USDA Natural Resources
Conservation Service

Ecological site R078BY078TX
Lakebed 19-26" PZ

Last updated: 9/15/2023
Accessed: 05/21/2025

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.

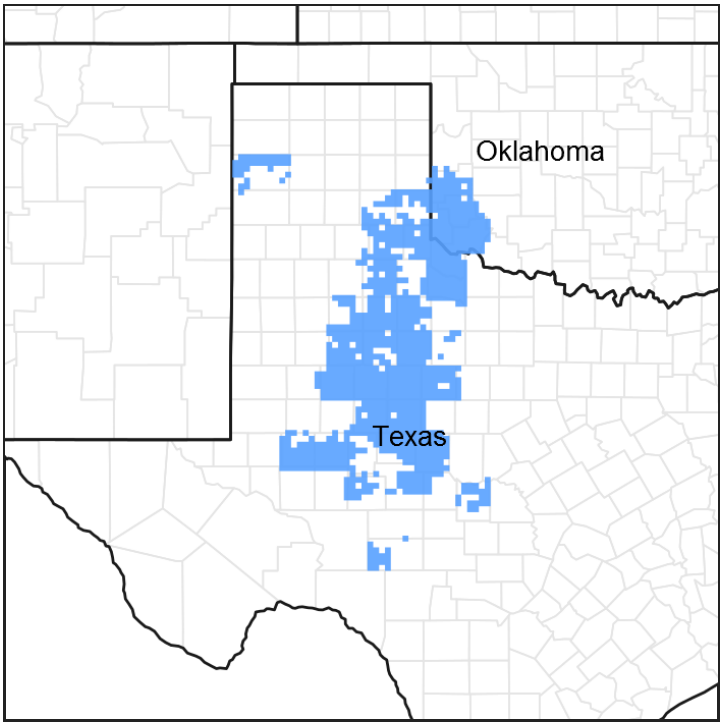


Figure 1. Mapped extent

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): 078B–Central Rolling Red Plains, Western Part

MLRA 78B is characterized by strongly dissected, rolling plains with prominent ridges and valleys and rolling to steep irregular topography. Loamy soils are generally well drained,

range from shallow to deep, and developed in sediments of Triassic and Permian age.

LRU notes

NA

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 clay soils in depressions. These areas are often ponded for various periods throughout the year. Reference vegetation consists of mid and tallgrasses with forbs and shrubs tolerant of saturated soils. Frequency and duration of ponding events tends to drive the community shifts more than anything else.

Associated sites

R078BY072TX	**Clay Loam 19-26" PZ** Often an inclusion in Clay Loam site.
R078BY089TX	**Shallow 19-26" PZ** Often an inclusion in the Shallow site.

Table 1. Dominant plant species

Tree	Not specified
Shrub	Not specified
Herbaceous	(1) *Panicum obtusum* (2) *Phyla nodiflora*

Physiographic features

These soils are on concave, lower positions in the landscape, including swales and playas. These depressional landforms occur on alluvial plain remnants and rolling plains landscapes. Slopes range from 0 to 1 percent. Elevation ranges from 1300 to 2840 feet. Runoff is negligible. Ponding is very brief to very long, depending on rainfall events. Ponding depths range from 0 to 36 inches with frequent ponding events. No flooding occurs on this site.

Table 2. Representative physiographic features

Landforms	(1) Alluvial plain remnant > Depression (2) Alluvial plain remnant > Swale (3) Alluvial plain remnant > Playa
Runoff class	Negligible
Ponding duration	Very brief (4 to 48 hours) to very long (more than 30 days)
Ponding frequency	Occasional to frequent
Elevation	396–866 m
Slope	0–1%
Ponding depth	0–91 cm
Water table depth	0–15 cm
Aspect	Aspect is not a significant factor

Climatic features

The climate of the western rolling plains is dry, sub-humid with hot summers and mild winters. Temperatures often reach 100 degrees F for several consecutive days during summer. Cold spells with temperatures less than 20 degrees F only last short periods of time. The soil is not frozen below the 3-inch depth for more than 2 to 3 days. Humidity is low during the winter and early spring months. Sometimes relative humidity is high enough to make summer days seem uncomfortable. Most of the precipitation comes in the form of rain and that in the spring and early summer principally. May is the wettest month followed by June. July and August are dryer and much hotter. Rainfall often comes as intense showers of relatively short duration. Rainfall rate per hour is often high and runoff is significant. Infiltration is diminished due to lack of opportunity time. The growing season begins in April and ends with the first killing frost in November. There is little snowfall with the average being about 10 inches. Rainfall averages about 22 inches.

