

Ecological site R041XB216AZ Clayey Slopes 8-12" p.z.

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General information

Provisional. A provisional ecological site description has undergone quality control and quality assurance review. It contains a working state and transition model and enough information to identify the ecological site.



Figure 1. Mapped extent

Areas shown in blue indicate the maximum mapped extent of this ecological site. Other ecological sites likely occur within the highlighted areas. It is also possible for this ecological site to occur outside of highlighted areas if detailed soil survey has not been completed or recently updated.

MLRA notes

Major Land Resource Area (MLRA): 041X–Madrean Archipelago

AZ 41.2 - Chihuahuan - Sonoran Desert Shrubs

Elevations range from 2600 to 4000 feet and precipitation ranges from 8 to 12 inches per year. Vegetation includes mesquite, palo verde, catclaw acacia, soaptree yucca, creosotebush, whitethorn, staghorn cholla, desert saltbush, Mormon tea, burroweed, snakeweed, tobosa, black grama, threeawns, bush muhly, dropseed, and burrograss. The soil temperature regime is thermic and the soil moisture regime is typic aridic. This unit occurs within the Basin and Range Physiographic Province and is characterized by numerous mountain ranges that rise abruptly from broad, plain-like valleys and basins. Igneous and metamorphic rock classes dominate the mountain ranges and sediments filling the basins represent combinations of fluvial, lacustrine, colluvial and alluvial deposits.

Associated sites

R041XB203AZ	Clayey Upland 8-12" p.z.
R041XB204AZ	Clay Loam Upland 8-12" p.z.
R041XB207AZ	Limy Slopes 8-12" p.z.

Similar sites

R041XC303AZ	Clayey Slopes 12-16" p.z.
R040XA103AZ	Clayey Slopes 10"-13" p.z.

Table 1. Dominant plant species

Tree	Not specified
Shrub	(1) Opuntia phaeacantha
Herbaceous	(1) Pleuraphis mutica (2) hilaria belangeri

Physiographic features

This site occurs in the lowest elevations of the Madrean Basin and Range province in southeastern Arizona. It occurs on ridges, fan terraces and hill-slopes.

Table 2. Representative physiographic features

Landforms	(1) Ridge(2) Fan piedmont(3) Hill
Flooding frequency	None
Ponding frequency	None
Elevation	792–1,219 m
Slope	15–45%
Aspect	N, E, S

Climatic features

Precipitation ranges from 8-12 inches annually. More than half falls during Jul-Sep in brief, but often heavy, thunderstorms. The rest of the moisture comes as light rain or snow that falls slowly for a day or more, but rarely lasts more than a day. May and June are normally the driest months. Humidity is generally very low.

Temperatures are mild throughout most of the year. Freezing temperatures are common at night Dec-Feb; brief 0 F may be observed some nights. During June, July & August, some days may exceed 100 F.

In years of average or greater winter precipitation, annual grasses and forbs occur abundantly in the interspaces.

Table 3. Representative climatic features

Frost-free period (average)	240 days
Freeze-free period (average)	
Precipitation total (average)	

Influencing water features

There are no water features associated with this site.

Soil features

These soils are moderately deep to deep and clayey textured. They are gravelly to very gravelly in the soil profile. They have thin (1-2 inch) surface horizons that range from sandyloam to loam in texture. They lack vertic soil properties. They usually have well developed covers of surface gravels and cobbles. Surface soils (10 inches) are non-calcareous, but some soils have calcic horizons below the argillic horizon.

Soil series mapped on areas of this site include: SSA-663 Gila-Duncan area MU 10 Eba; SSA-666 Cochise county Northwest part MU's 27 & 28 Contention; SSA-671 Cochise county Douglas-Tombstone part MU 35 Contention; SSA-675 San Carlos IR area MU 86 Eba.

