

Ecological site R041XB225AZ Sandstone / Mudstone Hills 8-12" p.z.

Accessed: 04/17/2024

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.

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

| | |
|-------------|-----------------------------------|
| R041XB207AZ | Limy Slopes 8-12" p.z. |
| R041XB208AZ | Limy Upland 8-12" p.z. |
| R041XB220AZ | Limestone Hills 8-12" p.z. |

Similar sites

| | |
|-------------|--------------------------|
| R041XB201AZ | Breaks 8-12" p.z. |
|-------------|--------------------------|

Table 1. Dominant plant species

| | |
|------------|---|
| Tree | (1) <i>canotia holacantha</i> |
| Shrub | (1) <i>acamptopappus sphaerocephalus</i> |
| Herbaceous | (1) <i>tridens muticus</i> (2) <i>aristida</i> |

Physiographic features

This site occurs in the lowest elevations of the Madrean Basin and Range province in southeastern Arizona. It occurs on steep escarpments, hill-slopes and ridge-tops. This site is characterized by highly eroded scarps with lenses of sandstone rock out-crop, intermingled with vegetated areas on more moderate slopes.

Table 2. Representative physiographic features

| | |
|--------------------|---|
| Landforms | (1) Hill (2) Ridge (3) Escarpment |
| Flooding frequency | None |
| Ponding frequency | None |
| Elevation | 2,600–4,000 ft |
| Slope | 10–75% |
| 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) | 0 days |
| Precipitation total (average) | 0 in |

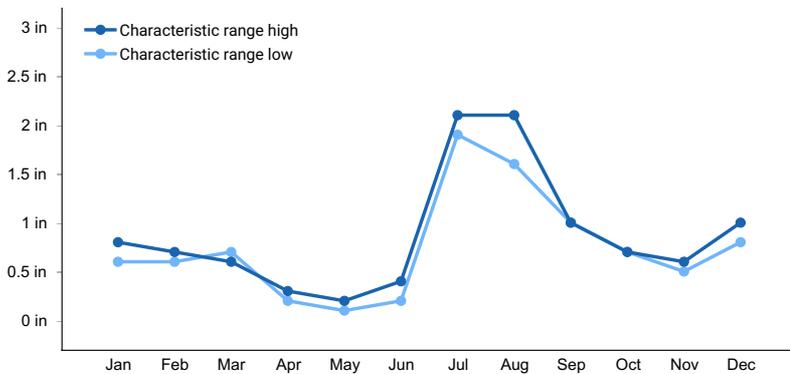


Figure 1. Monthly precipitation range

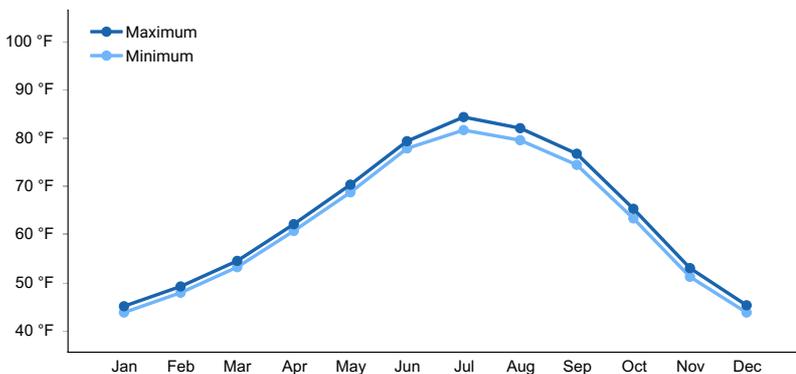


Figure 2. Monthly average minimum and maximum temperature

Influencing water features

There are no water features associated with this site.

Soil features

These are deep soils that are variable in texture, ranging from sandy loam to clayloam. They have formed in, mostly, unconsolidated mudstones and sandstones, formed on lacustrine deposits along the Gila river near San Carlos. The soils are calcareous and have soluble gypsum (1 to 10%) in the profile. Areas of sandstone rock outcrop occurs as thin (1-2 feet thick) ledges on steep slopes.

