

Ecological site R040XB221AZ Sandy Loam, Deep 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.

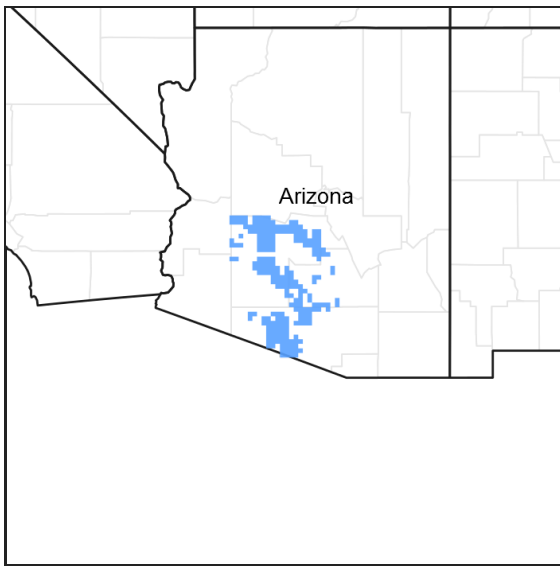


Figure 1. Mapped extent

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) <i>Parkinsonia microphylla</i> |
| Shrub | (1) <i>Larrea tridentata</i> var. <i>tridentata</i> (2) <i>Ambrosia deltoidea</i> |
| Herbaceous | (1) <i>Muhlenbergia porteri</i> (2) <i>Pleuraphis rigida</i> |

Physiographic features

This site occurs on fan terraces and stream terraces. Slopes are from 1% to 8%. Elevations range from 1000 to 2200 feet.

Table 2. Representative physiographic features

| | |
|-----------|--|
| Landforms | (1) Fan (2) Terrace (3) Stream terrace |
| Elevation | 1,000–2,200 ft |
| Slope | 1–8% |

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

These are deep soils formed in recent sandy alluvium of mixed origins. They are sandy loam throughout to at least moderate depths (30 inches). Cambic horizons are not clayey. Plant-soil moisture relationships are fair to good. They are non-calcareous in the surface 4 inches.

Soils mapped on this site include: SSA-645 Aguila-Carefree area MU's Antho-1, 2, 3 & 115, Anthony-5 & 7, Carrizo-29, Denure-29 & 58, Maripo-3, Momoli-29, 58 & 90; SSA-653 Gila Bend-Ajo area MU's Denure-22, Momoli XGrSL-49 & Momoli-53; SSA-659 Western Pinal county MU Denure-15 & 33; SSA-703 Tohono O'odham area MU's Denure-20 and Pahaka-20 & 43.

Table 4. Representative soil features

| | |
|-----------------|----------------|
| Surface texture | (1) Sandy loam |
|-----------------|----------------|

| | |
|--|------------------|
| Family particle size | (1) Loamy |
| Drainage class | Well drained |
| Permeability class | Moderately rapid |
| Soil depth | 60 in |
| Surface fragment cover <=3" | 1–10% |
| Surface fragment cover >3" | 0% |
| Available water capacity (0-40in) | 7.2–8.4 in |
| Calcium carbonate equivalent (0-40in) | 1–5% |
| Electrical conductivity (0-40in) | 0 mmhos/cm |
| Sodium adsorption ratio (0-40in) | 0 |
| Soil reaction (1:1 water) (0-40in) | 7.4–8.4 |
| Subsurface fragment volume <=3" (Depth not specified) | 1–10% |
| 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



State 1
Historical Climax Plant Community

Community 1.1
Historical Climax Plant Community

The potential plant community on this site is a mixture of desert trees, shrubs and cacti with minor amounts of perennial grasses and forbs. Annual grasses and forbs are important in this plant community. The aspect is shrubland. Perennial, herbaceous forage species like bush muhly and globemallow are quickly removed from the plant community with heavy grazing or from drought. A few introduced, cool season, annuals like; Mediterranean grass and London rocket mustard have become entrenched on areas of this site and compete with native annual forbs and grasses. The coarse textured soils make good use of both winter and summer rainfall, but are droughty for shallow rooted species like perennial grasses and forbs. The surfaces of these soils usually lack an effective cover of gravels. Plant populations of major species include; from 1 to 10 plants per acre for the tree group, 50 to 350 plants per acre for creosotebush and 500 to 1500 plants per acre for the bursage-ratany group. Trees on this site can reach fair size due to the deep coarse textured soils.