There is a 70% chance that yearly precipitation will fall between 16 and 24 inches. About 55% of the time, the yearly rainfall is below the mean. Dry spells during the growing season are common and long-term droughts occur in cycles of about 20 years. Native vegetation is principally warm season.

Table 3. Representative climatic features

Frost-free period (characteristic range)	189-194 days
Freeze-free period (characteristic range)	204-222 days
Precipitation total (characteristic range)	584-610 mm
Frost-free period (actual range)	184-201 days
Freeze-free period (actual range)	202-223 days
Precipitation total (actual range)	559-635 mm

Frost-free period (average)	192 days
Freeze-free period (average)	213 days
Precipitation total (average)	584 mm

Climate stations used

- (1) WELLINGTON [USC00419565], Wellington, TX
- (2) PADUCAH [USC00416740], Paducah, TX
- (3) JAYTON [USC00414570], Jayton, TX
- (4) SNYDER [USC00418433], Snyder, TX
- (5) ROBERT LEE [USC00417669], Robert Lee, TX

Influencing water features

These sites are often ponded. They receive some runoff for adjacent uplands.

Wetland description

NA

Soil features

Lakebed soils consist of deep to very deep, moderately well or somewhat poorly drained, very slowly permeable soils that formed in clayey alluvial or lacustrine materials. The soil was formed in calcareous clays on nearly level swales or playas on alluvial plain remnants or rolling plains. Water enters the soil rapidly when the soil is cracked; but after the cracks are closed water movement into the soil is very slow. In wet years water stands on the surface until it evaporates in the spring or fall.

Major Soil Taxonomic Units correlated to this site include: Roscoe clay, 0-1% slopes, Roscoe clay, Eastall silty clay, 0-1% slopes (OK), and Hermleigh clay, 0 to 1 percent slopes, frequently ponded.

Table 4. Representative soil features

Parent material	(1) Alluvium
Surface texture	(1) Silty clay (2) Clay
Family particle size	(1) Clayey
Drainage class	Poorly drained to somewhat poorly drained
Permeability class	Very slow to slow

Soil depth	183 cm
Surface fragment cover <=3"	0%
Surface fragment cover >3"	0%
Available water capacity (0-101.6cm)	11.94–18.03 cm
Calcium carbonate equivalent (0-101.6cm)	0–20%
Electrical conductivity (0-101.6cm)	0–2 mmhos/cm
Sodium adsorption ratio (0-101.6cm)	0–3
Soil reaction (1:1 water) (0-101.6cm)	6.6–8.4
Subsurface fragment volume <=3" (Depth not specified)	0–11%
Subsurface fragment volume >3" (Depth not specified)	0–4%

Ecological dynamics

The Lakebed ecological site occurs on swales and depressions with nearly level to concave surfaces. The soils of this site are often inundated. Ponding varies from very brief to very long and has considerable impact on the existing plant community. The drainage to storage ratio has as much to do with whether they pond much water or not. A large lake with a small drainage area may never pond water or support obligate hydrophytes. In contrast, a small lake with a large drainage area may be inundated most of the time except during long droughts. Intensity and duration of more localized rainfall events can also affect onset of ponding and ponding duration. Extended wet periods can significantly change the Lakebed environment.

