USDA Natural Resources Conservation Service

Ecological site R041XB207AZ
Limy 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

F041XB221AZ	**Loamy Bottom 8-12" p.z. woodland**
F041XB222AZ	**Saline Bottom 8-12" p.z. woodland**
R041XB206AZ	**Limy Fan 8-12" p.z.**
R041XB208AZ	**Limy Upland 8-12" p.z.**

Similar sites

R041XC308AZ	**Limy Slopes 12-16" p.z.**
R040XA110AZ	**Limy Slopes 10"-13" p.z.**

Table 1. Dominant plant species

Tree	Not specified
Shrub	(1) *larrea tridentata* (2) *acacia constricta*
Herbaceous	(1) *muhlenbergia porteri* (2) *aristida*

Physiographic features

This site occurs in the lowest elevations of the Madrean Basin and Range province in southeastern Arizona. It occurs on fan terraces, hill-slopes and ridge-tops. It occurs in the Gila and San Pedro river valleys.

Table 2. Representative physiographic features

Landforms	(1) Hill (2) Fan remnant (3) Ridge

Flooding frequency	None
Ponding frequency	None
Elevation	2,600–4,000 ft
Slope	15–55%
Aspect	N, E, S

Climatic features

Precipitation ranges from 8-12 inches annually. More than half falls during July-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 well drained, coarse textured, stratified and high in calcium carbonates. They are moderately deep to deep and underlain in places by very gravelly, lime cemented, conglomerate. They have formed in old fan deposits.

Soil series mapped on this site include: SSA-663 Gila-Duncan area MU's 10 21 & 26 Pinaleno, 43 Nickel; SSA-666 Cochise county Northwest part MU's 14 Redo, 75 Stagecoach; SSA-671 Cochise county Douglas-Tombstone part MU 35 Redington; SSA-675 San Carlos IR area MU's 86 Rillino, 87 torriorthents.

Table 4. Representative soil features

Surface texture	(1) Very gravelly sandy loam (2) Very gravelly loamy fine sand (3) Cobbly sandy loam
Family particle size	(1) Loamy
Drainage class	Somewhat excessively drained to well drained
Permeability class	Rapid to moderately rapid
Soil depth	60 in
Surface fragment cover <=3"	20–65%
Surface fragment cover >3"	0–15%
Available water capacity (0-40in)	3.4–6.1 in
Calcium carbonate equivalent (0-40in)	5–25%
Electrical conductivity (0-40in)	0–2 mmhos/cm
Sodium adsorption ratio (0-40in)	0–2
Soil reaction (1:1 water) (0-40in)	7.4–8.4
Subsurface fragment volume <=3" (Depth not specified)	15–65%
Subsurface fragment volume >3" (Depth not specified)	0–15%

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 community found on relict or relatively undisturbed areas of this site. Other plant communities described here represent plant communities that are known to occur when the site is disturbed by factors such as fire, grazing and 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 described in the 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 amount shown for that 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 the field data is not collected at the end of the summer growing season, then the field data must be corrected to the end of 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.
The historic native state includes the native plant communities that occur on the site, including the historic climax plant community. This state includes other plant communities that naturally occupy the site following fire, drought, flooding, herbivores and other natural disturbances. The historic climax plant community represents the natural climax community that eventually reoccupies the site with proper management and a return to near normal conditions and/or equilibrium.