Table 5. Annual production by plant type

| Plant Type | Low (Lb/Acre) | Representative Value (Lb/Acre) | High (Lb/Acre) |
|-----------------|------------------|-----------------------------------|-------------------|
| Shrub/Vine | 300 | – | 350 |
| Grass/Grasslike | 25 | – | 100 |
| Forb | 50 | – | 75 |
| Tree | 25 | – | 50 |
| Total | 400 | – | 575 |

Additional community tables

Table 6. Community 1.1 plant community composition

| Group | Common Name | Symbol | Scientific Name | Annual Production (Lb/Acre) | Foliar Cover (%) |
|------------------------|---------------------|--------|---|--------------------------------|---------------------|
| Grass/Grasslike | | | | | |
| 1 | | | | 25–50 | |
| | bush muhly | MUPO2 | <i>Muhlenbergia porteri</i> | 10–40 | – |
| | big galleta | PLRI3 | <i>Pleuraphis rigida</i> | 0–10 | – |
| 2 | | | | 5–15 | |
| | Parish's threeawn | ARPUP5 | <i>Aristida purpurea</i> var. <i>parishii</i> | 0–3 | – |
| | Wright's threeawn | ARPUW | <i>Aristida purpurea</i> var. <i>wrightii</i> | 0–3 | – |
| | spidergrass | ARTE3 | <i>Aristida ternipes</i> | 0–1 | – |
| | spidergrass | ARTEG | <i>Aristida ternipes</i> var. <i>gentilis</i> | 0–1 | – |
| | low woollygrass | DAPU7 | <i>Dasyochloa pulchella</i> | 0–1 | – |
| | Arizona cottontop | DICA8 | <i>Digitaria californica</i> | 0–1 | – |
| | plains bristlegrass | SEVU2 | <i>Setaria vulpiseta</i> | 0–1 | – |
| | spike dropseed | SPCO4 | <i>Sporobolus contractus</i> | 0–1 | – |
| | sand dropseed | SPCR | <i>Sporobolus cryptandrus</i> | 0–1 | – |
| | mesa dropseed | SPFL2 | <i>Sporobolus flexuosus</i> | 0–1 | – |
| | slim tridens | TRMU | <i>Tridens muticus</i> | 0–1 | – |
| | desert needlegrass | ACSP12 | <i>Achnatherum speciosum</i> | 0–1 | – |
| | Santa Rita threeawn | ARCAG | <i>Aristida californica</i> var. <i>glabrata</i> | 0–1 | – |
| 3 | | | | 5–50 | |
| | sixweeks threeawn | ARAD | <i>Aristida adscensionis</i> | 0–10 | – |
| | prairie threeawn | AROL | <i>Aristida oligantha</i> | 0–10 | – |
| | needle grama | BOAR | <i>Bouteloua aristidoides</i> | 0–10 | – |
| | sixweeks grama | BOBA2 | <i>Bouteloua barbata</i> | 0–5 | – |
| | Rothrock's grama | BORO2 | <i>Bouteloua rothrockii</i> | 0–5 | – |
| | Eastwood fescue | VUMIC | <i>Vulpia microstachys</i> var. <i>ciliata</i> | 0–5 | – |
| | Pacific fescue | VUMIP | <i>Vulpia microstachys</i> var. <i>pauciflora</i> | 0–5 | – |
| | sixweeks fescue | VUOC | <i>Vulpia octoflora</i> | 0–5 | – |
| | Arizona brome | BRAR4 | <i>Bromus arizonicus</i> | 0–1 | – |
| | feather fingergrass | CHVI4 | <i>Chloris virgata</i> | 0–1 | – |
| | canyon cupgrass | ERLE7 | <i>Eriochloa lemmonii</i> | 0–1 | – |
| | desert lovegrass | ERPEM | <i>Eragrostis pectinacea</i> var. <i>miserrima</i> | 0–1 | – |
| | tufted lovegrass | ERPEP2 | <i>Eragrostis pectinacea</i> var. <i>pectinacea</i> | 0–1 | – |

