

Ecological site R041XB213AZ Sandy Wash 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.

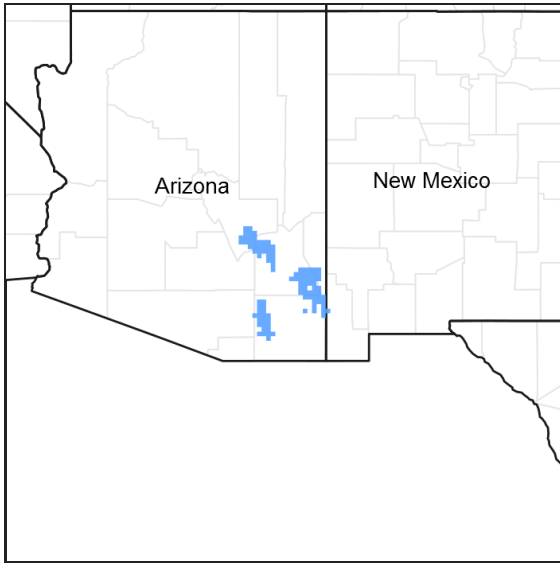


Figure 1. Mapped extent

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

| | |
|-------------|-------------------------------------|
| R041XB207AZ | Limy Slopes 8-12" p.z. |
| R041XB208AZ | Limy Upland 8-12" p.z. |
| R041XB210AZ | Loamy Upland 8-12" p.z. |
| R041XB215AZ | Sandy Loam Upland 8-12" p.z. |

Similar sites

| | |
|-------------|--------------------------------|
| R040XA115AZ | Sandy Wash 10"-13" p.z. |
| R041XC316AZ | Sandy Wash 12-16" p.z. |

Table 1. Dominant plant species

| | |
|------------|--|
| Tree | (1) <i>Prosopis</i> (2) <i>Acacia greggii</i> |
| Shrub | Not specified |
| Herbaceous | Not specified |

Physiographic features

This site occurs in the lowest elevations of the Madrean Basin and Range province in southeastern Arizona. It occurs on floodplains, low stream terraces, in canyons and on alluvial fans. It benefits on a regular basis from extra moisture received as over-bank flooding of channels and as runoff from adjacent upland areas. It does not benefit from shallow water tables.

Table 2. Representative physiographic features

| | |
|--------------------|---|
| Landforms | (1) Flood plain (2) Stream terrace (3) Canyon |
| 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) |
| Ponding frequency | None to rare |
| Elevation | 792–1,219 m |
| Slope | 0–3% |
| Aspect | Aspect is not a significant factor |

Climatic features

Precipitation ranges from 8-12 inches annually. More than half falls during Jul-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 mm |

Influencing water features

There are no water features associated with this site.

Soil features

These are very young soils on gravelly and sandy alluvium of mixed origin. They are deep and well drained. Surface textures range from gravelly sand to loamy fine sand. Sub-soils are sandy loam and loamy sands with various amounts of gravel and/or cobbles. Although coarse textures make for low available water holding capacities, plant-soil moisture relationships are very good due to extra moisture the site receives. Soil surfaces, outside of channel areas, are light colored.

Soils mapped on this site include: SSA-662 Safford area MU's AIB AmA AnA ApB & AtA Anthony, AtA Gila, AuA AvA AvB AwA & AzA Arizo, Br & Bt Brazito, Cm & Co Comoro, Cn Comoro Mottled Variant, Gv Gravelly alluvial land, and Ma & Mr Maricopa; SSA-664 San Simon area MU's 1 Anthony and 2 Arizo; SSA-666 Cochise county Northwest part MU's 3 Maricopa and 65 Queencreek; SSA-671 Cochise county Douglas-Tombstone part MU's 2 Maricopa and 3 Arizo family; SSA-675 San Carlos IR area MU's 4 & 5 Anthony, 60 Queencreek & Brazito.

Table 4. Representative soil features

| | |
|--|---|
| Surface texture | (1) Gravelly sandy loam (2) Gravelly loamy fine sand (3) Very gravelly loamy sand |
| Family particle size | (1) Sandy |
| Drainage class | Somewhat excessively drained to well drained |
| Permeability class | Rapid to moderately rapid |
| Soil depth | 152 cm |
| Surface fragment cover <=3" | 5–35% |
| Surface fragment cover >3" | 0–10% |
| Available water capacity (0-101.6cm) | 6.1–15.24 cm |
| Calcium carbonate equivalent (0-101.6cm) | 0–5% |
| 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) | 0–45% |
| Subsurface fragment volume >3" (Depth not specified) | 0–10% |

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 each 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. The potential plant community on this site is a diverse mixture of native perennial grasses, shrubs, vines, trees and annual forbs and grasses. Smaller drainage-ways are dominated by desert trees like mesquite, desert willow and catclaw acacia. Larger washes and canyons will have a higher percentage of broadleaf trees like ash, walnut and netleaf hackberry.