State and transition model

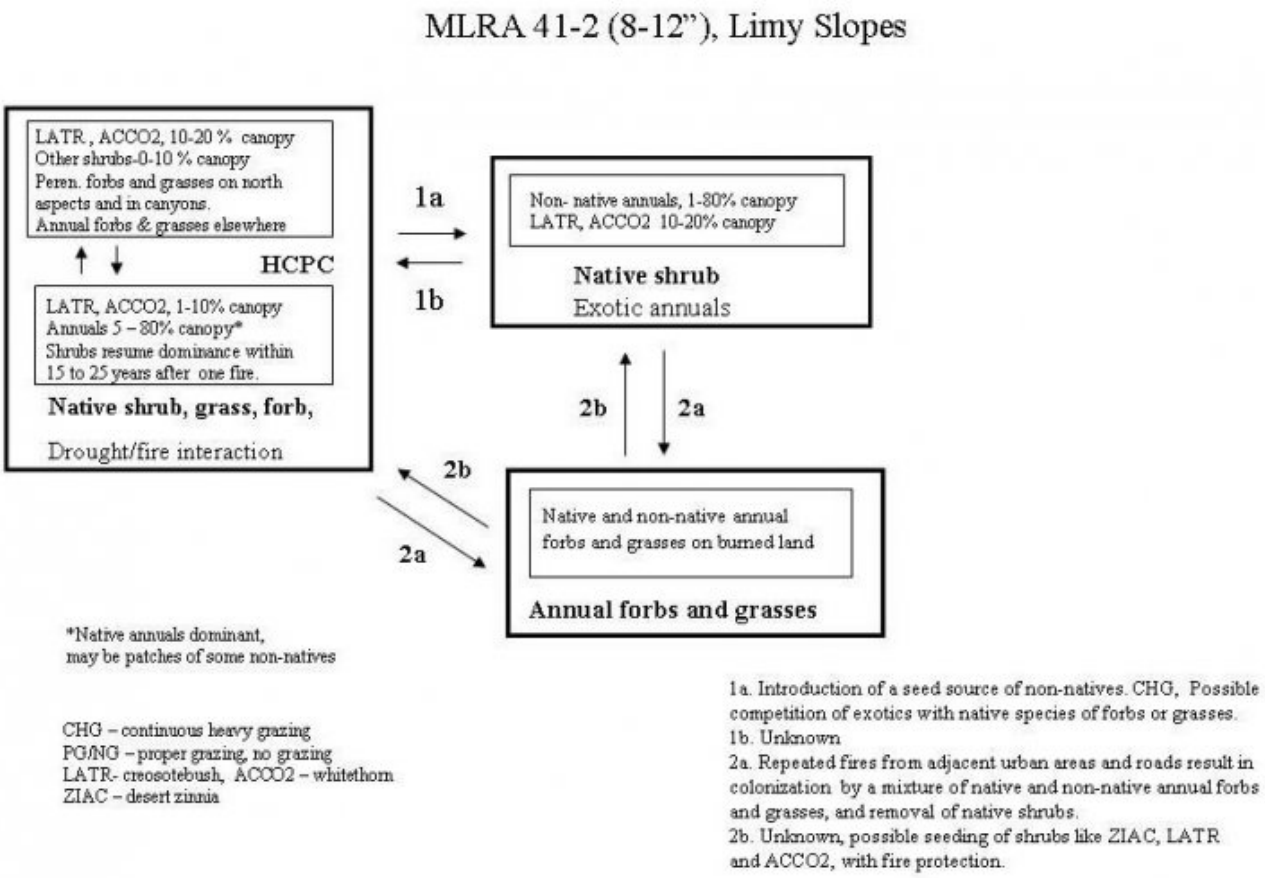

Figure 4. State and Transition, Limy Slopes 8-12" p.z.

State 1
Historic Climax Plant Community

Community 1.1
Historic Climax Plant Community

Figure 5. Limy Slopes 8-12" pz.

This plant community is dominated by creosote bush and whitethorn acacia. Annual grasses and forbs are an important part of the plant community in wet seasons. Perennial grasses are important only on north aspects. Cryptogams are common on this site, often colonizing areas with low covers of gravel and rock.