Surface texture	(1) Very gravelly sandy loam(2) Cobbly sandy loam(3) Very gravelly loam
Family particle size	(1) Clayey
Drainage class	Well drained
Permeability class	Moderately slow to slow
Soil depth	64–152 cm
Surface fragment cover <=3"	20–60%
Surface fragment cover >3"	5–20%
Available water capacity (0-101.6cm)	10.67–19.05 cm
Calcium carbonate equivalent (0-101.6cm)	0–10%
Electrical conductivity (0-101.6cm)	0–2 mmhos/cm
Sodium adsorption ratio (0-101.6cm)	0–2
Soil reaction (1:1 water) (0-101.6cm)	7.4–8.4
Subsurface fragment volume <=3" (Depth not specified)	30–60%
Subsurface fragment volume >3" (Depth not specified)	0–10%

Table 4. Representative soil features

Ecological dynamics

The plant communities found on an ecological site are naturally variable. Composition and production will vary with yearly conditions, location, aspect, and the natural variability of the soils. The historical climax plant community represents the natural potential plant communities found on relict or relatively undisturbed sites. Other plant communities described here represent plant communities that are known to occur when the site is disturbed by factors such as grazing, fire, or drought.

Production data provided in this site description is standardized to air-dry weight at the end of the summer growing season. The plant communities described in this site description are based on near normal rainfall years.

NRCS uses a Similarity Index to compare existing plant communities to the plant communities described here. Similarity Index is determined by comparing the production and composition of a plant community to the production and composition of a plant community described in this site description. To determine Similarity Index, compare the production (air-dry weight) of each species to that shown in the plant community description. For each species, count no more than the maximum amount shown for the species, and for each group, count no more than the maximum shown for the group. Divide the resulting total by the total normal year production shown in the plant community description. If rainfall has been significantly above or below normal, use the total production shown for

above or below normal years. If field data is not collected at the end of the summer growing season, then the field data must be corrected to the end of the year production before comparing it to the site description. The growth curve can be used as a guide for estimating production at the end of the summer growing season.

State and transition model

MLRA 41-2 (8-12"), Clayey Slopes



*Native annuals dominant, may be patches of some non-natives

Figure 4. State and Transition, Clayey Slopes 8-12" pz.

State 1 Historic Climax Plant Community

Community 1.1 Historic Climax Plant Community



Figure 5. Clayey Slopes 8-12" pz. soil profile

The native potential plant community on this site is a mixture of perennial grasses and desert shrubs and cacti. Annual forbs and grasses, of both the winter and summer seasons, are very important in the plant community in their respective (wet) seasons. Tobosa is the dominant perennial grass. The cover of some shallow rooted grass species like curly mesquite, fluctuate widely from wet to dry years.

Table 5. Annua	production	by plant typ	эe
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Plant Type	Low (Kg/Hectare)	Representative Value (Kg/Hectare)	High (Kg/Hectare)
Grass/Grasslike	146	336	588
Forb	7	56	196
Shrub/Vine	22	95	168
Tree	-	-	6
Total	175	487	958

Table 6. Soil surface cover

Tree basal cover	0%
Shrub/vine/liana basal cover	1-2%
Grass/grasslike basal cover	1-2%
Forb basal cover	1-2%
Non-vascular plants	0%
Biological crusts	0-5%
Litter	10-60%
Surface fragments >0.25" and <=3"	30-50%

Surface fragments >3"	1-15%
Bedrock	0%
Water	0%
Bare ground	5-60%

Table 7. Canopy structure (% cover)

Height Above Ground (M)	Tree	Shrub/Vine	Grass/ Grasslike	Forb
<0.15	_	1-5%	1-20%	1-20%
>0.15 <= 0.3	_	2-5%	5-10%	1-15%
>0.3 <= 0.6	_	2-5%	5-10%	1-5%
>0.6 <= 1.4	_	5-15%	0-2%	0-2%
>1.4 <= 4	0-2%	1-5%	-	-
>4 <= 12	_	_	-	_
>12 <= 24	_	_	-	_
>24 <= 37	_	_	_	_
>37	_	_	_	_

State 2 Annuals

Community 2.1 Annuals

This state occurs where native and non-native annual forbs and grasses dominate the plant community. Perennial grasses and forbs have been removed due to the interaction of drought, fire and continuous grazing. Repeat fires near residential areas can cause this state. Non-native annual species include red brome, filaree, cheatgrass and purslane.

