USDA Natural Resources
Conservation Service

Ecological site R083AY027TX
Western Clay Loam

Last updated: 9/19/2023
Accessed: 05/11/2025

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.

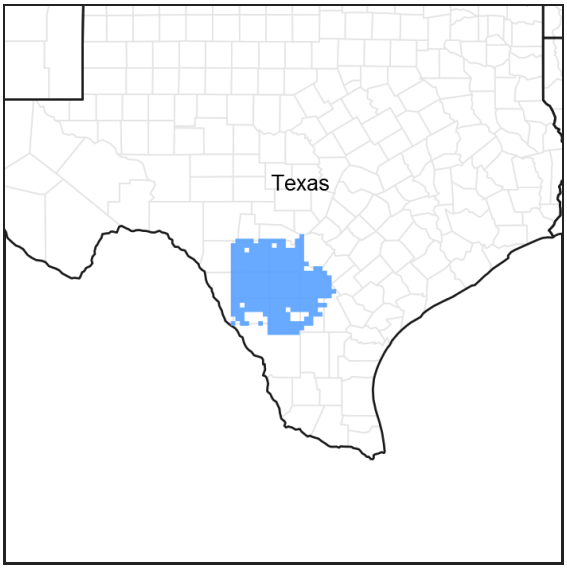

Figure 1. Mapped extent

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): 083A–Northern Rio Grande Plain

This area is entirely in Texas and south of San Antonio. It makes up about 11,115 square miles (28,805 square kilometers). The towns of Uvalde, Cotulla, and Hondo are in the western part of the area, and Beeville, Goliad, and Kenedy are in the eastern part. The town of Alice is just outside the southern edge of the area. Interstate Highways 35 and 37 cross this area. This area is comprised of inland, dissected coastal plains.

Classification relationships

USDA-Natural Resources Conservation Service, 2006.
-Major Land Resource Area (MLRA) 83A

Ecological site concept

The Clay Loam ecological site has deep to very deep clay loam soils and has high vegetative production. The Eastern Clay Loams are more productive than the Western Clay Loam sites, with the separation line occurring in Atascosa County.

Associated sites

R083AY003TX	**Gravelly Ridge**
R083AY005TX	**Shallow**
R083AY013TX	**Loamy Bottomland**
R083AY008TX	**Salty Prairie**
R083AY011TX	**Claypan Prairie**
R083AY012TX	**Loamy Draw**
R083AY016TX	**Saline Clay Loam**

Similar sites

R083CY025TX	**Clay Loam**
R083DY025TX	**Clay Loam**
R083BY025TX	**Clay Loam**

Table 1. Dominant plant species

Tree	Not specified
Shrub	Not specified
Herbaceous	(1) *Schizachyrium scoparium* (2) *Bothriochloa barbinodis*

Physiographic features

The Clay Loam ecological site is made of loamy soils formed from calcareous loamy alluvium. These nearly level to gently sloping soils are on stream terraces on coastal plains. Slope gradients are dominantly 0 to 2 percent but range up to 5 percent. Elevation ranges from 200 to 1,000 feet. This area is comprised of inland, dissected coastal plains.

Table 2. Representative physiographic features

Landforms	(1) Coastal plain > Stream terrace (2) Coastal plain > Interfluve
Runoff class	Negligible to medium
Flooding frequency	None
Ponding frequency	None
Elevation	200–1,000 ft
Slope	0–5%
Aspect	Aspect is not a significant factor

Climatic features

MLRA 83A is subtropical, subhumid on the western boundary and subtropical humid on the eastern boundary. Winters are dry and mild and the summers are hot and humid. Tropical maritime air masses predominate throughout spring, summer, and fall. Modified polar air masses exert considerable influence during winter, creating a continental climate characterized by large variations in temperature. Average precipitation for MLRA 83A is 20 inches on the western boundary and 35 inches on the eastern boundary. Peak rainfall, because of rain showers, occurs late in spring and a secondary peak occurs early in fall. Heavy thunderstorm activities increase in April, May, and June. July is hot and dry with little weather variations. Rainfall increases again in late August and September as tropical disturbances increase and become more frequent. Tropical air masses from the Gulf of Mexico dominate during the spring, summer, and fall. Prevailing winds are southerly to southeasterly throughout the year except in

December when winds are predominately northerly.