Table 5. Annual production by plant type

Plant Type	Low (Lb/Acre)	Representative Value (Lb/Acre)	High (Lb/Acre)
Shrub/Vine	111	250	360
Grass/Grasslike	12	75	220
Forb	2	15	115
Total	**125**	**340**	**695**

Table 6. Soil surface cover

Tree basal cover	0%
Shrub/vine/liana basal cover	1-2%
Grass/grasslike basal cover	0-2%
Forb basal cover	0-2%
Non-vascular plants	0%
Biological crusts	1-10%
Litter	3-35%
Surface fragments >0.25" and <=3"	15-50%

Surface fragments >3"	1-15%
Bedrock	0%
Water	0%
Bare ground	5-50%

Table 7. Canopy structure (% cover)

Height Above Ground (Ft)	Tree	Shrub/Vine	Grass/ Grasslike	Forb
<0.5	–	1-3%	1-5%	1-5%
>0.5 <= 1	–	1-5%	1-10%	1-5%
>1 <= 2	–	0-2%	1-10%	0-5%
>2 <= 4.5	–	15-35%	0-5%	0-2%
>4.5 <= 13	–	1-5%	–	–
>13 <= 40	–	–	–	–
>40 <= 80	–	–	–	–
>80 <= 120	–	–	–	–
>120	–	–	–	–

State 2
Shrubs, annuals

Community 2.1
Shrubs, annuals

Figure 7. Limy Slopes 8-12" pz., red brome

This plant community occurs where the native shrub cover is still dominant but the herbaceous layer of the plant community is dominated by non-native annual forbs and grasses. These species can include filaree, mediterranean grass, red brome, Sahara mustard, malta starthistle and London rocket.

State 3
Annuals

Community 3.1
Annuals

Figure 8. Limy Slopes 8-12" pz. two fires since 1983.

This state occurs where areas of the site are subject to repeated fires. This state is usually adjacent to residential areas or along heavily travelled roads where the incidence of fires is high. Repeated burning removes native shrubs and leaves a plant community dominated by native and non-native annual forbs and grasses.

Transition T1A
State 1 to 2

Introduction of a seed source of non-natives, Continuous Heavy Grazing. Possible competition of exotics with native species of forbs or grasses.

Transition T1B
State 1 to 3

Repeated fires from adjacent urban areas and roads result in colonization by a mixture of native and non-native annual forbs and grasses, removal of native shrubs.

Restoration pathway R2A
State 2 to 1

Unknown

Transition T2A
State 2 to 3

Repeated fires from adjacent urban areas and roads result in colonization by a mixture of native and non-native annual forbs and grasses, removal of native shrubs.

Restoration pathway R3A
State 3 to 1

Unknown, possible seeding of shrubs with fire protection.

Restoration pathway R3
State 3 to 2

Unknown, possible seeding of shrubs with fire protection.

Additional community tables

Table 8. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production (Lb/Acre)	Foliar Cover (%)
Grass/Grasslike					
1	**Dominant perennial grasses**			11–150	
	blue threeawn	ARPUN	*Aristida purpurea var. nealleyi*	5–50	–
	bush muhly	MUPO2	*Muhlenbergia porteri*	5–50	–

	slim tridens	TRMU	*Tridens muticus*	1–25	–
	black grama	BOER4	*Bouteloua eriopoda*	0–25	–
	low woollygrass	DAPU7	*Dasyochloa pulchella*	1–25	–
	sideoats grama	BOCU	*Bouteloua curtipendula*	0–15	–
	Parish's threeawn	ARPUP5	*Aristida purpurea var. parishii*	0–10	–
2	**Misc. perennial grasses**			0–20	
	purple threeawn	ARPU9	*Aristida purpurea*	0–5	–
	spidergrass	ARTE3	*Aristida ternipes*	0–5	–
	spidergrass	ARTEG	*Aristida ternipes var. gentilis*	0–5	–
	tobosagrass	PLMU3	*Pleuraphis mutica*	0–5	–
	alkali sacaton	SPAI	*Sporobolus airoides*	0–2	–
	Hall's panicgrass	PAHA	*Panicum hallii*	0–2	–
	whiplash pappusgrass	PAVA2	*Pappophorum vaginatum*	0–2	–
	sand dropseed	SPCR	*Sporobolus cryptandrus*	0–2	–
	mesa dropseed	SPFL2	*Sporobolus flexuosus*	0–2	–
	spike dropseed	SPCO4	*Sporobolus contractus*	0–1	–
	burrograss	SCBR2	*Scleropogon brevifolius*	0–1	–
	plains bristlegrass	SEVU2	*Setaria vulpiseta*	0–1	–
	Arizona cottontop	DICA8	*Digitaria californica*	0–1	–
	squirreltail	ELEL5	*Elymus elymoides*	0–1	–
	nineawn pappusgrass	ENDE	*Enneapogon desvauxii*	0–1	–
	Arizona muhly	MUAR3	*Muhlenbergia arizonica*	0–1	–
	New Mexico needlegrass	ACPE13	*Achnatherum perplexum*	0–1	–
	desert needlegrass	ACSP12	*Achnatherum speciosum*	0–1	–
3	**Annual grasses**			1–50	
	sixweeks grama	BOBA2	*Bouteloua barbata*	0–20	–
	prairie threeawn	AROL	*Aristida oligantha*	1–15	–
	needle grama	BOAR	*Bouteloua aristidoides*	0–10	–
	Rothrock's grama	BORO2	*Bouteloua rothrockii*	0–10	–
	sixweeks fescue	VUOC	*Vulpia octoflora*	0–10	–
	mucronate sprangeltop	LEPAB	*Leptochloa panicea ssp. brachiata*	0–5	–