The reference plant community of the site was highly variable. Before European settlement, this variability was influenced more by size of the site, inundation period, and moisture regime than by the overall climate, herbivory, or fire. Bison and pronghorn antelope used the site for water and forage. The reference community was alternately dominated by mid, short grasses, and hydrophytes such as sedges, rushes and spike rushes, depending on wet and dry cycles and extended droughts. This situation is true today, even after years of change and grazing. Grazing affects the composition and development of the plant communities during and after inundation periods, however.

Dramatic fluctuations in amounts of vegetation occur. The plant community is under continual change from grass to forbs and back to grass. This change is created more by variation in water availability than by grazing pressure. Smaller lakes, or those infrequently

inundated, generally support a Grass Dominant Community (1.1) devoid of hydrophytes except during extended wet periods. In reference condition this community was typically dominated by vine mesquite (*Panicum obtusum*), buffalograss (*Bouteloua dactyloides*), with lesser amounts of western wheatgrass (*Pascopyrum smithii*), white tridens (*Tridens albescens*) and a few facultative hydrophilic species. The grasses declined during extended wet periods, being replaced by sedges (Carex spp.), rushes (Scirpus/Juncus spp.) and other hydrophytes. Midgrasses became dominant again during subsequent normal or dry cycles.

Those sites with more frequent or longer periods of inundation supported a Hydrophyte Dominant Plant Community (1.2), generally devoid of grasses. This included sedges, spike rushes and rushes. Some facultative hydrophytic grasses, such as vine mesquite, occurred on higher terrain on the outer edges of the lakebed.

Abusive grazing, along with extended dry periods, will eventually cause the decline of the more palatable midgrasses and forbs. When this happens, the site quality deteriorates; plant vigor and productivity is reduced and the more desirable midgrasses and forbs give way to shortgrasses and weedy annuals. An accompanying reduction in plant basal area, root biomass, mulch levels, and leaf area of the dominants creates openings for invading or subdominant plants. On lakebeds with the Grass Dominant Community (1.1), low vigor blue grama (*Bouteloua gracilis*) and buffalograss will increase along with many annual grass and forb species.

On lakebeds with the Hydrophyte Dominant Community (1.2), less palatable hydrophytes, mostly sedges and rushes, dominate the lakebeds. With continued overgrazing these plant communities transition into a Degraded Shortgrass/Hydrophyte Plant Community (2.1).

Further degradation, caused by overgrazing or prolonged drought followed by a long period of inundation, will result in a Hydrophyte/Annuals Plant Community (3.1). This plant community is composed primarily of annual and perennial forbs such as kochia (*Bassia prostrata*), frog-fruit (*Phyla fruticosa*), and bursage (*Ambrosia grayi*), along with large patches of bare ground.

The Lakebed site, being small in area compared to surrounding sites and often receiving extra water, was likely a concentration area for herbivores and other wildlife before European settlement. This is the general situation today and the site is generally in a deteriorated condition unless good grazing management is practiced. Because of its productivity and moisture regime, it can add diversity to rangeland as habitat for endemic wildlife as well as for migratory animals and waterfowl. Therefore, more intensive management is warranted.

The State and Transition Pathways diagram in the next section depicts the state and trajectories taken by the communities of the Lakebed Site under the grazing regime described above.

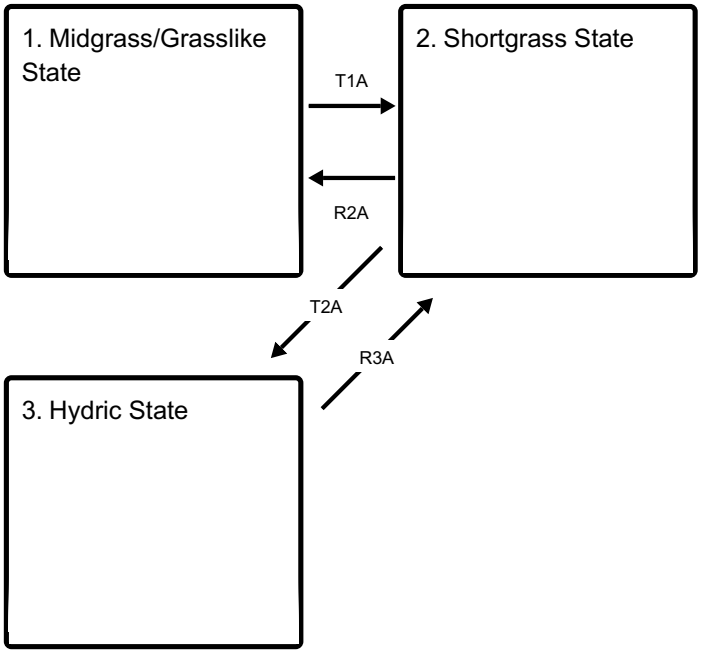
NOTE: Rangeland Health Reference Worksheets have been posted for this site on the Texas NRCS website (www.tx.nrcs.usda.gov) in Section II of the eFOTG under (F) Ecological Site Descriptions.