State and transition model

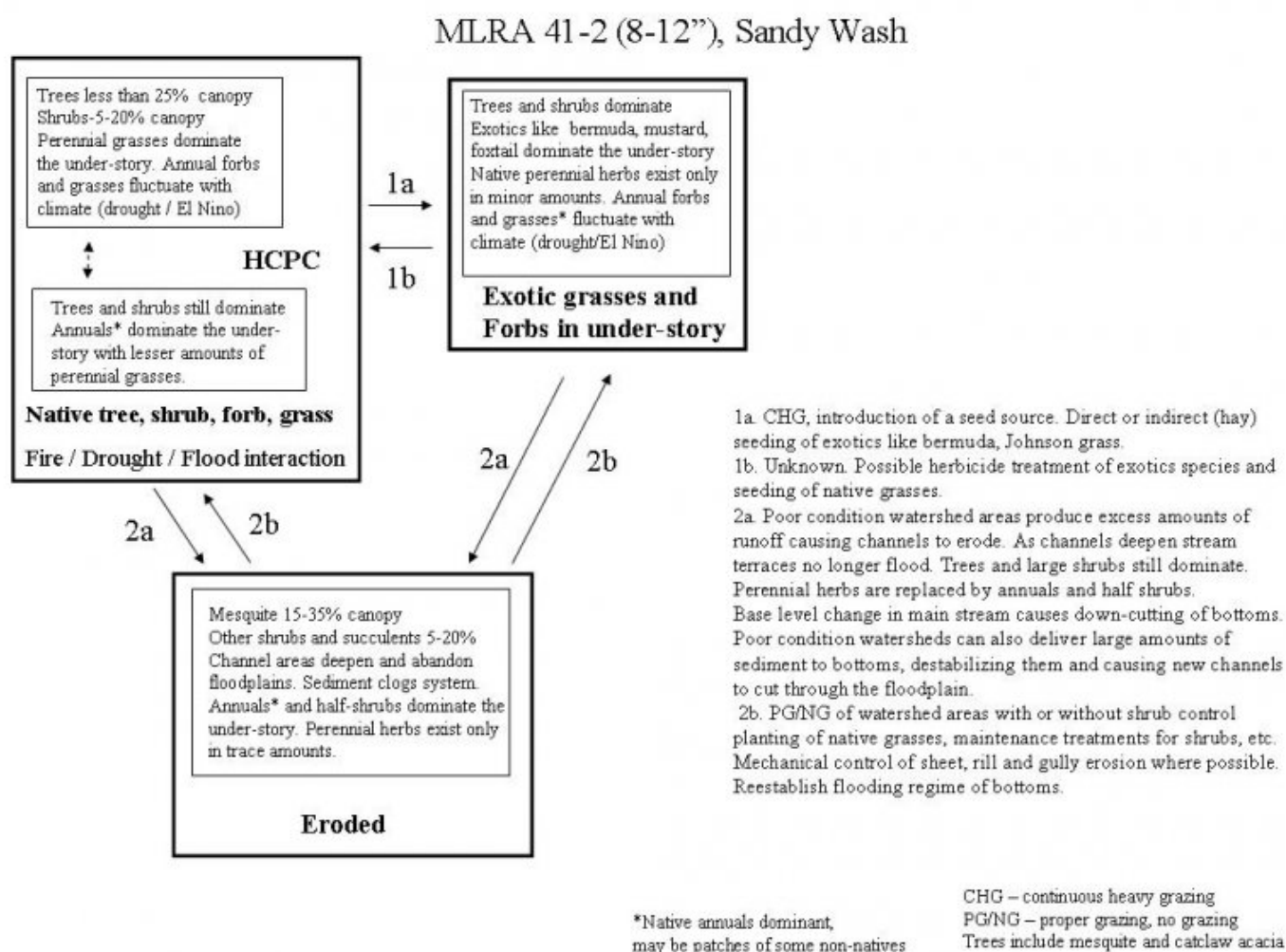


Figure 4. State and Transition, Sandy Wash 8-12" pz.

State 1 Historic Climax Plant Community

Community 1.1 Historic Climax Plant Community

The potential plant community of this site is a diverse mixture of perennial grasses, forbs, vines, trees and shrubs. Annual forbs and grasses of both the warm and cool seasons are well represented in the plant community. The major grass, forb and shrub species on the site are well dispersed throughout the plant community. Tree canopy

cover ranges from 10 to 20% in the potential plant community. With continuous heavy grazing, palatable mid-grasses decline and species such as Rothrock grama and annuals increase. With severe deterioration, woody species increase to dominate the plant community. Mesquite, with lesser amounts of catclaw acacia and desert willow, form the over-story and burroweed, jimmyweed and snakeweed dominates the under-story. Active channel areas are dominated by shrubs like burrobrush and desert broom. The site is very susceptible to gully, channel and bank erosion, especially where it has deteriorated to shrubby conditions and where depleted watershed areas are contributing larger than normal amounts of runoff. The lowering of the base level of the axial stream of a watershed will eventually cause channeling of the site. Deeply channeled areas will no longer flood the stream terraces of this site. Due to deep, coarse textured soils and extra moisture received as flooding, trees grow to maximum size on the site. This site can produce effective herbaceous covers with tree canopies up to 20%.

Table 5. Annual production by plant type

| Plant Type | Low (Kg/Hectare) | Representative Value (Kg/Hectare) | High (Kg/Hectare) |
|-----------------|---------------------|--------------------------------------|----------------------|
| Grass/Grasslike | 460 | 1121 | 1681 |
| Tree | 336 | 560 | 897 |
| Forb | 45 | 112 | 616 |
| Shrub/Vine | 84 | 224 | 336 |
| Total | 925 | 2017 | 3530 |

Figure 6. Plant community growth curve (percent production by month).
 AZ4121, 41.2 7-12" p.z. all sites. Growth begins in the late winter to early spring, semi-dormancy occurs during the May through June drought, most growth occurs during the summer rainy season..

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 0 | 5 | 5 | 10 | 0 | 0 | 25 | 30 | 15 | 5 | 5 | 0 |

State 2 Understory exotics

Community 2.1 Understory exotics

This state exists where exotic perennial and annual grasses and forbs have invaded from adjacent areas to become dominant in the under-story. These species include bermuda grass, red brome, foxtail barley, barnyard grass, London rocket, filaree, tumbleweed, Sahara mustard and malva. These species usually have little effect on the over-story tree and large shrub component of the plant community. They do, however, greatly limit the diversity of native grasses and forbs.

