

## Ecological site R040XB227AZ Saline Bottom 7"-10" p.z.

Accessed: 04/26/2024

### General information

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

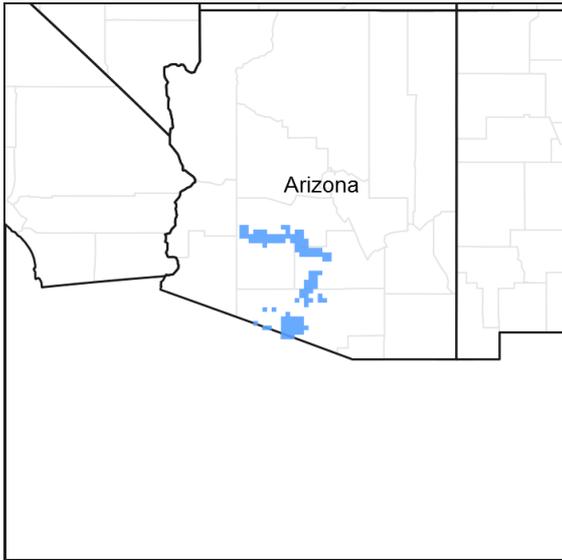


Figure 1. Mapped extent

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

### MLRA notes

Major Land Resource Area (MLRA): 040X–Sonoran Basin and Range

AZ 40.2 – Middle Sonoran Desert

Elevations range from 1200 to 2000 feet and precipitation averages 7 to 10 inches per year. Vegetation includes saguaro, palo verde, creosotebush, triangle bursage, brittlebush, prickly pear, cholla, desert saltbush, wolfberry bush muhly, threeawns, 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	Not specified
Shrub	(1) <i>Prosopis velutina</i> (2) <i>Atriplex polycarpa</i>
Herbaceous	(1) <i>Sporobolus airoides</i> (2) <i>Trichloris crinita</i>

## Physiographic features

This site occurs on floodplains and alluvial fans. It benefits on a regular basis from extra moisture received as overbank flooding and/or runoff from adjacent upland sites.

Table 2. Representative physiographic features

Landforms	(1) Flood plain (2) Alluvial fan
Elevation	900–2,050 ft
Slope	0–1%

## Climatic features

Precipitation in the sub-resource area ranges from 7 to 10 inches. Elevations range from 900 to 2050 feet. Winter-summer rainfall ratios range from 40% to 60% in the southern part along the international boundary, to 60% to 40% in the central and northern parts of the sub-resource area. 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 38% at Florence and 46% at Aguila. Summer rains fall July- September, originate in the Gulf of Mexico, and are convective, usually brief, intense thunderstorms. Summer precipitation is extremely erratic and undependable in this area. Cool season moisture tends to be frontal, originates in the Pacific and Gulf of California, and falls in widespread storms with long duration and low intensity. This is the dependable moisture supply for vegetation in the area. Snow is very rare and usually melts on contact. May-June is the driest time of the year. Humidity is very low.

Winter temperatures are very mild with very few days recording freezing for short periods of time. Summertime temperatures are hot to very hot with many days in June-July exceeding 105 degrees F. Frost-free days range from 280 at stations in major river valleys with cold air drainage to 320 to 350 days at upland stations.

Both the spring and the summer growing seasons are equally important for perennial grass, forb and shrub growth. Cool and warm season annual forbs and grasses can be common in their respective seasons with above average rainfall. Perennial forage species can remain green throughout the year with available moisture.

Table 3. Representative climatic features

Frost-free period (average)	350 days
Freeze-free period (average)	0 days
Precipitation total (average)	10 in

## Influencing water features

### Soil features

Soils are deep, well-drained, saline and sodic. Texture is loamy. Subsurface texture group includes fine loamy and coarse silty. Plant-soil moisture relationships are good due to the extra water these soils receive as runoff from adjacent upland areas.

Soils mapped on this site include: SSA-651 Central Maricopa county MU's Cashion-Cn, Gadsden (saline)-Gd, Gilman-Gf, Gh, GL & Gp, Glenbar-Gs & Gu; SSA-658 Gila River Indian Reservation MU's Cuerda-12, Gadsden (saline)-15 & 16, Glenbar-15 & 17; SSA-703 Tohono O'odham area MU's Kamato-8, Tatai-57 & Valencia-9.

