

# Ecological site R040XC318AZ Sandy Wash 3"-7" 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): 040X–Sonoran Basin and Range

#### AZ 40.3 - Colorado Sonoran Desert

Elevations range from 300 to 1200 feet and precipitation averages 3 to 7 inches per year. Vegetation includes creosotebush, white bursage, brittlebush, Mormon tea, teddybear cholla, elephant tree, smoke tree, ocotillo, and big galleta. The soil temperature regime is hyperthermic 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.

#### Table 1. Dominant plant species

Tree	(1) Parkinsonia microphylla (2) Parkinsonia florida
Shrub	(1) Acacia greggii (2) Olneya tesota
Herbaceous	(1) Pleuraphis rigida (2) Muhlenbergia porteri

## Physiographic features

This site occurs in a bottom position. It benefits significantly from run-in moisture from adjacent areas. The soils may suffer from excessive loss from runoff. It occurs as floodplains, low terraces, alluvial fans and drainageways.

Table 2. Representative physiographic features

Landforms	<ul><li>(1) Flood plain</li><li>(2) Terrace</li><li>(3) Alluvial fan</li></ul>
Elevation	75–1,000 ft
Slope	0–5%

## **Climatic features**

Precipitation in this common resource area ranges from 3-7 inches yearly. Despite historical averages in rainfall amounts, as one moves from east to west in this resource area rains become more unpredictable and variable with Coefficients of Variation of annual rainfall equal to 44% at Gila Bend and 65% at Mohawk. Winter-Summer rainfall ratios are 40-60%. Summer rains fall July-September, originate in the Gulf of Mexico and are convective, usually brief intense thunderstorms. Summer thunderstorms usually form over the mountains in the afternoon and spread to the valleys and plains in the evening. The intensity of this precipitation is moderate to heavy, but rarely lasts more than half an hour. Many times these storms produce little more than gusty winds and light showers. Cool season moisture tends to be frontal, originate in the Pacific and Gulf of California and falls in widespread storms with long duration and low intensity. Snow is very rare and falls normally only in the higher mountains.

Mean temperatures for the hottest month (Jul) is 93 F; the coldest month (Jan) is 53 F. Extreme temperatures of 125 F and 10 F have been recorded. Long periods with little or no effective moisture occur frequently.

The winter-spring precipitation is the most dependable on the site. Perennial grasses, though classed as warm season growers, grow actively year-round when moisture is available. Shrubs and trees generally respond to seasonal moisture. The two rainy periods bring about their respective production of either winter or summer annual grasses and forbs.

Frost-free period (average)	363 days
Freeze-free period (average)	0 days
Precipitation total (average)	7 in

#### Table 3. Representative climatic features

#### Influencing water features

#### **Soil features**

Soils that are grouped together in this range site are deep to bedrock or other plant root restricting layers. The surface soil depth ranges from 6-8 inches with textures ranging from very gravelly loamy sand, loamy sand to silt loam. The underlying layers have a rapid permeability and hold all moisture the climate supplies. Soluble salt accumulations are low and pH ranges from 7.9-8.4. With good vegetative cover, infiltration rates are high. Stability against erosion processes is poor. Plant-soil moisture relationships are poor. Coarse fragments may be found throughout the soil In the Carrizo, it ranges from 35-85% coarse fragment. In the Lagunita, it ranges from 0-15% coarse fragments.

Soils mapped on this site include: in SSA-627 Southern Mohave county MU's Carrizo family-19 & 20, Carrizo-21; SSA-645 Aguila-Carefree area MU's Brios-11, Carrizo-4 & 11; SSA-649 Yuma-Wellton area MU's Carrizo-3, Lagunita-16 & 18, Torrifluvents-30; SSA-653 Gila Bend-Ajo area MU's Carrizo-67, Vint vfsl-63, Why Grfsl-66 & Why-67; SSA-656 Colorado River Indian Reservation area MU's Carrizo-5 & 17.