STATE AND TRANSITIONAL PATHWAYS: (DIAGRAM)

Narrative:
The following diagram depicts the vegetation pathways and states that will most likely occur with heavy livestock grazing/browsing under the prevailing climate. There may be alternative trajectories or states, depending on various natural or man-influenced disturbances, which are not shown on this diagram.

State and transition model

Ecosystem states



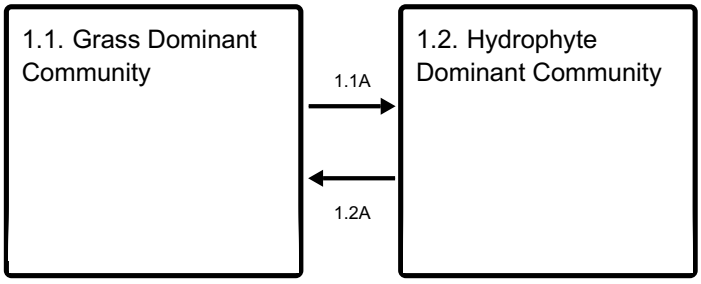
T1A - Absence of disturbance coupled with excessive grazing pressure

R2A - Adequate rest from defoliation, followed by reintroduction of historic disturbance regimes

T2A - Absence of disturbance and excessive grazing pressure coupled with periodic wet cycles

R3A - Adequate rest from defoliation, reintroduction of historic disturbance regimes, and dry cycles

State 1 submodel, plant communities



State 2 submodel, plant communities

2.1. Degraded Shortgrass/Hydrophyte Community

State 3 submodel, plant communities

3.1. Hydrophytes/Annuals Community

State 1
Midgrass/Grasslike State

The Grass Dominant Community is the interpretive or "reference" plant community for the Lakebed site. When the moisture regime of the Lakebed Site is relatively dry because inundation is infrequent or occasional, the plant community is a Grass Dominated Plant Community (1.1). This situation normally occurs in the smaller lakebeds and in larger, deeper lakes during extended dry cycles. Vine mesquite, buffalograss, western wheatgrass, cane bluestem, knotgrass, blue grama and white tridens are the primary grasses in most of the grass-dominated lakebeds. Sedges and spike rushes are generally present in small amounts. Common forbs are frogfruit, arrowhead, evening primrose, knotweed, and plains coreopsis, especially in wetter areas. Herbage production is primarily by grasses. The annual herbage yields of the reference community varied widely from year to year and were dependent on available runoff water and growing conditions. The plant community found on frequently ponded Lakebed Ecological sites, or that occurs as the result of extended wet cycles, is the Hydrophyte Dominant Community (1.2). Plants such as sedges, rushes, spike rushes, smartweed and many annuals dominate the composition and production. Western wheatgrass and vine mesquite are often present around the edges of the ponded areas. Larger lakebeds support the greatest diversity of vegetation. Species composition varies considerably. Several hydrophilic forbs such as sawtooth frogfruit, kochia, bursage, slimleaf goosefoot, and arrowhead can be expected.