| | | | | | |
|-------------|----------------------------|--------|--|-------|---|
| | Mexican sprangletop | LEFUU | <i>Leptochloa fusca ssp. uninervia</i> | 0-1 | - |
| | mucronate sprangletop | LEPA6 | <i>Leptochloa panicea</i> | 0-1 | - |
| | delicate muhly | MUFR | <i>Muhlenbergia fragilis</i> | 0-1 | - |
| | littleseed muhly | MUMI | <i>Muhlenbergia microsperma</i> | 0-1 | - |
| | Bigelow's bluegrass | POBI | <i>Poa bigelovii</i> | 0-1 | - |
| | Arizona signalgrass | URAR | <i>Urochloa arizonica</i> | 0-1 | - |
| 4 | | | | 5-10 | |
| | Alga | 2ALGA | <i>Alga</i> | 2-4 | - |
| | Fungus | 2FUNGI | <i>Fungus</i> | 1-2 | - |
| | Lichen | 2LICHN | <i>Lichen</i> | 1-2 | - |
| | Moss | 2MOSS | <i>Moss</i> | 1-2 | - |
| Forb | | | | | |
| 5 | | | | 50-75 | |
| | desert globemallow | SPAM2 | <i>Sphaeralcea ambigua</i> | 0-5 | - |
| | buckwheat | ERIOG | <i>Eriogonum</i> | 0-5 | - |
| | Coulter's globemallow | SPCO2 | <i>Sphaeralcea coulteri</i> | 0-3 | - |
| | Emory's globemallow | SPEM | <i>Sphaeralcea emoryi</i> | 0-3 | - |
| | globemallow | SPHAE | <i>Sphaeralcea</i> | 0-3 | - |
| | evening primrose | OENOT | <i>Oenothera</i> | 0-3 | - |
| | desert Indianwheat | PLOV | <i>Plantago ovata</i> | 0-3 | - |
| | desert trumpet | ERIN4 | <i>Eriogonum inflatum</i> | 0-2 | - |
| | combseed | PECTO | <i>Pectocarya</i> | 0-2 | - |
| | bristly fiddleneck | AMTE3 | <i>Amsinckia tessellata</i> | 0-2 | - |
| | milkweed | ASCLE | <i>Asclepias</i> | 0-1 | - |
| | milkvetch | ASTRA | <i>Astragalus</i> | 0-1 | - |
| | wheelscale saltbush | ATEL | <i>Atriplex elegans</i> | 0-1 | - |
| | wheelscale saltbush | ATELF | <i>Atriplex elegans var. fasciculata</i> | 0-1 | - |
| | Wright's saltbush | ATWR | <i>Atriplex wrightii</i> | 0-1 | - |
| | desert marigold | BAMU | <i>Baileya multiradiata</i> | 0-1 | - |
| | Coulter's spiderling | BOCO2 | <i>Boerhavia coulteri</i> | 0-1 | - |
| | spiderling | BOERH2 | <i>Boerhavia</i> | 0-1 | - |
| | hoary bowlesia | BOIN3 | <i>Bowlesia incana</i> | 0-1 | - |
| | exserted Indian paintbrush | CAEXE | <i>Castilleja exserta ssp. exserta</i> | 0-1 | - |
| | yellow tackstem | CAPA7 | <i>Calycoseris parryi</i> | 0-1 | - |
| | white tackstem | CAWR | <i>Calycoseris wrightii</i> | 0-1 | - |
| | whitemargin sandmat | CHAL11 | <i>Chamaesyce albomarginata</i> | 0-1 | - |
| | lambquarters | CHAL7 | <i>Chenopodium album</i> | 0-1 | - |
| | brittle spineflower | CHBR | <i>Chorizanthe brevicornu</i> | 0-1 | - |
| | aridland goosefoot | CHDE | <i>Chenopodium desiccatum</i> | 0-1 | - |
| | hyssopleaf sandmat | CHHY3 | <i>Chamaesyce hyssopifolia</i> | 0-1 | - |
| | devil's spineflower | CHRI | <i>Chorizanthe rigida</i> | 0-1 | - |
| | sand pygmyweed | CRCOC | <i>Crassula connata var. connata</i> | 0-1 | - |
| | cryptantha | CRYPT | <i>Cryptantha</i> | 0-1 | - |