Table 4. Representative soil features

Surface texture	(1) Loam (2) Clay loam (3) Silty clay loam
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Family particle size	(1) Loamy
Drainage class	Well drained
Permeability class	Very slow to moderate
Soil depth	60 in
Surface fragment cover <=3"	0%
Surface fragment cover >3"	0%
Available water capacity (0-40in)	9.6–11.4 in
Calcium carbonate equivalent (0-40in)	1–10%
Electrical conductivity (0-40in)	2–16 mmhos/cm
Sodium adsorption ratio (0-40in)	13–30
Soil reaction (1:1 water) (0-40in)	7.9–9
Subsurface fragment volume <=3" (Depth not specified)	0%
Subsurface fragment volume >3" (Depth not specified)	0%

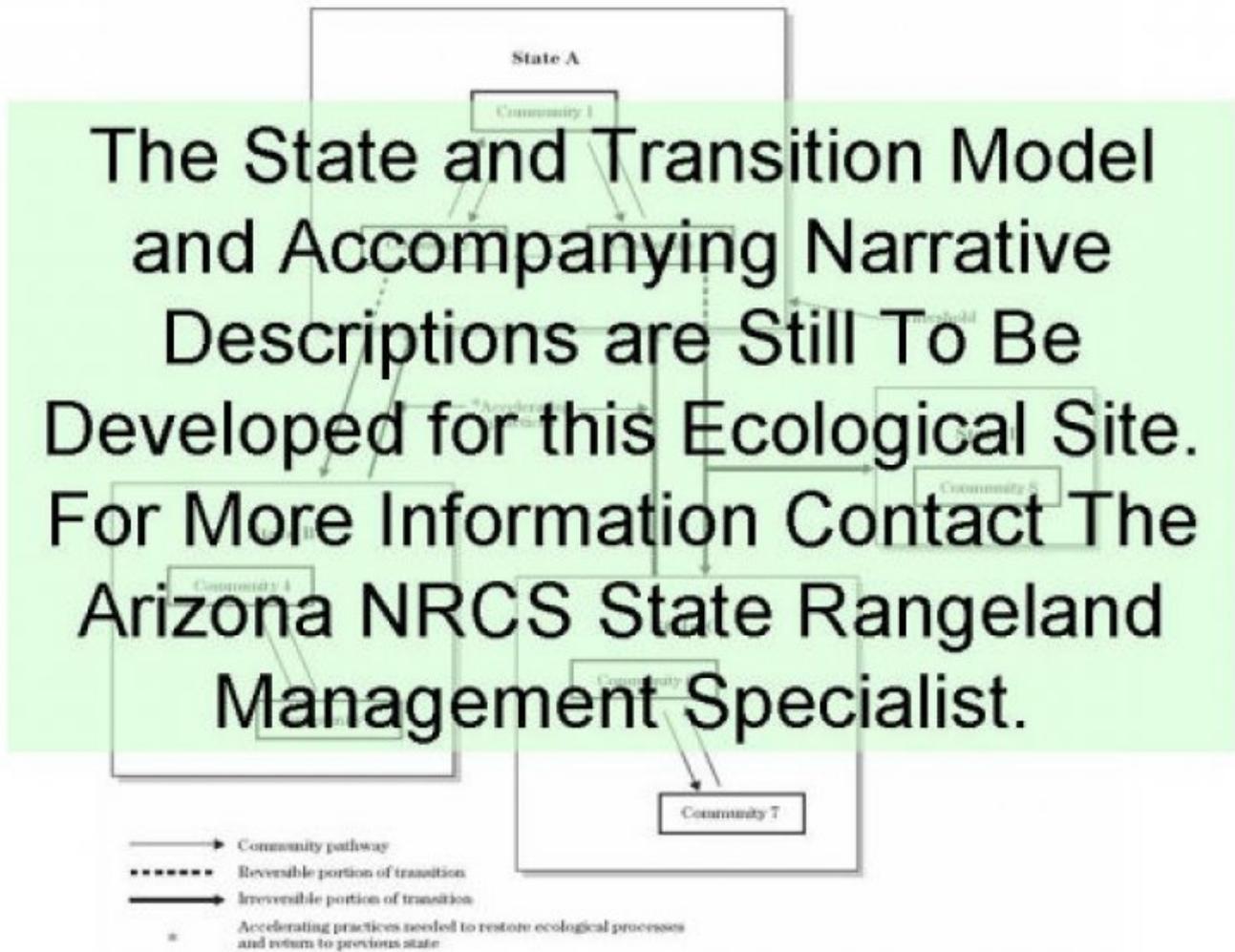
## Ecological dynamics

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



The State and Transition Model and Accompanying Narrative Descriptions are Still To Be Developed for this Ecological Site. For More Information Contact The Arizona NRCS State Rangeland Management Specialist.

**State 1  
Historic Climax Plant Community**

**Community 1.1  
Historic Climax Plant Community**

The native plant community on this site is dominated by a diverse mixture of perennial grasses, salt desert shrubs, and desert trees. The aspect is shrubland. With continuous heavy grazing, midgrasses are removed from the plant community. When perennial grass cover is depleted, the site is extremely susceptible to gully erosion. Mesquite can increase quickly to dominate the plant community under conditions of heavy grazing and accelerated erosion and/or sedimentation. Base level changes in large watersheds will lead to eventual gullying of the site. With severe erosion, the effectiveness of flooding is greatly reduced as is the site's ability to produce vegetation. PLant populations of major tree and shrub species range from 100-400 trees/ac. for both Andersons wolfberry and iodinebush. Tree canopy ranges from 10-20%. Perennial plant basal cover ranges from 5-10%. The atriplex species are very sensitive to fires in the summer.

Table 5. Annual production by plant type

Plant Type	Low (Lb/Acre)	Representative Value (Lb/Acre)	High (Lb/Acre)
Shrub/Vine	810	945	1080
Grass/Grasslike	540	675	810
Forb	180	225	270
<b>Total</b>	<b>1530</b>	<b>1845</b>	<b>2160</b>