	witchgrass	PACA6	*Panicum capillare*	0–5	–
	Mexican panicgrass	PAHI5	*Panicum hirticaule*	0–5	–
	sixweeks threeawn	ARAD	*Aristida adscensionis*	0–5	–
	Arizona brome	BRAR4	*Bromus arizonicus*	0–2	–
	canyon cupgrass	ERLE7	*Eriochloa lemmonii*	0–2	–
	desert lovegrass	ERPEM	*Eragrostis pectinacea var. miserrima*	0–2	–
	tufted lovegrass	ERPEP2	*Eragrostis pectinacea var. pectinacea*	0–2	–
	Bigelow's bluegrass	POBI	*Poa bigelovii*	0–2	–
	Arizona signalgrass	URAR	*Urochloa arizonica*	0–2	–
	delicate muhly	MUFR	*Muhlenbergia fragilis*	0–2	–
	littleseed muhly	MUMI	*Muhlenbergia microsperma*	0–2	–
	Mexican sprangletop	LEFUU	*Leptochloa fusca ssp. uninervia*	0–1	–
Forb					
4	**Perennial Forbs**			1–15	
	dwarf desertpeony	ACNA2	*Acourtia nana*	1–10	–
	Coues' cassia	SECO10	*Senna covesii*	0–5	–
	pricklyleaf dogweed	THAC	*Thymophylla acerosa*	0–5	–
	desert globemallow	SPAM2	*Sphaeralcea ambigua*	0–2	–
	slender janusia	JAGR	*Janusia gracilis*	0–2	–
	leatherweed	CRPO5	*Croton pottsii*	0–2	–
	bluedicks	DICA14	*Dichelostemma capitatum*	0–2	–
	weakleaf bur ragweed	AMCO3	*Ambrosia confertiflora*	0–2	–
	tuber anemone	ANTU	*Anemone tuberosa*	0–1	–
	narrowleaf silverbush	ARLA12	*Argythamnia lanceolata*	0–1	–
	New Mexico silverbush	ARNE2	*Argythamnia neomexicana*	0–1	–
	perennial rockcress	ARPE2	*Arabis perennans*	0–1	–