Table 3. Representative climatic features

Frost-free period (characteristic range)	225-251 days
Freeze-free period (characteristic range)	264-365 days
Precipitation total (characteristic range)	25-29 in
Frost-free period (actual range)	207-262 days
Freeze-free period (actual range)	258-365 days
Precipitation total (actual range)	22-30 in
Frost-free period (average)	235 days
Freeze-free period (average)	310 days
Precipitation total (average)	26 in

Climate stations used

- (1) CARRIZO SPRINGS 3W [USC00411486], Carrizo Springs, TX
- (2) HONDO [USC00414254], Hondo, TX
- (3) MATHIS 4 SSW [USC00415661], Mathis, TX
- (4) UVALDE 3 SW [USC00419268], Uvalde, TX
- (5) CHARLOTTE 5 NNW [USC00411663], Charlotte, TX
- (6) FOWLERTON [USC00413299], Fowlerton, TX
- (7) PEARSALL [USC00416879], Pearsall, TX
- (8) POTEET [USC00417215], Poteet, TX
- (9) LYTLE 3W [USC00415454], Natalia, TX
- (10) HONDO MUNI AP [USW00012962], Hondo, TX
- (11) DILLEY [USC00412458], Dilley, TX

Influencing water features

Water features does not influence this site.

Wetland description

N/A

Soil features

This site consists of deep and very deep, well drained, moderate to moderately slow permeable soils. Reaction is neutral to moderately alkaline. A typical profile will include a calcic horizon originating between 10 inches and 24 inches of depth. The soil moisture regime is ustic bordering on aridic. Soil series correlated to this site include: Amphion, Bookout, Caid, Castroville, Chacon, Hanis, Sabenyo, Uvalde, and Zavco.

Table 4. Representative soil features

Parent material	(1) Alluvium–sedimentary rock (2) Residuum–sedimentary rock
Surface texture	(1) Clay loam (2) Silty clay loam (3) Sandy clay loam
Family particle size	(1) Fine (2) Fine-loamy (3) Fine-silty

Drainage class	Well drained
Permeability class	Slow to moderate
Soil depth	80 in
Surface fragment cover <=3"	0%
Surface fragment cover >3"	0%
Available water capacity (0-40in)	4–7 in
Calcium carbonate equivalent (0-40in)	0–30%
Electrical conductivity (0-40in)	0–4 mmhos/cm
Sodium adsorption ratio (0-40in)	0–5
Soil reaction (1:1 water) (0-40in)	6.6–8.4
Subsurface fragment volume <=3" (Depth not specified)	1–10%
Subsurface fragment volume >3" (Depth not specified)	0–2%

Ecological dynamics

The plant communities that can be found on this site range from a midgrass dominant to a brush-covered site with bare ground. This diversity in plant communities is in direct response to grazing management, fire, and drought. The reference plant community was composed of predominantly midgrasses such as false Rhodesgrass (Chloris crinita), multi-flower false Rhodesgrass (Chloris pluriflora), little bluestem (*Schizachyrium scoparium*), Arizona cottontop (*Digitaria californica*), feathery bluestems (*Andropogon ternarius*), pink pappusgrass (*Pappophorum bicolor*), and sideoats grama (*Bouteloua curtipendula*), with a small percentage of woodies such as mesquite (*Prosopis glandulosa*), whitebrush (*Aloysia gratissima*), Condalias (Condalia spp.), and wolfberry (*Lycium carolinianum*), and numerous perennial forbs. The reference community was maintained by periodic grazing by roaming herds of wildlife and numerous fires that were set by lightning and the Native Americans. The site was very productive and maintained a high percentage of ground cover with high fertility. Runoff of rainfall was slow, allowing the soil profile to fill to capacity.

In the reference plant community, the midgrasses dominated the shortgrasses due to their ability to capture the sunlight and shade the shorter grasses. The midgrasses also had deeper root systems that allowed them to retain the deep moisture while the shortgrasses had shorter root systems and could capture only the shallow moisture. Many of the deep-rooted grasses also have more root hairs that allow them to be more efficient at extracting moisture from very dry soil. Due to these differences, the midgrasses maintained their dominance over the shortgrasses as they could produce much more food and maintain a high state of health and vigor even in times of drought.

Fire occurred on a regular basis and burned anytime the grass was abundant and dry and there was an ignition source. These fires burned for days as there was nothing but rivers or denuded low producing ecological sites to stop them. They arrested the woody component to a small percentage of the total production, as well as canopy. These fires assisted in maintaining a good component of perennial forbs on the site by opening the ground cover to allow their establishment and regeneration and breaking the dormancy of some seeds.