#### Table 4. Representative soil features

Surface texture	<ul><li>(1) Loamy sand</li><li>(2) Sand</li><li>(3) Sandy loam</li></ul>
Family particle size	(1) Sandy
Drainage class	Well drained to somewhat excessively drained
Permeability class	Moderately rapid to very rapid
Soil depth	60 in
Surface fragment cover <=3"	5–45%
Surface fragment cover >3"	0–10%
Available water capacity (0-40in)	1.8–7.2 in
Calcium carbonate equivalent (0-40in)	0–10%
Electrical conductivity (0-40in)	0–1 mmhos/cm
Sodium adsorption ratio (0-40in)	0
Soil reaction (1:1 water) (0-40in)	7.4–8.4
Subsurface fragment volume <=3" (Depth not specified)	5-45%
Subsurface fragment volume >3" (Depth not specified)	0–10%

#### **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 fire, grazing, 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 amount shown for each group. Divide the resulting total by the total normal year production shown in the plant community description. If the 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



# State 1 Historic Climax Plant Community

#### Community 1.1 Historic Climax Plant Community

The plant community is a mixture of perennial grasses and forbs, desert trees and shrubs, and annual grasses and forbs. The active washy areas in the site have little vegetation except burrobush and annual grasses and forbs. Continuous grazing use and the absence of natural fires have led to woody plant invasion. These areas are extremely sensitive and when plant cover has been reduced, the extra water concentrated on the site causes accelerated erosion and channel cutting. As a result, less and less of the original overflow areas still get flooded.

#### Table 5. Annual production by plant type

Plant Type	Low (Lb/Acre)	Representative Value (Lb/Acre)	High (Lb/Acre)
Grass/Grasslike	520	688	855
Shrub/Vine	280	370	460
Forb	140	210	280
Tree	10	45	80
Total	950	1313	1675

Figure 5. Plant community growth curve (percent production by month). AZ4041, 40.3 3-7" p.z. all sites. Most growth occurs in the winter to early spring, plants are dormant May through October..

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
5	20	40	25	0	0	0	0	0	0	5	5

# Additional community tables

Table 6. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production (Lb/Acre)	Foliar Cover (%)
Grass	/Grasslike				
0	Dominant Perennial Gra	asses		350–500	
	big galleta	PLRI3	Pleuraphis rigida	210–280	_
	bush muhly	MUPO2	Muhlenbergia porteri	140–210	_
	Arizona cottontop	DICA8	Digitaria californica	14–70	_
1	Threeawn Group	<u>.</u>		140–210	
	blue threeawn	ARPUN	Aristida purpurea var. nealleyi	15–21	_
	Parish's threeawn	ARPUP5	Aristida purpurea var. parishii	15–21	_
	Wright's threeawn	ARPUW	Aristida purpurea var. wrightii	15–21	_
	spidergrass	ARTE3	Aristida ternipes	15–21	_
	spidergrass	ARTEG	Aristida ternipes var. gentilis	15–21	_
	Santa Rita threeawn	ARCAG	Aristida californica var. glabrata	15–21	_
	poverty threeawn	ARDI5	Aristida divaricata	15–21	_
	purple threeawn	ARPU9	Aristida purpurea	15–21	_
	Fendler's threeawn	ARPUF	Aristida purpurea var. fendleriana	15–21	_
2	Misc. Perennial Grasse	s		15–75	
	spike dropseed	SPCO4	Sporobolus contractus	4–20	_
	sand dropseed	SPCR	Sporobolus cryptandrus	4–20	_
	mesa dropseed	SPFL2	Sporobolus flexuosus	4–20	-
	slim tridens	TRMU	Tridens muticus	4–20	_
3	Annual Grasses			15–70	
	sixweeks threeawn	ARAD	Aristida adscensionis	0–14	_
	needle grama	BOAR	Bouteloua aristidoides	0–14	_
	sixweeks grama	BOBA2	Bouteloua barbata	0–14	-
	Arizona brome	BRAR4	Bromus arizonicus	0–14	_
	low woollygrass	DAPU7	Dasyochloa pulchella	5–14	-
	Devils Canyon muhly	MUAP	Muhlenbergia appressa	0–14	_
	littleseed muhly	MUMI	Muhlenbergia microsperma	0–14	_
	Bigelow's bluegrass	POBI	Poa bigelovii	5–14	_
	sixweeks fescue	VUOC	Vulpia octoflora	5–14	_
Forb					
4	Misc. Forbs			70–140	
	Santa Rita threeawn	ARCAG	Aristida californica var. glabrata	14–21	_
	poverty threeawn	ARDI5	Aristida divaricata	14–21	-
	purple threeawn	ARPU9	Aristida purpurea	14–21	_
	Fendler's threeawn	ARPUF	Aristida purpurea var. fendleriana	14–21	-
	hlue threeswn		Aristida nurnurea var neallevi	14_21	