	rockcress				
	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	–
	whitemargin sandmat	CHAL11	*Chamaesyce albomarginata*	0–1	–
	desert trumpet	ERIN4	*Eriogonum inflatum*	0–1	–
	desert larkspur	DEPA	*Delphinium parishii*	0–1	–
	brownfoot	ACWR5	*Acourtia wrightii*	0–1	–
	poreleaf dogweed	ADPO2	*Adenophyllum porophyllum*	0–1	–
	trailing windmills	ALIN	*Allionia incarnata*	0–1	–
	Fendler's bladderpod	LEFE	*Lesquerella fendleri*	0–1	–
	Parry's false prairie-clover	MAPA7	*Marina parryi*	0–1	–
	lacy tansyaster	MAPIP4	*Machaeranthera pinnatifida ssp. pinnatifida var. pinnatifida*	0–1	–
	plains blackfoot	MELE2	*Melampodium leucanthum*	0–1	–
	wishbone-bush	MILAV	*Mirabilis laevis var. villosa*	0–1	–
	desert tobacco	NIOB	*Nicotiana obtusifolia*	0–1	–
	slender poreleaf	POGR5	*Porophyllum gracile*	0–1	–
	glandleaf milkwort	POMA7	*Polygala macradenia*	0–1	–
	brownplume wirelettuce	STPA4	*Stephanomeria pauciflora*	0–1	–
	silverleaf nightshade	SOEL	*Solanum elaeagnifolium*	0–1	–
	rue of the mountains	THTE2	*Thamnosma texana*	0–1	–
	branched noseburn	TRRA5	*Tragia ramosa*	0–1	–
5	**Annual forbs**			1–100	
	bristly fiddleneck	AMTE3	*Amsinckia tessellata*	0–15	–
	cryptantha	CRYPT	*Cryptantha*	0–15	–
	Esteve's pincushion	CHST	*Chaenactis stevioides*	0–10	–
	exserted Indian paintbrush	CAEXE	*Castilleja exserta ssp. exserta*	0–10	–

	yellow tackstem	CAPA7	*Calycoseris parryi*	0–10	–
	white tackstem	CAWR	*Calycoseris wrightii*	0–10	–
	western tansymustard	DEPI	*Descurainia pinnata*	0–10	–
	flatcrown buckwheat	ERDE6	*Eriogonum deflexum*	0–10	–
	miniature woollystar	ERDI2	*Eriastrum diffusum*	0–10	–
	thelypody	THELY	*Thelypodium*	0–10	–
	woolly tidestromia	TILA2	*Tidestromia lanuginosa*	0–10	–
	combseed	PECTO	*Pectocarya*	0–10	–
	manybristle chinchweed	PEPA2	*Pectis papposa*	0–10	–
	phacelia	PHACE	*Phacelia*	0–10	–
	desert Indianwheat	PLOV	*Plantago ovata*	0–10	–
	chia	SACO6	*Salvia columbariae*	0–5	–
	Nuttall's povertyweed	MONU	*Monolepis nuttalliana*	0–5	–
	lyreleaf jewelflower	STCA5	*Streptanthus carinatus*	0–5	–
	Gordon's bladderpod	LEGO	*Lesquerella gordonii*	0–5	–
	shaggyfruit pepperweed	LELA	*Lepidium lasiocarpum*	0–5	–
	intermediate pepperweed	LEVIM	*Lepidium virginicum var. medium*	0–5	–
	coastal bird's-foot trefoil	LOSAB	*Lotus salsuginosus var. brevivexillus*	0–5	–
	slender goldenweed	MAGR10	*Machaeranthera gracilis*	0–5	–
	Coulter's spiderling	BOCO2	*Boerhavia coulteri*	0–5	–
	hairy prairie clover	DAMO	*Dalea mollis*	0–2	–
	fringed redmaids	CACI2	*Calandrinia ciliata*	0–2	–
	American wild carrot	DAPU3	*Daucus pusillus*	0–2	–
	brittle spineflower	CHBR	*Chorizanthe brevicornu*	0–2	–
	hyssopleaf sandmat	CHHY3	*Chamaesyce hyssopifolia*	0–2	–

