

Ecological site R041XC315AZ Saline Bottom 12-16" p.z.

Accessed: 05/06/2024

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.

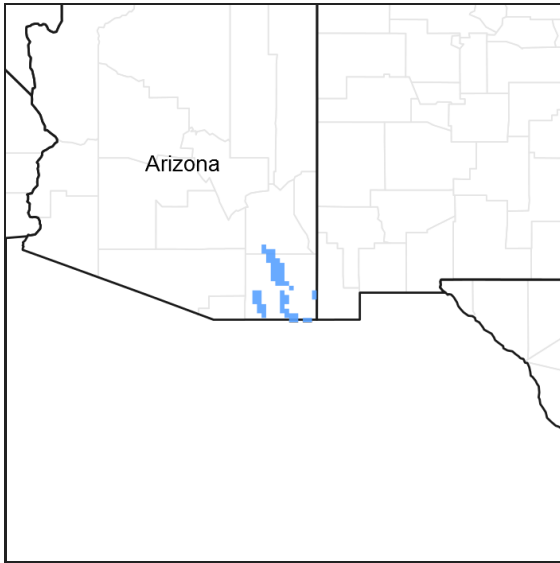


Figure 1. Mapped extent

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): 041X–Madrean Archipelago

AZ 41.3 – Chihuahuan – Sonoran Semidesert Grasslands

Elevations range from 3200 to 5000 feet and precipitation ranges from 12 to 16 inches per year. Vegetation includes mesquite, catclaw acacia, netleaf hackberry, palo verde, false mesquite, range ratany, fourwing saltbush, tarbush, littleleaf sumac, sideoats grama, black grama, plains lovegrass, cane beardgrass, tobosa, vine mesquite, threeawns, Arizona cottontop and bush muhly. The soil temperature regime is thermic and the soil moisture regime is ustic 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

R041XC312AZ	Loamy Bottom 12-16" p.z.
R041XC313AZ	Loamy Upland 12"-16" p.z.
R041XC319AZ	Sandy Loam Upland 12-16" p.z.

Similar sites

R041XB211AZ	Saline Bottom 8-12" p.z.
-------------	--------------------------

Table 1. Dominant plant species

Tree	Not specified
Shrub	Not specified
Herbaceous	(1) <i>sporobolus airoides</i> (2) <i>distichlis spicata</i>

Physiographic features

This site occurs in the middle elevations of the Madrean Basin and Range province in southeastern Arizona. It occurs on the alluvial fans flanking the Willcox playa and flood plains of streams like Whitewater Draw. It benefits on a sporadic basis from extra moisture received as runoff from the contributory watershed areas.

Table 2. Representative physiographic features

Landforms	(1) Alluvial fan (2) Flood plain (3) Flood-plain playa
Flooding duration	Very brief (4 to 48 hours) to brief (2 to 7 days)
Flooding frequency	Occasional to frequent
Ponding duration	Very brief (4 to 48 hours) to brief (2 to 7 days)
Ponding frequency	Rare to occasional
Elevation	1,219–1,372 m
Slope	0–3%
Aspect	Aspect is not a significant factor

Climatic features

Precipitation in this common resource area ranges from 12-16 inches yearly in the eastern part with elevations from 3600-5000 feet, and 13-17 inches in the western part where elevations are 3300-4500 feet. Winter-Summer rainfall ratios are 40-60% in the west and 30-70% in the east. Summer rains fall July-September, originate in the Gulf of Mexico and are convective, usually brief, intense thunderstorms. 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. Snow rarely lasts more than one day. May and June are the driest months of the year. Humidity is generally very low.

Temperatures are mild. Freezing temperatures are common at night from December-April; however temperatures during the day are frequently above 50 F. Occasionally in December-February, brief 0 F temperatures may be experienced some nights. During June, July and August, some days may exceed 100 F.

Cool season plants start growth in early spring and mature in early summer. Warm season plants take advantage of summer rains and are growing and nutritious July-September. Warm season grasses may remain green throughout the year.

Table 3. Representative climatic features

Frost-free period (average)	220 days
Freeze-free period (average)	0 days
Precipitation total (average)	406 mm

Influencing water features

There are no water features on this site.

Soil features

These soils are of various depth and textures. They have all formed in strongly saline and/or alkaline, basin floor or stream alluvium. Plant-soil moisture relationships are fair to poor due to infrequent flooding.

