Plant Type	Low (Kg/Hectare)	Representative Value (Kg/Hectare)	High (Kg/Hectare)
Grass/Grasslike	2354	4371	6389
Forb	112	168	224
Shrub/Vine	224	168	112
Total	**2690**	**4707**	**6725**

Figure 14. Plant community growth curve (percent production by month). TX3040, Tallgrass Prairie Community. True tallgrass prairie with Indiangrass, big bluestem, and little bluestem as co-dominants. .

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2	2	3	14	22	20	7	4	13	8	3	2

Community 1.3
Midgrass Community

Continued retrogression caused by drought, heavy continuous grazing, or other disturbances results in a midgrass dominant plant community comprised of sideoats grama, blue grama, silver bluestem, Texas wintergrass, dropseeds, and vine mesquite. Western ragweed and broomweed become the dominant forbs. The density of shrubs and other woody plants continues to increase on the site. Annual production ranges from 1700 to 3300 pounds per acre.

Table 7. Annual production by plant type

Plant Type	Low (Kg/Hectare)	Representative Value (Kg/Hectare)	High (Kg/Hectare)
Grass/Grasslike	1513	2466	3138
Forb	280	336	392
Shrub/Vine	112	112	168
Total	**1905**	**2914**	**3698**

Figure 16. Plant community growth curve (percent production by month). TX3020, Midgrass Savannah, 10% canopy. Midgrass savannah with 10 percent canopy cover. Continuous overgrazing led to the decline of tall grasses and the rise of the midgrass species..

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2	2	2	10	20	24	10	5	10	10	3	2

Pathway 1.1A
Community 1.1 to 1.2

Tallgrass Community

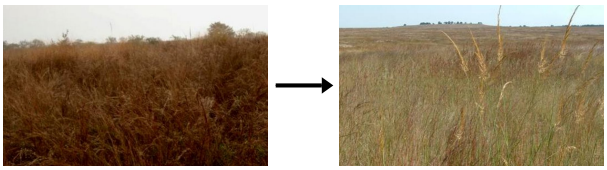
Little Bluestem Dominant Community

With uncontrolled grazing and no fires, the Tallgrass Community will shift to the Little Bluestem Dominant Community.

Conservation practices

Prescribed Burning
Prescribed Grazing

Pathway 1.2A
Community 1.2 to 1.1



Little Bluestem Dominant Community

Tallgrass Community

The Little Bluestem Dominant Community may be restored to the Tallgrass Commiunity with the use of Prescribed Grazing and Prescribed Burning conservation practices.

Conservation practices

Prescribed Burning
Prescribed Grazing

Pathway 1.2B
Community 1.2 to 1.3

With the continuation of abusive grazing and no fires, the Little Bluestem Dominant Community would be shifted to the Midgrass Community.

Pathway 1.3A
Community 1.3 to 1.2

With the use of conservation practices such as Prescribed Grazing and Prescribed Burning, the Midgrass Community can be restored to the Little Bluestem Dominant Community.

Conservation practices

Prescribed Burning
Prescribed Grazing

State 2
Shrubland State

The Shrubland Community is dominated by midgrasses and shortgrasses. Broomweed and other annual forbs increase significantly. Mesquite, pricklypear, and lotebush invade the site and woody canopy may exceed 25%. Annual production becomes very erratic and usually ranges from 1000 to 2000 pounds per acre.

Dominant plant species

- honey mesquite (*Prosopis glandulosa*), shrub
- lotebush (*Ziziphus obtusifolia*), shrub
- pricklypear (*Opuntia*), shrub
- buffalograss (*Bouteloua dactyloides*), grass

Community 2.1
Shrubland Community

Figure 17. 2.1 Shrubland Community

Abusive grazing and/or other severe disturbances cause continued deterioration of the plant community. At this stage, the site is dominated by midgrasses and shortgrasses such as buffalograss, curlymesquite, Texas grama, dropseeds, and silver bluestem as well as annual threeawns. Broomweed and other annual forbs increase significantly. Mesquite, pricklypear, and lotebush invade the site and woody canopy may exceed 25%. Annual production becomes very erratic and usually ranges from 1000 to 2000 pounds per acre.

Table 8. Annual production by plant type

Plant Type	Low (Kg/Hectare)	Representative Value (Kg/Hectare)	High (Kg/Hectare)
Grass/Grasslike	560	1065	1513
Forb	224	336	504
Shrub/Vine	336	280	224
Total	**1120**	**1681**	**2241**

Figure 19. Plant community growth curve (percent production by month). TX3030, Mid/Shortgrass with Mesquite - Buffalograss . Mid and Short Grass with Mesquite; Buffalograss, Texas Wintergrass, and Meadow Dropseed..