| | | | | |
|------------------------|--------|---|-----|---|
| hairy prairie clover | DAMO | <i>Dalea mollis</i> | 0-1 | - |
| American wild carrot | DAPU3 | <i>Daucus pusillus</i> | 0-1 | - |
| western tansymustard | DEPI | <i>Descurainia pinnata</i> | 0-1 | - |
| touristplant | DIWI2 | <i>Dimorphocarpa wislizeni</i> | 0-1 | - |
| flatcrown buckwheat | ERDE6 | <i>Eriogonum deflexum</i> | 0-1 | - |
| miniature woollystar | ERDI2 | <i>Eriastrum diffusum</i> | 0-1 | - |
| erigenia | ERIGE | <i>Erigenia</i> | 0-1 | - |
| woolly sunflower | ERIOP2 | <i>Eriophyllum</i> | 0-1 | - |
| Texas stork's bill | ERTE13 | <i>Erodium texanum</i> | 0-1 | - |
| California poppy | ESCAM | <i>Eschscholzia californica</i> ssp. <i>mexicana</i> | 0-1 | - |
| pygmy poppy | ESMI | <i>Eschscholzia minutiflora</i> | 0-1 | - |
| spurge | EUPHO | <i>Euphorbia</i> | 0-1 | - |
| hairy desertsunflower | GECA2 | <i>Geraea canescens</i> | 0-1 | - |
| gilia | GILIA | <i>Gilia</i> | 0-1 | - |
| desert lily | HEUN2 | <i>Hesperocallis undulata</i> | 0-1 | - |
| Arizona poppy | KAGR | <i>Kallstroemia grandiflora</i> | 0-1 | - |
| Gordon's bladderpod | LEGO | <i>Lesquerella gordonii</i> | 0-1 | - |
| shaggyfruit pepperweed | LELA | <i>Lepidium lasiocarpum</i> | 0-1 | - |
| pepperweed | LEPID | <i>Lepidium</i> | 0-1 | - |
| foothill deervetch | LOHU2 | <i>Lotus humistratus</i> | 0-1 | - |
| Arizona lupine | LUAR4 | <i>Lupinus arizonicus</i> | 0-1 | - |
| Coulter's lupine | LUSP2 | <i>Lupinus sparsiflorus</i> | 0-1 | - |
| disc mayweed | MADI6 | <i>Matricaria discoidea</i> | 0-1 | - |
| lacy tansyaster | MAPIP4 | <i>Machaeranthera pinnatifida</i> ssp. <i>pinnatifida</i> var. <i>pinnatifida</i> | 0-1 | - |
| bristly nama | NAHI | <i>Nama hispidum</i> | 0-1 | - |
| glandular threadplant | NEGL | <i>Nemacladus glanduliferus</i> | 0-1 | - |
| manybristle chinchweed | PEPA2 | <i>Pectis papposa</i> | 0-1 | - |
| phacelia | PHACE | <i>Phacelia</i> | 0-1 | - |
| Florida pellitory | PAFL3 | <i>Parietaria floridana</i> | 0-1 | - |
| brownfoot | ACWR5 | <i>Acourtia wrightii</i> | 0-1 | - |
| weakleaf bur ragweed | AMCO3 | <i>Ambrosia confertiflora</i> | 0-1 | - |
| fringed amaranth | AMFI | <i>Amaranthus fimbriatus</i> | 0-1 | - |
| common fiddleneck | AMMEI2 | <i>Amsinckia menziesii</i> var. <i>intermedia</i> | 0-1 | - |
| carelessweed | AMPA | <i>Amaranthus palmeri</i> | 0-1 | - |
| woollyhead neststraw | STMI2 | <i>Stylocline micropoides</i> | 0-1 | - |
| brownplume wirelettuce | STPA4 | <i>Stephanomeria pauciflora</i> | 0-1 | - |
| sand fringe pod | THCU | <i>Thysanocarpus curvipes</i> | 0-1 | - |
| cutleaf thelypody | THLA | <i>Thelypodium laciniatum</i> | 0-1 | - |
| woolly tidestromia | TILA2 | <i>Tidestromia lanuginosa</i> | 0-1 | - |
| doubleclaw | PRPA2 | <i>Proboscidea parviflora</i> | 0-1 | - |
| New Mexico plumeseed | RANE | <i>Rafinesquia neomexicana</i> | 0-1 | - |
| sleepy silene | SIAN2 | <i>Silene antirrhina</i> | 0-1 | - |