The natural graze-rest cycles were broken by continuous grazing and the stocking rates exceeded the carrying capacity of the land with settlement. Historical accounts identify grazing by herds of wild horses, followed by heavy sheep and cattle grazing as settlement progressed. Previously grazing was limited only to antelope, deer, and the occasional and irregular small herd of bison. The midgrasses were grazed to the point that they could no longer produce enough food in their leaves to maintain health and vigor. All available food produced was going to grow more leaf area to enhance the food manufacturing process at the expense of the root system. Sustained

overgrazing caused the root system to shrink, as respiration required energy. In time, the midgrasses would become a very shallow rooted, small leaf area, weak plant that was set up for doom during the next drought. Under these circumstances, the midgrass plant was not in a dominant position to the short grasses, but in a position of being dominated by the shortgrasses on the site. This then lead to the demise of the midgrasses and a spread of the shortgrasses on the site.

This reduction of midgrasses and expansion of shortgrasses, along with the concurrent suppression of fire, allowed the woody plants to proliferate and eventually dominate the site. With their domination, they now captured the sunlight first and replaced the shortgrasses and remnant midgrasses. The area is now a Shrub/Woodland site with a canopy of brush that exceeds 20 to 50 percent. The understory will range from a cover of short and midgrasses to bare ground. When bare ground exists, it develops a crust that limits water infiltration as well as seedling growth. This is now a new steady state that will exist until energy is applied to reduce the brush back to its original state and a maintenance program established to maintain it. The area will probably need to be seeded with a seed source of native seeds and a good grazing management program established to maintain the health and vigor of the forage component.