Dominant plant species

- vine mesquite (*Panicum obtusum*), grass
- turkey tangle fogfruit (*Phyla nodiflora*), other herbaceous

Community 1.1

Grass Dominant Community

Figure 8. 1.1 Grass Dominant Community

The interpretive or "reference" plant community for the Lakebed site is a Grass Dominated Plant Community (1.1). This situation normally occurs in the smaller lakebeds and in larger, deeper lakes during extended dry cycles. Vine mesquite, buffalograss, western wheatgrass, cane bluestem (*Bothriochloa barbinodis*), knotgrass (*Paspalum distichum*), blue grama and white tridens are the primary grasses in most of the grass-dominated lakebeds. Sedges and spike rushes are generally present in small amounts. Common forbs are frogfruit (Phyla spp.), arrowhead (Sagittaria spp.), evening primrose (Oenothera spp.), knotweed (Polygonum spp.) and plains coreopsis (*Coreopsis tinctoria*), especially in wetter areas. Herbage production is primarily by grasses. The annual herbage yields of the site vary widely from year to year and are dependent on available runoff water and growing conditions. Total annual yields range from 500 pounds in dry years to as much as 5,000 pounds when moisture conditions for plant growth are ideal. The amount of standing water, length of time of inundation and lengths and severity of dry periods dictate the plant succession stage at any given time. As the period of inundation increases, the grasses are replaced by hydrophilic plants such as sedge, spikerush, frogfruit and smartweed. Historically herbivory has had less impact on species composition than the moisture regime. Continuous livestock grazing can, however, cause this plant community to regress to a Degraded Shortgrass/Hydrophyte Plant community (2.1). Prescribed grazing, which controls the frequency and intensity of grazing, is required to maintain this plant community.

Table 5. Annual production by plant type

Plant Type	Low (Kg/Hectare)	Representative Value (Kg/Hectare)	High (Kg/Hectare)
Grass/Grasslike	392	2158	3923
Forb	168	925	1681
Shrub/Vine	–	–	1
Total	**560**	**3083**	**5605**

Figure 10. Plant community growth curve (percent production by month). TX2055, Perennial Midgrasses and Hydrophytes. Spring/Summer growth of grasses, grasslikes and hydrophytic forbs..

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	3	10	20	22	13	8	4	8	6	6	0

Community 1.2
Hydrophyte Dominant Community

Figure 11. 1.2 Hydrophyte Dominant Community

The plant community found on frequently ponded Lakebed Ecological sites, or that occurs as the result of extended wet cycles, is the Hydrophyte Dominant Plant Community (1.2). Plants such as sedges, rushes, spike rushes, smartweed and many annuals dominate the composition and production. Western wheatgrass and vine mesquite are often present around the edges of the ponded areas. Larger lakebeds support the greatest diversity of vegetation. Species composition varies considerably. Several hydrophilic forbs such as sawtooth frogfruit, kochia, bursage, slimleaf goosefoot and arrowhead can be expected. Annual yields vary widely from year to year and are dependent on runoff from adjacent sites. Total annual yields of herbage range from 1500 pounds in dry years to over 5000 pounds under good moisture conditions. In this vegetation phase most of the production is by hydrophytic plants. Changes in vegetation are created more by variation in water

availability and ponding duration than by grazing pressure. Selective grazing by livestock does, however, impact the community over time. With continued overgrazing, the more palatable grasses and forbs decline, being replaced by less palatable grass-likes, shortgrasses and annuals. This is a structural change in the vegetation. As a result, the Hydrophyte Dominant Community (1.2) transitions into the Degraded Shortgrass/Hydrophyte Plant Community (2.1).

Table 6. Annual production by plant type

Plant Type	Low (Kg/Hectare)	Representative Value (Kg/Hectare)	High (Kg/Hectare)
Grass/Grasslike	673	2018	3363
Forb	336	1009	1681
Tree	56	168	280
Shrub/Vine	56	168	280
Total	**1121**	**3363**	**5604**

Figure 13. Plant community growth curve (percent production by month). TX2056, Hydrophyte Dominant Plant Community. Summer growth of grass-likes and hydrophytic forbs..