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
5	5	5	15	15	15	5	5	10	10	5	5

State 3
Converted Land State

The Converted Land Community has been cultivated for cropland or pastureland purposes. Small grain or forage sorghum may be cropped. Permanent native and introduce pasture may also be planted. Sometimes the community may be abandoned and let “go back” to native species encroached by woody species.

Dominant plant species

- Bermudagrass (*Cynodon dactylon*), grass

Community 3.1
Converted Land Community

Figure 20. 3.1 Converted Land Community

Thousands of acres of Loamy rangelands have been plowed up and converted to other vegetation. Converted lands can include cropland, introduced pasture and areas planted to native or introduced grasses. Many acres of Loamy Prairie rangelands have been converted to cropland (primarily small grains) Still more acres have been planted to introduced grasses such as bermudagrass, Kleingrass, and several varieties of Old World bluestems. In the highest state of production following conversion the trees, shrubs and forbs will be reduced or eliminated from the site. The more woodies and forbs that occur on a converted site, the lower the overall production would be. The figures in this table reflect this relationship.

Table 9. Annual production by plant type

Plant Type	Low (Kg/Hectare)	Representative Value (Kg/Hectare)	High (Kg/Hectare)
Grass/Grasslike	2914	5268	7622
Forb	336	280	224
Shrub/Vine	112	56	–
Total	**3362**	**5604**	**7846**

Figure 22. Plant community growth curve (percent production by month). TX3037, Converted Land Community. Planted to monocultures of introduced species, or monocultures or mixtures of commercially available native tallgrasses. .

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	3	5	14	23	20	5	4	12	8	3	2

Community 3.2
Abandoned Land Community

Abandoned croplands and reseeded areas tend to revert back to a more natural state through the process of secondary succession. This is a very slow process that takes decades or centuries dependent on the status of the area at the time it is abandoned. The first plants to establish are annual forbs and grasses followed by early successional shortgrasses and midgrasses. If managed properly, some of these abandoned areas may eventually begin to approximate the diversity and complexity of the native Loamy ecosystem. Midgrasses, perennial forbs, and tallgrasses may begin to establish if the area is carefully managed. However, it is highly unlikely that abandoned lands can ever return to reference vegetation within a reasonable period of time.

Table 10. Annual production by plant type

Plant Type	Low (Kg/Hectare)	Representative Value (Kg/Hectare)	High (Kg/Hectare)
Forb	448	560	673
Grass/Grasslike	336	448	560
Shrub/Vine	112	224	336
Total	**896**	**1232**	**1569**

Figure 24. Plant community growth curve (percent production by month). TX3038, Abandoned Land Community. Abandoned croplands, pasturelands and seeded areas..

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
3	4	8	16	18	12	4	4	10	12	6	3

Pathway 3.1A
Community 3.1 to 3.2

The Converted Land Community will shift to the Abandoned Land Community when abusive grazing, no fires, no brush management, no pasture management, no cropland management, and land left idled/abandoned occur.

Pathway 3.2A
Community 3.2 to 3.1

The Abandoned Land Community can be reverted back to the Converted Land Community with the application of various conservation practices including Prescribed Grazing, Range/Pasture/Cropland Management, Pasture Planting, Range Planting, and Crop Cultivation.

Conservation practices

Brush Management
Conservation Crop Rotation
Prescribed Burning
Prescribed Grazing
Range Planting
Nutrient Management
Integrated Pest Management (IPM)

Transition T1A
State 1 to 2

With abusive grazing, no fires, and no brush management, the Prairie State will transition into the Shrubland State.

Transition T1B
State 1 to 3

With Seedbed Preparation, Range Planting, Pasture Planting, and Crop Cultivation, the Prairie State will transition into the Converted Land State.

Restoration pathway R2A
State 2 to 1

The restoration occurs from the Shrubland State to the Prairie State by the use of various conservation practices including Prescribed Grazing, Prescribed Burning, Brush Management, and Range Planting.

Conservation practices

Brush Management
Prescribed Burning
Prescribed Grazing
Range Planting

Transition T2A
State 2 to 3

The transition from the Shrubland State to the Converted Land State occurs due to the application of land clearing, Brush Management, Seedbed preparation, Range Planting, and Crop Cultivation.