State 3 Shrubs, tobosa

Community 3.1 Shrubs, tobosa

This state occurs where native shrubs and succulents have increased from 10 to 20% canopy. Dominant shrubs and succulents include catclaw, prickly pear, mesquite, whitethorn and cholla species. tobosa is still present on the site in adequate amounts and curly mesquite still fluctuates with climate.

State 4 Eroded

Community 4.1 Eroded

This state exists where severe sheet, rill and, in some cases, gully erosion has ocurred. It is usually associated with historic water locations and, or road and trail construction across the slope. The state is characterized by soil compaction and concentration of runoff by trailing of livestock or vehicles; or by heavy livestock traffic.

Transition T1A State 1 to 2 Continuous Heavy Grazing (managing for annuals), burning (to freshen tobosa) plus CHG. Reduction of A Horizon, Organic Matter and litter. Soil is compacted, greatly reducing infiltration and increasing runoff.

Transition T1B State 1 to 3

Proximity to seed source, introduction of seeds.

Restoration pathway R2A State 2 to 1

Prescribed Grazing/No Grazing, seeding or planting of tobobsa. Soil ripping, contouring, and/or mulching.

Transition T2A State 2 to 4

Continuous Heavy grazing, interruption of overland flow, diversion of runoff, roads. Severe soil compaction from traffic (livestock and equipment).

Restoration pathway R3A State 3 to 1

Herbicide or mechanical means to remove shrubs. Prescribed Grazing/No Grazing.

Transition T3A State 3 to 4

Continuous Heavy Grazing coupled with drought and burning, low grass cover. Reduction of A Horizon, Organic Matter and litter. Soil is compacted with sheet, rill and gully erosion. Persistently reduced infiltration, greatly reduced runoff, and very limited recruitment of perennial grasses.

Restoration pathway R4A State 4 to 2

Mechanical control of rills and gullies. Prescribed Grazing/No Grazing, ripping compacted areas.

Restoration pathway R4B State 4 to 3

Mechanical/Herbicide treatment of shrubs, Prescribed Grazing/No Grazing, seeding or planting of tobosa, maintenance treatments for shrubs, sheet, rill and gully erosion control.

Additional community tables

 Table 8. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production (Kg/Hectare)	Foliar Cover (%)			
Grass	Grass/Grasslike							
1	Dominant Perennial Gr	ass		112–224				
	tobosagrass	PLMU3	Pleuraphis mutica	112–224	-			
2	Miscellaneous Perenni	19–140						
	curly-mesquite	HIBE	Hilaria belangeri	6–112	-			
	black grama	BOER4	Bouteloua eriopoda	11–56	-			
	sideoats grama	BOCU	Bouteloua curtipendula	1–22	-			
	huch muhlu		Muhlanharaia nartari	1 00				