State 3 Eroded

Community 3.1 Eroded

This state occurs where poor condition watersheds yield excessive amounts of runoff causing erosion of the channel areas. As channels deepen, the low stream terraces no longer receive extra water from flooding and stream-bank erosion enlarges the area of river-wash. Down-cutting of major stream systems can contribute to this situation in areas where sandy bottoms are tributary to the main stream. The woody component of the plant community usually remains intact but the herbaceous component becomes dominated by half-shrubs and annuals. Poor condition watersheds can also destabilize the sandy bottom site by adding more sediment than the system can handle, causing channels to move and cut through new areas on the floodplain.

Additional community tables

Table 6. Community 1.1 plant community composition

| Group | Common Name | Symbol | Scientific Name | Annual Production (Kg/Hectare) | Foliar Cover (%) |
|------------------------|------------------------------|--------|--|--------------------------------|------------------|
| Grass/Grasslike | | | | | |
| 1 | Dominant mid grasses | | | 336–673 | |
| | sideoats grama | BOCU | <i>Bouteloua curtipendula</i> | 112–336 | – |
| | green sprangletop | LEDU | <i>Leptochloa dubia</i> | 28–224 | – |
| | big sacaton | SPWR2 | <i>Sporobolus wrightii</i> | 0–224 | – |
| | plains bristlegrass | SEVU2 | <i>Setaria vulpiseta</i> | 17–112 | – |
| | spike dropseed | SPCO4 | <i>Sporobolus contractus</i> | 28–112 | – |
| | cane bluestem | BOBA3 | <i>Bothriochloa barbinodis</i> | 6–112 | – |
| 2 | Suffrutescent grasses | | | 56–336 | |
| | bush muhly | MUPO2 | <i>Muhlenbergia porteri</i> | 56–224 | – |
| | Arizona cottontop | DICA8 | <i>Digitaria californica</i> | 17–168 | – |
| | Santa Rita threeawn | ARCAG | <i>Aristida californica var. glabrata</i> | 0–56 | – |
| 3 | Miscellaneous grasses | | | 56–112 | |
| | spidergrass | ARTE3 | <i>Aristida ternipes</i> | 22–56 | – |
| | spidergrass | ARTEG | <i>Aristida ternipes var. gentilis</i> | 11–56 | – |
| | tanglehead | HECO10 | <i>Heteropogon contortus</i> | 0–56 | – |
| | deergrass | MURI2 | <i>Muhlenbergia rigens</i> | 0–56 | – |
| | whiplash pappusgrass | PAVA2 | <i>Pappophorum vaginatum</i> | 0–56 | – |
| | sand dropseed | SPCR | <i>Sporobolus cryptandrus</i> | 0–28 | – |
| | squirreltail | ELELE | <i>Elymus elymoides ssp. elymoides</i> | 6–28 | – |
| | black grama | BOER4 | <i>Bouteloua eriopoda</i> | 0–28 | – |
| | blue grama | BOGR2 | <i>Bouteloua gracilis</i> | 0–28 | – |
| | hairy grama | BOHI2 | <i>Bouteloua hirsuta</i> | 0–28 | – |
| | Rothrock's grama | BORO2 | <i>Bouteloua rothrockii</i> | 0–28 | – |
| | Parish's threeawn | ARPUP5 | <i>Aristida purpurea var. parishii</i> | 0–28 | – |
| | Orcutt's threeawn | ARSCO | <i>Aristida schiedeana var. orcuttiana</i> | 0–28 | – |
| | vine mesquite | PAOB | <i>Panicum obtusum</i> | 0–28 | – |
| | purple threeawn | ARPU9 | <i>Aristida purpurea</i> | 0–17 | – |
| | plains lovegrass | ERIN | <i>Eragrostis intermedia</i> | 0–17 | – |
| | alkali sacaton | SPAI | <i>Sporobolus airoides</i> | 0–17 | – |
| | mesa dropseed | SPFL2 | <i>Sporobolus flexuosus</i> | 0–11 | – |
| | poverty threeawn | ARDI5 | <i>Aristida divaricata</i> | 0–11 | – |
| | Fendler threeawn | ARPUL | <i>Aristida purpurea var. longiseta</i> | 0–6 | – |
| | blue threeawn | ARPUN | <i>Aristida purpurea var. nealleyi</i> | 0–6 | – |
| | sedge | CAREX | <i>Carex</i> | 0–6 | – |
| | low woollygrass | DAPU7 | <i>Dasyochloa pulchella</i> | 0–6 | – |
| | nineawn pappusgrass | ENDE | <i>Enneapogon desvauxii</i> | 0–6 | – |
| | bulb panicgrass | PABU | <i>Panicum bulbosum</i> | 0–6 | – |
| | knotgrass | PADI6 | <i>Paspalum distichum</i> | 0–6 | – |
| 4 | Annual grasses | | | 11–448 | |
| | prairie threeawn | AROL | <i>Aristida oligantha</i> | 1–112 | – |