Additional community tables

Table 11. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production (Kg/Hectare)	Foliar Cover (%)
Grass/Grasslike					
1	**Tallgrasses**			673–3026	
	Indiangrass	SONU2	*Sorghastrum nutans*	336–2578	–
	big bluestem	ANGE	*Andropogon gerardii*	224–2242	–
	switchgrass	PAVI2	*Panicum virgatum*	112–673	–
2	**Tallgrass**			336–1905	
	little bluestem	SCSC	*Schizachyrium scoparium*	336–1905	–
3	**Midgrasses**			336–897	

	sideoats grama	BOCU	*Bouteloua curtipendula*	168–673	–
	blue grama	BOGR2	*Bouteloua gracilis*	112–673	–
	silver beardgrass	BOLAT	*Bothriochloa laguroides ssp. torreyana*	112–448	–
	Arizona cottontop	DICA8	*Digitaria californica*	0–336	–
	vine mesquite	PAOB	*Panicum obtusum*	0–336	–
	purpletop tridens	TRFL2	*Tridens flavus*	0–336	–
	Reverchon's bristlegrass	SERE3	*Setaria reverchonii*	0–224	–
	bristlegrass	SETAR	*Setaria*	0–224	–
	composite dropseed	SPCOC2	*Sporobolus compositus var. compositus*	0–224	–
	Drummond's dropseed	SPCOD3	*Sporobolus compositus var. drummondii*	0–224	–
	sand dropseed	SPCR	*Sporobolus cryptandrus*	0–224	–
	white tridens	TRAL2	*Tridens albescens*	0–224	–
	Texas cupgrass	ERSE5	*Eriochloa sericea*	0–224	–
	tumble windmill grass	CHVE2	*Chloris verticillata*	0–224	–
	hairy grama	BOHIH	*Bouteloua hirsuta var. hirsuta*	0–224	–
4	**Cool-season grasses**			168–336	
	Canada wildrye	ELCA4	*Elymus canadensis*	0–336	–
	Texas wintergrass	NALE3	*Nassella leucotricha*	168–336	–
	western wheatgrass	PASM	*Pascopyrum smithii*	0–336	–
	Scribner's rosette grass	DIOLS	*Dichanthelium oligosanthes var. scribnerianum*	0–112	–
5	**Midgrasses/Shortgrasses**			168–392	
	buffalograss	BODA2	*Bouteloua dactyloides*	168–392	–
	curly-mesquite	HIBE	*Hilaria belangeri*	0–224	–
	fall witchgrass	DICO6	*Digitaria cognata*	0–112	–
	Texas grama	BORI	*Bouteloua rigidiseta*	0–56	–
	purple threeawn	ARPU9	*Aristida purpurea*	0–56	–
	Wright's threeawn	ARPUW	*Aristida purpurea var. wrightii*	0–56	–
Forb					
6	**Forbs**			224–560	
	white heath aster	SYERE	*Symphyotrichum ericoides var. ericoides*	0–168	–
	Engelmann's daisy	ENPE4	*Engelmannia peristenia*	0–168	–
	Maximilian sunflower	HEMA2	*Helianthus maximiliani*	0–168	–
	Cuman ragweed	AMPS	*Ambrosia psilostachya*	0–112	–
	white sagebrush	ARLUM2	*Artemisia ludoviciana ssp. mexicana*	0–112	–
	American star-thistle	CEAM2	*Centaurea americana*	0–112	–
	plains blackfoot	MELE2	*Melampodium leucanthum*	0–56	–
	chickenthief	MEOL	*Mentzelia oligosperma*	0–56	–
	littleleaf sensitive-briar	MIMI22	*Mimosa microphylla*	0–56	–
	yellow puff	NELU2	*Neptunia lutea*	0–56	–
	evening primrose	OENOT	*Oenothera*	0–56	–
	Gulf Indian breadroot	PERH2	*Pediomelum rhombifolium*	0–56	–