Soils mapped on this site include: SSA-665 Willcox area MU's Cc, Ce & Cg Cogswell, Ct Crot, Du Duncan, Dv Duncan variant, Go Gothard, St Stewart; SSA-671 Cochise county Douglas-Tombstone part MU's 29 Chorro Doubleabode & Gothard, 30 Chorro, 31 Cogswell C saline-sodic, 48 Doubleabode SL, 51 Gothard, 55 Elfrida CL saline-sodic, 66 Forrest CL saline-sodic, 69 Forrest SiL saline-sodic, 73 Gothard L, 74 Gothard SL, 80 Guest SiCL saline-sodic, 82 Guest SiC saline-sodic, 83 Cogswell saline-sodic & Guest saline-sodic, 104 Major SiL.

Table 4. Representative soil features

Family particle size	(1) Clayey
Drainage class	Somewhat poorly drained to well drained
Permeability class	Moderately slow to very slow
Soil depth	51–152 cm
Surface fragment cover <=3"	0–5%
Surface fragment cover >3"	0–1%
Available water capacity (0-101.6cm)	4.06–20.32 cm
Calcium carbonate equivalent (0-101.6cm)	5–50%
Electrical conductivity (0-101.6cm)	4–20 mmhos/cm
Sodium adsorption ratio (0-101.6cm)	5–30
Soil reaction (1:1 water) (0-101.6cm)	7.9–9
Subsurface fragment volume <=3" (Depth not specified)	0–5%
Subsurface fragment volume >3" (Depth not specified)	0–1%

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.

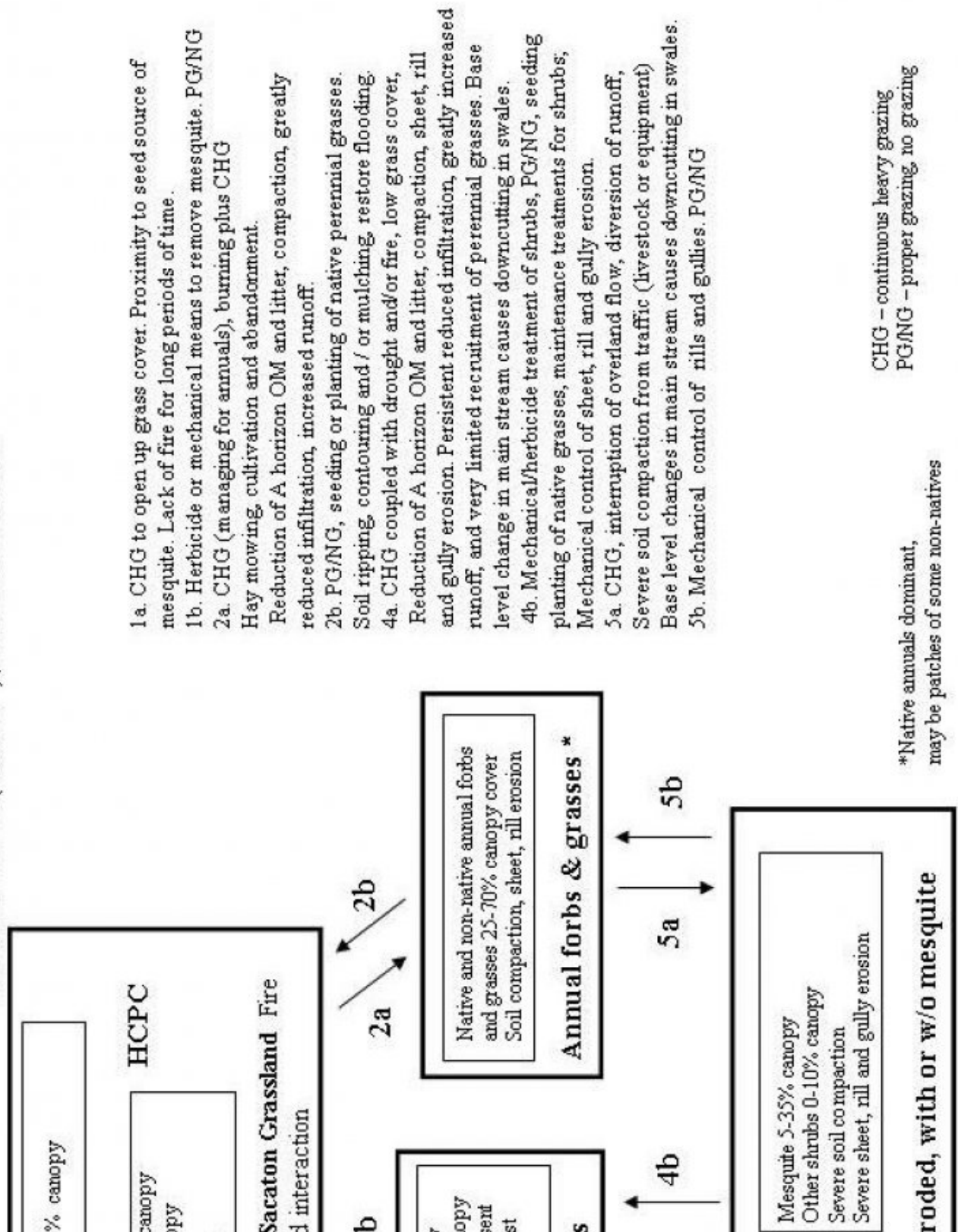
Production data provided in this site description is standardized to air dry weight at the end of the summer growing season. The plant communities described in this site description are based on near normal rainfall years.