| | | | | | |
|--|-----------------------|--------|---|-------|---|
| | Parry's grama | BOPA2 | <i>Bouteloua parryi</i> | 0-112 | - |
| | feather fingergrass | CHVI4 | <i>Chloris virgata</i> | 1-112 | - |
| | tapertip cupgrass | ERACA | <i>Eriochloa acuminata</i> var. <i>acuminata</i> | 0-56 | - |
| | mucronate sprangeltop | LEPAB | <i>Leptochloa panicea</i> ssp. <i>brachiata</i> | 0-56 | - |
| | Mexican panicgrass | PAHI5 | <i>Panicum hirticaule</i> | 0-56 | - |
| | sixweeks fescue | VUOC | <i>Vulpia octoflora</i> | 1-56 | - |
| | Arizona brome | BRAR4 | <i>Bromus arizonicus</i> | 0-56 | - |
| | needle grama | BOAR | <i>Bouteloua aristoides</i> | 1-56 | - |
| | Bigelow's bluegrass | POBI | <i>Poa bigelovii</i> | 0-28 | - |
| | Arizona signalgrass | URAR | <i>Urochloa arizonica</i> | 0-28 | - |
| | Arizona barley | HOAR | <i>Hordeum arizonicum</i> | 0-28 | - |
| | Mexican sprangletop | LEFUU | <i>Leptochloa fusca</i> ssp. <i>uninervia</i> | 0-28 | - |
| | desert lovegrass | ERPEM | <i>Eragrostis pectinacea</i> var. <i>miserrima</i> | 0-28 | - |
| | sixweeks threeawn | ARAD | <i>Aristida adscensionis</i> | 0-22 | - |
| | sixweeks grama | BOBA2 | <i>Bouteloua barbata</i> | 0-11 | - |
| | tufted lovegrass | ERPEP2 | <i>Eragrostis pectinacea</i> var. <i>pectinacea</i> | 0-11 | - |
| | sweet tanglehead | HEME | <i>Heteropogon melanocarpus</i> | 0-11 | - |
| | Mexican lovegrass | ERME | <i>Eragrostis mexicana</i> | 0-11 | - |
| | delicate muhly | MUFR | <i>Muhlenbergia fragilis</i> | 0-11 | - |
| | littleseed muhly | MUMI | <i>Muhlenbergia microsperma</i> | 0-11 | - |
| | witchgrass | PACA6 | <i>Panicum capillare</i> | 0-11 | - |

Forb

| | | | | | |
|---|----------------------------|--------|-------------------------------------|--------|---|
| 5 | Perennial forbs | | | 22-112 | |
| | weakleaf bur ragweed | AMCO3 | <i>Ambrosia confertiflora</i> | 1-39 | - |
| | redstar | IPCO3 | <i>Ipomoea coccinea</i> | 0-34 | - |
| | canaigre dock | RUHY | <i>Rumex hymenosepalus</i> | 6-34 | - |
| | Lemmon's ragwort | SELE8 | <i>Senecio lemmonii</i> | 1-28 | - |
| | desert globemallow | SPAM2 | <i>Sphaeralcea ambigua</i> | 1-28 | - |
| | gooseberryleaf globemallow | SPGR2 | <i>Sphaeralcea grossulariifolia</i> | 0-28 | - |
| | brownplume wirelettuce | STPA4 | <i>Stephanomeria pauciflora</i> | 1-28 | - |
| | Trans-Pecos thimblehead | HYWI | <i>Hymenothrix wislizeni</i> | 1-28 | - |
| | scarlet spiderling | BOCO | <i>Boerhavia coccinea</i> | 1-28 | - |
| | climbing wartclub | BOSC | <i>Boerhavia scandens</i> | 1-28 | - |
| | Thurber's cotton | GOTH | <i>Gossypium thurberi</i> | 0-28 | - |
| | fingerleaf gourd | CUDI | <i>Cucurbita digitata</i> | 1-17 | - |
| | coyote gourd | CUPA | <i>Cucurbita palmata</i> | 0-17 | - |
| | brownfoot | ACWR5 | <i>Acourtia wrightii</i> | 0-17 | - |
| | Gila manroot | MAGI | <i>Marah gilensis</i> | 0-17 | - |
| | lacy tansyaster | MAPI | <i>Machaeranthera pinnatifida</i> | 1-17 | - |
| | desert tobacco | NIOB | <i>Nicotiana obtusifolia</i> | 0-11 | - |
| | variableleaf bushbean | MAGI2 | <i>Macroptilium gibbosifolium</i> | 0-11 | - |
| | Parry's beardtongue | PEPA24 | <i>Penstemon parryi</i> | 0-11 | - |

| | | | | |
|------------------------------|--------|--|------|---|
| mesquite mistletoe | PHCA8 | <i>Phoradendron californicum</i> | 1-11 | - |
| hairy fourwort | TENE | <i>Tetramerium nervosum</i> | 0-11 | - |
| perennial rockcress | ARPE2 | <i>Arabis perennans</i> | 0-11 | - |
| Arizona foldwing | DIRE4 | <i>Dicliptera resupinata</i> | 0-11 | - |
| spreading fleabane | ERDI4 | <i>Erigeron divergens</i> | 0-11 | - |
| fringed twinevine | FUCYC | <i>Funastrum cynanchoides</i> ssp. <i>cynanchoides</i> | 0-11 | - |
| southwestern mock vervain | GLGO | <i>Glandularia gooddingii</i> | 0-11 | - |
| small matweed | GUDE | <i>Guilleminea densa</i> | 0-6 | - |
| Lewis flax | LILE3 | <i>Linum lewisii</i> | 0-6 | - |
| Wright's deervetch | LOWR | <i>Lotus wrightii</i> | 0-6 | - |
| Coulter's lyrepod | LYCO4 | <i>Lyrocarpa coulteri</i> | 0-6 | - |
| roving sailor | MAAN9 | <i>Maurandella antirrhiniflora</i> | 0-6 | - |
| wild dwarf morning- glory | EVAR | <i>Evolvulus arizonicus</i> | 0-6 | - |
| Cooley's bundleflower | DECO2 | <i>Desmanthus cooleyi</i> | 0-6 | - |
| Missouri gourd | CUFO | <i>Cucurbita foetidissima</i> | 0-6 | - |
| desert marigold | BAMU | <i>Baileya multiradiata</i> | 0-6 | - |
| Arizona wrightwort | CAAR7 | <i>Carlownrightia arizonica</i> | 0-6 | - |
| skeletonweed | CHAET | <i>Chaetadelpha</i> | 0-6 | - |
| rose heath | CHER2 | <i>Chaetopappa ericoides</i> | 0-6 | - |
| whitemouth dayflower | COER | <i>Commelina erecta</i> | 0-6 | - |
| trailing windmills | ALIN | <i>Allionia incarnata</i> | 0-6 | - |
| tarragon | ARDR4 | <i>Artemisia dracunculus</i> | 0-6 | - |
| white sagebrush | ARLU | <i>Artemisia ludoviciana</i> | 0-6 | - |
| American vetch | VIAM | <i>Vicia americana</i> | 0-6 | - |
| Louisiana vetch | VILU | <i>Vicia ludoviciana</i> | 0-6 | - |
| slimleaf bean | PHAN3 | <i>Phaseolus angustissimus</i> | 0-6 | - |
| Wright's cudweed | PSCAC2 | <i>Pseudognaphalium canescens</i> ssp. <i>canescens</i> | 0-6 | - |
| Colorado Desert mistletoe | PHMA18 | <i>Phoradendron macrophyllum</i> | 0-6 | - |
| tufted evening primrose | OECA10 | <i>Oenothera caespitosa</i> | 0-6 | - |
| sweet four o'clock | MILO2 | <i>Mirabilis longiflora</i> | 0-6 | - |
| Coulter's wrinklefruit | TECO | <i>Tetradlea coulteri</i> | 0-6 | - |
| ragged nettlespurge | JAMA | <i>Jatropha macrorhiza</i> | 0-2 | - |
| velvetseed milkwort | POOB | <i>Polygala obscura</i> | 0-2 | - |
| shrubby purslane | POSU3 | <i>Portulaca suffrutescens</i> | 0-2 | - |
| ivyleaf groundcherry | PHHE4 | <i>Physalis hederifolia</i> | 0-2 | - |
| jewels of Opar | TAPA2 | <i>Talinum paniculatum</i> | 0-2 | - |
| New Mexico fanpetals | SINE | <i>Sida neomexicana</i> | 0-2 | - |
| silverleaf nightshade | SOEL | <i>Solanum elaeagnifolium</i> | 0-2 | - |
| twinleaf senna | SEBA3 | <i>Senna bauhinioides</i> | 0-2 | - |
| New Mexico silverbush | ARNE2 | <i>Argythamnia neomexicana</i> | 0-2 | - |
| Palmer's Indian mallow | ABPA | <i>Abutilon palmeri</i> | 0-2 | - |

| | | | | | |
|---|--------------------------|--------|--|--------|---|
| | dwarf desertpeony | ACNA2 | <i>Acourtia nana</i> | 0–2 | – |
| | lyreleaf greeneyes | BELY | <i>Berlandiera lyrata</i> | 0–2 | – |
| | Watson's dutchman's pipe | ARWA | <i>Aristolochia watsonii</i> | 0–2 | – |
| | desert larkspur | DEPA | <i>Delphinium parishii</i> | 0–2 | – |
| 6 | Annual forbs | | | 22–504 | |
| | carelessweed | AMPA | <i>Amaranthus palmeri</i> | 1–112 | – |
| | bristly fiddleneck | AMTE3 | <i>Amsinckia tessellata</i> | 1–112 | – |
| | western tansymustard | DEPI | <i>Descurainia pinnata</i> | 1–56 | – |
| | goosefoot | CHENO | <i>Chenopodium</i> | 1–56 | – |
| | longleaf false goldeneye | HELOA2 | <i>Heliomeris longifolia</i> var. <i>annua</i> | 1–56 | – |
| | longleaf false goldeneye | HELOL | <i>Heliomeris longifolia</i> var. <i>longifolia</i> | 0–56 | – |
| | camphorweed | HESU3 | <i>Heterotheca subaxillaris</i> | 0–56 | – |
| | Thurber's morning-glory | IPTH | <i>Ipomoea thurberi</i> | 0–56 | – |
| | sensitive partridge pea | CHNI2 | <i>Chamaecrista nictitans</i> | 1–39 | – |
| | Coulter's spiderling | BOCO2 | <i>Boerhavia coulteri</i> | 1–39 | – |
| | sorrel buckwheat | ERPO4 | <i>Eriogonum polycladon</i> | 1–34 | – |
| | wheelscale saltbush | ATEL | <i>Atriplex elegans</i> | 0–28 | – |
| | fewflower beggarticks | BILE | <i>Bidens leptocephala</i> | 1–28 | – |
| | slender goldenweed | MAGR10 | <i>Machaeranthera gracilis</i> | 1–28 | – |
| | tanseyleaf tansyaster | MATA2 | <i>Machaeranthera tanacetifolia</i> | 1–28 | – |
| | phacelia | PHACE | <i>Phacelia</i> | 1–28 | – |
| | shaggyfruit pepperweed | LELA | <i>Lepidium lasiocarpum</i> | 1–22 | – |
| | intermediate pepperweed | LEVIM | <i>Lepidium virginicum</i> var. <i>medium</i> | 1–22 | – |
| | hoary bowlesia | BOIN3 | <i>Bowlesia incana</i> | 0–22 | – |
| | New Mexico thistle | CINE | <i>Cirsium neomexicanum</i> | 1–22 | – |
| | cryptantha | CRYPT | <i>Cryptantha</i> | 1–22 | – |
| | common sunflower | HEAN3 | <i>Helianthus annuus</i> | 0–22 | – |
| | woolly tidestromia | TILA2 | <i>Tidestromia lanuginosa</i> | 0–22 | – |
| | crestrub morning-glory | IPCO2 | <i>Ipomoea costellata</i> | 0–17 | – |
| | New Mexico copperleaf | ACNE | <i>Acalypha neomexicana</i> | 1–17 | – |
| | American wild carrot | DAPU3 | <i>Daucus pusillus</i> | 1–11 | – |
| | California poppy | ESCAM | <i>Eschscholzia californica</i> ssp. <i>mexicana</i> | 0–11 | – |
| | horseweed | CONYZ | <i>Conyza</i> | 0–11 | – |
| | Florida pellitory | PAFL3 | <i>Parietaria floridana</i> | 0–11 | – |
| | whitestem blazingstar | MEAL6 | <i>Mentzelia albicaulis</i> | 0–11 | – |
| | sweet four o'clock | MILO2 | <i>Mirabilis longiflora</i> | 0–11 | – |
| | phlox | PHLOX | <i>Phlox</i> | 0–11 | – |
| | Arizona popcornflower | PLAR | <i>Plagiobothrys arizonicus</i> | 0–11 | – |
| | woolly plantain | PLPA2 | <i>Plantago patagonica</i> | 1–11 | – |
| | purslane | PORTU | <i>Portulaca</i> | 0–11 | – |

| | | | | |
|----------------------------|--------|---------------------------------|------|---|
| chia | SAC06 | <i>Salvia columbariae</i> | 0-11 | - |
| sawtooth sage | SASU7 | <i>Salvia subincisa</i> | 0-11 | - |
| ragwort | SENEC | <i>Senecio</i> | 0-11 | - |
| streamside bur cucumber | SIAM | <i>Sicyos ampelophyllus</i> | 0-11 | - |
| sleepy silene | SIAN2 | <i>Silene antirrhina</i> | 1-11 | - |
| climbing arrowheads | SIGR | <i>Sicyosperma gracile</i> | 0-11 | - |
| cutleaf bur cucumber | SILA | <i>Sicyos laciniatus</i> | 0-11 | - |
| combseed | PECTO | <i>Pectocarya</i> | 0-11 | - |
| manybristle chinchweed | PEPA2 | <i>Pectis papposa</i> | 0-6 | - |
| golden crownbeard | VEEN | <i>Verbesina encelioides</i> | 0-6 | - |
| sand fringe-pod | THCU | <i>Thysanocarpus curvipes</i> | 0-6 | - |
| spreading fanpetals | SIAB | <i>Sida abutifolia</i> | 0-6 | - |
| desert unicorn-plant | PRAL4 | <i>Proboscidea althaeifolia</i> | 0-6 | - |
| doubleclaw | PRPA2 | <i>Proboscidea parviflora</i> | 0-6 | - |
| New Mexico plumeseed | RANE | <i>Rafinesquia neomexicana</i> | 0-6 | - |
| desert Indianwheat | PLOV | <i>Plantago ovata</i> | 0-6 | - |
| minerslettuce | MONTI | <i>Montia</i> | 0-6 | - |
| Nuttall's povertyweed | MONU | <i>Monolepis nuttalliana</i> | 0-6 | - |
| green carpetweed | MOVE | <i>Mollugo verticillata</i> | 0-6 | - |
| Mexican passionflower | PAME2 | <i>Passiflora mexicana</i> | 0-6 | - |
| Arizona lupine | LUAR4 | <i>Lupinus arizonicus</i> | 0-6 | - |
| Coulter's lupine | LUSP2 | <i>Lupinus sparsiflorus</i> | 0-6 | - |
| cutleaf cyclanthera | CYDI | <i>Cyclanthera dissecta</i> | 0-6 | - |
| Palmer's spectaclepod | DICA31 | <i>Dimorphocarpa candicans</i> | 0-6 | - |
| wedgeleaf draba | DRCU | <i>Draba cuneifolia</i> | 0-6 | - |
| sanddune wallflower | ERCA14 | <i>Erysimum capitatum</i> | 0-6 | - |
| lobed tickseed | COAU | <i>Coreopsis auriculata</i> | 0-6 | - |
| scrambled eggs | COAU2 | <i>Corydalis aurea</i> | 0-6 | - |
| spurge | EUPHO | <i>Euphorbia</i> | 1-6 | - |
| beeblossom | GAURA | <i>Gaura</i> | 0-6 | - |
| Arizona poppy | KAGR | <i>Kallstroemia grandiflora</i> | 0-6 | - |
| warty caltrop | KAPA | <i>Kallstroemia parviflora</i> | 0-6 | - |
| Gordon's bladderpod | LEGO | <i>Lesquerella gordonii</i> | 0-6 | - |
| southwestern pricklypoppy | ARPL3 | <i>Argemone pleiacantha</i> | 0-6 | - |
| milkvetch | ASTRA | <i>Astragalus</i> | 0-6 | - |
| star gilia | GIST | <i>Gilia stellata</i> | 0-2 | - |
| blanketflower | GAILL | <i>Gaillardia</i> | 0-2 | - |
| Texas stork's bill | ERTE13 | <i>Erodium texanum</i> | 0-2 | - |
| fringed redmaids | CACI2 | <i>Calandrinia ciliata</i> | 0-2 | - |
| Fendler's desertydandelion | MAFE | <i>Malacothrix fendleri</i> | 0-2 | - |
| foothill deervetch | LOHU2 | <i>Lotus humistratus</i> | 0-2 | - |

| | | | | | |
|-------------------|------------------------------|-------|--|--------|---|
| | coastal bird's-foot trefoil | LOSAB | <i>Lotus salsuginosus</i> var. <i>brevivexillus</i> | 0–2 | – |
| | desert evening primrose | OEPR | <i>Oenothera primiveris</i> | 0–2 | – |
| | rough cocklebur | XAST | <i>Xanthium strumarium</i> | 0–2 | – |
| Shrub/Vine | | | | | |
| 7 | Riverwash shrubs | | | 28–168 | |
| | rubber rabbitbrush | ERNAL | <i>Ericameria nauseosa</i> ssp. <i>consimilis</i> var. <i>leiosperma</i> | 0–112 | – |
| | singlewhorl burrobrush | HYMO | <i>Hymenoclea monogyra</i> | 1–112 | – |
| | clasping milkweed | ASAM | <i>Asclepias amplexicaulis</i> | 3–43 | – |
| | fingerleaf gourd | CUDI | <i>Cucurbita digitata</i> | 3–43 | – |
| | Missouri gourd | CUFO | <i>Cucurbita foetidissima</i> | 3–43 | – |
| | coyote gourd | CUPA | <i>Cucurbita palmata</i> | 3–43 | – |
| | pricklyburr | DAIN2 | <i>Datura inoxia</i> | 3–43 | – |
| | Gila manroot | MAGI | <i>Marah gilensis</i> | 3–43 | – |
| | doubleclaw | PRPA2 | <i>Proboscidea parviflora</i> | 3–43 | – |
| | ambrosia leaf bur ragweed | AMAM2 | <i>Ambrosia ambrosioides</i> | 0–28 | – |
| | desertbroom | BASA2 | <i>Baccharis sarothroides</i> | 1–22 | – |
| | mule-fat | BASA4 | <i>Baccharis salicifolia</i> | 0–22 | – |
| | burroweed | ISTE2 | <i>Isocoma tenuisecta</i> | 1–22 | – |
| | sweetbush | BEJU | <i>Bebbia juncea</i> | 0–17 | – |
| 8 | Miscellaneous shrubs | | | 56–168 | |
| | fringed twinevine | FUCYC | <i>Funastrum cynanchoides</i> ssp. <i>cynanchoides</i> | 1–28 | – |
| | desert-thorn | LYCIU | <i>Lycium</i> | 1–28 | – |
| | whitethorn acacia | ACCO2 | <i>Acacia constricta</i> | 0–28 | – |
| | lotebush | ZIOB | <i>Ziziphus obtusifolia</i> | 1–28 | – |
| | littleleaf sumac | RHMI3 | <i>Rhus microphylla</i> | 0–28 | – |
| | Thurber's desert honeysuckle | ANTH2 | <i>Anisacanthus thurberi</i> | 0–22 | – |
| | fourwing saltbush | ATCA2 | <i>Atriplex canescens</i> | 0–22 | – |
| | Drummond's clematis | CLDR | <i>Clematis drummondii</i> | 1–22 | – |
| | Apache plume | FAPA | <i>Fallugia paradoxa</i> | 0–22 | – |
| | desert olive | FOSH | <i>Forestiera shrevei</i> | 0–17 | – |
| | knifeleaf condalia | COSP3 | <i>Condalia spathulata</i> | 0–17 | – |
| | Warnock's snakewood | COWA | <i>Condalia warnockii</i> | 0–17 | – |
| | Coulter's brickellbush | BRCO | <i>Brickellia coulteri</i> | 0–17 | – |
| | fairyduster | CAER | <i>Calliandra eriophylla</i> | 0–11 | – |
| | Kearney's snakewood | COWAK | <i>Condalia warnockii</i> var. <i>kearneyana</i> | 0–11 | – |
| | shortleaf baccharis | BABR | <i>Baccharis brachyphylla</i> | 0–11 | – |
| | California brickellbush | BRCA3 | <i>Brickellia californica</i> | 0–11 | – |
| | longleaf jointfir | EPTR | <i>Ephedra trifurca</i> | 0–11 | – |
| | bastardsage | ERWR | <i>Eriogonum wrightii</i> | 0–11 | – |
| | Texas mulberry | MOMI | <i>Morus microphylla</i> | 0–11 | – |

| | | | | | |
|--|---------------------------|--------|---|------|---|
| | sacahuista | NOMI | <i>Nolina microcarpa</i> | 0–11 | – |
| | skunkbush sumac | RHTR | <i>Rhus trilobata</i> | 0–11 | – |
| | threadleaf ragwort | SEFLF | <i>Senecio flaccidus var. flaccidus</i> | 0–11 | – |
| | canyon grape | VIAR2 | <i>Vitis arizonica</i> | 0–11 | – |
| | soaptree yucca | YUEL | <i>Yucca elata</i> | 1–11 | – |
| | Thurber's sandpaper plant | PETH4 | <i>Petalonyx thurberi</i> | 0–6 | – |
| | Parish's goldeneye | VIPA14 | <i>Viguiera parishii</i> | 0–6 | – |
| | banana yucca | YUBA | <i>Yucca baccata</i> | 0–6 | – |
| | American threefold | TRCA8 | <i>Trixis californica</i> | 0–6 | – |
| | cactus apple | OPEN3 | <i>Opuntia engelmannii</i> | 0–6 | – |
| | Schott's yellowhood | NISC | <i>Nissolia schottii</i> | 0–6 | – |
| | catclaw mimosa | MIACB | <i>Mimosa aculeaticarpa var. biuncifera</i> | 0–6 | – |
| | velvetpod mimosa | MIDY | <i>Mimosa dysocarpa</i> | 0–6 | – |
| | sorrelvine | CITR2 | <i>Cissus trifoliata</i> | 0–6 | – |
| | yerba de pasmo | BAPT | <i>Baccharis pteronioides</i> | 0–6 | – |
| | Wright's beebrush | ALWR | <i>Aloysia wrightii</i> | 0–6 | – |
| | common sotol | DAWH2 | <i>Dasyilirion wheeleri</i> | 0–2 | – |
| | Palmer's century plant | AGPA3 | <i>Agave palmeri</i> | 0–2 | – |
| | candy barrelcactus | FEWI | <i>Ferocactus wislizeni</i> | 0–2 | – |
| | broom snakeweed | GUSA2 | <i>Gutierrezia sarothrae</i> | 0–2 | – |