	pitcher sage	SAAZG	*Salvia azurea var. grandiflora*	0–56	–
	scarlet globemallow	SPCO	*Sphaeralcea coccinea*	0–56	–
	queen's-delight	STSY	*Stillingia sylvatica*	0–56	–
	prairie clover	DALEA	*Dalea*	0–56	–
	purple prairie clover	DAPU5	*Dalea purpurea*	0–56	–
	Illinois bundleflower	DEIL	*Desmanthus illinoensis*	0–56	–
	ticktrefoil	DESMO	*Desmodium*	0–56	–
	blacksamson echinacea	ECAN2	*Echinacea angustifolia*	0–56	–
	Chalk Hill hymenopappus	HYTE2	*Hymenopappus tenuifolius*	0–56	–
	trailing krameria	KRLA	*Krameria lanceolata*	0–56	–
	beeblossom	GAURA	*Gaura*	0–56	–
	curlycup gumweed	GRSQ	*Grindelia squarrosa*	0–56	–
	Baldwin's ironweed	VEBA	*Vernonia baldwinii*	0–56	–
	Texas vervain	VEHA	*Verbena halei*	0–56	–
Shrub/Vine					
7	**Trees, Shrubs & Vines**			0–168	
	sugarberry	CELAL	*Celtis laevigata var. laevigata*	0–168	–
	netleaf hackberry	CELAR	*Celtis laevigata var. reticulata*	0–168	–
	elm	ULMUS	*Ulmus*	0–168	–
	plum	PRUNU	*Prunus*	0–112	–
	sumac	RHUS	*Rhus*	0–112	–
	gum bully	SILA20	*Sideroxylon lanuginosum*	0–112	–

Animal community

Historically, the Loamy site was inhabited permanently and intermittently by a wide variety of mammals, reptiles, and birds. Several historical references and journals written in the 18th and 19th century by explorers, survey parties, and military expeditions refer to herds of bison, wild cattle, wild horses, and antelope roaming freely across the North Central Prairie and adjacent regions.

Currently, the site is utilized by deer, quail, dove, numerous species of birds, and a variety of small fur-bearing mammals. In the plant communities included in the historic climax plant community, the lack of trees and shrubs limits the habitat for several wildlife species. Animal species and populations fluctuate as the vegetation cycles through temporary phases and different ecological stages.

Livestock grazing should be controlled by implementing grazing management systems that incorporate frequent and timely deferment periods and correct stocking rates to prevent abusive grazing.

Hydrological functions

When herbaceous vegetation and ground cover are maintained in a healthy and vigorous status, water infiltration into the soil profile is increased significantly, resulting in less runoff. A thick, healthy grass cover also results in improved water quality because it serves as a filter or trap to reduce sediments and pollutants before the water flows offsite.

Recreational uses

These scenic areas offer outdoor activities including photography, bird watching, hiking, camping, horseback riding,

and off-road vehicle use. Hunting quail, dove, turkey and deer are most often associated with the adjacent ecological sites.

Wood products

NA

Other products

NA

Other information

None.

Inventory data references

Vegetation data for this site was obtained from existing Range Site Descriptions, SCS-RANGE -417 Production and Composition Records for Native Grazing Lands, and on-site inventories by the author and local experts including ranchers, natural resource specialists from federal and state agencies, and personnel from cooperating agencies and organizations. A total 4 SCS-RANGE-417's containing data collected from 2 counties during the period 12/30/1981 to 12/12/1986 were reviewed for this site.

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Acknowledgments

Site Development and Testing Plan:

Future work, as described in a Project Plan, to validate the information in this Provisional Ecological Site Description is needed. This will include field activities to collect low, medium and high intensity sampling, soil correlations, and analysis of that data. Annual field reviews should be done by soil scientists and vegetation specialists. A final field review, peer review, quality control, and quality assurance reviews of the ESD will be needed to produce the final document. Annual reviews of the Project Plan are to be conducted by the Ecological Site Technical Team.

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)	Lem Creswell, Zone RMS, NRCS, Weatherford, Texas.
Contact for lead author	817-596-2865
Date	12/05/2007
Approved by	Bryan Christensen
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

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

2. **Presence of water flow patterns:** None.

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 10% bare ground randomly distributed throughout.

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):** Under normal rainfall, little litter movement should be expected.

8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):** Soil surface in HCPC is resistant to erosion. Stability class range is expected to be 5-6.

9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** 0-16 inches thick that has weak granular structure. SOM is approximately 1-6%. See soil survey for specific soils info.

10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** The tallgrass prairie tallgrasses, midgrasses, and forbs have adequate litter and little bare ground. This allows 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 >

    Other: Cool-season grasses > Warm-season shortgrasses > Forbs > Trees > Shrubs/Vines

    Additional:

13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** Grasses due to their growth habit will exhibit some mortality and decadence, though very slight.

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14. **Average percent litter cover (%) and depth (in):** Litter is dominantly herbaceous.

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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** 3000 - 6500 pounds per acre.

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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:** Mesquite, prickly pear, johnsongrass, annual broomweed, and King Ranch bluestem.

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17. **Perennial plant reproductive capability:** All perennial plants should be capable of reproducing, except during periods of prolonged drought conditions,abusive grazing, and wildfires.