Soils mapped on this site include torriorthents and haplogypsid. THIS SITE is NOT CURRENTLY CORRELATED on a SOIL in any SSA in AZ.

Table 4. Representative soil features

| | |
|--|--|
| Surface texture | (1) Sandy loam (2) Silt loam (3) Clay loam |
| Family particle size | (1) Loamy |
| Drainage class | Well drained |
| Permeability class | Moderately rapid to slow |
| Soil depth | 60 in |
| Surface fragment cover <=3" | 5–35% |
| Surface fragment cover >3" | 1–15% |
| Available water capacity (0-40in) | 3.7–5.6 in |
| Calcium carbonate equivalent (0-40in) | 1–15% |
| Electrical conductivity (0-40in) | 0–3 mmhos/cm |
| Sodium adsorption ratio (0-40in) | 0–3 |
| Soil reaction (1:1 water) (0-40in) | 7.4–8.4 |
| Subsurface fragment volume <=3" (Depth not specified) | 5–35% |
| Subsurface fragment volume >3" (Depth not specified) | 1–5% |

Ecological dynamics

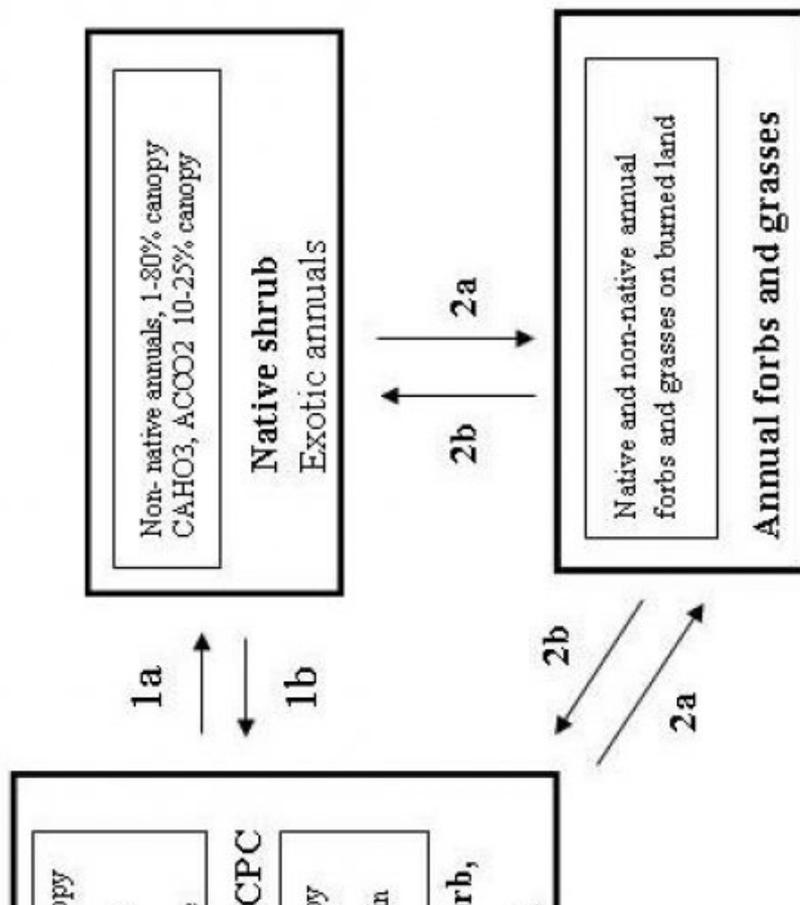
The plant communities found on an ecological site are naturally variable. Composition and production will vary with yearly conditions, location, aspect and the natural variability of the soils. The Historical Climax Plant Community represents the natural potential plant community found on relict or relatively 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

MLRA 41-2 (8-12''), Sandstone – Mudstone Hills



1a. Introduction of a seed source of non-natives. CHG, Possible competition of exotics with native species of forbs or grasses.