## Additional community tables

Table 6. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production (Lb/Acre)	Foliar Cover (%)
<b>Grass/Grasslike</b>					
1				101–169	
	alkali sacaton	SPAI	<i>Sporobolus airoides</i>	101–169	–
	false Rhodes grass	TRCR9	<i>Trichloris crinita</i>	101–169	–
2				34–68	
	Havard's threeawn	ARHA3	<i>Aristida havardii</i>	34–68	–
	spidergrass	ARTEG	<i>Aristida ternipes var. gentilis</i>	34–68	–
	Arizona cottontop	DICA8	<i>Digitaria californica</i>	34–68	–
	bush muhly	MUPO2	<i>Muhlenbergia porteri</i>	34–68	–
	plains bristlegrass	SEVU2	<i>Setaria vulpisetata</i>	34–68	–
3				7–34	
	Parish's threeawn	ARPUP5	<i>Aristida purpurea var. parishii</i>	7–34	–
	cane bluestem	BOBA3	<i>Bothriochloa barbinodis</i>	7–34	–
	saltgrass	DISP	<i>Distichlis spicata</i>	7–34	–
	tanglehead	HECO10	<i>Heteropogon contortus</i>	7–34	–
	vine mesquite	PAOB	<i>Panicum obtusum</i>	7–34	–
	tobosagrass	PLMU3	<i>Pleuraphis mutica</i>	7–34	–
	big galleta	PLRI3	<i>Pleuraphis rigida</i>	7–34	–
	spike dropseed	SPCO4	<i>Sporobolus contractus</i>	7–34	–
	sand dropseed	SPCR	<i>Sporobolus cryptandrus</i>	7–34	–
	mesa dropseed	SPFL2	<i>Sporobolus flexuosus</i>	7–34	–
4				34–68	
	sixweeks threeawn	ARAD	<i>Aristida adscensionis</i>	34–68	–
	prairie threeawn	AROL	<i>Aristida oligantha</i>	34–68	–
	needle grama	BOAR	<i>Bouteloua aristidoides</i>	34–68	–
	sixweeks grama	BOBA2	<i>Bouteloua barbata</i>	34–68	–
	Rothrock's grama	BORO2	<i>Bouteloua rothrockii</i>	34–68	–
	Arizona brome	BRAR4	<i>Bromus arizonicus</i>	34–68	–
	feather fingergrass	CHVI4	<i>Chloris virgata</i>	34–68	–
	tapertip cupgrass	ERACA	<i>Eriochloa acuminata var. acuminata</i>	34–68	–
	desert lovegrass	ERPEM	<i>Eragrostis pectinacea var. miserrima</i>	34–68	–
	tufted lovegrass	ERPEP2	<i>Eragrostis pectinacea var. pectinacea</i>	34–68	–
	Mexican sprangletop	LEFUU	<i>Leptochloa fusca ssp. uninervia</i>	34–68	–
	mucronate sprangletop	LEPAB	<i>Leptochloa panicea ssp. brachiata</i>	34–68	–
	sticky sprangletop	LEVI5	<i>Leptochloa viscida</i>	34–68	–
	delicate muhly	MUFR	<i>Muhlenbergia fragilis</i>	34–68	–
	littleseed muhly	MUMI	<i>Muhlenbergia microsperma</i>	34–68	–
	witchgrass	PACA6	<i>Panicum capillare</i>	34–68	–
	Bigelow's bluegrass	POBI	<i>Poa bigelovii</i>	34–68	–
	Madagascar dropseed	SPPY2	<i>Sporobolus pyramidatus</i>	34–68	–