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

State and transition model

MLRA 41-3 (12-16"), Saline Bottom



- 1a. CHG to open up grass cover. Proximity to seed source of mesquite. Lack of fire for long periods of time.
- 1b. Herbicide or mechanical means to remove mesquite. PG/NG
- 2a. CHG (managing for annuals), burning plus CHG
- Hay mowing, cultivation and abandonment.
- Reduction of A horizon OM and litter, compaction, greatly reduced infiltration, increased runoff.
- 2b. PG/NG, seeding or planting of native perennial grasses.
- Soil ripping, contouring and / or mulching, restore flooding.
- 4a. CHG coupled with drought and/or fire, low grass cover.
- Reduction of A horizon OM and litter, compaction, sheet, rill and gully erosion. Persistent reduced infiltration, greatly increased runoff, and very limited recruitment of perennial grasses. Base level change in main stream causes downcutting in swales.
- 4b. Mechanical/herbicide treatment of shrubs, PG/NG, seeding planting of native grasses, maintenance treatments for shrubs, Mechanical control of sheet, rill and gully erosion.
- 5a. CHG, interruption of overland flow, diversion of runoff, Severe soil compaction from traffic (livestock or equipment)
- Base level changes in main stream causes downcutting in swales.
- 5b. Mechanical control of rills and gullies. PG/NG

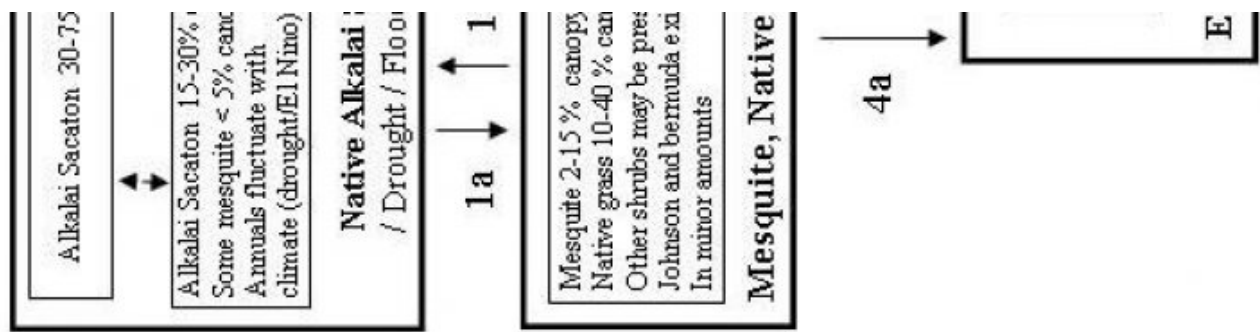


Figure 4. State and Transition, Saline Bottom 12-16" p.z.

**State 1
Historic Climax Plant Community**

**Community 1.1
Historic Climax Plant Community**

The potential plant community is dominated by a warm perennial grass; alkalai sacaton. Scattered trees give the site a savannah appearance. Several species of shrubs and perennial and annual forbs are unique to this site. This site is not flooded on a regular basis. Production will vary from what rainfall can produce in one year, to several times that when the site floods in another year. In large areas of this site there will be places where water concentrates and larger areas where runoff occurs. Flooding in "El Nino" years will be widespread and of long duration. As the plant community deteriorates from continuous heavy grazing and/or repeated burning alkalai sacaton can decrease in cover. Mesquite can increase to densities of 20-30 percent canopy without a noticeable decline in grass under-story. Tree size varies with soil texture and depth. Areas of the site flanking the Willcox playa are not subject to gully erosion as base level is controlled by the closed drainage system. However, areas which flank stream floodplains are subject to severe gully erosion if the base level of the stream is lowered and the grass cover is depleted by improper management. Natural fire was a feature of this and helped maintain the shrub free aspect of the potential plant community.