State and transition model

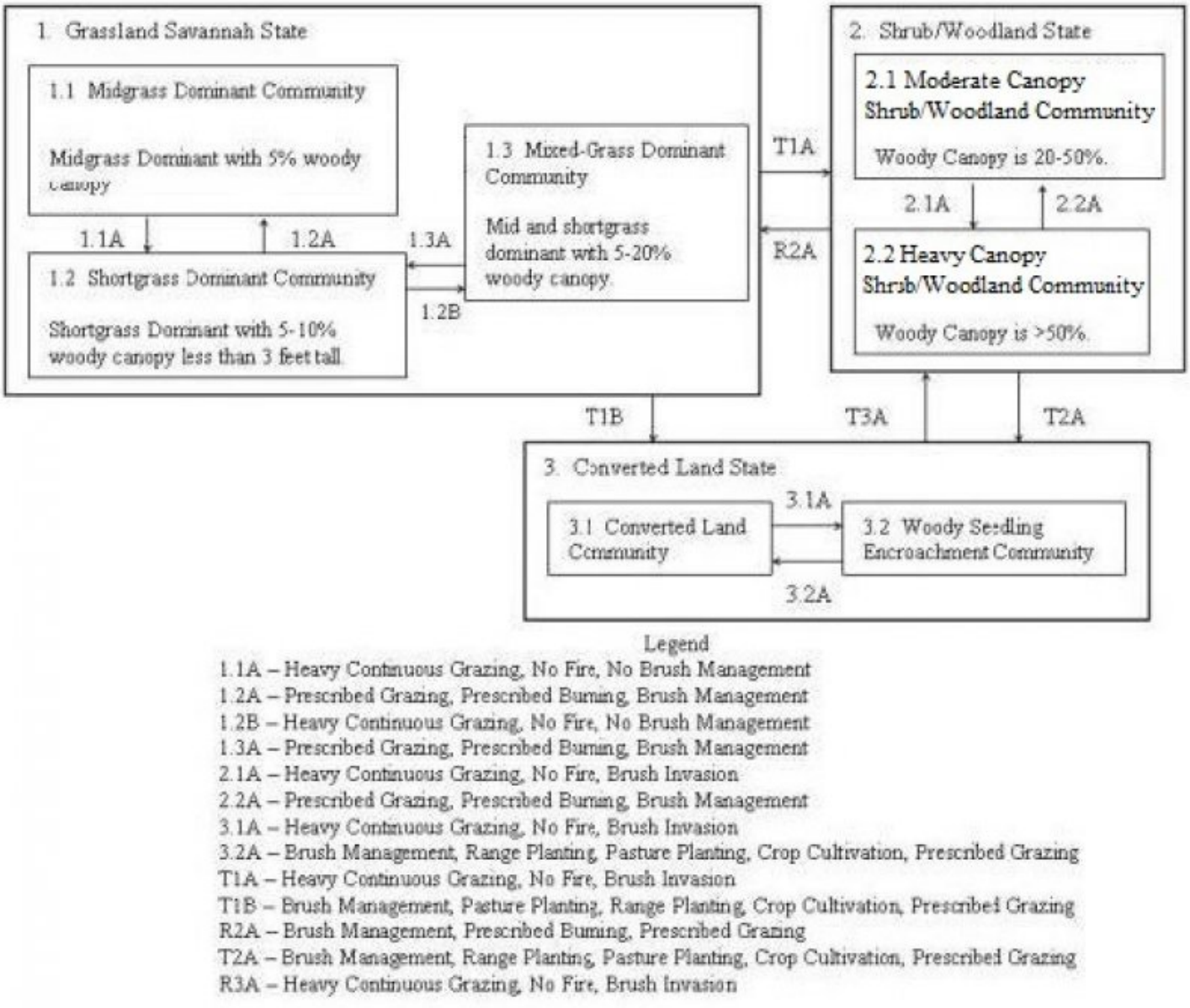

Figure 8. STM

State 1
Grassland Savannah

Dominant plant species

- little bluestem (*Schizachyrium scoparium*), grass

Community 1.1
Midgrass Dominant

This community represents the reference plant community. It is a fire-climax, midgrass plant community with less than five percent canopy of woody plants. The grasses are two flower trichloris, four flower trichloris, little bluestem, Arizona cottontop, feathery bluestems, pink pappusgrass, sideoats grama, buffalograss (*Bouteloua dactyloides*), curlymesquite (*Hilaria belangeri*), perennial threeawn (Aristida spp.), plains bristlegrass (Setaria spp.), Texas winter grass (*Nassella leucotricha*), and hooded windmillgrass (*Chloris cucullata*). The woody species are mesquite, whitebrush, Condalias, spiny hackberry (Celtis pallida), cacti, Texas colubrine (*Colubrina texensis*), wolfberry, vine ephedra (Ephedra spp.), desert yaupon (*Schaefferia cuneifolia*), and guayacan (Guaiacum augustifolium). Forbs are Engelmann's daisy (*Engelmannia peristenia*), bundleflower (Desmanthus spp.), sensitive briar (Schrankia spp.), orange zexmenia (Wedelia hispida), hairy ruellia (Ruellia spp.), Mexican sagewort (*Artemisia ludoviciana*), bushsunflower (Simsia lagasceformis), lazy daisy (Aphanostephus spp.), and annual forbs.

Table 5. Annual production by plant type

Plant Type	Low (Lb/Acre)	Representative Value (Lb/Acre)	High (Lb/Acre)
Grass/Grasslike	1700	3650	4900
Shrub/Vine	200	250	550
Forb	100	150	550
Tree	0	0	0
Total	**2000**	**4050**	**6000**

Figure 10. Plant community growth curve (percent production by month). TX4525, Midgrass Dominant, 5% woodies. Midgrass plant community with less than a 5 percent canopy of woody plants. Growth occurs with peak in spring and fall seasons..

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2	2	5	10	18	15	5	9	15	9	5	5

Community 1.2
Shortgrass Dominant

This phase of the Grassland Savannah State still exhibits a savannah plant structure with the woody species canopy being as high as 10 percent, but less than three feet tall. This is a result of fire being removed as a component of the site. Heavy continuous grazing has taken many of the midgrasses out of the site and replaced them with shortgrasses such as buffalograss, curlymesquite, threeawn, tumblegrass (*Schedonnardus paniculatus*), and red grama (*Bouteloua trifida*). Other common Increasers to the site are leatherstem (*Jatropha dioica*), huisache (Acacia smallii), ragweed (Ambrosia spp.), and tasajillo (Opuntia leptocaulis).

Table 6. Annual production by plant type

Plant Type	Low (Lb/Acre)	Representative Value (Lb/Acre)	High (Lb/Acre)
Grass/Grasslike	700	1500	2000
Shrub/Vine	400	500	800
Forb	25	50	500
Tree	0	0	0
Total	**1125**	**2050**	**3300**

Figure 12. Plant community growth curve (percent production by month). TX4526, Shortgrass Dominant with 5-10% woodies. Shortgrass savannah plant structure with the woody species canopy being as much as 10%, but being less than 3 feet tall..