	Arizona signalgrass	URAR	<i>Urochloa arizonica</i>	34–68	–
	sixweeks fescue	VUOC	<i>Vulpia octoflora</i>	34–68	–
<b>Forb</b>					
5				0–1	
	dwarf desertpeony	ACNA2	<i>Acourtia nana</i>	0–1	–
	weakleaf bur ragweed	AMCO3	<i>Ambrosia confertiflora</i>	0–1	–
	field anoda	ANPE4	<i>Anoda pentaschista</i>	0–1	–
	coyote gourd	CUPA	<i>Cucurbita palmata</i>	0–1	–
	Indian rushpea	HOGL2	<i>Hoffmannseggia glauca</i>	0–1	–
	desert tobacco	NIOBO	<i>Nicotiana obtusifolia</i> var. <i>obtusifolia</i>	0–1	–
	violet wild petunia	RUNU	<i>Ruellia nudiflora</i>	0–1	–
	desert globemallow	SPAM2	<i>Sphaeralcea ambigua</i>	0–1	–
	spear globemallow	SPHA	<i>Sphaeralcea hastulata</i>	0–1	–
6				15–90	
	Navajo Mountain beardtongue	PENA4	<i>Penstemon navajoa</i>	1000–5000	–
	alpine gooseberry	RILA2	<i>Ribes lasianthum</i>	1000–5000	–
	Elliott's bluestem	ANGYS	<i>Andropogon gyrans</i> var. <i>stenophyllus</i>	0–5	–
	Watson's dutchman's pipe	ARWA	<i>Aristolochia watsonii</i>	0–1	–
	clasping milkweed	ASAM	<i>Asclepias amplexicaulis</i>	0–1	–
	milkvetch	ASTRA	<i>Astragalus</i>	0–1	–
	desert marigold	BAMU	<i>Baileya multiradiata</i>	0–1	–
	hoary bowlesia	BOIN3	<i>Bowlesia incana</i>	0–1	–
	canaigre dock	RUHY	<i>Rumex hymenosepalus</i>	0–1	–
	violet wild petunia	RUNU	<i>Ruellia nudiflora</i>	0–1	–
	spreading fanpetals	SIAB	<i>Sida abutifolia</i>	0–1	–
	sleepy silene	SIAN2	<i>Silene antirrhina</i>	0–1	–
	silverleaf nightshade	SOEL	<i>Solanum elaeagnifolium</i>	0–1	–
	desert globemallow	SPAM2	<i>Sphaeralcea ambigua</i>	0–1	–
	spear globemallow	SPHA	<i>Sphaeralcea hastulata</i>	0–1	–
	woollyhead neststraw	STMI2	<i>Stylocline micropoides</i>	0–1	–
	brownplume wirelettuce	STPA4	<i>Stephanomeria pauciflora</i>	0–1	–
	woolly tidestromia	TILA2	<i>Tidestromia lanuginosa</i>	0–1	–
	Tumamoc globeberry	TUMA	<i>Tumamoca macdougalii</i>	0–1	–
	manybristle chinchweed	PEPA2	<i>Pectis papposa</i>	0–1	–
	phacelia	PHACE	<i>Phacelia</i>	0–1	–
	orange fameflower	PHAU13	<i>Phemeranthus aurantiacus</i>	0–1	–
	slimjim bean	PHFI3	<i>Phaseolus filiformis</i>	0–1	–
	Arizona popcornflower	PLAR	<i>Plagiobothrys arizonicus</i>	0–1	–
	desert Indianwheat	PLOV	<i>Plantago ovata</i>	0–1	–
	purslane	PORTU	<i>Portulaca</i>	0–1	–
	doubleclaw	PRPA2	<i>Proboscidea parviflora</i>	0–1	–
	New Mexico plumeseed	RANE	<i>Rafinesquia neomexicana</i>	0–1	–