Table 5. Annual production by plant type

Plant Type	Low (Kg/Hectare)	Representative Value (Kg/Hectare)	High (Kg/Hectare)
Grass/Grasslike	455	1121	1961
Forb	7	34	140
Tree	6	11	112
Shrub/Vine	6	22	106
Total	474	1188	2319

Table 6. Soil surface cover

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

Water	0%
Bare ground	5-60%

Table 7. Canopy structure (% cover)

Height Above Ground (M)	Tree	Shrub/Vine	Grass/ Grasslike	Forb
<0.15	–	–	0-5%	0-5%
>0.15 <= 0.3	–	–	1-10%	0-5%
>0.3 <= 0.6	–	0-1%	15-50%	0-5%
>0.6 <= 1.4	–	0-2%	1-10%	0-1%
>1.4 <= 4	0-1%	0-1%	–	–
>4 <= 12	0-1%	–	–	–
>12 <= 24	–	–	–	–
>24 <= 37	–	–	–	–
>37	–	–	–	–

Figure 6. Plant community growth curve (percent production by month). AZ4134, 41.3 12-16" p.z. other sites. Growth begins in the spring, semi-dormancy occurs during the May through June drought, most growth occurs during the summer rains..

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	0	5	10	0	0	30	35	15	5	0	0

State 2

Mesquite, native grass

Community 2.1

Mesquite, native grass

Mesquite increases in the absence of fire for long periods of time. Alkalai sacaton can maintain good cover with up to 25% canopy of mesquite in occasionally flooded situations.

State 3

Annual grasses and forbs

Community 3.1

Annual grasses and forbs

This state occurs where the native plant community has been plowed and the site brought under cultivation (irrigated agriculture) and subsequently abandoned. Native and non-native annual forbs and grasses dominate the plant community. Shrubs like desert broom, jimmyweed and burroweed can be present.

State 4

Eroded, w/wo mesquite

Community 4.1

Eroded, w/wo mesquite

This state occurs where the site has been depleted of grass cover either due to cultivation or due to the interactions of fire, drought and continuous grazing. Base level changes of associated stream systems will cause gulling of the site in this condition. Areas of this state around the Willcox playa will not have gullies due to the base level control of

the playa, but will have severe sheet and rill erosion due to lack of plant cover, soil compaction and trailing. This state can have moderate to high amounts of mesquite present. Erosion networks cause large amounts of water to be rapidly drained from the site.