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	1	3	8	12	24	28	8	10	4	2	0

Pathway 1.1A
Community 1.1 to 1.2

Grass Dominant Community **Hydrophyte Dominant Community**

With frequent inundation, the Grass Dominant Community will shift to the Hydrophyte Dominant Community.

Pathway 1.2A
Community 1.2 to 1.1

Hydrophyte Dominant Community

Grass Dominant Community

With infrequent inundation, the Hydrophyte Dominant Community will shift back to the Grass Dominant Community.

State 2
Shortgrass State

The Shortgrass State is the result of continued overgrazing by livestock. Selective grazing reduces the more palatable or less grazing resistant midgrasses, grass-likes and forbs. Sedges, rushes, buffalograss and blue grama increase along with annual grasses such as little barley, barnyardgrass, and sixweeks fescue. Invading forbs include smartweed, slimleaf goosefoot, kochia, evening primrose, silverleaf nightshade and arrowhead.

Dominant plant species

- buffalograss (*Bouteloua dactyloides*), grass
- sedge (*Carex*), other herbaceous
- rush (*Juncus*), other herbaceous

Community 2.1
Degraded Shortgrass/Hydrophyte Community

Figure 14. 2.1 Degraded Shortgrass/Hydrophyte Community

The Degraded Shortgrass/Hydrophyte Community (2.1) is the result of continued overgrazing by livestock. Selective grazing reduces the more palatable or less grazing

resistant midgrasses, grass-likes and forbs. Plants found in this community include increases of sedges, rushes, buffalograss and blue grama along with annual grasses such as little barley (*Hordeum pusillum*), barnyardgrass (*Echinochloa crus-galli*), and sixweeks fescue (*Vulpia octoflora*). Invading forbs include smartweed, slimleaf goosefoot, kochia, evening primrose, silverleaf nightshade (*Solanum elaeagnifolium*) and arrowhead. Herbage production declines as shorter plants with shorter roots dominate. Grasses and grass-likes remain the dominant vegetation type. The site becomes more susceptible to drought. Pricklypear, and other shrubs from adjacent sites, may invade. Prescribed grazing, including proper stocking and control of access, is required to return this community to the reference community and maintain its potential. Continued overgrazing often led to the Hydrophytes/Annuals Community.

Table 7. Annual production by plant type

Plant Type	Low (Kg/Hectare)	Representative Value (Kg/Hectare)	High (Kg/Hectare)
Grass/Grasslike	538	1110	1681
Forb	359	740	1121
Microbiotic Crusts	–	–	–
Tree	–	–	–
Shrub/Vine	–	–	–
Total	**897**	**1850**	**2802**

Figure 16. Plant community growth curve (percent production by month). TX2057, Shortgrass/Hydrophyte Plant Community. Low vigar warm-season grasses, hydrophytic plants with increasing amounts of annuals..

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	3	10	20	22	13	8	4	8	6	6	0

State 3
Hydric State

The Hydrophytes/ Annuals Community (3.1) is the result of long-term overgrazing followed by long-term ponding of the site during extended wet periods. The continuous overgrazing reduces the vegetation to shortgrasses, grass-likes, and forbs. The ponding kills the remaining shortgrasses and non-hydrophytic perennial forbs. When drying occurs the hydrophytic plants dominate and annuals establish from seed. Unpalatable sedges, rushes, are present in the composition along with annuals such as little barley, barnyardgrass, and six-week’s fescue. Forbs include smartweed, slimleaf goosefoot, kochia, evening primrose, silverleaf nightshade and arrowhead.