	DUSH HIUHIY	NUFUZ	митепретуга роцен	1-22	-	
	Arizona cottontop	DICA8	Digitaria californica	0–11	_	
	plains bristlegrass	SEVU2	Setaria vulpiseta	0–11	_	
	sand dropseed	SPCR	Sporobolus cryptandrus	0–6	_	
	green sprangletop	LEDU	Leptochloa dubia	0–6	-	
	Hall's panicgrass	PAHA	Panicum hallii	0–6	_	
	vine mesquite	PAOB	Panicum obtusum	0–6	_	
	blue grama	BOGR2	Bouteloua gracilis	0–6	_	
	cane bluestem	BOBA3	Bothriochloa barbinodis	0–6	-	
	squirreltail	ELEL5	Elymus elymoides	0–2	_	
	tanglehead	HECO10	Heteropogon contortus	0–2	-	
	burrograss	SCBR2	Scleropogon brevifolius	0–1	-	
3	Perennial threeawns			11–112		
	purple threeawn	ARPU9	Aristida purpurea	6–28	-	
	Parish's threeawn	ARPUP5	Aristida purpurea var. parishii	0–28	_	
	spidergrass	ARTE3	Aristida ternipes	6–28	_	
	spidergrass	ARTEG	Aristida ternipes var. gentilis	0–17	_	
	Fendler threeawn	ARPUL	Aristida purpurea var. longiseta	0–17	_	
	blue threeawn	ARPUN	Aristida purpurea var. nealleyi	0–6	_	
	poverty threeawn	ARDI5	Aristida divaricata	0–6	-	
4	Annual grasses			1–112		
	sixweeks threeawn	ARAD	Aristida adscensionis	1–28	-	
	mucronate sprangeltop	LEPAB	Leptochloa panicea ssp. brachiata	0–28	_	
	sixweeks fescue	VUOC	Vulpia octoflora	1–28	_	
	Arizona signalgrass	URAR	Urochloa arizonica	0–22	_	
	needle grama	BOAR	Bouteloua aristidoides	0–22	_	
	sixweeks grama	BOBA2	Bouteloua barbata	0–22	-	
	Rothrock's grama	BORO2	Bouteloua rothrockii	0–22	-	
	witchgrass	PACA6	Panicum capillare	0–11	_	
	Mexican panicgrass	PAHI5	Panicum hirticaule	0–11	-	
	prairie threeawn	AROL	Aristida oligantha	1–11	_	
	Bigelow's bluegrass	POBI	Poa bigelovii	0–6	_	
	Eastwood fescue	VUMIC	Vulpia microstachys var. ciliata	0–6	_	
	desert fescue	VUMIM	Vulpia microstachys var. microstachys	0–6	_	
	Arizona brome	BRAR4	Bromus arizonicus	0–6	_	
	feather fingergrass	CHVI4	Chloris virgata	0–6	_	
	tapertip cupgrass	ERACA	Eriochloa acuminata var. acuminata	0–6	_	
	desert lovegrass	ERPEM	Eragrostis pectinacea var. miserrima	0–6	-	
	tufted lovegrass	ERPEP2	Eragrostis pectinacea var. pectinacea	0–6	_	
	Mexican sprangletop	LEFUU	Leptochloa fusca ssp. uninervia	0–6	_	
	delicate muhly	MUFR	Muhlenbergia fragilis	0–2	_	
	littleseed muhly	МОМІ	Muhlenbergia microsperma	0–2	_	
Forb	-orb					
5	Perennial forbs			6–28		
			·			

dwarf desertpeony	ACNA2	Acourtia nana	1–11	_
bluedicks	DICA14	Dichelostemma capitatum	0–6	_
slender janusia	JAGR	Janusia gracilis	1–6	_
weakleaf bur ragweed	AMCO3	Ambrosia confertiflora	1–6	_
slender poreleaf	POGR5	Porophyllum gracile	1–6	_
desert globemallow	SPAM2	Sphaeralcea ambigua	1–6	_
brownplume wirelettuce	STPA4	Stephanomeria pauciflora	0–6	_
pricklyleaf dogweed	THAC	Thymophylla acerosa	0–1	_
Rocky Mountain zinnia	ZIGR	Zinnia grandiflora	0–1	_
glandleaf milkwort	POMA7	Polygala macradenia	0–1	_
Coues' cassia	SECO10	Senna covesii	0–1	_
silverleaf nightshade	SOEL	Solanum elaeagnifolium	0–1	_
ragged nettlespurge	JAMA	Jatropha macrorhiza	0–1	_
San Pedro daisy	LAPO4	Lasianthaea podocephala	0–1	
Parry's false prairie- clover	MAPA7	Marina parryi	0–1	-
lacy tansyaster	MAPIP4	Machaeranthera pinnatifida ssp. pinnatifida var. pinnatifida	0–1	Ι
plains blackfoot	MELE2	Melampodium leucanthum	0–1	_
wishbone-bush	MILAV	Mirabilis laevis var. villosa	0–1	_
desert tobacco	NIOB	Nicotiana obtusifolia	0–1	_
tuber anemone	ANTU	Anemone tuberosa	0–1	_
narrowleaf silverbush	ARLA12	Argythamnia lanceolata	0–1	_
white sagebrush	ARLU	Artemisia ludoviciana	0–1	_
New Mexico silverbush	ARNE2	Argythamnia neomexicana	0–1	_
perennial rockcress	ARPE2	Arabis perennans	0–1	_
dense ayenia	AYMI	Ayenia microphylla	0–1	_
hairyseed bahia	BAAB	Bahia absinthifolia	0–1	_
desert marigold	BAMU	Baileya multiradiata	0–1	_
scarlet spiderling	BOCO	Boerhavia coccinea	0–1	_
Arizona wrightwort	CAAR7	Carlowrightia arizonica	0–1	
desert mariposa lily	CAKE	Calochortus kennedyi	0–1	-
sego lily	CANU3	Calochortus nuttallii	0–1	_
whitemargin sandmat	CHAL11	Chamaesyce albomarginata	0–1	
leatherweed	CRPO5	Croton pottsii	0–1	_
fingerleaf gourd	CUDI	Cucurbita digitata	0–1	_
coyote gourd	CUPA	Cucurbita palmata	0–1	
spreading fleabane	ERDI4	Erigeron divergens	0–1	
desert trumpet	ERIN4	Eriogonum inflatum	0–1	_
southwestern mock vervain	GLGO	Glandularia gooddingii	0–1	
desert rosemallow	HICO	Hibiscus coulteri	0–1	_
Indian rushpea	HOGL2	Hoffmannseggia glauca	0–1	_
brownfoot	ACWR5	Acourtia wrightii	0–1	_
poreleaf dogweed	ADPO2	Adenophyllum porophyllum	0–1	_