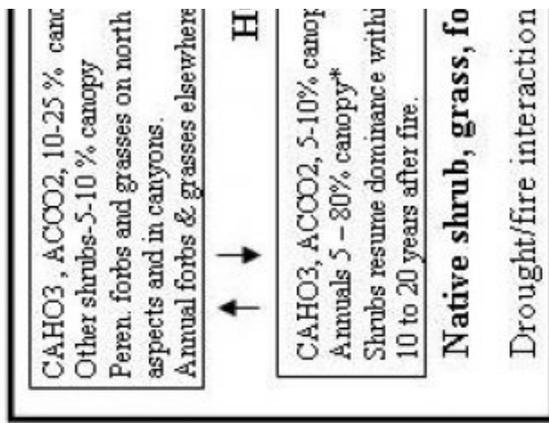
1b. Unknown

2a. Repeated fires from adjacent urban areas result in colonization by a mixture of native and non-native annual forbs and grasses.

2b. Unknown, possible seeding of shrubs like CAHO3, LATR and ACCO2, with fire protection.

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



*Native annuals don
may be patches of s

CHG - continuous her
PG/NG - proper grazi
CAHO3 - canotia, AC

Figure 3. State & Transition, Sandstone/Mudstone Hills 8-12

State 1 Historic Climax Plant Community

Community 1.1 Historic Climax Plant Community



Figure 4. Sandstone / Mudstone Hills 8-12" pz., HCPC

The native potential plant community found on this site is dominated by desert trees, especially canotia, and shrubs. Perennial grasses and herbs are found in minor amounts and fluctuate widely from wet to dry years.

Table 5. Annual production by plant type

| Plant Type | Low (Lb/Acre) | Representative Value (Lb/Acre) | High (Lb/Acre) |
|-----------------|------------------|-----------------------------------|-------------------|
| Tree | 5 | 35 | 200 |
| Grass/Grasslike | 17 | 55 | 170 |
| Shrub/Vine | 51 | 100 | 145 |
| Forb | 1 | 10 | 65 |
| Total | 74 | 200 | 580 |

Table 6. Soil surface cover

| | |
|-----------------------------------|--------|
| Tree basal cover | 0-1% |
| Shrub/vine/liana basal cover | 1-2% |
| Grass/grasslike basal cover | 0-1% |
| Forb basal cover | 0-1% |
| Non-vascular plants | 0% |
| Biological crusts | 1-10% |
| Litter | 5-35% |
| Surface fragments >0.25" and <=3" | 5-15% |
| Surface fragments >3" | 1-5% |
| Bedrock | 1-5% |
| Water | 0% |
| Bare ground | 30-85% |

Table 7. Canopy structure (% cover)

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

State 2

Shrubs, exotic annuals

Community 2.1

Shrubs, exotic annuals

This state occurs where non-native annual forbs and grasses have increased to dominate the herbaceous component of the plant community. Species include red brome, cheatgrass, filaree, purslane and Sahara mustard. Native annuals and perennial grasses and forbs exist in the plant community but are diminished in cover and diversity. The native tree and shrub cover is intact.

State 3 Annuals

Community 3.1 Annuals



Figure 6. Sandstone / Mudstone Hills 8-12" pz., annuals

This state occurs where repeated fires have eliminated desert shrubs and trees from the plant community. It occurs near residential areas where the chances of fires are much greater. Native and non-native annual forbs and grasses dominate the plant community.