Dominant plant species

- sedge (*Carex*), other herbaceous

- rush (*Juncus*), other herbaceous

Community 3.1
Hydrophytes/Annuals Community

Figure 17. 3.1 Hydrophytes/Annuals Community

The Hydrophytes/ Annuals Plant Community (3.1) is the result of long-term overgrazing followed by long-term ponding of the site during extended wet periods. The continuous overgrazing reduces the vegetation to shortgrasses, grass-likes, and forbs. The ponding kills the remaining shortgrasses and non-hydrophytic perennial forbs. When drying occurs the hydrophytic plants dominate and annuals establish from seed. Unpalatable sedges, rushes, are present in the composition along with annuals such as little barley, barnyardgrass, and six-week's fescue. Forbs include smartweed, slimleaf goosefoot, kochia, evening primrose, silverleaf nightshade and arrowhead. Herbage production varies greatly due to preponderance of annuals. The unpalatable grass-likes remain the dominant vegetation type. The site becomes more susceptible to drought. Pricklypear and other shrubs from adjacent sites may invade. Return of the Hydrophyte/Annuals Community to a more productive community in a reasonable length of time would require re-vegetation with historic native species, proper stocking and prescribed grazing. Many years of proper stocking and prescribed grazing would be required to return to the reference community without artificial re-vegetation.

Table 8. Annual production by plant type

Plant Type	Low (Kg/Hectare)	Representative Value (Kg/Hectare)	High (Kg/Hectare)
Grass/Grasslike	280	981	1681
Forb	280	981	1681
Microbiotic Crusts	–	–	–
Tree	–	–	–
Shrub/Vine	–	–	–
Total	**560**	**1962**	**3362**

Figure 19. Plant community growth curve (percent production by month). TX2057, Shortgrass/Hydrophyte Plant Community. Low vigar warm-season grasses, hydrophytic plants with increasing amounts of annuals..

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	3	10	20	22	13	8	4	8	6	6	0

Transition T1A
State 1 to 2

With heavy continuous grazing and no fires, the Midgrass/Grasslike State will transition into the Shortgrass State.

Restoration pathway R2A
State 2 to 1

The Shortgrass State reverts back to the Midgrass/Grasslike State due to conservation practices such as Prescribed Grazing and Prescribed Burning.

Conservation practices

Prescribed Burning
Prescribed Grazing

Transition T2A
State 2 to 3

The Shortgrass State transitions into the Hydric State due to heavy continuous grazing, no fires, and periodic wet cycles.

Restoration pathway R3A
State 3 to 2

With Prescribed Grazing inputs, Time, and Dry Cycles, the Hydric State can be restored back to the Shortgrass State.

Conservation practices

Prescribed Grazing

Additional community tables

Table 9. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production (Kg/Hectare)	Foliar Cover (%)
Grass/Grasslike					
1	**Midgrass**			168–1681	
	vine mesquite	PAOB	*Panicum obtusum*	168–1681	–
2	**Mid/Shortgrasses**			112–1121	
	cane bluestem	BOBA3	*Bothriochloa barbinodis*	0–1121	–
	buffalograss	BODA2	*Bouteloua dactyloides*	0–1121	–
	blue grama	BOGR2	*Bouteloua gracilis*	0–1121	–
	knotgrass	PADI6	*Paspalum distichum*	0–1121	–
	white tridens	TRAL2	*Tridens albescens*	0–1121	–
3	**Cool-season Grass**			28–280	
	western wheatgrass	PASM	*Pascopyrum smithii*	28–280	–
4	**Hydrophytic Plants**			84–841	
	sedge	CAREX	*Carex*	0–841	–
	flatsedge	CYPER	*Cyperus*	0–841	–
	spikerush	ELEOC	*Eleocharis*	0–841	–
	bulrush	SCIRP	*Scirpus*	0–841	–
Forb					
5	**Forbs**			168–1681	
	ragweed	AMBRO	*Ambrosia*	0–1681	–
	lambsquarters	CHAL7	*Chenopodium album*	0–1681	–
	goosefoot	CHENO	*Chenopodium*	0–1681	–
	golden tickseed	COTI3	*Coreopsis tinctoria*	0–1681	–

	snow on the mountain	EUMA8	*Euphorbia marginata*	0–1681	–
	Texas blueweed	HECI	*Helianthus ciliaris*	0–1681	–
	spotted evening primrose	OECA3	*Oenothera canescens*	0–1681	–
	diamondleaf fogfruit	PHFR11	*Phyla fruticosa*	0–1681	–
	knotweed	POLYG4	*Polygonum*	0–1681	–
	pondweed	POTAM	*Potamogeton*	0–1681	–
	arrowhead	SAGIT	*Sagittaria*	0–1681	–
	silverleaf nightshade	SOEL	*Solanum elaeagnifolium*	0–1681	–
	cattail	TYPHA	*Typha*	0–1681	–
	plains ironweed	VEMA2	*Vernonia marginata*	0–1681	–
Shrub/Vine					
6	**Shrub**			0–1	
	common buttonbush	CEOC2	*Cephalanthus occidentalis*	0–1	–
Tree					
7	**Tree**			0–1	
	willow	SALIX	*Salix*	0–1	–