				1	
	trailing windmills	ALIN	Allionia incarnata	0–1	_
	largeflower onion	ALMA4	Allium macropetalum	0–1	_
6	Annual forbs			1–168	
	California poppy	ESCAM	Eschscholzia californica ssp. mexicana	0–56	_
	Coulter's lupine	LUSP2	Lupinus sparsiflorus	0–28	-
	western tansymustard	DEPI	Descurainia pinnata	0–22	
	combseed	PECTO	Pectocarya	0–22	_
	Arizona popcornflower	PLAR	Plagiobothrys arizonicus	0–22	-
	desert Indianwheat	PLOV	Plantago ovata	0–22	_
	shaggyfruit pepperweed	LELA	Lepidium lasiocarpum	0–17	-
	intermediate pepperweed	LEVIM	Lepidium virginicum var. medium	0–17	-
	coastal bird's-foot trefoil	LOSAB	Lotus salsuginosus var. brevivexillus	0–17	-
	tanseyleaf tansyaster	MATA2	Machaeranthera tanacetifolia	0–17	
	bristly fiddleneck	AMTE3	Amsinckia tessellata	0–17	-
	exserted Indian paintbrush	CAEXE	Castilleja exserta ssp. exserta	0–17	_
	pitseed goosefoot	CHBE4	Chenopodium berlandieri	0–11	_
	miniature woollystar	ERDI2	Eriastrum diffusum	0–11	_
	longleaf false goldeneye	HELOA2	Heliomeris longifolia var. annua	0–11	_
	Arizona poppy	KAGR	Kallstroemia grandiflora	0–11	_
	manybristle chinchweed	PEPA2	Pectis papposa	0–11	_
	New Mexico plumeseed	RANE	Rafinesquia neomexicana	0–11	_
	Gordon's bladderpod	LEGO	Lesquerella gordonii	0–6	_
	sorrel buckwheat	ERPO4	Eriogonum polycladon	0–6	_
	Texas stork's bill	ERTE13	Erodium texanum	0–6	_
	wedgeleaf draba	DRCU	Draba cuneifolia	0–6	_
	flatcrown buckwheat	ERDE6	Eriogonum deflexum	0–6	_
	cryptantha	CRYPT	Cryptantha	0–6	_
	Nuttall's povertyweed	MONU	Monolepis nuttalliana	0–6	_
	foothill deervetch	LOHU2	Lotus humistratus	0–6	_
	slender goldenweed	MAGR10	Machaeranthera gracilis	0–6	_
	carelessweed	AMPA	Amaranthus palmeri	0–6	_
	milkvetch	ASTRA	Astragalus	0–6	_
	wheelscale saltbush	ATEL	Atriplex elegans	0-6	
	Coulter's spiderling	BOCO2	Boerhavia coulteri	0-6	_
	fringed redmaids	CACI2	Calandrinia ciliata	0–2	_
	brittle spineflower	CHBR	Chorizanthe brevicornu	0–2	_
	hyssopleaf sandmat	CHHY3	Chamaesyce hyssopifolia	0–2	_
	Esteve's pincushion	CHST	Chaenactis stevioides	0–2	_
	white tackstem	CAWR	Calycoseris wrightii	0–2	_
	Arizona lupine	LUAR4	Lupinus arizonicus	0–2	_