blue un ceawn		πιτοιίαα ραιρατοά ναι. ποαπογι	17-21	
Parish's threeawn	ARPUP5	Aristida purpurea var. parishii	14–21	_
spidergrass	ARTE3	Aristida ternipes	14–21	_
spidergrass	ARTEG	Aristida ternipes var. gentilis	14–21	_
sixweeks fescue	VUOC	Vulpia octoflora	0–15	_
needle grama	BOAR	Bouteloua aristidoides	0–10	_
Arizona brome	BRAR4	Bromus arizonicus	0–10	_
Devils Canyon muhly	MUAP	Muhlenbergia appressa	0–10	_
littleseed muhly	MUMI	Muhlenbergia microsperma	0–10	_
Bigelow's bluegrass	POBI	Poa bigelovii	0–10	_
spike dropseed	SPCO4	Sporobolus contractus	0–10	_
sand dropseed	SPCR	Sporobolus cryptandrus	0–10	-
mesa dropseed	SPFL2	Sporobolus flexuosus	0–10	_
sixweeks threeawn	ARAD	Aristida adscensionis	0–10	_
pelotazo	ABIN	Abutilon incanum	1–7	_
Indian mallow	ABUTI	Abutilon	2–7	
brownfoot	ACWR5	Acourtia wrightii	1–7	
trailing windmills	ALIN	Allionia incarnata	1–7	-
weakleaf bur ragweed	AMCO3	Ambrosia confertiflora	1–7	-
carelessweed	AMPA	Amaranthus palmeri	1–7	-
smallflowered milkvetch	ASNU4	Astragalus nuttallianus	1–7	_
milkvetch	ASTRA	Astragalus	2–7	_
desert marigold	BAMU	Baileya multiradiata	1–7	_
fleabane	ERIGE2	Erigeron	2–7	_
pink velvetmallow	HOAL	Horsfordia alata	1–7	_
Arizona poppy	KAGR	Kallstroemia grandiflora	1–7	_
Coulter's lupine	LUSP2	Lupinus sparsiflorus	1–7	_
wishbone-bush	MILAV	Mirabilis laevis var. villosa	1–7	_
monkeyflower	MIMUL	Mimulus	2–7	_
Bostock's minerslettuce	МОВО	Montia bostockii	1–7	_
bristly nama	NAHI	Nama hispidum	1–7	_
desert tobacco	NIOBO	Nicotiana obtusifolia var. obtusifolia	1–7	-
evening primrose	OENOT	Oenothera	2–7	-
lineleaf whitepuff	OLLI	Oligomeris linifolia	1–7	-
combseed	PECTO	Pectocarya	2–7	-
Emory's rockdaisy	PEEM	Perityle emoryi	1–7	-
manybristle chinchweed	PEPA2	Pectis papposa	1–7	_
desert Indianwheat	PLOV	Plantago ovata	1–7	_
New Mexico plumeseed	RANE	Rafinesquia neomexicana	1–7	_
 sleepy silene	SIAN2	Silene antirrhina	1–7	
 desert globemallow	SPAM2	Sphaeralcea ambigua	1–7	
 Coulter's globemallow	SPCO2	Sphaeralcea coulteri	1–7	
 globemallow	SPHAE	Sphaeralcea	2–7	
 woolly tidestromia	TILA2	Tidestromia lanuginosa	1_7	_

5	More Forbs			70–140	
	Texas fluffgrass	TRTE2	Tridens texanus	7–14	_
	western tansymustard	DEPI	Descurainia pinnata	2–10	_
	bluedicks	DICA14	Dichelostemma capitatum	1–7	_
	touristplant	DIWI2	Dimorphocarpa wislizeni	1–7	_
	fetid marigold	DYPA	Dyssodia papposa	1–7	_
	whisperingbells	EMPE	Emmenanthe penduliflora	1–7	_
	miniature woollystar	ERDI2	Eriastrum diffusum	1–7	_
	desert trumpet	ERIN4	Eriogonum inflatum	1–7	_
	buckwheat	ERIOG	Eriogonum	2–7	_
	desert poppy	ESGL	Eschscholzia glyptosperma	1–7	_
	рудту рорру	ESMI	Eschscholzia minutiflora	1–7	_
	hideseed	EUCRY	Eucrypta	2–7	_
	spurge	EUPHO	Euphorbia	2–7	_
	hairy desertsunflower	GECA2	Geraea canescens	1–7	-
	gilia	GILIA	Gilia	2–7	_
	Gordon's bladderpod	LEGO	Lesquerella gordonii	1–7	_
	shaggyfruit pepperweed	LELA	Lepidium lasiocarpum	1–7	_
	trefoil	LOTUS	Lotus	2–7	_
	Gila manroot	MAGI	Marah gilensis	1–7	-
	Parry's false prairie- clover	MAPA7	Marina parryi	1–7	_
	blazingstar	MENTZ	Mentzelia	2–7	-
	Florida pellitory	PAFL3	Parietaria floridana	1–7	-
	phacelia	PHACE	Phacelia	2–7	-
	doubleclaw	PRPA2	Proboscidea parviflora	1–7	-
	canaigre dock	RUHY	Rumex hymenosepalus	1–7	-
	woollyhead neststraw	STMI2	Stylocline micropoides	1–7	-
	brownplume wirelettuce	STPA4	Stephanomeria pauciflora	1–7	-
	desert sand verbena	ABVI	Abronia villosa	1–7	-
	common fiddleneck	AMMEI2	Amsinckia menziesii var. intermedia	1–7	-
	narrowleaf silverbush	ARLA12	Argythamnia lanceolata	1–7	-
	New Mexico silverbush	ARNE2	Argythamnia neomexicana	1–7	_
	whitestem milkweed	ASAL	Asclepias albicans	1–7	_
	milkweed	ASCLE	Asclepias	2–7	_
	rush milkweed	ASSU	Asclepias subulata	1–7	_
	spiderling	BOERH2	Boerhavia	2–7	_
	hoary bowlesia	BOIN3	Bowlesia incana	1–7	-
	exserted Indian paintbrush	CAEXE	Castilleja exserta ssp. exserta	1–7	-
	goosefoot	CHENO	Chenopodium	2–7	_
	New Mexico thistle	CINE	Cirsium neomexicanum	1–7	
	sand pygmyweed	CRCOC	Crassula connata var. connata	1–7	_
	cryptantha	CRYPT	Cryptantha	2–7	_
	finaerleaf aourd	СПЫ	Cucurhita digitata	1_7	_