Additional community tables

Table 8. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production (Kg/Hectare)	Foliar Cover (%)
Grass/Grasslike					
1	Dominant perennial grass			448–1681	
	alkali sacaton	SPAI	<i>Sporobolus airoides</i>	448–1681	–
2	Miscellaneous perennial grasses			6–168	
	big sacaton	SPWR2	<i>Sporobolus wrightii</i>	0–84	–
	false Rhodes grass	TRCR9	<i>Trichloris crinita</i>	0–56	–
	saltgrass	DISP	<i>Distichlis spicata</i>	1–56	–
	vine mesquite	PAOB	<i>Panicum obtusum</i>	0–34	–
	scratchgrass	MUAS	<i>Muhlenbergia asperifolia</i>	0–28	–
	creeping muhly	MURE	<i>Muhlenbergia repens</i>	0–28	–
	spidergrass	ARTE3	<i>Aristida ternipes</i>	0–17	–
	spidergrass	ARTEG	<i>Aristida ternipes var. gentilis</i>	0–17	–
	blue grama	BOGR2	<i>Bouteloua gracilis</i>	0–17	–
	tobosagrass	PLMU3	<i>Pleuraphis mutica</i>	0–17	–
	hairy grama	BOHI2	<i>Bouteloua hirsuta</i>	0–11	–
	Rothrock's grama	BORO2	<i>Bouteloua rothrockii</i>	0–11	–
	knotgrass	PADI6	<i>Paspalum distichum</i>	0–11	–
	sedge	CAREX	<i>Carex</i>	0–6	–
	flatsedge	CYPER	<i>Cyperus</i>	0–6	–
	Parish's threeawn	ARPUP5	<i>Aristida purpurea var. parishii</i>	0–6	–
	burrograss	SCBR2	<i>Scleropogon brevifolius</i>	0–6	–
	plains bristlegrass	SEVU2	<i>Setaria vulpiseta</i>	0–6	–
	spike dropseed	SPCO4	<i>Sporobolus contractus</i>	0–6	–
	sand dropseed	SPCR	<i>Sporobolus cryptandrus</i>	0–6	–
3	Annual grasses			1–112	
	prairie threeawn	AROL	<i>Aristida oligantha</i>	1–28	–
	feather fingergrass	CHVI4	<i>Chloris virgata</i>	1–28	–
	tapertip cupgrass	ERACA	<i>Eriochloa acuminata var. acuminata</i>	0–17	–
	needle grama	BOAR	<i>Bouteloua aristidoides</i>	0–17	–
	mucronate sprangletop	LEPA6	<i>Leptochloa panicea</i>	0–17	–
	sticky sprangletop	LEVI5	<i>Leptochloa viscida</i>	0–17	–
	Mexican sprangletop	LEFUU	<i>Leptochloa fusca ssp. uninervia</i>	0–11	–
	tufted lovegrass	ERPE	<i>Eragrostis pectinacea</i>	0–6	–
	little barley	HOPU	<i>Hordeum pusillum</i>	0–6	–
	delicate muhly	MUFR	<i>Muhlenbergia fragilis</i>	0–6	–
	littleseed muhly	MUMI	<i>Muhlenbergia microsperma</i>	0–6	–
	witchgrass	PACA6	<i>Panicum capillare</i>	0–6	–

	Mexican panicgrass	PAHI5	<i>Panicum hirticaule</i>	0-6	-
	Bigelow's bluegrass	POBI	<i>Poa bigelovii</i>	0-6	-
	poverty dropseed	SPVA	<i>Sporobolus vaginiflorus</i>	0-6	-
	Arizona signalgrass	URAR	<i>Urochloa arizonica</i>	0-6	-
	sixweeks fescue	VUOC	<i>Vulpia octoflora</i>	0-6	-
	Arizona brome	BRAR4	<i>Bromus arizonicus</i>	0-6	-
	sixweeks threeawn	ARAD	<i>Aristida adscensionis</i>	0-6	-
Forb					
4	Perennial forbs			6-56	
	fingerleaf gourd	CUDI	<i>Cucurbita digitata</i>	1-17	-
	Missouri gourd	CUFO	<i>Cucurbita foetidissima</i>	0-17	-
	wealeaf bur ragweed	AMCO3	<i>Ambrosia confertiflora</i>	1-17	-
	alkali marsh aster	ALPA14	<i>Almutaster pauciflorus</i>	0-6	-
	scarlet spiderling	BOCO	<i>Boerhavia coccinea</i>	0-6	-
	spiny chloracantha	CHSP11	<i>Chloracantha spinosa</i>	0-6	-
	coyote gourd	CUPA	<i>Cucurbita palmata</i>	0-6	-
	beeblossom	GAURA	<i>Gaura</i>	0-6	-
	southwestern mock vervain	GLGO	<i>Glandularia gooddingii</i>	0-6	-
	small matweed	GUDE	<i>Guilleminea densa</i>	0-6	-
	Indian rushpea	HOGL2	<i>Hoffmannseggia glauca</i>	0-6	-
	lacy tansyaster	MAPI	<i>Machaeranthera pinnatifida</i>	0-6	-
	camphor pluchea	PLCA7	<i>Pluchea camphorata</i>	0-6	-
	canaigre dock	RUHY	<i>Rumex hymenosepalus</i>	0-6	-
	earleaf fanpetals	SITR	<i>Sida tragiifolia</i>	0-6	-
	silverleaf nightshade	SOEL	<i>Solanum elaeagnifolium</i>	0-6	-
	silky sophora	SONU	<i>Sophora nuttalliana</i>	0-6	-
	gooseberryleaf globemallow	SPGR2	<i>Sphaeralcea grossulariifolia</i>	0-6	-
	spear globemallow	SPHA	<i>Sphaeralcea hastulata</i>	0-6	-
	dwarf desertpeony	ACNA2	<i>Acourtia nana</i>	0-2	-
	clasping milkweed	ASAM	<i>Asclepias amplexicaulis</i>	0-1	-
5	Annual forbs			1-84	
	common sunflower	HEAN3	<i>Helianthus annuus</i>	0-56	-
	common sunflower	HEAN3	<i>Helianthus annuus</i>	0-56	-
	San Pedro matchweed	XAGY	<i>Xanthocephalum gymnospermoides</i>	0-34	-
	Nuttall's povertyweed	MONU	<i>Monolepis nuttalliana</i>	0-34	-
	salt heliotrope	HECU3	<i>Heliotropium curassavicum</i>	0-28	-
	wheelscale saltbush	ATEL	<i>Atriplex elegans</i>	0-28	-
	western tansymustard	DEPI	<i>Descurainia pinnata</i>	1-28	-
	wheelscale saltbush	ATEL	<i>Atriplex elegans</i>	1-28	-
	Wright's saltbush	ATWR	<i>Atriplex wrightii</i>	0-28	-
	carelessweed	AMPA	<i>Amaranthus palmeri</i>	0-28	-
	salt heliotrope	HECU3	<i>Heliotropium curassavicum</i>	0-28	-