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2	2	5	10	18	15	5	9	15	9	5	5

Community 1.3
Mixed-Grass Dominant

This phase of the Grassland Savannah State still exhibits the savannah plant structure even though the woody canopy cover may be as high as 20 percent. The understory can still be a midgrass plant community, a shortgrass community, or a mixture of midgrasses and shortgrasses depending on the grazing management regime that it has received. A lack of fire and brush management is the major component driving the plant community toward Shrub/Woodland State (2). A threshold is being approached, but is still reversible by prescribed fire, brush management, and grazing management. There is still sufficient fuel production to carry a fire and the shrubs are small enough to still be affected.

Table 7. Annual production by plant type

Plant Type	Low (Lb/Acre)	Representative Value (Lb/Acre)	High (Lb/Acre)
Grass/Grasslike	300	1000	1500
Shrub/Vine	600	1000	1500
Forb	25	50	500
Tree	0	0	0
Total	**925**	**2050**	**3500**

Figure 14. Plant community growth curve (percent production by month). TX4527, Mixed-Grass Savannah with 5-20% Woodies. Mixed-Grass Savannah Community with the woody canopy cover may be as high as 20%..

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2	2	5	10	18	15	5	9	15	9	5	5

Pathway 1.1A
Community 1.1 to 1.2

The reference community (1.1) will transition to the Shortgrass Dominant Community (1.2) with lack of fire, continued overgrazing, insufficient rest cycles, and/or natural disturbances, like prolonged drought.

Pathway 1.2A
Community 1.2 to 1.1

This phase can be managed back to the Midgrass Dominant Community (1.1) but will take the reintroduction of fire to the ecosystem or some method of brush management that allows selective removal of the plants. A prescribed grazing plan will be essential to reverse the trend and return the midgrasses back to the plant community over an extended period time.

Pathway 1.2B
Community 1.2 to 1.3

If heavy continuous grazing continues with the exclusion of fire, the phase will transition to the Mixed-Grass Dominant Community (1.3).

Pathway 1.3A
Community 1.3 to 1.2

This phase can be managed back to the Community 1.2, and eventually 1.1 but will take the reintroduction of fire to the ecosystem or some method of brush management that allows selective removal of the plants. A prescribed grazing plan will be essential to reverse the trend and returning the shortgrasses, and eventually the midgrasses back to the plant community over an extended period time.

State 2
Shrub/Woodland

Dominant plant species

- Christmas cactus (*Cylindropuntia leptocaulis*), shrub
- pricklypear (*Opuntia*), shrub

Community 2.1
Moderate Canopy Shrub/Woodland

Figure 15. 2.1 Moderate Canopy Shrub/Woodland

This plant community is a result of a transition from the Grassland Savannah (1) to the Shrubland/Woodland State (2). This threshold is passed when the woody canopy becomes such that insufficient fuel is produced to carry a fire that will control the woody canopy. The understory is limited in production due to the competition for sunlight, water, and nutrients. There is an increase in tasajillo, prickly pear (Opuntia spp.), yucca (Yucca spp.), annual grasses, and forbs.

Table 8. Annual production by plant type

Plant Type	Low (Lb/Acre)	Representative Value (Lb/Acre)	High (Lb/Acre)
Shrub/Vine	675	1200	2250
Grass/Grasslike	200	750	1000
Forb	25	50	250
Tree	0	0	0
Total	**900**	**2000**	**3500**

Figure 17. Plant community growth curve (percent production by month). TX4528, Shrub/Woodland Community, 20-50% canopy. Shrub/Woodland Community with 20-50% woody canopy..

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2	2	5	10	18	15	5	9	15	9	5	5

Community 2.2
Heavy Canopy Shrub/Woodland

Figure 18. 2.2 Heavy Canopy Shrub/Woodland

This plant community is the culmination of continued heavy grazing and a lack of fire or brush management. At this point the woody species have dominated the site and there is very little understory production. Bare ground has increased and caused crusting to the point that there is little water infiltration and little seedling emergence. Water infiltration does occur directly under some of the woody species, such as mesquite, as it moves down the trunk of the tree to the base. During the growing season, light showers are captured in the canopy of the trees and evaporate. Energy flow is predominantly through the shrubs as is the nutrient uptake. Winter rains can produce understory forage from cool-season annual forbs and grasses and perennials such as Texas wintergrass.