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 | | | 15–100 | |
| | blue threeawn | ARPUN | <i>Aristida purpurea</i> var. <i>nealleyi</i> | 5–50 | – |
| | tobosagrass | PLMU3 | <i>Pleuraphis mutica</i> | 5–50 | – |
| | slim tridens | TRMU | <i>Tridens muticus</i> | 1–20 | – |
| | bush muhly | MUPO2 | <i>Muhlenbergia porteri</i> | 5–15 | – |
| | Parish's threeawn | ARPUP5 | <i>Aristida purpurea</i> var. <i>parishii</i> | 0–10 | – |
| 2 | Misc. perennial grasses | | | 1–20 | |
| | Indian ricegrass | ACHY | <i>Achnatherum hymenoides</i> | 0–10 | – |
| | desert needlegrass | ACSP12 | <i>Achnatherum speciosum</i> | 0–10 | – |
| | low woollygrass | DAPU17 | <i>Dasychloa pulchella</i> | 1–10 | – |

| | | | | | |
|-------------|-------------------------|--------|--|------|---|
| | low woollygrass | SPAI | <i>Sparganium purpureum</i> | 0-5 | - |
| | alkali sacaton | SPAI | <i>Sporobolus airoides</i> | 0-5 | - |
| | spike dropseed | SPCO4 | <i>Sporobolus contractus</i> | 0-5 | - |
| | purple threeawn | ARPU9 | <i>Aristida purpurea</i> | 0-5 | - |
| | spidergrass | ARTE3 | <i>Aristida ternipes</i> | 0-5 | - |
| | spidergrass | ARTEG | <i>Aristida ternipes var. gentilis</i> | 0-5 | - |
| | sideoats grama | BOCU | <i>Bouteloua curtipendula</i> | 0-5 | - |
| | black grama | BOER4 | <i>Bouteloua eriopoda</i> | 0-5 | - |
| | burrograss | SCBR2 | <i>Scleropogon brevifolius</i> | 0-5 | - |
| | big sacaton | SPWR2 | <i>Sporobolus wrightii</i> | 0-5 | - |
| | false Rhodes grass | TRCR9 | <i>Trichloris crinita</i> | 0-2 | - |
| | poverty threeawn | ARDI5 | <i>Aristida divaricata</i> | 0-2 | - |
| | sand dropseed | SPCR | <i>Sporobolus cryptandrus</i> | 0-2 | - |
| | mesa dropseed | SPFL2 | <i>Sporobolus flexuosus</i> | 0-2 | - |
| | New Mexico feathergrass | HENE5 | <i>Hesperostipa neomexicana</i> | 0-2 | - |
| | whiplash pappusgrass | PAVA2 | <i>Pappophorum vaginatum</i> | 0-2 | - |
| | Arizona cottontop | DICA8 | <i>Digitaria californica</i> | 0-1 | - |
| | nineawn pappusgrass | ENDE | <i>Enneapogon desvauxii</i> | 0-1 | - |
| | plains bristlegrass | SEVU2 | <i>Setaria vulpiseta</i> | 0-1 | - |
| 3 | Annual grasses | | | 1-50 | |
| | needle grama | BOAR | <i>Bouteloua aristidoides</i> | 0-20 | - |
| | sixweeks grama | BOBA2 | <i>Bouteloua barbata</i> | 0-20 | - |
| | Rothrock's grama | BORO2 | <i>Bouteloua rothrockii</i> | 0-10 | - |
| | Eastwood fescue | VUMIC | <i>Vulpia microstachys var. ciliata</i> | 0-10 | - |
| | desert fescue | VUMIM | <i>Vulpia microstachys var. microstachys</i> | 0-10 | - |
| | sixweeks fescue | VUOC | <i>Vulpia octoflora</i> | 1-10 | - |
| | sixweeks threeawn | ARAD | <i>Aristida adscensionis</i> | 0-5 | - |
| | prairie threeawn | AROL | <i>Aristida oligantha</i> | 0-5 | - |
| | mucronate sprangletop | LEPAB | <i>Leptochloa panicea ssp. brachiata</i> | 0-5 | - |
| | delicate muhly | MUFR | <i>Muhlenbergia fragilis</i> | 0-2 | - |
| | littleseed muhly | MUMI | <i>Muhlenbergia microsperma</i> | 0-2 | - |
| | witchgrass | PACA6 | <i>Panicum capillare</i> | 0-2 | - |
| | Mexican panicgrass | PAHI5 | <i>Panicum hirticaule</i> | 0-2 | - |
| | Bigelow's bluegrass | POBI | <i>Poa bigelovii</i> | 0-2 | - |
| | Arizona signalgrass | URAR | <i>Urochloa arizonica</i> | 0-2 | - |
| | Arizona brome | BRAR4 | <i>Bromus arizonicus</i> | 0-2 | - |
| | feather fingergrass | CHVI4 | <i>Chloris virgata</i> | 0-2 | - |
| | canyon cupgrass | ERLE7 | <i>Eriochloa lemmonii</i> | 0-2 | - |
| | Mexican lovegrass | ERME | <i>Eragrostis mexicana</i> | 0-2 | - |
| | desert lovegrass | ERPEM | <i>Eragrostis pectinacea var. miserrima</i> | 0-2 | - |
| | tufted lovegrass | ERPEP2 | <i>Eragrostis pectinacea var. pectinacea</i> | 0-2 | - |
| | Mexican sprangletop | LEFUU | <i>Leptochloa fusca ssp. uninervia</i> | 0-1 | - |
| Forb | | | | | |
| 4 | Perennial forbs | | | 1-15 | |

| | | | | | |
|---|------------------------------|--------|--|------|---|
| | dwarf desertpeony | ACNA2 | <i>Acourtia nana</i> | 1–5 | – |
| | lacy tansyaster | MAPIP4 | <i>Machaeranthera pinnatifida</i> ssp. <i>pinnatifida</i> var. <i>pinnatifida</i> | 0–5 | – |
| | pricklyleaf dogweed | THAC | <i>Thymophylla acerosa</i> | 0–5 | – |
| | glandleaf milkwort | POMA7 | <i>Polygala macradenia</i> | 0–2 | – |
| | desert globemallow | SPAM2 | <i>Sphaeralcea ambigua</i> | 0–2 | – |
| | weakleaf bur ragweed | AMCO3 | <i>Ambrosia confertiflora</i> | 0–2 | – |
| | stinging serpent | CESI | <i>Cevallia sinuata</i> | 0–2 | – |
| | whitemargin sandmat | CHAL11 | <i>Chamaesyce albomarginata</i> | 0–1 | – |
| | leatherweed | CRPO5 | <i>Croton pottsii</i> | 0–1 | – |
| | bluedicks | DICA14 | <i>Dichelostemma capitatum</i> | 0–1 | – |
| | spreading fleabane | ERDI4 | <i>Erigeron divergens</i> | 0–1 | – |
| | desert trumpet | ERIN4 | <i>Eriogonum inflatum</i> | 0–1 | – |
| | southwestern mock vervain | GLGO | <i>Glandularia gooddingii</i> | 0–1 | – |
| | paleface | HIDE | <i>Hibiscus denudatus</i> | 0–1 | – |
| | San Pedro daisy | LAPO4 | <i>Lasianthaea podocephala</i> | 0–1 | – |
| | Fendler's bladderpod | LEFE | <i>Lesquerella fendleri</i> | 0–1 | – |
| | tuber anemone | ANTU | <i>Anemone tuberosa</i> | 0–1 | – |
| | perennial rockcress | ARPE2 | <i>Arabis perennans</i> | 0–1 | – |
| | dense ayenia | AYMI | <i>Ayenia microphylla</i> | 0–1 | – |
| | hairyseed bahia | BAAB | <i>Bahia absinthifolia</i> | 0–1 | – |
| | desert marigold | BAMU | <i>Baileya multiradiata</i> | 0–1 | – |
| | desert mariposa lily | CAKE | <i>Calochortus kennedyi</i> | 0–1 | – |
| | sego lily | CANU3 | <i>Calochortus nuttallii</i> | 0–1 | – |
| | brownplume wirelettuce | STPA4 | <i>Stephanomeria pauciflora</i> | 0–1 | – |
| | Coues' cassia | SECO10 | <i>Senna covesii</i> | 0–1 | – |
| | silverleaf nightshade | SOEL | <i>Solanum elaeagnifolium</i> | 0–1 | – |
| | wishbone-bush | MILAV | <i>Mirabilis laevis</i> var. <i>villosa</i> | 0–1 | – |
| | desert tobacco | NIOB | <i>Nicotiana obtusifolia</i> | 0–1 | – |
| | brownfoot | ACWR5 | <i>Acourtia wrightii</i> | 0–1 | – |
| | trailing windmills | ALIN | <i>Allionia incarnata</i> | 0–1 | – |
| | rue of the mountains | THTE2 | <i>Thamnosma texana</i> | 0–1 | – |
| | branched noseburn | TRRA5 | <i>Tragia ramosa</i> | 0–1 | – |
| 5 | Annual forbs | | | 0–50 | |
| | western tansymustard | DEPI | <i>Descurainia pinnata</i> | 0–10 | – |
| | flatcrown buckwheat | ERDE6 | <i>Eriogonum deflexum</i> | 0–10 | – |
| | desert Indianwheat | PLOV | <i>Plantago ovata</i> | 0–10 | – |
| | miniature woollystar | ERDI2 | <i>Eriastrum diffusum</i> | 0–5 | – |
| | cryptantha | CRYPT | <i>Cryptantha</i> | 0–5 | – |
| | Gordon's bladderpod | LEGO | <i>Lesquerella gordonii</i> | 0–5 | – |
| | shaggyfruit pepperweed | LELA | <i>Lepidium lasiocarpum</i> | 0–5 | – |
| | intermediate pepperweed | LEVIM | <i>Lepidium virginicum</i> var. <i>medium</i> | 0–5 | – |

| | | | | |
|-----------------------------|--------|--|-----|---|
| coastal bird's-foot trefoil | LOSAB | <i>Lotus salsuginosus</i> var. <i>brevivexillus</i> | 0-5 | - |
| Nuttall's povertyweed | MONU | <i>Monolepis nuttalliana</i> | 0-5 | - |
| slender goldenweed | MAGR10 | <i>Machaeranthera gracilis</i> | 0-5 | - |
| carelessweed | AMPA | <i>Amaranthus palmeri</i> | 0-5 | - |
| bristly fiddleneck | AMTE3 | <i>Amsinckia tessellata</i> | 0-5 | - |
| wheelscale saltbush | ATEL | <i>Atriplex elegans</i> | 0-5 | - |
| Coulter's spiderling | BOCO2 | <i>Boerhavia coulteri</i> | 0-5 | - |
| fringed redmaids | CACI2 | <i>Calandrinia ciliata</i> | 0-2 | - |
| tanseyleaf tansyaster | MATA2 | <i>Machaeranthera tanacetifolia</i> | 0-2 | - |
| phacelia | PHACE | <i>Phacelia</i> | 0-2 | - |
| desert evening primrose | OEPR | <i>Oenothera primiveris</i> | 0-2 | - |
| Florida pellitory | PAFL3 | <i>Parietaria floridana</i> | 0-2 | - |
| combseed | PECTO | <i>Pectocarya</i> | 0-2 | - |
| green carpetweed | MOVE | <i>Mollugo verticillata</i> | 0-2 | - |
| Coulter's lupine | LUSP2 | <i>Lupinus sparsiflorus</i> | 0-2 | - |
| hairy prairie clover | DAMO | <i>Dalea mollis</i> | 0-2 | - |
| American wild carrot | DAPU3 | <i>Daucus pusillus</i> | 0-2 | - |
| hairy desertsunflower | GECA2 | <i>Geraea canescens</i> | 0-2 | - |
| star gilia | GIST | <i>Gilia stellata</i> | 0-2 | - |
| Arizona poppy | KAGR | <i>Kallstroemia grandiflora</i> | 0-2 | - |
| sorrel buckwheat | ERPO4 | <i>Eriogonum polycladon</i> | 0-2 | - |
| Texas stork's bill | ERTE13 | <i>Erodium texanum</i> | 0-2 | - |
| California poppy | ESCAM | <i>Eschscholzia californica</i> ssp. <i>mexicana</i> | 0-2 | - |
| white tackstem | CAWR | <i>Calycoseris wrightii</i> | 0-2 | - |
| brittle spineflower | CHBR | <i>Chorizanthe brevicornu</i> | 0-2 | - |
| hyssopleaf sandmat | CHHY3 | <i>Chamaesyce hyssopifolia</i> | 0-2 | - |
| Esteve's pincushion | CHST | <i>Chaenactis stevioides</i> | 0-2 | - |
| woollyhead neststraw | STMI2 | <i>Stylocline micropoides</i> | 0-2 | - |
| woolly tidestromia | TILA2 | <i>Tidestromia lanuginosa</i> | 0-2 | - |
| 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 | - |
| Coulter's globemallow | SPCO2 | <i>Sphaeralcea coulteri</i> | 0-1 | - |
| common woolly sunflower | ERLA6 | <i>Eriophyllum lanatum</i> | 0-1 | - |
| Mexican fireplant | EUHE4 | <i>Euphorbia heterophylla</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 | - |
| Arizona popcornflower | PLAR | <i>Plagiobothrys arizonicus</i> | 0-1 | - |
| whitestem blazingstar | MEAL6 | <i>Mentzelia albicaulis</i> | 0-1 | - |
| exserted Indian paintbrush | CAEXE | <i>Castilleja exserta</i> ssp. <i>exserta</i> | 0-1 | - |
| yellow tackstem | CAPA7 | <i>Calycoseris parryi</i> | 0-1 | - |
| hoarv bowlesia | BOIN3 | <i>Bowlesia incana</i> | 0-1 | - |