	green carpetweed	MOVE	Mollugo verticillata	0–2
	desert evening primrose	OEPR	Oenothera primiveris	0–2
	Florida pellitory	PAFL3	Parietaria floridana	0–2
	hairy prairie clover	DAMO	Dalea mollis	0–2
	American wild carrot	DAPU3	Daucus pusillus	0–2
	hairy desertsunflower	GECA2	Geraea canescens	0–2
	star gilia	GIST	Gilia stellata	0–2
	phacelia	PHACE	Phacelia	0–2
	woolly tidestromia	TILA2	Tidestromia lanuginosa	0–2
	sleepy silene	SIAN2	Silene antirrhina	0–2
	woollyhead neststraw	STMI2	Stylocline micropoides	0–2
	sand fringepod	THCU	Thysanocarpus curvipes	0–1
	tumblemustard	THELY3	Thelypodiopsis	0–1
	Coulter's globemallow	SPCO2	Sphaeralcea coulteri	0–1
	doubleclaw	PRPA2	Proboscidea parviflora	0–1
	chia	SACO6	Salvia columbariae	0–1
	sawtooth sage	SASU7	Salvia subincisa	0–1
	spreading fanpetals	SIAB	Sida abutifolia	0–1
	Mexican fireplant	EUHE4	Euphorbia heterophylla	0–1
	camphorweed	HESU3	Heterotheca subaxillaris	0–1
	crestrib morning-glory	IPCO2	Ipomoea costellata	0–1
	common woolly sunflower	ERLA6	Eriophyllum lanatum	0-1
	whitestem blazingstar	MEAL6	Mentzelia albicaulis	0–1
	bristly nama	NAHI	Nama hispidum	0–1
	glandular threadplant	NEGL	Nemacladus glanduliferus	0–1
	Fendler's desertdandelion	MAFE	Malacothrix fendleri	0–1
	scrambled eggs	COAU2	Corydalis aurea	0–1
	whitemouth dayflower	COER	Commelina erecta	0–1
	yellow tackstem	CAPA7	Calycoseris parryi	0–1
	hoary bowlesia	BOIN3	Bowlesia incana	0–1
	southwestern pricklypoppy	ARPL3	Argemone pleiacantha	0–1
	annual agoseris	AGHE2	Agoseris heterophylla	0–1
Shru	ıb/Vine			
7	Dominant shrubs			11–78
	jojoba	SICH	Simmondsia chinensis	0–45
	catclaw acacia	ACGR	Acacia greggii	6–17
	creosote bush	LATR2	Larrea tridentata	0–11
	western honey mesquite	PRGLT	Prosopis glandulosa var. torreyana	1–11
	whitethorn acacia	ACCO2	Acacia constricta	1–11
	fourwing saltbush	ATCA2	Atriplex canescens	0_6