	brownfoot	ACWR5	<i>Acourtia wrightii</i>	0-1	-
	wealeaf bur ragweed	AMCO3	<i>Ambrosia confertiflora</i>	0-1	-
	fringed amaranth	AMFI	<i>Amaranthus fimbriatus</i>	0-1	-
	carelessweed	AMPA	<i>Amaranthus palmeri</i>	0-1	-
	bristly fiddleneck	AMTE3	<i>Amsinckia tessellata</i>	0-1	-
	fringed redmaids	CACI2	<i>Calandrinia ciliata</i>	0-1	-
	yellow tackstem	CAPA7	<i>Calycoseris parryi</i>	0-1	-
	white tackstem	CAWR	<i>Calycoseris wrightii</i>	0-1	-
	goosefoot	CHENO	<i>Chenopodium</i>	0-1	-
	hyssopleaf sandmat	CHHY3	<i>Chamaesyce hyssopifolia</i>	0-1	-
	New Mexico thistle	CINE	<i>Cirsium neomexicanum</i>	0-1	-
	cryptantha	CRYPT	<i>Cryptantha</i>	0-1	-
	fingerleaf gourd	CUDI	<i>Cucurbita digitata</i>	0-1	-
	coyote gourd	CUPA	<i>Cucurbita palmata</i>	0-1	-
	desert thorn-apple	DADI2	<i>Datura discolor</i>	0-1	-
	American wild carrot	DAPU3	<i>Daucus pusillus</i>	0-1	-
	sacred thorn-apple	DAWR2	<i>Datura wrightii</i>	0-1	-
	western tansymustard	DEPI	<i>Descurainia pinnata</i>	0-1	-
	Palmer's spectaclepod	DICA31	<i>Dimorphocarpa candicans</i>	0-1	-
	miniature woollystar	ERDI2	<i>Eriastrum diffusum</i>	0-1	-
	spreading fleabane	ERDI4	<i>Erigeron divergens</i>	0-1	-
	buckwheat	ERIOG	<i>Eriogonum</i>	0-1	-
	Texas stork's bill	ERTE13	<i>Erodium texanum</i>	0-1	-
	California poppy	ESCAM	<i>Eschscholzia californica ssp. mexicana</i>	0-1	-
	Mexican fireplant	EUHE4	<i>Euphorbia heterophylla</i>	0-1	-
	haplopappus	HAPLO11	<i>Haplopappus</i>	0-1	-
	Indian rushpea	HOGL2	<i>Hoffmannseggia glauca</i>	0-1	-
	Arizona poppy	KAGR	<i>Kallstroemia grandiflora</i>	0-1	-
	biannual lettuce	LALU	<i>Lactuca ludoviciana</i>	0-1	-
	Gordon's bladderpod	LEGO	<i>Lesquerella gordonii</i>	0-1	-
	shaggyfruit pepperweed	LELA	<i>Lepidium lasiocarpum</i>	0-1	-
	coastal bird's-foot trefoil	LOSAB	<i>Lotus salsuginosus var. brevivexillus</i>	0-1	-
	Lindley's silverpuffs	MILI5	<i>Microseris lindleyi</i>	0-1	-
	Nuttall's povertyweed	MONU	<i>Monolepis nuttalliana</i>	0-1	-
	green carpetweed	MOVE	<i>Mollugo verticillata</i>	0-1	-
	bristly nama	NAHI	<i>Nama hispidum</i>	0-1	-
	desert tobacco	NIOBO	<i>Nicotiana obtusifolia var. obtusifolia</i>	0-1	-
	evening primrose	OENOT	<i>Oenothera</i>	0-1	-
	Florida pellitory	PAFL3	<i>Parietaria floridana</i>	0-1	-
	combseed	PECTO	<i>Pectocarya</i>	0-1	-
8				11-34	
	wheelscale saltbush	ATEL	<i>Atriplex elegans</i>	11-34	-
	wheelscale saltbush	ATELF	<i>Atriplex elegans var. fasciculata</i>	11-34	-
	aridland goosefoot	CHDE	<i>Chenopodium desiccatum</i>	11-34	-