	ingeneal goura	0001	Ουσαινία σιγκατα	1-1	_
	Missouri gourd	CUFO	Cucurbita foetidissima	1–7	-
	desert thorn-apple	DADI2	Datura discolor	1–7	_
	hairy prairie clover	DAMO	Dalea mollis	1–7	_
	sacred thorn-apple	DAWR2	Datura wrightii	1–7	_
Shrub	/Vine				
6	Dominant Shrubs			200–250	
	whitethorn acacia	ACCO2	Acacia constricta	50–85	_
	catclaw acacia	ACGR	Acacia greggii	50–85	-
	desert-thorn	LYCIU	Lycium	50–85	-
	desert ironwood	OLTE	Olneya tesota	50–85	_
	sixweeks threeawn	ARAD	Aristida adscensionis	1–7	_
	needle grama	BOAR	Bouteloua aristidoides	1–7	_
	Arizona brome	BRAR4	Bromus arizonicus	1–7	_
	Devils Canyon muhly	MUAP	Muhlenbergia appressa	1–7	-
	littleseed muhly	MUMI	Muhlenbergia microsperma	1–7	_
	Bigelow's bluegrass	POBI	Poa bigelovii	1–7	-
	scarlet globemallow	SPCO	Sphaeralcea coccinea	1–7	_
	sand dropseed	SPCR	Sporobolus cryptandrus	1–7	-
	mesa dropseed	SPFL2	Sporobolus flexuosus	1–7	-
	sixweeks fescue	VUOC	Vulpia octoflora	1–7	_
7	Misc. Shrubs			70–140	
	burrobush	AMDU2	Ambrosia dumosa	4–10	-
	Drummond's clematis	CLDR	Clematis drummondii	4–10	-
	creosote bush	LATRT	Larrea tridentata var. tridentata	4–10	-
	jojoba	SICH	Simmondsia chinensis	2–5	-
	Hall's shrubby-spurge	TEHA	Tetracoccus hallii	2–5	-
	honey mesquite	PRGL2	Prosopis glandulosa	2–5	-
	screwbean mesquite	PRPU	Prosopis pubescens	2–5	-
	whitestem paperflower	PSCO2	Psilostrophe cooperi	2–5	-
	smoketree	PSSP3	Psorothamnus spinosus	2–5	-
	Mexican bladdersage	SAME	Salazaria mexicana	2–5	-
	bitter snakewood	COGL	Condalia globosa	2–5	_
	brittlebush	ENFA	Encelia farinosa	2–5	_
	San Felipe dogweed	ADPO	Adenophyllum porophylloides	2–5	_
	ambrosia leaf bur ragweed	AMAM2	Ambrosia ambrosioides	2–5	-
	triangle bur ragweed	AMDE4	Ambrosia deltoidea	2–5	_
	fringed twinevine	FUCYC	Funastrum cynanchoides ssp. cynanchoides	2–5	_
	desert lavender	HYEM	Hyptis emoryi	2–5	_
	singlewhorl burrobrush	HYMO	Hymenoclea monogyra	2–5	_
	burrobrush	HYSA	Hymenoclea salsola	2–5	_
	slender janusia	JAGR	Janusia gracilis	2–5	_
	beloperone	JUCA8	Justicia californica	2–5	_

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	crown of thorns	KOSP	Koeberlinia spinosa	2–5	-
	narrowleaf silverbush	ARLA12	Argythamnia lanceolata	2–5	-
	fourwing saltbush	ATCA2	Atriplex canescens	0–5	_
	big saltbush	ATLE	Atriplex lentiformis	2–5	_
	cattle saltbush	ATPO	Atriplex polycarpa	1–5	_
	shortleaf baccharis	BABR	Baccharis brachyphylla	2–5	_
	desertbroom	BASA2	Baccharis sarothroides	2–5	_
	sweetbush	BEJU	Bebbia juncea	2–5	_
	Coulter's brickellbush	BRCO	Brickellia coulteri	2–5	_
	crucifixion thorn	CAEM4	Castela emoryi	2–5	_
	American threefold	TRCA8	Trixis californica	2–5	-
	toothleaf goldeneye	VIDE3	Viguiera dentata	2–5	-
	lotebush	ZIOBO	Ziziphus obtusifolia var. obtusifolia	2–5	_
	white ratany	KRGR	Krameria grayi	0–4	_
	button brittlebush	ENFR	Encelia frutescens	0–4	_
	longleaf jointfir	EPTR	Ephedra trifurca	0–4	_
	Coulter's lyrepod	LYCO4	Lyrocarpa coulteri	0–4	_
	Douglas' ragwort	SEFLD	Senecio flaccidus var. douglasii	0–3	_
	Hartweg's twinevine	FUCYH	Funastrum cynanchoides ssp. heterophyllum	0–3	_
8	Succulents			14–70	
	saguaro	CAGI10	Carnegiea gigantea	2–10	_
	Arizona pencil cholla	CYAR14	Cylindropuntia arbuscula	2–10	_
	teddybear cholla	CYBI9	Cylindropuntia bigelovii	2–10	_
	Wiggins' cholla	CYEC3	Cylindropuntia echinocarpa	2–10	_
	Christmas cactus	CYLE8	Cylindropuntia leptocaulis	2–10	_
	branched pencil cholla	CYRA9	Cylindropuntia ramosissima	2–10	_
	ocotillo	FOSP2	Fouquieria splendens	2–10	_
Tree		•	•		
9	Trees			10–80	
	blue paloverde	PAFL6	Parkinsonia florida	5–40	_
	yellow paloverde	PAMI5	Parkinsonia microphylla	5–40	_