	longleaf jointfir	EPTR	Ephedra trifurca	0–6	–
8	Miscellaneous shrubs			0–11	
	crucifixion thorn	CAHO3	Canotia holacantha	0–1	_
	spiny hackberry	CEEH	Celtis ehrenbergiana	0–1	_
	American tarwort	FLCE	Flourensia cernua	0–1	_
	ocotillo	FOSP2	Fouquieria splendens	0–1	_
	water jacket	LYAN	Lycium andersonii	0–1	-
	Berlandier's wolfberry	LYBE	Lycium berlandieri	0–1	-
	pale desert-thorn	LYPA	Lycium pallidum	0–1	-
	catclaw mimosa	MIACB	Mimosa aculeaticarpa var. biuncifera	0–1	-
	blue paloverde	PAFL6	Parkinsonia florida	0–1	-
	yellow paloverde	PAMI5	Parkinsonia microphylla	0–1	-
	lotebush	ZIOB	Ziziphus obtusifolia	0–1	-
9	Half shrubs	-		6–56	
	fairyduster	CAER	Calliandra eriophylla	1–17	-
	broom snakeweed	GUSA2	Gutierrezia sarothrae	1–17	
	littleleaf ratany	KRER	Krameria erecta	1–17	-
	rough menodora	MESC	Menodora scabra	1–17	-
	desert zinnia	ZIAC	Zinnia acerosa	0–11	-
	pelotazo	ABIN	Abutilon incanum	1–6	-
	shortleaf baccharis	BABR	Baccharis brachyphylla	1–6	-
	rayless goldenhead	ACSP	Acamptopappus sphaerocephalus	0–1	-
	Parish's goldeneye	VIPA14	Viguiera parishii	0–1	-
	winterfat	KRLA2	Krascheninnikovia lanata	0–1	-
	burroweed	ISTE2	Isocoma tenuisecta	0–1	-
	brittlebush	ENFA	Encelia farinosa	0–1	-
	button brittlebush	ENFR	Encelia frutescens	0–1	-
	turpentine bush	ERLA12	Ericameria laricifolia	0–1	-
	threadleaf snakeweed	GUMI	Gutierrezia microcephala	0–1	-
10	Succulents	-		6–22	
	tulip pricklypear	OPPH	Opuntia phaeacantha	1–17	-
	cactus apple	OPEN3	Opuntia engelmannii	1–17	-
	buck-horn cholla	CYAC8	Cylindropuntia acanthocarpa	0–6	-
	walkingstick cactus	CYSP8	Cylindropuntia spinosior	0–6	-
	Christmas cactus	CYLE8	Cylindropuntia leptocaulis	0–2	-
	purple pricklypear	OPMA8	Opuntia macrocentra	0–2	-
	banana yucca	YUBA	Yucca baccata	0–2	-
	soaptree yucca	YUEL	Yucca elata	0–1	_
	Engelmann's hedgehog cactus	ECEN	Echinocereus engelmannii	0–1	_
	pinkflower hedgehog cactus	ECFA	Echinocereus fasciculatus	0–1	_
	candy barrelcactus	FEWI	Ferocactus wislizeni	0–1	_
	devil's cholla	GRKU	Grusonia kunzei	0–1	_
	Graham's ninnle cactus	MAGRO	Mammillaria grahamii	0_1	_

				· · ·	
Tree				-	-
11	Occasional tree			0–6	
	oneseed juniper	JUMO	Juniperus monosperma	0–6	-

Animal community

This site produces some perennial forage for livestock. It wet (El Nino) winters it produces a tremendous amount of annual forbs and grasses, all of which are excellent forage. The site is home to a variety of small mammals and birds and their associated predators. It is a good foraging area for larger mammals like mule deer and javalina.

Hydrological functions

These soils are heavy textured and with steep slopes are very good producers of runoff.

Recreational uses

Hunting, horseback riding, hiking, wildlife observation, photography, rock hounding and bird watching.

Wood products

Limited mesquite wood for campfires.

Other products

Red clay for pot making. Herbs like wild onions, grass nuts and herbaceous sage.

Contributors

Dan Robinett Larry D. Ellicott

Approval

Scott Woodall, 8/06/2020

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	Scott Woodall
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

- 1. Number and extent of rills:
- 2. Presence of water flow patterns:
- 3. Number and height of erosional pedestals or terracettes:
- 4. Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):
- 5. Number of gullies and erosion associated with gullies:
- 6. Extent of wind scoured, blowouts and/or depositional areas:
- 7. Amount of litter movement (describe size and distance expected to travel):
- 8. Soil surface (top few mm) resistance to erosion (stability values are averages most sites will show a range of values):
- 9. Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):
- 10. Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:
- 11. Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site):
- 12. Functional/Structural Groups (list in order of descending dominance by above-ground annual-production or live foliar cover using symbols: >>, >, = to indicate much greater than, greater than, and equal to):

Dominant:

Sub-dominant:

Other:

Additional:

- 13. Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):
- 14. Average percent litter cover (%) and depth (in):
- 15. Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annualproduction):
- 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: