USDA Natural Resources
Conservation Service

Ecological site R040XB216AZ
Sandy Wash 7"-10" 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.

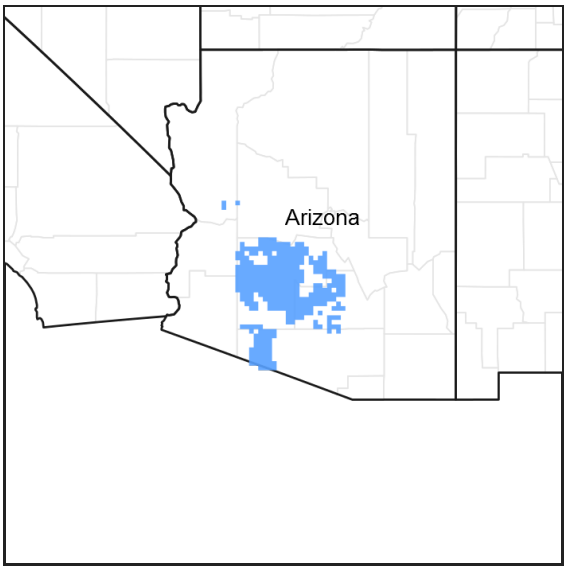

Figure 1. Mapped extent

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 40.2 – 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	(1) *Parkinsonia florida* (2) *Parkinsonia microphylla*
Shrub	(1) *Baccharis sarothroides* (2) *Salix gooddingii*
Herbaceous	(1) *Digitaria californica*

Physiographic features

This site occurs on floodplains and alluvial fans. It benefits on a rgualr basis fro extra moisture received as overbank flooding and/or runoff from adjacent upland sites. Slopes are from 0% to 3%. Elevations range from 900 to 2000 feet.

Table 2. Representative physiographic features

Landforms	(1) Alluvial fan (2) Flood plain
Elevation	274–610 m
Slope	0–3%

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)	254 mm

Influencing water features

Soil features

These are very young soils on gravelly and sandy alluvium of mixed origin. Textures range from sandyloam to very cobbly sands. Subsurface texture group includes coarse loamy also. They are deep and excessively well drained. Although coarse textures make for low water holding capacities, plant-soil moisture relationships are very good due to the extra moisture the soils receive. They may or may not be calcareous. This site is mapped on 7 Soil Survey areas in Southwestern Arizona CRA D40-2.

Soils mapped on this site include: SSA-627 Southern Mohave county MU Brazito family-14; SSA-645 Aguila-Carefree area MU's Carrizo-3 & 10, & Brios-10; SSA-651 Central Maricopa county MU's Brios-Ae, Br, Bs, Bt & CF, Carrizo-AfA, AfB, AGB, Cb, CeD, CF & Vr, Maripo-Ma, Torrifluvents-TB & TD, Torrisamments-TD, & Vint-Va, Vh, Vlc, Vn & Vr; SSA-653 Gila Bend-Ajo area MU's Carrizo-5, 6, 37 & 53, Carrizo XGrSL-49, & Why-21 & 22; SSA-658 Gila River Indian Reservation MU's Brios-1, 2 & 36, Carrizo-5 & 9, Why-36; SSA-659 Western Pinal county MU's Antho-2, Carrizo-34, Valencia-48 & Why-49; SSA-661 Eastern Pinal-Southern Gila counties MU's Brios-290,

Carrizo-207, 216 & 290, & Vint-280.

Table 4. Representative soil features

Surface texture	(1) Gravelly loam (2) Very gravelly loamy sand (3) Sandy loam
Family particle size	(1) Sandy
Drainage class	Well drained to excessively drained
Permeability class	Moderately rapid to very rapid
Soil depth	152 cm
Surface fragment cover <=3"	5–45%
Surface fragment cover >3"	0%
Available water capacity (0-101.6cm)	6.1–18.29 cm
Calcium carbonate equivalent (0-101.6cm)	1–10%
Electrical conductivity (0-101.6cm)	0 mmhos/cm
Sodium adsorption ratio (0-101.6cm)	0
Soil reaction (1:1 water) (0-101.6cm)	7.4–8.4
Subsurface fragment volume <=3" (Depth not specified)	5–45%
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 the 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
Historical Climax Plant Community