	boraxweed	NIOC2	<i>Nitrophila occidentalis</i>	11–34	–
	Coulter's globemallow	SPCO2	<i>Sphaeralcea coulteri</i>	11–34	–
<b>Shrub/Vine</b>					
9				236–378	
	velvet mesquite	PRVE	<i>Prosopis velutina</i>	236–378	–
10				142–189	
	fourwing saltbush	ATCA2	<i>Atriplex canescens</i>	142–189	–
	cattle saltbush	ATPO	<i>Atriplex polycarpa</i>	142–189	–
	water jacket	LYAN	<i>Lycium andersonii</i>	142–189	–
11				9–47	
	slender sandbur	CEGR3	<i>Cenchrus gracillimus</i>	9–47	–
	buckhorn cholla	CYACA2	<i>Cylindropuntia acanthocarpa</i> var. <i>acanthocarpa</i>	9–47	–
	Arizona pencil cholla	CYAR14	<i>Cylindropuntia arbuscula</i>	9–47	–
	jumping cholla	CYFUF	<i>Cylindropuntia fulgida</i> var. <i>fulgida</i>	9–47	–
	Christmas cactus	CYLE8	<i>Cylindropuntia leptocaulis</i>	9–47	–
	walkingstick cactus	CYSP8	<i>Cylindropuntia spinosior</i>	9–47	–
	devil's cholla	GRKU	<i>Grusonia kunzei</i>	9–47	–
	common fishhook cactus	MATE4	<i>Mammillaria tetrancistra</i>	9–47	–
	limestone adderstongue	OPEN	<i>Ophioglossum engelmannii</i>	9–47	–
12				9–47	
	whitethorn acacia	ACCO2	<i>Acacia constricta</i>	9–47	–
	catclaw acacia	ACGR	<i>Acacia greggii</i>	9–47	–
	iodinebush	ALOC2	<i>Allenrolfea occidentalis</i>	9–47	–
	Tucson bur ragweed	AMCO4	<i>Ambrosia cordifolia</i>	9–47	–
	burrobush	AMDU2	<i>Ambrosia dumosa</i>	9–47	–
	fourwing saltbush	ATCAL2	<i>Atriplex canescens</i> var. <i>laciniata</i>	9–47	–
	desertbroom	BASA2	<i>Baccharis sarothroides</i>	9–47	–
	crucifixion thorn	CAEM4	<i>Castela emoryi</i>	9–47	–
	Palmer's cock's comb	CEPA5	<i>Celosia palmeri</i>	9–47	–
	Drummond's clematis	CLDR	<i>Clematis drummondii</i>	9–47	–
	fringed twinevine	FUCY	<i>Funastrum cynanchoides</i>	9–47	–
	creosote bush	LATRT	<i>Larrea tridentata</i> var. <i>tridentata</i>	9–47	–
	Arizona desert-thorn	LYEX	<i>Lycium exsertum</i>	9–47	–
	Gila manroot	MAGI	<i>Marah gilensis</i>	9–47	–
	Jerusalem thorn	PAAC3	<i>Parkinsonia aculeata</i>	9–47	–
	blue paloverde	PAFL6	<i>Parkinsonia florida</i>	9–47	–
	chokecherry	PRVI	<i>Prunus virginiana</i>	9–47	–
	greasewood	SAVE4	<i>Sarcobatus vermiculatus</i>	9–47	–
	Mojave seablite	SUMO	<i>Suaeda moquinii</i>	9–47	–
	soaptree yucca	YUEL	<i>Yucca elata</i>	9–47	–
	lotebush	ZIOB	<i>Ziziphus obtusifolia</i>	9–47	–
13				9–19	
	triangle bur ragweed	AMDE4	<i>Ambrosia deltoidea</i>	9–19	–