	sandmat				
	tanseyleaf tansyaster	MATA2	*Machaeranthera tanacetifolia*	0–2	–
	hairy desertsunflower	GECA2	*Geraea canescens*	0–2	–
	star gilia	GIST	*Gilia stellata*	0–2	–
	Coulter's lupine	LUSP2	*Lupinus sparsiflorus*	0–2	–
	sorrel buckwheat	ERPO4	*Eriogonum polycladon*	0–2	–
	Texas stork's bill	ERTE13	*Erodium texanum*	0–2	–
	California poppy	ESCAM	*Eschscholzia californica ssp. mexicana*	0–2	–
	woollyhead neststraw	STMI2	*Stylocline micropoides*	0–2	–
	Arizona poppy	KAGR	*Kallstroemia grandiflora*	0–2	–
	green carpetweed	MOVE	*Mollugo verticillata*	0–2	–
	desert evening primrose	OEPR	*Oenothera primiveris*	0–2	–
	Florida pellitory	PAFL3	*Parietaria floridana*	0–2	–
	doubleclaw	PRPA2	*Proboscidea parviflora*	0–1	–
	New Mexico plumeseed	RANE	*Rafinesquia neomexicana*	0–1	–
	sawtooth sage	SASU7	*Salvia subincisa*	0–1	–
	spreading fanpetals	SIAB	*Sida abutifolia*	0–1	–
	sleepy silene	SIAN2	*Silene antirrhina*	0–1	–
	Coulter's globemallow	SPCO2	*Sphaeralcea coulteri*	0–1	–
	bristly nama	NAHI	*Nama hispidum*	0–1	–
	glandular threadplant	NEGL	*Nemacladus glanduliferus*	0–1	–
	Arizona popcornflower	PLAR	*Plagiobothrys arizonicus*	0–1	–
	sand fringepod	THCU	*Thysanocarpus curvipes*	0–1	–
	Mexican fireplant	EUHE4	*Euphorbia heterophylla*	0–1	–
	common woolly sunflower	ERLA6	*Eriophyllum lanatum*	0–1	–
	sanddune wallflower	ERCA14	*Erysimum capitatum*	0–1	–
	crestrib morning-	IPCO2	*Ipomoea costellata*	0–1	–

	glory				
	southwestern pricklypoppy	ARPL3	*Argemone pleiacantha*	0–1	–
	milkvetch	ASTRA	*Astragalus*	0–1	–
	wheelscale saltbush	ATEL	*Atriplex elegans*	0–1	–
	soft prairie clover	DAMO2	*Dalea mollissima*	0–1	–
	hoary bowlesia	BOIN3	*Bowlesia incana*	0–1	–
	scrambled eggs	COAU2	*Corydalis aurea*	0–1	–
	annual agoseris	AGHE2	*Agoseris heterophylla*	0–1	–
	carelessweed	AMPA	*Amaranthus palmeri*	0–1	–
Shrub/Vine					
6	**Dominant shrub**			100–300	
	creosote bush	LATR2	*Larrea tridentata*	100–250	–
	whitethorn acacia	ACCO2	*Acacia constricta*	10–100	–
	viscid acacia	ACNE4	*Acacia neovernicosa*	0–50	–
	whitethorn acacia	ACCOP9	*Acacia constricta var. paucispina*	0–25	–
7	**Miscellaneous shrubs**			5–15	
	Wright's beebrush	ALWR	*Aloysia wrightii*	0–10	–
	mariola	PAIN2	*Parthenium incanum*	0–10	–
	jojoba	SICH	*Simmondsia chinensis*	0–10	–
	ocotillo	FOSP2	*Fouquieria splendens*	0–5	–
	western honey mesquite	PRGLT	*Prosopis glandulosa var. torreyana*	0–2	–
	button brittlebush	ENFR	*Encelia frutescens*	0–2	–
	catclaw acacia	ACGR	*Acacia greggii*	0–1	–
	fourwing saltbush	ATCA2	*Atriplex canescens*	0–1	–
	cattle saltbush	ATPO	*Atriplex polycarpa*	0–1	–
	shortleaf baccharis	BABR	*Baccharis brachyphylla*	0–1	–
	crucifixion thorn	CAHO3	*Canotia holacantha*	0–1	–
	Warnock's snakewood	COWA	*Condalia warnockii*	0–1	–
	oneseed juniper	JUMO	*Juniperus monosperma*	0–1	–
	crown of thorns	KOSP	*Koeberlinia spinosa*	0–1	–
	water jacket	LYAN	*Lycium andersonii*	0–1	–