Tree

| | | | | | |
|-------------------|-----------------------------|--------|--|---------|---|
| 6 | | | | 25–50 | |
| | yellow paloverde | PAMI5 | <i>Parkinsonia microphylla</i> | 5–15 | – |
| | velvet mesquite | PRVE | <i>Prosopis velutina</i> | 5–15 | – |
| | desert ironwood | OLTE | <i>Olneya tesota</i> | 2–10 | – |
| Shrub/Vine | | | | | |
| 7 | | | | 75–100 | |
| | creosote bush | LATR2 | <i>Larrea tridentata</i> | 75–100 | – |
| 8 | | | | 200–250 | |
| | triangle bur ragweed | AMDE4 | <i>Ambrosia deltoidea</i> | 50–100 | – |
| | burrobush | AMDU2 | <i>Ambrosia dumosa</i> | 40–80 | – |
| | white ratany | KRGR | <i>Krameria grayi</i> | 20–40 | – |
| | littleleaf ratany | KRER | <i>Krameria erecta</i> | 10–30 | – |
| 9 | | | | 5–10 | |
| | burrobrush | HYSA | <i>Hymenoclea salsola</i> | 0–2 | – |
| | alkali goldenbush | ISACA2 | <i>Isocoma acradenia</i> var. <i>acradenia</i> | 0–1 | – |
| | southern goldenbush | ISPL | <i>Isocoma pluriflora</i> | 0–1 | – |
| | burroweed | ISTE2 | <i>Isocoma tenuisecta</i> | 0–1 | – |
| | sangre de cristo | JACA2 | <i>Jatropha cardiophylla</i> | 0–1 | – |
| | Arizona nettlespurge | JACI | <i>Jatropha cinerea</i> | 0–1 | – |
| | water jacket | LYAN | <i>Lycium andersonii</i> | 0–1 | – |
| | Berlandier's wolfberry | LYBE | <i>Lycium berlandieri</i> | 0–1 | – |
| | Arizona desert-thorn | LYEX | <i>Lycium exsertum</i> | 0–1 | – |
| | whitestem paperflower | PSCO2 | <i>Psilostrophe cooperi</i> | 0–1 | – |
| | Mexican bladdersage | SAME | <i>Salazaria mexicana</i> | 0–1 | – |
| | arrow poison plant | SEBI9 | <i>Sebastiania bilocularis</i> | 0–1 | – |
| | desertrue | THAMN | <i>Thamnosma</i> | 0–1 | – |
| | lotebush | ZIOB | <i>Ziziphus obtusifolia</i> | 0–1 | – |
| | whitethorn acacia | ACCO2 | <i>Acacia constricta</i> | 0–1 | – |
| | rayless goldenhead | ACSP | <i>Acamptopappus sphaerocephalus</i> | 0–1 | – |
| | cattle saltbush | ATPO | <i>Atriplex polycarpa</i> | 0–1 | – |
| | desertbroom | BASA2 | <i>Baccharis sarothroides</i> | 0–1 | – |
| | brittlebush | ENFA | <i>Encelia farinosa</i> | 0–1 | – |
| | Nevada jointfir | EPNE | <i>Ephedra nevadensis</i> | 0–1 | – |
| | ocotillo | FOSP2 | <i>Fouquieria splendens</i> | 0–1 | – |
| | broom snakeweed | GUSA2 | <i>Gutierrezia sarothrae</i> | 0–1 | – |
| 10 | | | | 5–25 | |
| | Engelmann's hedgehog cactus | ECEN | <i>Echinocereus engelmannii</i> | 0–2 | – |
| | candy barrelcactus | FEWI | <i>Ferocactus wislizeni</i> | 0–2 | – |
| | beavertail pricklypear | OPBA2 | <i>Opuntia basilaris</i> | 0–1 | – |
| | senita cactus | PASC14 | <i>Pachycereus schottii</i> | 0–1 | – |
| | nightblooming cereus | PEGR3 | <i>Peniocereus greggii</i> | 0–1 | – |
| | organpipe cactus | STTH3 | <i>Stenocereus thurberi</i> | 0–1 | – |