| | | | | | |
|-------------------|-----------------------------|--------|---|--------|---|
| | milkvetch | ASTRA | <i>Astragalus</i> | 0–1 | – |
| Shrub/Vine | | | | | |
| 6 | Dominant shrubs | | | 50–100 | |
| | whitethorn acacia | ACCO2 | <i>Acacia constricta</i> | 10–50 | – |
| | creosote bush | LATR2 | <i>Larrea tridentata</i> | 10–50 | – |
| | catclaw acacia | ACGR | <i>Acacia greggii</i> | 1–20 | – |
| | viscid acacia | ACNE4 | <i>Acacia neovernicosa</i> | 0–20 | – |
| | longleaf jointfir | EPTR | <i>Ephedra trifurca</i> | 0–10 | – |
| | ocotillo | FOSP2 | <i>Fouquieria splendens</i> | 0–10 | – |
| | jojoba | SICH | <i>Simmondsia chinensis</i> | 0–10 | – |
| 7 | Miscellaneous shrubs | | | 0–15 | |
| | Wright's beebrush | ALWR | <i>Aloysia wrightii</i> | 0–5 | – |
| | mariola | PAIN2 | <i>Parthenium incanum</i> | 0–5 | – |
| | western honey mesquite | PRGLT | <i>Prosopis glandulosa var. torreyana</i> | 0–2 | – |
| | Parish's goldeneye | VIPA14 | <i>Viguiera parishii</i> | 0–1 | – |
| | lotebush | ZIOB | <i>Ziziphus obtusifolia</i> | 0–1 | – |
| | fourwing saltbush | ATCA2 | <i>Atriplex canescens</i> | 0–1 | – |
| | cattle saltbush | ATPO | <i>Atriplex polycarpa</i> | 0–1 | – |
| | brittlebush | ENFA | <i>Encelia farinosa</i> | 0–1 | – |
| | button brittlebush | ENFR | <i>Encelia frutescens</i> | 0–1 | – |
| | American tarwort | FLCE | <i>Flourensia cernua</i> | 0–1 | – |
| | crown of thorns | KOSP | <i>Koeberlinia spinosa</i> | 0–1 | – |
| | water jacket | LYAN | <i>Lycium andersonii</i> | 0–1 | – |
| | pale desert-thorn | LYPA | <i>Lycium pallidum</i> | 0–1 | – |
| 8 | Half shrubs | | | 1–20 | |
| | Eastern Mojave buckwheat | ERFA2 | <i>Eriogonum fasciculatum</i> | 0–15 | – |
| | rayless goldenhead | ACSP | <i>Acamptopappus sphaerocephalus</i> | 0–10 | – |
| | fairyduster | CAER | <i>Calliandra eriophylla</i> | 0–5 | – |
| | broom snakeweed | GUSA2 | <i>Gutierrezia sarothrae</i> | 0–5 | – |
| | littleleaf ratany | KRER | <i>Krameria erecta</i> | 0–5 | – |
| | desert zinnia | ZIAC | <i>Zinnia acerosa</i> | 0–5 | – |
| | rough menodora | MESC | <i>Menodora scabra</i> | 0–5 | – |
| | whitestem paperflower | PSCO2 | <i>Psilostrophe cooperi</i> | 0–2 | – |
| | winterfat | KRLA2 | <i>Krascheninnikovia lanata</i> | 0–1 | – |
| | threadleaf snakeweed | GUMI | <i>Gutierrezia microcephala</i> | 0–1 | – |
| | burrobush | AMDU2 | <i>Ambrosia dumosa</i> | 0–1 | – |
| | resinleaf brickellbush | BRBA2 | <i>Brickellia baccharidea</i> | 0–1 | – |
| 9 | Succulents | | | 0–10 | |
| | banana yucca | YUBA | <i>Yucca baccata</i> | 1–10 | – |
| | common sotol | DAWH2 | <i>Dasyilirion wheeleri</i> | 0–5 | – |
| | soaptree yucca | YUEL | <i>Yucca elata</i> | 0–2 | – |
| | Engelmann's hedgehog cactus | ECEN | <i>Echinocereus engelmannii</i> | 0–1 | – |