Animal community

Many types of insects, reptiles, birds and mammals used the plant community of the Lakebed Ecological Site, either as their base habitat or from the adjacent sites. Frogs and salamanders are found in abundance in wet seasons. Small mammals include many kinds of rodents, jackrabbit and skunk. Predators include coyote, bobcats and snakes. Prairie dogs may inhabit this site in the dryer phase. Game birds, songbirds, and birds of prey were indigenous or frequent users. Most are still plentiful. White-tailed and mule deer use the Lakebed site in its various states. Deer, turkey, pheasant, and quail particularly favor the habitat provided by the Grass Dominant Community. Deer, turkey, quail, pheasant, and dove hunting is an important sport, or commercial enterprise, providing considerable income to land owners.

Livestock should be stocked in proportion to the available forage, keeping deer competition for forbs in mind. If the animal numbers are not kept in balance with herbage through grazing management and wildlife population management, the Hydrophytes/Annuals community will have little to offer as habitat for deer or livestock on a except on a seasonal basis.

These playas are a vital part of the habitat for species such as ducks, cranes, and other

migratory birds. Pheasants also utilize these sites. The water regime is a major influence on vegetation composition. The main impact from grazing is alteration of vegetation structure.

Hydrological functions

Runoff from adjacent sites ponds on the Lakebed site. After rains, the runoff from surrounding soils accumulates on the site to a depth of a few inches to several feet and remains for a few days or several months. When the soil dries, wide deep cracks form at the surface. The cracks take in water readily, but close when wet. Permeability is slow and water availability is high. Water erosion hazard is slight, but soil-blowing hazard is moderate for denuded soil. Perennial vegetation is hard to maintain due to long periods of inundation by water. Current and previous ponding has a major impact on vegetation composition and production.

Hydrology manipulations (pits, ditches and berms) plus silt loads can have a great influence on the plant community. This is not as common in rangeland depressions but if present there is an impact on the vegetation.

Recreational uses

Bird watching, photography and horseback riding in conjunction with adjacent sites are feasible.

Wood products

None.

Other products

None.

Other information

None.

Inventory data references

Information presented here has been derived from the revised Lakebed Range Site (RR, PE 25-31), literature, limited NRCS clipping data (417s), field observations and personal contacts with range-trained personnel. Photos by Clint Rollins.

Other references

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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.

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Date	09/04/2007
Approved by	Bryan Christensen
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

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

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

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3. **Number and height of erosional pedestals or terracettes:** None to slight.

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4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** 20-25% bare ground.

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

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6. **Extent of wind scoured, blowouts and/or depositional areas:** None to slight.

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7. **Amount of litter movement (describe size and distance expected to travel):** None to slight.

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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):** Moderate to high resistance to surface erosion.

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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Very friable; common fine roots and pores; few fine concretions of calcium carbonate; moderately alkaline; abrupt boundary.

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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Basal cover and density with small interspaces should make rainfall impact minimal. This site is poorly drained, permeability is very slow to moderately slow and available water holding capacity varies from excessive to non-available.

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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):** None.

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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: Warm-season midgrasses >

    Sub-dominant: Warm-season shortgrasses > Sedges >

    Other: Forbs > Cool-season grasses

    Additional:

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13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** Plant mortality and decadence varies from low to high depending on the water regime (flooding).

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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):** 500 pounds per acre during dry periods to 5,000 pounds per acre during wet periods.

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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:** Invasive annual and perennial forbs, willows and willow baccharis can be invasive.

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