	hollywood	GUSA	<i>Guaiacum sanctum</i>	9–19	–
	alkali goldenbush	ISACA2	<i>Isocoma acradenia</i> var. <i>acradenia</i>	9–19	–
	burroweed	ISTE2	<i>Isocoma tenuisecta</i>	9–19	–

## Animal community

The plant community on this site is suitable for grazing by all classes of horses and cattle. Because of water availability in the rainy seasons, long green periods, shade, and easy accessibility, this site is often overused. Large areas should be fenced and managed separately from adjacent upland areas. Grazing during the summer flood season will result in trampling damage to grasses and reduce livestock performance due to heat, humidity and insect pests. The plant community provides adequate nutrition throughout the year. Salt desert shrub species provide digestible protein. Perennial grasses provide energy.

Free water is available during rainy seasons in natural charcos and discontinuous gullies. Forage diversity, shade and cover are very good and make this site home to a great variety of wildlife, including large desert mammals. Water developments which prolong availability of free water are important to large wildlife. A moderate mesquite canopy makes the site home to a variety of tree-nesting bird species.

## Other information

T&E Species: Tumamoc Globe berry, perennial vine (Tumomoca Macdougalii)

## Contributors

DGR  
Larry D. Ellicott  
Steve Barker

## 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)	Emilio Carrillo, Dave Womack, Dan Robinett
Contact for lead author	NRCS Tucson Area Office
Date	03/07/2005
Approved by	s. Cassady
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

## Indicators

1. **Number and extent of rills:** Rills are present on the site, but are discontinuous due to low slopes.

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2. **Presence of water flow patterns:** Water flow patterns are uncommon due to low slopes.

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3. **Number and height of erosional pedestals or terracettes:** There are no pedestals or terracettes present.

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4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** 5-50%. Expect low values in dry years.

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

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6. **Extent of wind scoured, blowouts and/or depositional areas:** No evidence of soil movement by wind.

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7. **Amount of litter movement (describe size and distance expected to travel):** Herbaceous litter can move by wind and water. Woody litter remains under shrub canopies except in very high flows.

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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):** Soil surface resistance to erosion is good under shrub canopies to moderate in interspaces due to crusts formed by raindrop impact.

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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Weak thin platy to single grane; 7.5-10YR6/4 dry, 7.5-10YR3/4 Moist, entisol - no A horizon

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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** 15-25%. Herbaceous litter is present in some years, absent in others. Large shrubs with large coppice mounds with high infiltration rates. Subshrubs with small mounds with high infiltration rates. Mounds occupy 15-30% of the surface and are evenly spaced over the area.

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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: mesquite > other trees shrubs > alkai sacaton > winter annuals > summer annuals > other perennial grasses and forbs > succulents > cryptogams

Sub-dominant:

Other:

Additional:

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13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** 30-70% canopy mortality on trees and shrubs, 50-60% mortality on perennial grasses.

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14. **Average percent litter cover (%) and depth ( in):** Herbaceous litter is not persistent on the site.

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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** 800 lbs/ac unfavorable precipitation, 1800 lbs/ac normal precipitation, 3000 lbs/ac favorable precipitation

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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:** Sahara mustard (potential), London Rocket, Cheeseweed, salt cedar, mesquite, Bermuda grass, jimmyweed

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17. **Perennial plant reproductive capability:** Not impaired for shrubs; drought impaired for perenial grasses and forbs.

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