seaside heliotrope	HECUO	<i>Heliotropium curassavicum var. oculatum</i>	0-28	-
Nuttall's povertyweed	MONU	<i>Monolepis nuttalliana</i>	0-28	-
San Pedro matchweed	XAGY	<i>Xanthocephalum gymnospermoides</i>	0-28	-
hairy desertsunflower	GECA2	<i>Geraea canescens</i>	0-17	-
intermediate pepperweed	LEVIM	<i>Lepidium virginicum var. medium</i>	0-17	-
longleaf false goldeneye	HELOA2	<i>Helioomeris longifolia var. annua</i>	0-17	-
longleaf false goldeneye	HELOL	<i>Helioomeris longifolia var. longifolia</i>	0-17	-
camphorweed	HESU3	<i>Heterotheca subaxillaris</i>	0-17	-
goosefoot	CHENO	<i>Chenopodium</i>	0-17	-
Wright's saltbush	ATWR	<i>Atriplex wrightii</i>	0-17	-
goosefoot	CHENO	<i>Chenopodium</i>	0-17	-
carelessweed	AMPA	<i>Amaranthus palmeri</i>	0-17	-
bristly fiddleneck	AMTE3	<i>Amsinckia tessellata</i>	0-17	-
intermediate pepperweed	LEVIM	<i>Lepidium virginicum var. medium</i>	0-17	-
western tansymustard	DEPI	<i>Descurainia pinnata</i>	0-17	-
longleaf false goldeneye	HELOA2	<i>Helioomeris longifolia var. annua</i>	0-17	-
hairy desertsunflower	GECA2	<i>Geraea canescens</i>	0-11	-
slender goldenweed	MAGR10	<i>Machaeranthera gracilis</i>	0-11	-
tanseyleaf tansyaster	MATA2	<i>Machaeranthera tanacetifolia</i>	0-11	-
golden crownbeard	VEEN	<i>Verbesina encelioides</i>	0-11	-
cryptantha	CRYPT	<i>Cryptantha</i>	0-11	-
golden crownbeard	VEEN	<i>Verbesina encelioides</i>	0-11	-
shaggyfruit pepperweed	LELA	<i>Lepidium lasiocarpum</i>	0-6	-
sleepy silene	SIAN2	<i>Silene antirrhina</i>	0-6	-
purslane	PORTU	<i>Portulaca</i>	0-6	-
crestrub morning-glory	IPCO2	<i>Ipomoea costellata</i>	0-6	-
Thurber's morning-glory	IPTH	<i>Ipomoea thurberi</i>	0-6	-
slender goldenweed	MAGR10	<i>Machaeranthera gracilis</i>	0-6	-
tanseyleaf tansyaster	MATA2	<i>Machaeranthera tanacetifolia</i>	0-6	-
desert Indianwheat	PLOV	<i>Plantago ovata</i>	0-6	-
New Mexico thistle	CINE	<i>Cirsium neomexicanum</i>	0-6	-
spurge	EUPHO	<i>Euphorbia</i>	0-6	-
fewflower beggarticks	BILE	<i>Bidens leptoccephala</i>	0-6	-
Coulter's spiderling	BOCO2	<i>Boerhavia coulteri</i>	0-6	-
crested anoda	ANCR2	<i>Anoda cristata</i>	0-6	-
New Mexico thistle	CINE	<i>Cirsium neomexicanum</i>	0-6	-
Coulter's spiderling	BOCO2	<i>Boerhavia coulteri</i>	0-6	-
aridland goosefoot	CHDE	<i>Chenopodium desiccatum</i>	0-6	-
fringed amaranth	AMFI	<i>Amaranthus fimbriatus</i>	0-6	-
sleepy silene	SIAN2	<i>Silene antirrhina</i>	0-6	-

