

Ecological site R041XB208AZ **Limy Upland 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.

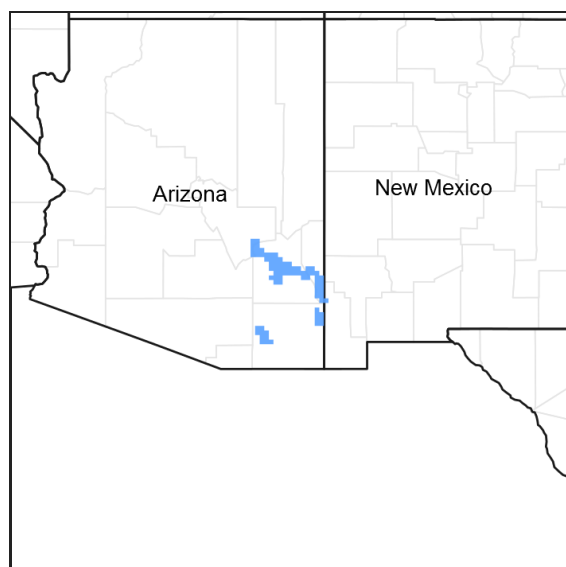


Figure 1. Mapped extent

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, soap tree yucca, creosote bush, 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. |

| | |
|-------------|------------------------|
| R041XB207AZ | Limy Slopes 8-12" p.z. |
|-------------|------------------------|

Similar sites

| | |
|-------------|--------------------------|
| R040XA111AZ | Limy Upland 10"-13" p.z. |
| R041XC309AZ | Limy Upland 12-16" p.z. |

Table 1. Dominant plant species

| | |
|------------|--|
| Tree | Not specified |
| Shrub | (1) <i>larrea tridentata</i> |
| Herbaceous | (1) <i>muhlenbergia porteri</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 fan terraces and ridge-tops. It occurs in the Gila and San Pedro river valleys.

Table 2. Representative physiographic features

| | |
|--------------------|--|
| Landforms | (1) Fan piedmont (2) Fan remnant (3) Ridge |
| Flooding frequency | None |
| Ponding frequency | None |
| Elevation | 792–1,219 m |
| Slope | 1–15% |
| Aspect | Aspect is not a significant factor |

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 shallow and underlain by lime and/or silica cemented pans or very gravelly, lime cemented, conglomerate. They have formed in old fan deposits.

Soil series mapped on this site include: SSA-662 Safford area MU's BeB BpB PsB & ThC Bitter Spring, ChB ChE CkD & PuB Cave, WhA WkA & WkB Whitlock; SSA-663 Gila-Duncan area MU's 25 26 & 41 Piloncillo, 29 & 45 Whitlock; SSA-664 San Simon area MU 44 Vekol; SSA-666 Cochise county Northwest part MU's 8 Borderline and 27 Monzingo; SSA-671 Cochise county Douglas-Tombstone part MU's 15 Borderline FSL, 35 & 111 Monzingo, 47 Dona Ana; SSA-675 San Carlos IR area MU 17 Bylas.

Table 4. Representative soil features

| | |
|--|---|
| Surface texture | (1) Very gravelly sandy loam (2) Very gravelly fine sandy loam (3) Sandy loam |
| Family particle size | (1) Loamy |
| Drainage class | Well drained |
| Permeability class | Moderately rapid to moderate |
| Soil depth | 13–51 cm |
| Surface fragment cover <=3" | 15–50% |
| Surface fragment cover >3" | 0–15% |
| Available water capacity (0-101.6cm) | 1.27–4.32 cm |
| Calcium carbonate equivalent (0-101.6cm) | 10–30% |
| Electrical conductivity (0-101.6cm) | 0–2 mmhos/cm |
| Sodium adsorption ratio (0-101.6cm) | 0–2 |
| Soil reaction (1:1 water) (0-101.6cm) | 7.4–8.4 |
| Subsurface fragment volume <=3" (Depth not specified) | 15–60% |
| Subsurface fragment volume >3" (Depth not specified) | 0–5% |

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 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