| | | | | | |
|-------------|----------------------|-------|------------------------------------|--------|---|
| | candy barrelcactus | FEWI | <i>Ferocactus wislizeni</i> | 0–1 | – |
| | devil's cholla | GRKU | <i>Grusonia kunzei</i> | 0–1 | – |
| | cactus apple | OPEN3 | <i>Opuntia engelmannii</i> | 0–1 | – |
| | purple pricklypear | OPMA8 | <i>Opuntia macrocentra</i> | 0–1 | – |
| | tulip pricklypear | OPPH | <i>Opuntia phaeacantha</i> | 0–1 | – |
| | nightblooming cereus | PEGR3 | <i>Peniocereus greggii</i> | 0–1 | – |
| | buck-horn cholla | CYAC8 | <i>Cylindropuntia acanthocarpa</i> | 0–1 | – |
| | Christmas cactus | CYLE8 | <i>Cylindropuntia leptocaulis</i> | 0–1 | – |
| | walkingstick cactus | CYSP8 | <i>Cylindropuntia spinosior</i> | 0–1 | – |
| Tree | | | | | |
| 10 | Dominant tree | | | 5–200 | |
| | crucifixion thorn | CAHO3 | <i>Canotia holacantha</i> | 10–180 | – |
| | oneseed juniper | JUMO | <i>Juniperus monosperma</i> | 0–25 | – |

Animal community

This site is a poor producer of livestock forage. Steep slopes and lack of perennial forage plants limit utilization of the site.

Wildlife on the site are limited mainly to small mammals and birds and their associated predators. At the higher elevations in this CRA, mule deer use this site for cover and forage. Water developments are very important for both livestock and wildlife on the site.

Hydrological functions

These are medium to heavy textured soils with steep slopes making them good producers of runoff and sediment.

Recreational uses

Hunting, horseback riding, hiking, photography, bird watching

Wood products

Limited wood from shrubby mesquite and canotia.

Other products

Sandstone slabs for building blocks and flag-stone.

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) | |
|--------------------------|--|

| | |
|---|-------------------|
| Contact for lead author | |
| Date | |
| Approved by | |
| 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):**

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

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

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

8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):**

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

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

11. **Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site):**

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:**
-