Table 9. Annual production by plant type

Plant Type	Low (Lb/Acre)	Representative Value (Lb/Acre)	High (Lb/Acre)
Shrub/Vine	1500	2000	3000
Forb	0	100	200
Grass/Grasslike	0	100	200
Tree	0	0	0
Total	**1500**	**2200**	**3400**

Figure 20. Plant community growth curve (percent production by month). TX4529, Shrub Woodland Community with >50% Woodies. Shrub Woodland Community with >50% Woodies.

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2	2	5	10	18	15	5	9	15	9	5	5

Pathway 2.1A
Community 2.1 to 2.2

Moderate Canopy Shrub/Woodland

Heavy Canopy Shrub/Woodland

Continued heavy grazing coupled with lack of fire will cause this community to transition to the Heavy Canopy Shrub/Woodland Community (2.2). Brush density and height will continue to increase and shade the ground.

Pathway 2.2A

Community 2.2 to 2.1

Heavy Canopy Shrub/Woodland

Moderate Canopy Shrub/Woodland

To transition Community 2.2 back to 2.1, the land manager will need to apply prescribed grazing, prescribed burning (if enough fuel loads still exist), and brush management. The key is lessening the canopy cover by woody species.

State 3
Converted Land

Dominant plant species

- buffelgrass (*Pennisetum ciliare*), grass

Community 3.1
Converted Land

This plant community is a phase of the Converted Land State developed by applying brush management and seeding. The area can be seeded to native grasses, forbs, and desirable woody species, singly or as a mix. To maintain the native planting, prescribed grazing and some form of brush control will be needed on a continuing basis or the plant community will develop into the Woody Seedling Encroachment Community (3.2). Some land managers have chosen to seed introduced grasses instead of native species. To maintain the introduced grass planting, prescribed grazing and some form of brush control will be needed on a continuing basis or the plant community will develop into the Woody Seedling Encroachment Community (3.2). This community can also be attained by converting cropped fields into pastures. Some sites remain in cropland today, typically small grain production for stocker-cattle grazing. While restoration of this site to a semblance of the midgrass grassland is possible with range planting, prescribed grazing, and prescribed burning, complete restoration of the reference community in a reasonable time is very unlikely due to deterioration of the soil structure and organisms. If cropping is abandoned, this land is usually planted to introduced grasses and forbs and managed as pastureland or encroachment by woody seedlings occur.

Table 10. Annual production by plant type

Plant Type	Low (Lb/Acre)	Representative Value (Lb/Acre)	High (Lb/Acre)
Grass/Grasslike	2000	4000	5000
Shrub/Vine	200	250	550
Forb	100	150	550
Tree	0	0	0
Total	**2300**	**4400**	**6100**

Figure 22. Plant community growth curve (percent production by month). TX4530, Converted Land Community. Community converted into warm-season grass seed mixtures..

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2	2	5	10	18	15	5	9	15	9	5	5

Figure 23. Plant community growth curve (percent production by month). TX4531, Converted Land - Introduced Grass Seeding. Seeding Coverted Land into Introduced grass species..

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	0	5	10	20	15	5	10	15	10	5	5

Figure 24. Plant community growth curve (percent production by month). TX4532, Cropland - Cool-season. Cool-season crops such as wheat and oats are planted..

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
14	18	21	22	6	0	0	0	0	0	9	10

Figure 25. Plant community growth curve (percent production by month). TX4533, Cropland - Warm-season. Crops such as cotton, corn, and grain and forage sorghum are planted..

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	0	5	10	20	20	5	10	15	10	5	0

Community 3.2
Woody Plant Seedling Encroachment

This plant community develops from native seeding, introduced seeding, and abandoned cropland communities. Seedlings of shrubs establish and spread due to the lack of fire or some other method of brush management. If the seedlings are not controlled, the Converted Land Community (3.1) will transition to the Woody Seedling Encroachment Community (3.2) and will require the application of energy in the form of machinery or herbicides to reduce the canopy. Production of the seeded species depends on the grazing management that has been applied since seeding, and the canopy of the shrubs invading or increasing on the site. As the canopy of the shrubs expands, grass and forb production will be reduced. Production will depend on the grass and forb species that invade the site as well as the canopy of the shrub invasion. It is unlikely that the Converted Land State (3) will ever fully return to the Grassland Savannah State (1). If neglected for a long time, it will transition into a Shrub/Woodland.

Table 11. Annual production by plant type

Plant Type	Low (Lb/Acre)	Representative Value (Lb/Acre)	High (Lb/Acre)
Grass/Grasslike	1600	3550	4800
Shrub/Vine	300	350	650
Forb	100	150	550
Tree	0	0	0
Total	**2000**	**4050**	**6000**

Figure 27. Plant community growth curve (percent production by month). TX4534, Converted Land - Woody Seedlings Encroachment. Woody seedling encroachment on converted lands such as abandoned cropland, native seeded land, and introduced seeding lands..

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2	2	5	10	18	15	5	9	15	9	5	5

Pathway 3.1A
Community 3.1 to 3.2

Like State 1 and 2, without prescribed grazing, fire, and/or brush management the site will eventually be invaded by brush. Without keeping woody species under control, this community will transition in the Wood Seedling Encroachment Community (3.2).

Pathway 3.2A
Community 3.2 to 3.1

In order to return to the Converted Land Community (3.2), the land manager must control the woody encroachment. This can be attained by mechanical or chemical brush management techniques. Proper grazing and fire may help if

the system is planted in grass. If the system is being cropped, other mechanical and chemical means are necessary to return the site to full agricultural productivity.

Transition T1A
State 1 to 2

Once the woody canopy exceeds approximately 20 percent and is taller than three feet, a threshold will have been passed to the Shrub/Woodland State (2). In this case energy in the form of heavy equipment and/or herbicides will be required along with prescribed grazing to shift the plant community back to the Grassland Savannah State (1).

Transition T1B
State 1 to 3

The Grassland Savannah State (1) can be converted to the Converted Land State (3) by controlling the brush and seeding to native or introduced grasses. It may also be plowed and converted to cropland.

Restoration pathway R2A
State 2 to 1

Brush management is the key driver in restoring Shrub/Woodland State (2) back to the Grassland Savannah State (1). Reduction in woody canopy below 20 percent will take large energy inputs depending on the canopy cover. A prescribed grazing plan and prescribed burning plan will keep the state functioning.

Transition T2A
State 2 to 3

The Shrub/Woodland State (2) can be converted to the Converted Land State (3) by controlling the brush and seeding to native or introduced grasses. It may also be plowed and converted to cropland.

Transition T3A
State 3 to 2

If the Woody Plant Seedling Encroachment Community (3.2) is left alone, eventually the woody plants will create a moderate to heavy canopy. At this point, the desired understory grasses, forbs, and/or crops will be shaded out and the site will transition into a Shrub/Woodland State (2).

Additional community tables

Table 12. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production (Lb/Acre)	Foliar Cover (%)
Grass/Grasslike					
1	**Midgrasses**			500–1400	
	little bluestem	SCSCS	*Schizachyrium scoparium var. scoparium*	500–1000	–
	false Rhodes grass	TRCR9	*Trichloris crinita*	500–1000	–
	multiflower false Rhodes grass	TRPL3	*Trichloris pluriflora*	500–1000	–
2	**Midgrasses**			1600–2100	
	cane bluestem	BOBA3	*Bothriochloa barbinodis*	500–1000	–
	Arizona cottontop	DICA8	*Digitaria californica*	500–1000	–
	pink pappusgrass	PABI2	*Pappophorum bicolor*	400–800	–
	sideoats grama	BOCU	*Bouteloua curtipendula*	400–800	–
	silver beardgrass	BOLAT	*Bothriochloa laguroides ssp. torreyana*	400–800	–

			torreyana		
3	**Midgrasses**			400–700	
	hooded windmill grass	CHCU2	*Chloris cucullata*	100–600	–
	plains bristlegrass	SEVU2	*Setaria vulpiseta*	100–500	–
4	**Shortgrasses**			200–400	
	buffalograss	BODA2	*Bouteloua dactyloides*	200–400	–
	curly-mesquite	HIBE	*Hilaria belangeri*	200–400	–
5	**Shortgrass**			50–100	
	threeawn	ARIST	*Aristida*	50–100	–
6	**Cool-season grasses**			0–200	
	Texas wintergrass	NALE3	*Nassella leucotricha*	0–200	–
Forb					
7	**Forbs**			100–550	
	Forb, annual	2FA	*Forb, annual*	0–100	–
	Riddell's dozedaisy	APRI	*Aphanostephus riddellii*	0–100	–
	white sagebrush	ARLUM2	*Artemisia ludoviciana ssp. mexicana*	0–100	–
	bundleflower	DESMA	*Desmanthus*	0–100	–
	Engelmann's daisy	ENPE4	*Engelmannia peristenia*	0–100	–
	sensitive plant	MIMOS	*Mimosa*	0–100	–
	awnless bushsunflower	SICA7	*Simsia calva*	0–100	–
Shrub/Vine					
8	**Shrubs/Vines**			200–550	
	whitebrush	ALGR2	*Aloysia gratissima*	0–300	–
	spiny hackberry	CEEH	*Celtis ehrenbergiana*	0–300	–
	snakewood	CONDA	*Condalia*	0–300	–
	Texan hogplum	COTE6	*Colubrina texensis*	0–300	–
	vine jointfir	EPPE	*Ephedra pedunculata*	0–300	–
	Texas lignum-vitae	GUAN	*Guaiacum angustifolium*	0–300	–
	Berlandier's wolfberry	LYBE	*Lycium berlandieri*	0–300	–
	pricklypear	OPUNT	*Opuntia*	0–300	–
	mesquite	PROSO	*Prosopis*	0–300	–
	desert yaupon	SCCU4	*Schaefferia cuneifolia*	0–300	–

Animal community

As a historic tall/midgrass prairie, this site was occupied by bison, antelope, deer, quail, turkey, and dove. This site was also used by many species of grassland songbirds, migratory waterfowl, and coyotes. This site now provides forage for livestock and is still used by quail, dove, migratory waterfowl, grassland birds, coyotes, and deer.

Feral hogs (Sus scrofa) can be found on most ecological sites in Texas. Damage caused by feral hogs each year includes, crop damage by rutting up crops, destroyed fences, livestock watering areas, and predation on native wildlife, and ground-nesting birds. Feral hogs have few natural predators, thus allowing their population to grow to high numbers.

Wildlife habitat is a complex of many different plant communities and ecological sites across the landscape. Most animals use the landscape differently to find food, shelter, protection, and mates. Working on a conservation plan for the whole property, with a local professional, will help managers make the decisions that allow them to realize their goals for wildlife and livestock.

Grassland State (1): This state provides the maximum amount of forage for livestock such as cattle. It is also utilized by deer, quail and other birds as a source of food. When a site is in the reference plant community phase (1.1) it will also be used by some birds for nesting, if other habitat requirements like thermal and escape cover are near.

Tree/Shrubland (2): This state can be maintained to meet the habitat requirements of cattle and wildlife. Land managers can find a balance that meets their goals and allows them flexibility to manage for livestock and wildlife. Forbs for deer and birds like quail will be more plentiful in this state. There will also be more trees and shrubs to provide thermal and escape cover for birds as well as cover for deer.

Converted Land State (3): The quality of wildlife habitat this site will produce is extremely variable and is influenced greatly by the timing of rain events. This state is often manipulated to meet landowner goals. If livestock production is the main goal, it can be converted to pastureland. It can also be planted to a mix of grasses and forbs that will benefit both livestock and wildlife. A mix of forbs in the pasture could attract pollinators, birds and other types of wildlife. Food plots can also be planted to provide extra nutrition for deer.

This rating system provides general guidance as to animal preference for plant species. It also indicates possible competition between kinds of herbivores for various plants. Grazing preference changes from time to time, especially between seasons, and between animal kinds and classes. Grazing preference does not necessarily reflect the ecological status of the plant within the plant community. For wildlife, plant preferences for food and plant suitability for cover are rated. Refer to habitat guides for a more complete description of a species habitat needs.

Hydrological functions

This site often occupies a down slope water receiving position. Sediment is deposited from runoff, which helps to form a deep and permeable soil profile. Due to good fertility and water receiving and retention features of the site, production often exceeds that of the associated upslope sites.

Recreational uses

Hunting, camping, and bird watching are common recreational uses.

Inventory data references

Information presented was derived from the revised Range Site, literature, limited NRCS clipping data (417s), field observations, and personal contacts with range-trained personnel.

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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	05/11/2025
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):**

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

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

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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:

---

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

---

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

---

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

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:**

17. **Perennial plant reproductive capability:**