MLRA 41-2 (8-12"), Limy Upland

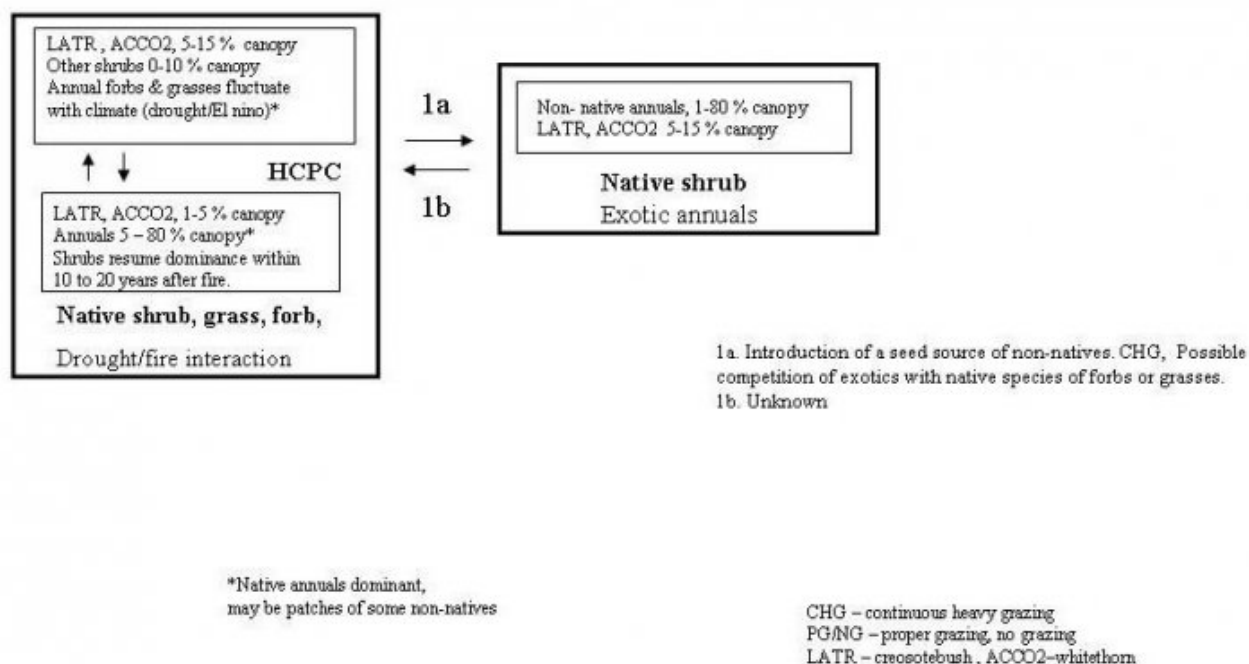


Figure 4. State and Transition, Limy Upland 8-12" p.z.

State 1

Historic Climax Plant Community

Community 1.1

Historic Climax Plant Community



Figure 5. Limy Upland 8-12" pz. soil pit

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

Table 5. Annual production by plant type

| Plant Type | Low (Kg/Hectare) | Representative Value (Kg/Hectare) | High (Kg/Hectare) |
|-----------------|---------------------|--------------------------------------|----------------------|
| Shrub/Vine | 87 | 196 | 280 |
| Grass/Grasslike | 8 | 22 | 123 |
| Forb | 1 | 6 | 67 |
| Total | 96 | 224 | 470 |

Table 6. Soil surface cover

| | |
|-----------------------------------|--------|
| Tree basal cover | 0% |
| Shrub/vine/liana basal cover | 1-2% |
| Grass/grasslike basal cover | 0-1% |
| Forb basal cover | 0-1% |
| Non-vascular plants | 0% |
| Biological crusts | 5-20% |
| Litter | 1-20% |
| Surface fragments >0.25" and <=3" | 15-50% |
| Surface fragments >3" | 1-15% |
| Bedrock | 0% |
| Water | 0% |
| Bare ground | 10-80% |

Table 7. Canopy structure (% cover)

| Height Above Ground (M) | Tree | Shrub/Vine | Grass/ Grasslike | Forb |
|-------------------------|------|------------|---------------------|------|
| <0.15 | – | 0-2% | 0-5% | 0-5% |
| >0.15 <= 0.3 | – | 1-5% | 1-5% | 0-5% |
| >0.3 <= 0.6 | – | 0-2% | 1-3% | 0-2% |
| >0.6 <= 1.4 | – | 5-10% | 0-2% | 0-1% |
| >1.4 <= 4 | – | 0-1% | – | – |
| >4 <= 12 | – | – | – | – |
| >12 <= 24 | – | – | – | – |
| >24 <= 37 | – | – | – | – |
| >37 | – | – | – | – |

State 2

Shrub, annuals

Community 2.1

Shrub, annuals

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

Transition T1A

State 1 to 2

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

Restoration pathway R2A

State 2 to 1

Unknown

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 grasses | | | 8–67 | |
| | bush muhly | MUPO2 | <i>Muhlenbergia porteri</i> | 6–45 | – |
| | blue threeawn | ARPUN | <i>Aristida purpurea</i> var. <i>nealleyi</i> | 1–22 | – |
| | low woollygrass | DAPU7 | <i>Dasyochloa pulchella</i> | 1–22 | – |
| | black grama | BOER4 | <i>Bouteloua eriopoda</i> | 0–17 | – |
| | slim tridens | TRMU | <i>Tridens muticus</i> | 0–17 | – |
| | Parish's threeawn | ARPUP5 | <i>Aristida purpurea</i> var. <i>parishii</i> | 0–11 | – |
| 2 | Misc. perennial grasses | | | 0–22 | |
| | purple threeawn | ARPU9 | <i>Aristida purpurea</i> | 0–6 | – |
| | spidergrass | ARTE3 | <i>Aristida ternipes</i> | 0–6 | – |
| | spidergrass | ARTEG | <i>Aristida ternipes</i> var. <i>gentilis</i> | 0–6 | – |

| | | | | | |
|-------------|------------------------------|--------|---|------|---|
| | tobosagrass | PLMU3 | <i>Pleuraphis mutica</i> | 0–6 | – |
| | Hall's panicgrass | PAHA | <i>Panicum hallii</i> | 0–2 | – |
| | whiplash pappusgrass | PAVA2 | <i>Pappophorum vaginatum</i> | 0–2 | – |
| | alkali sacaton | SPAI | <i>Sporobolus airoides</i> | 0–2 | – |
| | sand dropseed | SPCR | <i>Sporobolus cryptandrus</i> | 0–2 | – |
| | mesa dropseed | SPFL2 | <i>Sporobolus flexuosus</i> | 0–2 | – |
| | sideoats grama | BOCU | <i>Bouteloua curtipendula</i> | 0–2 | – |
| | Arizona cottontop | DICA8 | <i>Digitaria californica</i> | 0–1 | – |
| | squirreltail | ELEL5 | <i>Elymus elymoides</i> | 0–1 | – |
| | nineawn pappusgrass | ENDE | <i>Enneapogon desvauxii</i> | 0–1 | – |
| | Arizona muhly | MUAR3 | <i>Muhlenbergia arizonica</i> | 0–1 | – |
| | spike dropseed | SPCO4 | <i>Sporobolus contractus</i> | 0–1 | – |
| | burrograss | SCBR2 | <i>Scleropogon brevifolius</i> | 0–1 | – |
| | plains bristlegrass | SEVU2 | <i>Setaria vulpiseta</i> | 0–1 | – |
| 3 | Annual grasses | | | 0–34 | |
| | prairie threeawn | AROL | <i>Aristida oligantha</i> | 0–11 | – |
| | needle grama | BOAR | <i>Bouteloua aristoides</i> | 0–11 | – |
| | sixweeks grama | BOBA2 | <i>Bouteloua barbata</i> | 0–11 | – |
| | Rothrock's grama | BORO2 | <i>Bouteloua rothrockii</i> | 0–6 | – |
| | witchgrass | PACA6 | <i>Panicum capillare</i> | 0–6 | – |
| | sixweeks threeawn | ARAD | <i>Aristida adscensionis</i> | 0–6 | – |
| | delicate muhly | MUFR | <i>Muhlenbergia fragilis</i> | 0–2 | – |
| | littleseed muhly | MUMI | <i>Muhlenbergia microsperma</i> | 0–2 | – |
| | Bigelow's bluegrass | POBI | <i>Poa bigelovii</i> | 0–2 | – |
| | Arizona signalgrass | URAR | <i>Urochloa arizonica</i> | 0–2 | – |
| | sixweeks fescue | VUOC | <i>Vulpia octoflora</i> | 0–2 | – |
| | Mexican panicgrass | PAHI5 | <i>Panicum hirticaule</i> | 0–1 | – |
| | Arizona brome | BRAR4 | <i>Bromus arizonicus</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</i> ssp. <i>uninervia</i> | 0–1 | – |
| | mucronate sprangletop | LEPAB | <i>Leptochloa panicea</i> ssp. <i>brachiata</i> | 0–1 | – |
| Forb | | | | | |
| 4 | Perennial Forbs | | | 1–11 | |
| | dwarf desertpeony | ACNA2 | <i>Acourtia nana</i> | 1–6 | – |
| | pricklyleaf dogweed | THAC | <i>Thymophylla acerosa</i> | 0–2 | – |
| | rue of the mountains | THTE2 | <i>Thamnosma texana</i> | 0–2 | – |
| | weakleaf bur ragweed | AMCO3 | <i>Ambrosia confertiflora</i> | 0–2 | – |
| | leatherweed | CRPO5 | <i>Croton pottsii</i> | 0–2 | – |
| | bluedicks | DICA14 | <i>Dichelostemma capitatum</i> | 0–1 | – |
| | desert trumpet | ERIN4 | <i>Eriogonum inflatum</i> | 0–1 | – |
| | Parry's false prairie-clover | MAPA7 | <i>Marina parryi</i> | 0–1 | – |

| | | | | | |
|---|----------------------------|--------|---|------|---|
| | lacy tansyaster | MAPIP4 | <i>Machaeranthera pinnatifida</i> ssp. <i>pinnatifida</i> var. <i>pinnatifida</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 | – |
| | slender poreleaf | POGR5 | <i>Porophyllum gracile</i> | 0–1 | – |
| | glandleaf milkwort | POMA7 | <i>Polygala macradenia</i> | 0–1 | – |
| | Coues' cassia | SECO10 | <i>Senna covesii</i> | 0–1 | – |
| | silverleaf nightshade | SOEL | <i>Solanum elaeagnifolium</i> | 0–1 | – |
| | desert globemallow | SPAM2 | <i>Sphaeralcea ambigua</i> | 0–1 | – |
| | brownplume wirelettuce | STPA4 | <i>Stephanomeria pauciflora</i> | 0–1 | – |
| | tuber anemone | ANTU | <i>Anemone tuberosa</i> | 0–1 | – |
| | New Mexico silverbush | ARNE2 | <i>Argythamnia neomexicana</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 | – |
| | scarlet spiderling | BOCO | <i>Boerhavia coccinea</i> | 0–1 | – |
| | whitemargin sandmat | CHAL11 | <i>Chamaesyce albomarginata</i> | 0–1 | – |
| | branched noseburn | TRRA5 | <i>Tragia ramosa</i> | 0–1 | – |
| | brownfoot | ACWR5 | <i>Acourtia wrightii</i> | 0–1 | – |
| | poreleaf dogweed | ADPO2 | <i>Adenophyllum porophyllum</i> | 0–1 | – |
| | trailing windmills | ALIN | <i>Allionia incarnata</i> | 0–1 | – |
| 5 | Annual forbs | | | 0–56 | |
| | cryptantha | CRYPT | <i>Cryptantha</i> | 0–17 | – |
| | Esteve's pincushion | CHST | <i>Chaenactis stevioides</i> | 0–11 | – |
| | flatcrown buckwheat | ERDE6 | <i>Eriogonum deflexum</i> | 0–11 | – |
| | combseed | PECTO | <i>Pectocarya</i> | 0–11 | – |
| | manybristle chinchweed | PEPA2 | <i>Pectis papposa</i> | 0–11 | – |
| | phacelia | PHACE | <i>Phacelia</i> | 0–11 | – |
| | bristly fiddleneck | AMTE3 | <i>Amsinckia tessellata</i> | 0–11 | – |
| | exserted Indian paintbrush | CAEXE | <i>Castilleja exserta</i> ssp. <i>exserta</i> | 0–11 | – |
| | desert Indianwheat | PLOV | <i>Plantago ovata</i> | 0–11 | – |
| | chia | SACO6 | <i>Salvia columbariae</i> | 0–6 | – |
| | lyreleaf jewelflower | STCA5 | <i>Streptanthus carinatus</i> | 0–6 | – |
| | thelypody | THELY | <i>Thelypodium</i> | 0–6 | – |
| | woolly tidestromia | TILA2 | <i>Tidestromia lanuginosa</i> | 0–6 | – |
| | yellow tackstem | CAPA7 | <i>Calycoseris parryi</i> | 0–6 | – |
| | white tackstem | CAWR | <i>Calycoseris wrightii</i> | 0–6 | – |
| | Nuttall's povertyweed | MONU | <i>Monolepis nuttalliana</i> | 0–6 | – |
| | Gordon's bladderpod | LEGO | <i>Lesquerella gordonii</i> | 0–6 | – |
| | shaggyfruit pepperweed | LELA | <i>Lepidium lasiocarpum</i> | 0–6 | – |
| | intermediate pepperweed | LEVIM | <i>Lepidium virginicum</i> var. <i>medium</i> | 0–6 | – |

| | | | | | |
|--|------------------------------|--------|--|-----|---|
| | coastal bird's-foot trefoil | LOSAB | <i>Lotus salsuginosus</i> var. <i>brevivexillus</i> | 0–6 | – |
| | slender goldenweed | MAGR10 | <i>Machaeranthera gracilis</i> | 0–6 | – |
| | miniature woollystar | ERDI2 | <i>Eriastrum diffusum</i> | 0–6 | – |
| | western tansymustard | DEPI | <i>Descurainia pinnata</i> | 0–6 | – |
| | Coulter's spiderling | BOCO2 | <i>Boerhavia coulteri</i> | 0–6 | – |
| | hairy prairie clover | DAMO | <i>Dalea mollis</i> | 0–2 | – |
| | fringed redmaids | CACI2 | <i>Calandrinia ciliata</i> | 0–2 | – |
| | American wild carrot | DAPU3 | <i>Daucus pusillus</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 | – |
| | tanseyleaf tansyaster | MATA2 | <i>Machaeranthera tanacetifolia</i> | 0–2 | – |
| | hairy desertsunflower | GECA2 | <i>Geraea canescens</i> | 0–2 | – |
| | star gilia | GIST | <i>Gilia stellata</i> | 0–2 | – |
| | Coulter's lupine | LUSP2 | <i>Lupinus sparsiflorus</i> | 0–2 | – |
| | green carpetweed | MOVE | <i>Mollugo verticillata</i> | 0–2 | – |
| | brittle spineflower | CHBR | <i>Chorizanthe brevicornu</i> | 0–2 | – |
| | hyssopleaf sandmat | CHHY3 | <i>Chamaesyce hyssopifolia</i> | 0–2 | – |
| | woollyhead neststraw | STMI2 | <i>Stylocline micropoides</i> | 0–2 | – |
| | Arizona poppy | KAGR | <i>Kallstroemia grandiflora</i> | 0–2 | – |
| | desert evening primrose | OEPR | <i>Oenothera primiveris</i> | 0–2 | – |
| | Florida pellitory | PAFL3 | <i>Parietaria floridana</i> | 0–2 | – |
| | doubleclaw | PRPA2 | <i>Proboscidea parviflora</i> | 0–1 | – |
| | New Mexico plumeseed | RANE | <i>Rafinesquia neomexicana</i> | 0–1 | – |
| | sawtooth sage | SASU7 | <i>Salvia subincisa</i> | 0–1 | – |
| | spreading fanpetals | SIAB | <i>Sida abutifolia</i> | 0–1 | – |
| | sleepy silene | SIAN2 | <i>Silene antirrhina</i> | 0–1 | – |
| | Coulter's globemallow | SPCO2 | <i>Sphaeralcea coulteri</i> | 0–1 | – |
| | sand fringe-pod | THCU | <i>Thysanocarpus curvipes</i> | 0–1 | – |
| | southwestern pricklypoppy | ARPL3 | <i>Argemone pleiacantha</i> | 0–1 | – |
| | milkvetch | ASTRA | <i>Astragalus</i> | 0–1 | – |
| | wheelscale saltbush | ATEL | <i>Atriplex elegans</i> | 0–1 | – |
| | annual agoseris | AGHE2 | <i>Agoseris heterophylla</i> | 0–1 | – |
| | carelessweed | AMPA | <i>Amaranthus palmeri</i> | 0–1 | – |
| | bristly nama | NAHI | <i>Nama hispidum</i> | 0–1 | – |
| | glandular threadplant | NEGL | <i>Nemacladus glanduliferus</i> | 0–1 | – |
| | Arizona popcornflower | PLAR | <i>Plagiobothrys arizonicus</i> | 0–1 | – |
| | crestrib morning-glory | IPCO2 | <i>Ipomoea costellata</i> | 0–1 | – |
| | Mexican fireplant | EUHE4 | <i>Euphorbia heterophylla</i> | 0–1 | – |
| | sanddune wallflower | ERCA14 | <i>Erysimum capitatum</i> | 0–1 | – |
| | common woolly sunflower | ERLA6 | <i>Eriophyllum lanatum</i> | 0–1 | – |
| | soft prairie clover | DAMO2 | <i>Dalea mollissima</i> | 0–1 | – |

| | | | | | |
|-------------------|-----------------------------|--------|--|--------|---|
| | soft prairie clover | DAWU2 | <i>Dalea mollissima</i> | 0-1 | - |
| | hoary bowlesia | BOIN3 | <i>Bowlesia incana</i> | 0-1 | - |
| | scrambled eggs | COAU2 | <i>Corydalis aurea</i> | 0-1 | - |
| Shrub/Vine | | | | | |
| 6 | Dominant shrub | | | 84-224 | |
| | creosote bush | LATR2 | <i>Larrea tridentata</i> | 84-224 | - |
| 7 | Miscellaneous shrubs | | | 1-22 | |
| | jojoba | SICH | <i>Simmondsia chinensis</i> | 0-6 | - |
| | whitethorn acacia | ACCO2 | <i>Acacia constricta</i> | 0-6 | - |
| | mariola | PAIN2 | <i>Parthenium incanum</i> | 0-6 | - |
| | western honey mesquite | PRGLT | <i>Prosopis glandulosa</i> var. <i>torreyana</i> | 0-2 | - |
| | whitethorn acacia | ACCOP9 | <i>Acacia constricta</i> var. <i>paucispina</i> | 0-2 | - |
| | viscid acacia | ACNE4 | <i>Acacia neovernicosa</i> | 0-2 | - |
| | Wright's beebrush | ALWR | <i>Aloysia wrightii</i> | 0-1 | - |
| | fourwing saltbush | ATCA2 | <i>Atriplex canescens</i> | 0-1 | - |
| | cattle saltbush | ATPO | <i>Atriplex polycarpa</i> | 0-1 | - |
| | crucifixion thorn | CAHO3 | <i>Canotia holacantha</i> | 0-1 | - |
| | longleaf jointfir | EPTR | <i>Ephedra trifurca</i> | 0-1 | - |
| | American tarwort | FLCE | <i>Flourensia cernua</i> | 0-1 | - |
| | ocotillo | FOSP2 | <i>Fouquieria splendens</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 | - |
| | lotebush | ZIOB | <i>Ziziphus obtusifolia</i> | 0-1 | - |
| | catclaw acacia | ACGR | <i>Acacia greggii</i> | 0-1 | - |
| 8 | Half shrubs | | | 1-22 | |
| | desert zinnia | ZIAC | <i>Zinnia acerosa</i> | 1-11 | - |
| | rough menodora | MESC | <i>Menodora scabra</i> | 1-6 | - |
| | whitestem paperflower | PSCO2 | <i>Psilostrophe cooperi</i> | 0-6 | - |
| | littleleaf ratany | KRER | <i>Krameria erecta</i> | 1-6 | - |
| | rayless goldenhead | ACSP | <i>Acamptopappus sphaerocephalus</i> | 0-6 | - |
| | burrobush | AMDU2 | <i>Ambrosia dumosa</i> | 0-6 | - |
| | winterfat | KRLA2 | <i>Krascheninnikovia lanata</i> | 0-2 | - |
| | woody crinklemat | TICA3 | <i>Tiquilia canescens</i> | 0-1 | - |
| | shortleaf baccharis | BABR | <i>Baccharis brachyphylla</i> | 0-1 | - |
| | fairyduster | CAER | <i>Calliandra eriophylla</i> | 0-1 | - |
| | featherplume | DAFO | <i>Dalea formosa</i> | 0-1 | - |
| | threadleaf snakeweed | GUMI | <i>Gutierrezia microcephala</i> | 0-1 | - |
| | broom snakeweed | GUSA2 | <i>Gutierrezia sarothrae</i> | 0-1 | - |
| | burroweed | ISTE2 | <i>Isocoma tenuisecta</i> | 0-1 | - |
| 9 | Succulents | | | 1-11 | |
| | Christmas cactus | CYLE8 | <i>Cylindropuntia leptocaulis</i> | 0-2 | - |
| | purple pricklypear | OPMA8 | <i>Opuntia macrocentra</i> | 0-2 | - |
| | tufted pricklypear | OPDU | <i>Opuntia phaeacantha</i> | 0-2 | - |