Tree

| | | | | | |
|---|---------------------------|--------|---|---------|---|
| 9 | Dominant trees | | | 336–897 | |
| | mesquite | PROSO | <i>Prosopis</i> | 224–560 | – |
| | catclaw acacia | ACGR | <i>Acacia greggii</i> | 56–224 | – |
| | blue paloverde | PAFL6 | <i>Parkinsonia florida</i> | 0–112 | – |
| | Jerusalem thorn | PAAC3 | <i>Parkinsonia aculeata</i> | 0–56 | – |
| | netleaf hackberry | CELAR | <i>Celtis laevigata var. reticulata</i> | 0–56 | – |
| | desert willow | CHLI2 | <i>Chilopsis linearis</i> | 0–56 | – |
| | velvet ash | FRVE2 | <i>Fraxinus velutina</i> | 0–28 | – |
| | Arizona walnut | JUMA | <i>Juglans major</i> | 0–28 | – |
| | western soapberry | SASAD | <i>Sapindus saponaria var. drummondii</i> | 0–28 | – |
| | American black elderberry | SANIC4 | <i>Sambucus nigra ssp. canadensis</i> | 0–22 | – |
| | Arizona sycamore | PLWR2 | <i>Platanus wrightii</i> | 0–17 | – |
| | narrowleaf willow | SAEX | <i>Salix exigua</i> | 0–17 | – |
| | Fremont cottonwood | POFR2 | <i>Populus fremontii</i> | 0–11 | – |
| | oneseed juniper | JUMO | <i>Juniperus monosperma</i> | 0–11 | – |

Animal community

This site produces a wide variety of good quality forage and is usable at any season by all classes of cattle. It usually occurs as small inclusions within large areas of upland range sites. Having a good variety of forage species, shade, and occasional water, this site will be overused in the summer growing season before proper use is made of adjacent upland areas. For this reason, grazing systems must be used to allow recovery of herbaceous forage species on this site. The site produces a good variety of valuable browse for spring and fall use.

Occurring as occasional wooded strips through large areas of open uplands, this site is a haven for wildlife, especially in the heat of the summer season. Water is available occasionally in the spring and again in the summer. Water developments are very important for wildlife species using this site.

Hydrological functions

These sandy floodplains are extremely important for ground-water recharge in upland basins. Deep, very coarse textured soils allow water to percolate to great depths after runoff from large storms.

Recreational uses

Hunting, hiking, horseback riding, bird-watching, camping, photography and picknicing.

Wood products

Mesquite and catclaw acacia furnish limited fuel-wood and posts. The importance of large trees on this site for wildlife should limit the fuel-wood uses to deadwood and driftwood.

Other products

Sand, magnetite.

Inventory data references

Range 417s include 2 in fair condition.

Contributors

Dan Robinett

Larry D. Ellicott

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 |
| Date | 12/12/2012 |
| Approved by | Byron Lambeth |
| 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:** Sandy stream channels braid through the site and occupy 35% of the area. Channel depth ranges from 6-12 inches and floodplain areas receive extra water as overbank flow in moderate and large run-off

events.

3. **Number and height of erosional pedestals or terracettes:** Pedestals are common on all longer lived grasses and sub-shrubs and are from 1-3 inches in height. Pedestals are common on large shrubs and range from 6-12 inches high (from rodent activity, erosion and sedimentation). Terracettes are uncommon on the site.

4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** Bare ground from a point cover transect (300 pts) run on site was 41%. Gravel cover was 6% and basal cover of live perennial plants was 1%. Bare areas (outside braided channels), often masked by annuals, are 3-4' in diameter, generally 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):** Both fine and coarse litter size classes are staying in place. In channels, all litter size classes are moving except large woody debris which catches in low growing tree branches.

8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):** Values from a soil slake test average 1.7. Soils are very sandy. There is no difference between areas without canopy and shrub canopy areas.

9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** A horizon is 8 inches thick, single-grained. Colors are 7.5 YR 6/4 dry and 7.5 YR 4/4 moist.

10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Trees and large shrubs are well distributed on site (20-30% canopy cover), sub-shrubs scattered across site (0-3% canopy cover), perennial grasses show a general association with trees and shrubs with scattered plants across site (10-12% canopy cover), annual grasses and forbs fluctuate with weather patterns. General hydrologic functioning: the perennial grasses slow/reduce the energy of surface run-off and promote infiltration; trees and shrubs deter surface water flow without slowing its energy.

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

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.Mid-Grasses = Trees >>

Sub-dominant: Suffrutescent Grasses > Misc.Per.Grasses > Riverwash Shrubs = Misc. Shrubs > Annuals

Other:

Additional: Annual grasses and forbs fluctuate within ranking based on seasonal precipitation.

13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** Mortality due to drought (2009 and very dry winter spring of 2011) is high on perennial grasses and sub-shrubs.
-
14. **Average percent litter cover (%) and depth (in):** From the pace frequency transect (300 pts.) litter cover was 50% on this date.
-
15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** 825 lbs/ac. in a below average year; 1800 lbs/ac. in an average year; 3150 lbs/ac. in an above average year.
-
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 is native to site and has not increased in size or density. From transects mesquite canopy is 11% and density is 80 plants/ac. Catclaw acacia has 11% canopy on this site. Other invasive/non-native species: Enneapogon cenchroides (sofffeather pappusgrass), Bermuda, mustard, foxtail.
-
17. **Perennial plant reproductive capability:** Slightly impaired by drought on perennial grass and sub-shrub species.
-