Community 1.1
Historical Climax Plant Community

The potential plant community is a diverse mixture of desert trees, shrubs, vines and perennial and annual grasses and forbs. Major species are well dispersed throughout the community with the exception of big bursage and burrobush which are confined to the channel areas. The aspect is shrubland to woodland. With poorly managed grazing, perennial grasses, palatable forbs and shrubs like; slender janusia, yerbe-de-venado, trixis, bricklebush and globemallow disappear from the plant community. When the herbaceous and low shub cover has been depleted, erosion can begin and sandy channels entrench and rapidly remove waters from the site reducing the effectiveness of flooding. With heavy grazing, tree species can increase on the site. Trees reach full sizes due to good water relations and deep sandy soils. Tree canopies range from 10 to 15 percent on the site. Total canopy including tall shrubs like creosotebush, whitethorn, desert hackberry and wolfberry ranges from 25% to 40%. Tree canopies on the largest washes approach woodland densities but when cover is averaged over the entire area of the site it is less than 15%. Plant populations of major species range from 40 to 150 trees per acre for the group of mesquite, littleleaf paloverde, ironwood and blue paloverde, 5 to 30 saguaros per acre, 100 to 300 creosotebush per acre, 20 to 60 whitethorn plants per acre, 10 to 30 desert hackberry per acre, and 20 to 50 wolfberry per acre. There is a relationship between the production, plant density, cover and the watershed size of this bottom site.

Table 5. Annual production by plant type

Plant Type	Low (Kg/Hectare)	Representative Value (Kg/Hectare)	High (Kg/Hectare)
Shrub/Vine	588	–	1009
Tree	588	–	1009
Grass/Grasslike	420	–	673
Forb	252	–	420
Total	**1848**	**–**	**3111**

Additional community tables

Table 6. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production (Kg/Hectare)	Foliar Cover (%)
Grass/Grasslike					
1				55–82	
	bush muhly	MUPO2	*Muhlenbergia porteri*	55–82	–
	big galleta	PLRI3	*Pleuraphis rigida*	55–82	–
2				55–82	
	purple threeawn	ARPU9	*Aristida purpurea*	55–82	–
	blue threeawn	ARPUN	*Aristida purpurea var. nealleyi*	55–82	–
	Parish's threeawn	ARPUP5	*Aristida purpurea var. parishii*	55–82	–
	spidergrass	ARTE3	*Aristida ternipes*	55–82	–
	spidergrass	ARTEG	*Aristida ternipes var. gentilis*	55–82	–
3				27–55	
	sixweeks threeawn	ARAD	*Aristida adscensionis*	27–55	–
	prairie threeawn	AROL	*Aristida oligantha*	27–55	–
	needle grama	BOAR	*Bouteloua aristidoides*	27–55	–
	sixweeks grama	BOBA2	*Bouteloua barbata*	27–55	–
	Rothrock's grama	BORO2	*Bouteloua rothrockii*	27–55	–
	Arizona brome	BRAR4	*Bromus arizonicus*	27–55	–
	feather fingergrass	CHVI4	*Chloris virgata*	27–55	–
	bearded cupgrass	ERAR5	*Eriochloa aristata*	27–55	–
	canyon cupgrass	ERLE7	*Eriochloa lemmonii*	27–55	–
	desert lovegrass	ERPEM	*Eragrostis pectinacea var. miserrima*	27–55	–
	tufted lovegrass	ERPEP2	*Eragrostis pectinacea var. pectinacea*	27–55	–
	Mexican sprangletop	LEFUU	*Leptochloa fusca ssp. uninervia*	27–55	–
	mucronate sprangletop	LEPA6	*Leptochloa panicea*	27–55	–
	delicate muhly	MUFR	*Muhlenbergia fragilis*	27–55	–
	littleseed muhly	MUMI	*Muhlenbergia microsperma*	27–55	–
	Bigelow's bluegrass	POBI	*Poa bigelovii*	27–55	–
	Arizona signalgrass	URAR	*Urochloa arizonica*	27–55	–
	sixweeks fescue	VUOC	*Vulpia octoflora*	27–55	–
4				6–27	
	low woollygrass	DAPU7	*Dasyochloa pulchella*	6–27	–

	Arizona cottontop	DICA8	*Digitaria californica*	6–27	–
	tanglehead	HECO10	*Heteropogon contortus*	6–27	–
	plains bristlegrass	SEVU2	*Setaria vulpiseta*	6–27	–
	spike dropseed	SPCO4	*Sporobolus contractus*	6–27	–
	sand dropseed	SPCR	*Sporobolus cryptandrus*	6–27	–
	mesa dropseed	SPFL2	*Sporobolus flexuosus*	6–27	–
	slim tridens	TRMU	*Tridens muticus*	6–27	–
5				6–27	
	bigseed alfalfa dodder	CUIN	*Cuscuta indecora*	6–27	–
	mesquite mistletoe	PHCA8	*Phoradendron californicum*	6–27	–
6				6–27	
	Alga	2ALGA	*Alga*	6–27	–
	Fungus	2FUNGI	*Fungus*	6–27	–
	Lichen	2LICHN	*Lichen*	6–27	–
	Moss	2MOSS	*Moss*	6–27	–
Forb					
7				0–34	
	brownfoot	ACWR5	*Acourtia wrightii*	0–34	–
	trailing windmills	ALIN	*Allionia incarnata*	0–34	–
	narrowleaf silverbush	ARLA12	*Argythamnia lanceolata*	0–34	–
	desert marigold	BAMU	*Baileya multiradiata*	0–34	–
	climbing wartclub	BOSC	*Boerhavia scandens*	0–34	–
	whitemargin sandmat	CHAL11	*Chamaesyce albomarginata*	0–34	–
	desert trumpet	ERIN4	*Eriogonum inflatum*	0–34	–
	Coulter's lyrepod	LYCO4	*Lyrocarpa coulteri*	0–34	–
	Parry's false prairie-clover	MAPA7	*Marina parryi*	0–34	–
	lacy tansyaster	MAPIP4	*Machaeranthera pinnatifida ssp. pinnatifida var. pinnatifida*	0–34	–
	desert tobacco	NIOB	*Nicotiana obtusifolia*	0–34	–
	desert evening primrose	OEPR	*Oenothera primiveris*	0–34	–
	Parry's beardtongue	PEPA24	*Penstemon parryi*	0–34	–
	slender poreleaf	POGR5	*Porophyllum gracile*	0–34	–
	desert globemallow	SPAM2	*Sphaeralcea ambigua*	0–34	–
	brownplume wirelettuce	STPA4	*Stephanomeria pauciflora*	0–34	–
8				84–252	
	weakleaf bur ragweed	AMCO3	*Ambrosia confertiflora*	0–1	–
	fringed amaranth	AMFI	*Amaranthus fimbriatus*	0–1	–
	common fiddleneck	AMMEI2	*Amsinckia menziesii var. intermedia*	0–1	–
	carelessweed	AMPA	*Amaranthus palmeri*	0–1	–
	bristly fiddleneck	AMTE3	*Amsinckia tessellata*	0–1	–
	smallflowered milkvetch	ASNU4	*Astragalus nuttallianus*	0–1	–

	scarlet spiderling	BOCO	*Boerhavia coccinea*	0–1	–
	Coulter's spiderling	BOCO2	*Boerhavia coulteri*	0–1	–
	hoary bowlesia	BOIN3	*Bowlesia incana*	0–1	–
	exserted Indian paintbrush	CAEXE	*Castilleja exserta ssp. exserta*	0–1	–
	yellow tackstem	CAPA7	*Calycoseris parryi*	0–1	–
	white tackstem	CAWR	*Calycoseris wrightii*	0–1	–
	brittle spineflower	CHBR	*Chorizanthe brevicornu*	0–1	–
	aridland goosefoot	CHDE	*Chenopodium desiccatum*	0–1	–
	devil's spineflower	CHRI	*Chorizanthe rigida*	0–1	–
	New Mexico thistle	CINE	*Cirsium neomexicanum*	0–1	–
	sand pygmyweed	CRCOC	*Crassula connata var. connata*	0–1	–
	cryptantha	CRYPT	*Cryptantha*	0–1	–
	fingerleaf gourd	CUDI	*Cucurbita digitata*	0–1	–
	desert thorn-apple	DADI2	*Datura discolor*	0–1	–
	pricklyburr	DAIN2	*Datura inoxia*	0–1	–
	hairy prairie clover	DAMO	*Dalea mollis*	0–1	–
	American wild carrot	DAPU3	*Daucus pusillus*	0–1	–
	western tansymustard	DEPI	*Descurainia pinnata*	0–1	–
	touristplant	DIWI2	*Dimorphocarpa wislizeni*	0–1	–
	whisperingbells	EMPE	*Emmenanthe penduliflora*	0–1	–
	flatcrown buckwheat	ERDE6	*Eriogonum deflexum*	0–1	–
	miniature woollystar	ERDI2	*Eriastrum diffusum*	0–1	–
	erigenia	ERIGE	*Erigenia*	0–1	–
	woolly sunflower	ERIOP2	*Eriophyllum*	0–1	–
	Texas stork's bill	ERTE13	*Erodium texanum*	0–1	–
	California poppy	ESCAM	*Eschscholzia californica ssp. mexicana*	0–1	–
	pygmy poppy	ESMI	*Eschscholzia minutiflora*	0–1	–
	hideseed	EUCRY	*Eucrypta*	0–1	–
	spurge	EUPHO	*Euphorbia*	0–1	–
	fringed twinevine	FUCY	*Funastrum cynanchoides*	0–1	–
	hairy desertsunflower	GECA2	*Geraea canescens*	0–1	–
	gilia	GILIA	*Gilia*	0–1	–
	Arizona poppy	KAGR	*Kallstroemia grandiflora*	0–1	–
	Gordon's bladderpod	LEGO	*Lesquerella gordonii*	0–1	–
	shaggyfruit pepperweed	LELA	*Lepidium lasiocarpum*	0–1	–
	flax	LINUM	*Linum*	0–1	–
	coastal bird's-foot trefoil	LOSAB	*Lotus salsuginosus var. brevivexillus*	0–1	–
	Arizona lupine	LUAR4	*Lupinus arizonicus*	0–1	–
	Coulter's lupine	LUSP2	*Lupinus sparsiflorus*	0–1	–
	Gila manroot	MAGI	*Marah gilensis*	0–1	–
	blazingstar	MENTZ	*Mentzelia*	0–1	–

	bristly nama	NAHI	*Nama hispidum*	0–1	–
	glandular threadplant	NEGL	*Nemacladus glanduliferus*	0–1	–
	lineleaf whitepuff	OLLI	*Oligomeris linifolia*	0–1	–
	Florida pellitory	PAFL3	*Parietaria floridana*	0–1	–
	combseed	PECTO	*Pectocarya*	0–1	–
	manybristle chinchweed	PEPA2	*Pectis papposa*	0–1	–
	phacelia	PHACE	*Phacelia*	0–1	–
	desert Indianwheat	PLOV	*Plantago ovata*	0–1	–
	doubleclaw	PRPA2	*Proboscidea parviflora*	0–1	–
	New Mexico plumeseed	RANE	*Rafinesquia neomexicana*	0–1	–
	chia	SACO6	*Salvia columbariae*	0–1	–
	sleepy silene	SIAN2	*Silene antirrhina*	0–1	–
	Coulter's globemallow	SPCO2	*Sphaeralcea coulteri*	0–1	–
	woollyhead neststraw	STMI2	*Stylocline micropoides*	0–1	–
	woolly tidestromia	TILA2	*Tidestromia lanuginosa*	0–1	–
	catnip noseburn	TRNE	*Tragia nepetifolia*	0–1	–
Tree					
9				80–160	
	desert ironwood	OLTE	*Olneya tesota*	80–160	–
	blue paloverde	PAFL6	*Parkinsonia florida*	80–160	–
	yellow paloverde	PAMI5	*Parkinsonia microphylla*	80–160	–
10				40–80	
	catclaw acacia	ACGR	*Acacia greggii*	40–80	–
	velvet mesquite	PRVE	*Prosopis velutina*	40–80	–
	Fremont cottonwood	POFR2	*Populus fremontii*	0–6	–
Shrub/Vine					
11				80–120	
	whitethorn acacia	ACCO2	*Acacia constricta*	80–120	–
	Palmer's cock's comb	CEPA5	*Celosia palmeri*	80–120	–
	Drummond's clematis	CLDR	*Clematis drummondii*	80–120	–
	ropevine clematis	CLPA2	*Clematis pauciflora*	80–120	–
	longleaf jointfir	EPTR	*Ephedra trifurca*	80–120	–
	fringed twinevine	FUCY	*Funastrum cynanchoides*	80–120	–
	creosote bush	LATR2	*Larrea tridentata*	80–120	–
	water jacket	LYAN	*Lycium andersonii*	80–120	–
	Arizona desert-thorn	LYEX	*Lycium exsertum*	80–120	–
	desert wolfberry	LYMA	*Lycium macrodon*	80–120	–
	soaptree yucca	YUEL	*Yucca elata*	80–120	–
12				8–16	
	triangle bur ragweed	AMDE4	*Ambrosia deltoidea*	8–16	–

	triangle bur ragweed	AMDL4	*Ambrosia deltoidea*	8–40	
	holywood	GUSA	*Guaiacum sanctum*	8–16	–
	alkali goldenbush	ISACA2	*Isocoma acradenia var. acradenia*	8–16	–
	burroweed	ISTE2	*Isocoma tenuisecta*	8–16	–
13				40–80	
	candy barrelcactus	FEWI	*Ferocactus wislizeni*	40–80	–
	senita cactus	PASC14	*Pachycereus schottii*	40–80	–
	nightblooming cereus	PEGR3	*Peniocereus greggii*	40–80	–
	organpipe cactus	STTH3	*Stenocereus thurberi*	40–80	–
14				8–40	
	rayless goldenhead	ACSP	*Acamptopappus sphaerocephalus*	8–40	–
	poreleaf dogweed	ADPO2	*Adenophyllum porophyllum*	8–40	–
	ambrosia leaf bur ragweed	AMAM2	*Ambrosia ambrosioides*	8–40	–
	Tucson bur ragweed	AMCO4	*Ambrosia cordifolia*	8–40	–
	burrobush	AMDU2	*Ambrosia dumosa*	8–40	–
	woolly fruit bur ragweed	AMER	*Ambrosia eriocentra*	8–40	–
	horsetail milkweed	ASSU2	*Asclepias subverticillata*	8–40	–
	fourwing saltbush	ATCA2	*Atriplex canescens*	8–40	–
	cattle saltbush	ATPO	*Atriplex polycarpa*	8–40	–
	shortleaf baccharis	BABR	*Baccharis brachyphylla*	8–40	–
	desertbroom	BASA2	*Baccharis sarothroides*	8–40	–
	sweetbush	BEJU	*Bebbia juncea*	8–40	–
	Coulter's brickellbush	BRCO	*Brickellia coulteri*	8–40	–
	crucifixion thorn	CAEM4	*Castela emoryi*	8–40	–
	fairyduster	CAER	*Calliandra eriophylla*	8–40	–
	desert willow	CHLI2	*Chilopsis linearis*	8–40	–
	Nevada jointfir	EPNE	*Ephedra nevadensis*	8–40	–
	Eastern Mojave buckwheat	ERFA2	*Eriogonum fasciculatum*	8–40	–
	ocotillo	FOSP2	*Fouquieria splendens*	8–40	–
	desert lavender	HYEM	*Hyptis emoryi*	8–40	–
	singlewhorl burrobrush	HYMO	*Hymenoclea monogyra*	8–40	–
	burrobrush	HYSA	*Hymenoclea salsola*	8–40	–
	sangre de cristo	JACA2	*Jatropha cardiophylla*	8–40	–
	Arizona nettlespurge	JACI	*Jatropha cinerea*	8–40	–
	slender janusia	JAGR	*Janusia gracilis*	8–40	–
	beloperone	JUCA8	*Justicia californica*	8–40	–
	littleleaf ratany	KRER	*Krameria erecta*	8–40	–
	white ratany	KRGR	*Krameria grayi*	8–40	–
	Berlandier's wolfberry	LYBE	*Lycium berlandieri*	8–40	–
	Fremont's desert-thorn	LYFR	*Lycium fremontii*	8–40	–