	sleepy siene	SIANZ	<i>Siene anunnina</i>	0-6	-
	purslane	PORTU	<i>Portulaca</i>	0-6	-
	seaside heliotrope	HECUO	<i>Heliotropium curassavicum var. oculatum</i>	0-6	-
	longleaf false goldeneye	HELOL	<i>Heliomeris longifolia var. longifolia</i>	0-6	-
	crestrub morning-glory	IPCO2	<i>Ipomoea costellata</i>	0-6	-
	Thurber's morning-glory	IPTH	<i>Ipomoea thurberi</i>	0-6	-
	shaggyfruit pepperweed	LELA	<i>Lepidium lasiocarpum</i>	0-6	-
	sacred thorn-apple	DAWR2	<i>Datura wrightii</i>	0-2	-
	spurge	EUPHO	<i>Euphorbia</i>	0-2	-
	green carpetweed	MOVE	<i>Mollugo verticillata</i>	0-2	-
	manybristle chinchweed	PEPA2	<i>Pectis papposa</i>	0-2	-
	woolly plantain	PLPA2	<i>Plantago patagonica</i>	0-2	-
	desert unicorn-plant	PRAL4	<i>Proboscidea althaeifolia</i>	0-2	-
	doubleclaw	PRPA2	<i>Proboscidea parviflora</i>	0-2	-
	spreading fanpetals	SIAB	<i>Sida abutifolia</i>	0-2	-
	Wright's thistle	CIWR	<i>Cirsium wrightii</i>	0-2	-
	southwestern pricklypoppy	ARPL3	<i>Argemone pleiacantha</i>	0-2	-
	southwestern pricklypoppy	ARPL3	<i>Argemone pleiacantha</i>	0-2	-
	woolly plantain	PLPA2	<i>Plantago patagonica</i>	0-2	-
	green carpetweed	MOVE	<i>Mollugo verticillata</i>	0-2	-
	curlytop gumweed	GRNUA	<i>Grindelia nuda var. aphanactis</i>	0-2	-
	Coulter's horseweed	LACO13	<i>Laennecia coulteri</i>	0-2	-
	desert unicorn-plant	PRAL4	<i>Proboscidea althaeifolia</i>	0-2	-
	doubleclaw	PRPA2	<i>Proboscidea parviflora</i>	0-2	-
	spreading fanpetals	SIAB	<i>Sida abutifolia</i>	0-2	-
	vervain	VERBE	<i>Verbena</i>	0-2	-
	Wright's thistle	CIWR	<i>Cirsium wrightii</i>	0-1	-
	sacred thorn-apple	DAWR2	<i>Datura wrightii</i>	0-1	-
	American wild carrot	DAPU3	<i>Daucus pusillus</i>	0-1	-
Shrub/Vine					
6	Miscellaneous shrubs			6-84	
	fourwing saltbush	ATCA2	<i>Atriplex canescens</i>	1-28	-
	Mojave seablite	SUMO	<i>Suaeda moquinii</i>	0-28	-
	iodinebush	ALOC2	<i>Allenrolfea occidentalis</i>	0-17	-
	Griffiths' saltbush	ATGR2	<i>Atriplex griffithsii</i>	0-17	-
	cattle saltbush	ATPO	<i>Atriplex polycarpa</i>	0-17	-
	mule-fat	BASA4	<i>Baccharis salicifolia</i>	0-6	-
	shadscale saltbush	ATCO	<i>Atriplex confertifolia</i>	0-6	-
	rubber rabbitbrush	ERNAL	<i>Ericameria nauseosa ssp. consimilis var. leiosperma</i>	0-6	-
	pale desert-thorn	LYPA	<i>Lycium pallidum</i>	0-6	-