	[illegible]	[illegible]	[illegible]	[illegible]	
	pale desert-thorn	LYPA	*Lycium pallidum*	0–1	–
	longleaf jointfir	EPTR	*Ephedra trifurca*	0–1	–
	American tarwort	FLCE	*Flourensia cernua*	0–1	–
	yellow paloverde	PAMI5	*Parkinsonia microphylla*	0–1	–
	Parish's goldeneye	VIPA14	*Viguiera parishii*	0–1	–
	lotebush	ZIOB	*Ziziphus obtusifolia*	0–1	–
8	**Half shrubs**			5–35	
	desert zinnia	ZIAC	*Zinnia acerosa*	1–20	–
	rough menodora	MESC	*Menodora scabra*	1–15	–
	whitestem paperflower	PSCO2	*Psilostrophe cooperi*	0–10	–
	woody crinklemat	TICA3	*Tiquilia canescens*	0–10	–
	burrobush	AMDU2	*Ambrosia dumosa*	0–10	–
	fairyduster	CAER	*Calliandra eriophylla*	0–5	–
	rayless goldenhead	ACSP	*Acamptopappus sphaerocephalus*	0–5	–
	broom snakeweed	GUSA2	*Gutierrezia sarothrae*	0–5	–
	littleleaf ratany	KRER	*Krameria erecta*	1–5	–
	winterfat	KRLA2	*Krascheninnikovia lanata*	0–5	–
	featherplume	DAFO	*Dalea formosa*	0–2	–
	threadleaf snakeweed	GUMI	*Gutierrezia microcephala*	0–1	–
	burroweed	ISTE2	*Isocoma tenuisecta*	0–1	–
9	**Succulents**			1–10	
	Christmas cactus	CYLE8	*Cylindropuntia leptocaulis*	0–2	–
	purple pricklypear	OPMA8	*Opuntia macrocentra*	0–2	–
	tulip pricklypear	OPPH	*Opuntia phaeacantha*	0–2	–
	banana yucca	YUBA	*Yucca baccata*	0–2	–
	soaptree yucca	YUEL	*Yucca elata*	0–1	–
	nightblooming cereus	PEGR3	*Peniocereus greggii*	0–1	–
	walkingstick cactus	CYSP8	*Cylindropuntia spinosior*	0–1	–
	common sotol	DAWH2	*Dasylirion wheeleri*	0–1	–
	[illegible]	[illegible]	[illegible]	[illegible]	

	Engelmann's hedgehog cactus	ECEN	*Echinocereus engelmannii*	0–1	–
	redspine fishhook cactus	ECER2	*Echinomastus erectocentrus*	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 nipple cactus	MAGR9	*Mammillaria grahamii*	0–1	–
	cactus apple	OPEN3	*Opuntia engelmannii*	0–1	–
	saguaro	CAGI10	*Carnegiea gigantea*	0–1	–
	buck-horn cholla	CYAC8	*Cylindropuntia acanthocarpa*	0–1	–

Animal community

This site offers little in the way of forage for livestock. Areas of bush muhly, black grama and threeawn are grazed on slopes less than 45%. Annual grasses and forbs offer limited grazing in wet winters. High pH, due to calcium carbonates in the soil, lower the availability of essential plant nutrients and reduce the palatability of grasses to livestock. Adjacent, non-limy sites will be overused before appreciable use is made of this site.
Wildlife on this site is limited to small mammals and birds and their associated predators. In areas where the site is adjacent to large stream bottoms or mountains, it can be a forage area for large mammals like mule deer and javalina.

Hydrological functions

Coarse textured soils with very gravelly surfaces make this site a poor producer of runoff.

Recreational uses

Hunting, horseback riding, hiking, photography, bird watching.

Other products

Gravel

Type locality

Location 1: Cochise County, AZ	
Township/Range/Section	T15S R19E S26

General legal description	Whitehouse Ranch

Contributors

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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	05/21/2025
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):

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5. **Number of gullies and erosion associated with gullies:**

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6. **Extent of wind scoured, blowouts and/or depositional areas:**

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7. **Amount of litter movement (describe size and distance expected to travel):**

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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):**

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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):**

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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:**

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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):**

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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:

    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 annual-production):**

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:**