	rough menodora	MESC	*Menodora scabra*	8–40	–
	Thurber's sandpaper plant	PETH4	*Petalonyx thurberi*	8–40	–
	whitestem paperflower	PSCO2	*Psilostrophe cooperi*	8–40	–
	Mexican bladdersage	SAME	*Salazaria mexicana*	8–40	–
	arrow poision plant	SEBI9	*Sebastiania bilocularis*	8–40	–
	jojoba	SICH	*Simmondsia chinensis*	8–40	–
	Hall's shrubby-spurge	TEHA	*Tetracoccus hallii*	8–40	–
	American threefold	TRCA8	*Trixis californica*	8–40	–
	Parish's goldeneye	VIPA14	*Viguiera parishii*	8–40	–
	lotebush	ZIOB	*Ziziphus obtusifolia*	8–40	–

Animal community

The plant community on this site is well suited for grazing by all classes of livestock. It usually occurs as small inclusions in large areas of upland sites. Because of this and water availability in the rainy months, long green seasons, shade and easy accessibility, this area is often overused. Within vast areas of unproductive upland areas this site becomes the key grazing area, especially in the hot summers, and grazing management should hinge around proper use and recovery of the forage species in the plant community. The plant community, in good condition, provides adequate nutrition for livestock throughout the year.

Free water can be available on this site in the rainy seasons in small natural charcos in the streambed. Water developments providing free water throughout the year are very imortant to large mammals like mule deer. Forage diversity, shade, cover and structure are very good and make this site home to a great variety of wildlife species including the larger desert mammals. This site occurs in many areas as minor inclusions bisecting vast areas of unproductive upland sites. In these situations it is the only habitat for wildlife and fulfills the needs for a wide variety of bird, reptile, amphibian and insect species as well as most of the desert mammals.

Other information

T&E: Antilocapra Americana sonoriensis
(Sonoran pronghorn)
Leptonycteris curasoae yerbebuena
(Lesser long-nosed bat)

Type locality

Location 1: Pima County, AZ	
Township/Range/Section	T14S R1E S29
General legal description	Sells FO - Pisinemo District SW 1/4 Sec. 29
Location 2: Maricopa County, AZ	
Township/Range/Section	T3N R3W S5
General legal description	Phoenix FO - White Tank Mtn. Park
Location 3: Pima County, AZ	
Township/Range/Section	T15S R7W S30
General legal description	Tucson FO - Organ Pipe National Monument
Location 4: Pima County, AZ	
Township/Range/Section	T9S R3E S5

General legal description	Sells FO - Sif Oidak Dist. - along EPNG pipeline

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.

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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:** Rills are commo on the site as braided channels, but are usually well vegetated and not eroding.

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2. **Presence of water flow patterns:** Water flow paths ar constantly changing due to frequent flooding regimes.

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3. **Number and height of erosional pedestals or terracettes:** No accumulated or erosional pedestals on most perennial plants. Debris dams are common on large shrubs and trees from frequent flooding.

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4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** 15-40%

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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:** None

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7. **Amount of litter movement (describe size and distance expected to travel):** Highly variable, function of upland

overland flow input.

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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):** Expect ratings of 1-3 across the site.

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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.

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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, and 5-10% trees. Cover is well dispersed throughout site.

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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: shrubs > subshrubs > trees > succulets > forbs = perennial grasses (Note: annual forbs and grasses may be greater in El Nino years.)

    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):** 20-30% canopy mortality of trees & shrubs; 90-100% mortality of perennial grasses.

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

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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** 700 lbs/ac unfavorable precipitaton, 1500 lbs/ac normal preciptation, 2200 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:** Mediterranean grass, filare, Sahara mustard, red brome, creosote, triangle leaf bursage,

mesquite, desert broom.

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17. **Perennial plant reproductive capability:** Not impaired for shrubs, drought impaired for perennial grasses & forbs.