## **Animal community**

This site produces forage for year-round use and is easily traversed by stocker cattle, cows and calves. Because of water availability and ease of access, these sites are often overused. Where this site occurs as inclusions in larger areas of less productive sites (ile., limy uplands), these areas produce nearly all the forage and the entire area should be managed. Fencing, in managable units, of this site can be important in providing grazing control.

The variation in vegetation, coupled with forage production year-round and intermittent availability of water, this site is suitable habitat for a wide diversity of wildlife. Ogetn this site is the only one with suitable cover requirements for large desert mammals occuring in vast areas of upland sites with little or no cover. This site is also host to a variety of smaller animals, as well as birds and reptiles.

#### **Recreational uses**

This site is found throughout the alluvial fans and plains as sandy, tree-lined and gently sloping drainageways. The

active washy areas of this site support little vegetation except for annual grasses and forbs and borrobush. Less active areas have an understory of desert trees with a diverse understory of forbs, grasses and shrubs. Very few days in the fall, winter or spring are too uncomfortable to enjoy outdoor activities. The afternoon heat of Jun-Aug restricts activities. This site is suitable for horseback riding, wildlife observation, hunting, hiking, picnicking and photography.

## **Type locality**

Location 1: La Paz County, AZ

Township/Range/Section	T1N R12W S2		
General legal description	Eagle Tail Ranch		

## Contributors

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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)	Dave Womack, Byron Lambeth, Dan Robinett, Emilio Carrillo
Contact for lead author	NRCS Tucson Area Office
Date	03/02/2005
Approved by	S. Cassady
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

#### Indicators

- 1. Number and extent of rills: None.
- 2. Presence of water flow patterns: Highly variable, function of upland overland flow input.
- 3. Number and height of erosional pedestals or terracettes: No accumulated or erosional pedestals on most perennial plants.
- 4. Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground): 15-40%

5. Number of gullies and erosion associated with gullies: None.

- 6. Extent of wind scoured, blowouts and/or depositional areas: None.
- 7. Amount of litter movement (describe size and distance expected to travel): Highly variable, function of upland overland flow input.
- 8. Soil surface (top few mm) resistance to erosion (stability values are averages most sites will show a range of values): No slake test done. Expect ratings of 1-3 across site.
- 9. Soil surface structure and SOM content (include type of structure and A-horizon color and thickness): Weak Platy; color is 7.5-10YR6/4 dry, 7.5-10YR5/4 moist; thickness to 3 inches.
- 10. Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff: Canopy 60-70%; 10-30% perennial grass, 40% shrubs, 10% subshrubs, 10% perennial forbs, 5-10% trees. Cover is well dispersed throughout site.
- 11. Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site): None.
- 12. Functional/Structural Groups (list in order of descending dominance by above-ground annual-production or live foliar cover using symbols: >>, >, = to indicate much greater than, greater than, and equal to):

Dominant: perennial grass = trees > shrubs > sub shrubs > perennial forbs (note: this after several years of regional drought. Annual forbs and grasses may be greater than trees in El Nino years.)

Sub-dominant:

Other:

Additional:

- 13. Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence): 20-30% canopy mortality of trees and shrubs; 90-100% mortality of perennial grasses.
- 14. Average percent litter cover (%) and depth ( in):
- 15. Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annualproduction): 950 lbs/ac unfavorable precipitation; 1313 lbs/ac normal precipitation; 1675 lbs/ac favorable precipitation.

- 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: Sahara mustard.
- 17. **Perennial plant reproductive capability:** Not impaired for shrubs and trees; drought impaired for perennial grasses and forbs.