Animal community

This site produces very little herbaceous forage for year round use. In wet winters the production of cool season annual forbs and grasses can be high and provides for considerable extra grazing capacity in the March-May season.

Water developments are very important to wildlife species on this site. Cover and diversity are lacking for the larger desert mammals. This site is home to a variety of small mammals, reptiles and their predators.

Other information

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

Type locality

| | |
|---------------------------------|--|
| Location 1: Maricopa County, AZ | |
| Township/Range/Section | T6N R14W S3 |
| General legal description | Phoenix FO - Cunningham Pass |
| Location 2: Maricopa County, AZ | |
| Township/Range/Section | T1N R8E S19 |
| General legal description | Chandler FO - Apache Junction |
| Location 3: Pinal County, AZ | |
| Township/Range/Section | T5S R7E S18 |
| General legal description | Casa Grande FO - Sacaton Mountain |
| Location 4: Pima County, AZ | |
| Township/Range/Section | T17S R1E S21 |
| General legal description | Sells FO - Kupk Hills |
| Location 5: Pima County, AZ | |
| Township/Range/Section | T14S R5W S28 |
| General legal description | Tucson FO - Organ Pipe National Monument |
| Location 6: Pima County, AZ | |
| Township/Range/Section | T12S R6E S15 |
| General legal description | Tucson FO - Aguirre Valley |
| Location 7: Maricopa County, AZ | |
| Township/Range/Section | T8S R2W S4 |
| General legal description | Buckeye FO - Sand Tank Valley |

Contributors

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Rangeland health reference sheet

Interpreting Indicators of Rangeland Health is a qualitative assessment protocol used to determine ecosystem condition based on benchmark characteristics described in the Reference Sheet. A suite of 17 (or more) indicators

are typically considered in an assessment. The ecological site(s) representative of an assessment location must be known prior to applying the protocol and must be verified based on soils and climate. Current plant community cannot be used to identify the ecological site.

| | |
|---|--|
| Author(s)/participant(s) | Dave Womack, Dan Robinett, Emilio Carrillo |
| 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 common and continuous in absence of high gravel cover.

- 2. Presence of water flow patterns:** Water flow patterns are common, continuous, and occupy 15-20% of area.

- 3. Number and height of erosional pedestals or terracettes:** Shrubs have symmetrical mounds caused by the actions of splash, erosion and rodent activity. There are no pedestals on rock or gravel fragments and no terracettes are present.

- 4. Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** 10-60%. Expect low values in dry years.

- 5. Number of gullies and erosion associated with gullies:** none

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

- 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.

- 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.

- 9. Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Weak thin platy to granular; 7.5-10YR6/4 dry, 7.5-10YR4/4 moist, to 2 inches thick.

- 10. Effect of community phase composition (relative proportion of different functional groups) and spatial**

distribution on infiltration and runoff: Canopy 15-25%. Herbaceous litter is present in some years and 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.

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: subshrubs > trees > large shrubs > winter annuals > summer annuals > perennial grasses and forbs > succulents > cryptogams (Note: In El Nino years, annual forbs and grasses are #1 in above ground weight.

Sub-dominant:

Other:

Additional:

13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** 0-50% canopy mortality on trees & shrubs, 90-100% 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):** 300 lbs/ac unfavorable precipitation; 500 lbs/ac normal precipitation; 750 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), schismus, filaree
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17. **Perennial plant reproductive capability:** Not impaired for shrubs, drought impaired for perennial grasses and forbs.
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