| | | | | | |
|--|-----------------------------|-------|------------------------------------|-----|---|
| | tulip pricklypear | OPFN | <i>Opuntia praeacarina</i> | 0-2 | - |
| | banana yucca | YUBA | <i>Yucca baccata</i> | 0-2 | - |
| | soaptree yucca | YUEL | <i>Yucca elata</i> | 0-1 | - |
| | nightblooming cereus | PEGR3 | <i>Peniocereus greggii</i> | 0-1 | - |
| | walkingstick cactus | CYSP8 | <i>Cylindropuntia spinosior</i> | 0-1 | - |
| | Engelmann's hedgehog cactus | ECEN | <i>Echinocereus engelmannii</i> | 0-1 | - |
| | redspine fishhook cactus | ECER2 | <i>Echinomastus erectocentrus</i> | 0-1 | - |
| | pinkflower hedgehog cactus | ECFA | <i>Echinocereus fasciculatus</i> | 0-1 | - |
| | candy barrelcactus | FEWI | <i>Ferocactus wislizeni</i> | 0-1 | - |
| | devil's cholla | GRKU | <i>Grusonia kunzei</i> | 0-1 | - |
| | Graham's nipple cactus | MAGR9 | <i>Mammillaria grahamii</i> | 0-1 | - |
| | cactus apple | OPEN3 | <i>Opuntia engelmannii</i> | 0-1 | - |
| | buck-horn cholla | CYAC8 | <i>Cylindropuntia acanthocarpa</i> | 0-1 | - |

Animal community

This site offers little in the way of perennial forage for livestock. 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.

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

Contributors

Dan Robinett

Larry D. Ellicott

Approval

Scott Woodall, 7/28/2020

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) | Wilma Renken, Dan Robinett, Larry Humphrey |
| Contact for lead author | USDA-NRCS Tucson MLRA Soil Survey Office |
| Date | 11/05/2012 |
| Approved by | Scott Woodall |
| 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:** Water flow paths are not distinct but occur between clumps of creosote bush. They occupy 30-40% of the area and are discontinuous, averaging 20-30 feet in length.

3. **Number and height of erosional pedestals or terracettes:** Terrecettes do not occur. Pedestals occur on creosote bush and are 2-3 inches in height.

4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** Bare ground from the reference site was 36% with 45% gravel cover. Non-vegetated areas are plant/shrub interspaces; soil is well armored with gravel. Actual exposed soil areas are small (<2' in diameter) and not connected.

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):** None observed, but in some years fine litter classes can move short distances (2 -3 feet). All coarse litter classes stay in place.

8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):** Average value from soil slake test is 3. The average value from areas without canopy cover is 2 and average values from areas with creosote canopy is 4.3

9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** A horizon is two inches thick with a weak granular structure. Surface soil colors are 10 YR 5/3 dry and 10YR 3/4 moist.

10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** 13% canopy cover. Shrubs are evenly distributed across site. Perennial grasses

are generally confined within shrub canopies.

11. **Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site):** None. Abrupt change in texture from the B2tk horizon to the Ck horizon (at 12 inches) can be mistaken for a compaction zone. This is a laminar cap of cemented calcium carbonates on top of the Ck horizon. Average depth of penetration from a field penetrometer with a 2 kg sliding hammer is 7.6 cm.
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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: Dom.Shrub (creosote) >>
- Sub-dominant: Dom.Per.Grasses > Misc.Shrubs = Half Shrubs = Succulents > Misc.Per.Grasses = Annuals = Per.Forbs
- Other:
- Additional: Annuals fluctuate based on weather cycles.
-
13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** Complete mortality of perennial grasses and sub-shrubs in past several years due to severe drought since 2002.
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14. **Average percent litter cover (%) and depth (in):** Litter is mainly from annual grasses like needle grama, annual threeawn and six weeks grama. Coarse litter is all from creosote bush and tends to stay under the canopy.
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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** 86 lbs/ac for a below average year; 200 lbs/ac for an average year; 400 lbs/ac for an above average year;
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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:** None
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17. **Perennial plant reproductive capability:** Can be severely impaired for perennial grasses like bush muhly, threeawn, fluffgrass and black grama from severe drought. All desert zinnia plants on site are dead except those in small associated drainage ways.
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