	broom dalea	PSSC6	<i>Psoralea scoparius</i>	0-6	-
	fringed twinevine	FUCYC	<i>Funaria cynanchoides ssp. cynanchoides</i>	0-2	-
	southern goldenbush	ISPL	<i>Isocoma pluriflora</i>	0-2	-
	lotebush	ZIOB	<i>Ziziphus obtusifolia</i>	0-2	-
	Drummond's clematis	CLDR	<i>Clematis drummondii</i>	0-2	-
	longleaf jointfir	EPTR	<i>Ephedra trifurca</i>	0-2	-
	desertbroom	BASA2	<i>Baccharis sarothroides</i>	0-1	-
	burroweed	ISTE2	<i>Isocoma tenuisecta</i>	0-1	-
	broom snakeweed	GUSA2	<i>Gutierrezia sarothrae</i>	0-1	-
7	Succulents			0-22	
	devil's cholla	GRKU	<i>Grusonia kunzei</i>	0-11	-
	cactus apple	OPEN3	<i>Opuntia engelmannii</i>	0-6	-
	candy barrelcactus	FEWI	<i>Ferocactus wislizeni</i>	0-6	-
	Arizona pencil cholla	CYAR14	<i>Cylindropuntia arbuscula</i>	0-6	-
	Christmas cactus	CYLE8	<i>Cylindropuntia leptocaulis</i>	0-6	-
	walkingstick cactus	CYSP8	<i>Cylindropuntia spinosior</i>	0-6	-
	staghorn cholla	CYVE3	<i>Cylindropuntia versicolor</i>	0-6	-
	hedgehog cactus	ECHIN3	<i>Echinocereus</i>	0-1	-
Tree					
8	Trees			6-112	
	western honey mesquite	PRGLT	<i>Prosopis glandulosa var. torreyana</i>	6-112	-
	velvet mesquite	PRVE	<i>Prosopis velutina</i>	0-28	-
	western soapberry	SASAD	<i>Sapindus saponaria var. drummondii</i>	0-17	-
	catclaw acacia	ACGR	<i>Acacia greggii</i>	0-17	-

Animal community

Alkalai sacaton usually does not green up until the first summer rains in July, so the green season is the summer rainy season. Grazing must be concentrated in the summer to effectively utilize the forage resource. Areas of the site should be fenced exclusively for best management of alkalai sacaton. Herbaceous forage on the site will be deficient in digestible protein in the fall-winter-spring period. Burning or mowing can be used to freshen old growth alkalai sacaton. Burning should only be used in years with good winter-spring rainfall and should be done in late February to early March. Spring re-growth should not be grazed until the first summer rains. Several species of atriplex occur on the site but in such small quantities that the site is not valuable as winter forage area.

Free water is available some of the year in playa areas, natural charcos, and discontinuous gullies. This factor, in combination with the mixture of wooded areas and open grassland, make the site home to a variety of wildlife, and important for a variety of migratory waterfowl including sandhill cranes.

Hydrological functions

This site occurs as grassy alluvial fans flanking the Willcox playa and as grassy floodplains along streams. It acts to absorb water and catch sediment from large flood events.

Recreational uses

Hunting, hiking, horseback riding, bird watching, photography

Wood products

In areas where mesquite has increased to moderate canopy levels (15-30%) there can be considerable fuel-wood available.

Inventory data references

Range 417s include 3 in good condition and 4 in fair condition.

Type locality

Location 1: Cochise County, AZ	
Township/Range/Section	T13S R25E S31
General legal description	Willcox Playa

Contributors

Dan Robinett
Larry D. Ellicott
Steve Barker
Unknown

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
Contact for lead author	NRCS Tucson Area Office
Date	03/04/2005
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:** None

3. **Number and height of erosional pedestals or terracettes:** None

4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** 5-15%

-
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):** All litter size classes staying in place.
-
8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):** Expect values of 1-3 in bare areas and 4-6 in grass and shrub canopies.
-
9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Weak granular; color is 7.5-10YR5/4 Dry, 7.5-10YR3/3 Moist; thickness to 5 inches.
-
10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Canopy 50-60%, basal 15%, litter 30%. 60% of cover is perennial mid grasses, 10% short grasses, 5-10% annual forbs, 5-10% annual grasses, 5% trees and shrubs, and 5% perennial forbs. 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 midgrasses > perennial short grasses > shrubs & trees > annual grasses & forbs > perennial forbs
- Sub-dominant:
- Other:
- Additional:
-
13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** 50% basal area loss of perennial grasses due to prolonged regional drought.
-
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):** 800 lbs/ac unfavorable precipitation; 1500 lbs/ac normal precipitation; 2500 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: Mesquite
-

17. **Perennial plant reproductive capability:** No affected due to regional prolonged drought.
-