

Ecological site R030XA102AZ Breaks 3-6" 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): 030X–Mojave Basin and Range

AZ CRA 30.1 – Lower Mohave Desert

Elevations range from 400 to 2500 feet and precipitation averages 3 to 6 inches per year. Vegetation includes creosotebush, white bursage, Mormon tea, and brittlebush. The soil temperature regime is hyperthermic and the soil moisture regime is typic aridic. This unit occurs within the Basin and Range Province and is characterized by broad basins, valleys, and old lakebeds. Widely spaced mountains trending north to south occur throughout the area. Isolated, short mountain ranges are separated by an aggraded desert plain. The mountains are fault blocks that have been tilted up. Long alluvial fans coalesce with dry lakebeds between some of the ranges.

Table 1. Dominant plant species

Tree	Not specified
Shrub	(1) <i>Larrea tridentata</i>
Herbaceous	Not specified

Physiographic features

This range site occurs on terraces adjacent to the Colorado River. It does not receive run-in from adjacent areas, but suffers from excessive loss from runoff. It occurs on all exposures.

Table 2. Representative physiographic features

Landforms	(1) Hill (2) Mountain
Flooding frequency	None
Ponding frequency	None
Elevation	244–610 m
Slope	0–50%

Climatic features

The 30-1AZ Lower Mohave Desert Shrub land resource unit is characterized by a hot, dry climate. The average annual rainfall is 3 to 6 inches, but it can be extremely variable (e.g. from 0 to 11 inches). There can be long periods when little or no precipitation is received. Most of the precipitation for the year could arrive in just a couple of storms. The soil moisture regime is typic aridic and the soil temperature regime is hyperthermic. Winter precipitation from November through April occurs as gentle rains from storms coming out of the Pacific Ocean. Snow is very rare and only falls in the highest mountains. A seasonal drought occurs in May and June. Summer/fall precipitation from July through October comes from spotty, unreliable, and sometimes violent thunderstorms. The moisture originates in the Gulf of Mexico (and the Pacific Ocean in the fall) and flows into the state on the north end of the Mexican monsoon. Strong winds are common, especially during the spring.

Table 3. Representative climatic features

Frost-free period (average)	325 days
Freeze-free period (average)	365 days
Precipitation total (average)	152 mm

Influencing water features

Soil features

Soils on this site are deep. Surface depth is highly variable, ranging from 1 to 60 inches. Texture ranges from sand to clay. Underlying layers have permeability ranging from rapid to slow; this soil cannot hold climate supplied moisture. Soluble salt accumulations are low. pH ranges from 7.8-8.4. With good vegetative cover infiltration rate is low. Stability against erosion processes is poor. Plant-soil moisture relationships are poor. Gravel content in certain horizon average greater than 35%. The torriorthents contain greater than 35% gravels by volume.

Table 4. Representative soil features

Surface texture	(1) Gravelly sand (2) Sandy clay loam (3) Clay loam
Drainage class	Well drained to somewhat excessively drained
Permeability class	Moderate to very rapid
Soil depth	3–152 cm
Soil reaction (1:1 water) (0-101.6cm)	7.8–8.4

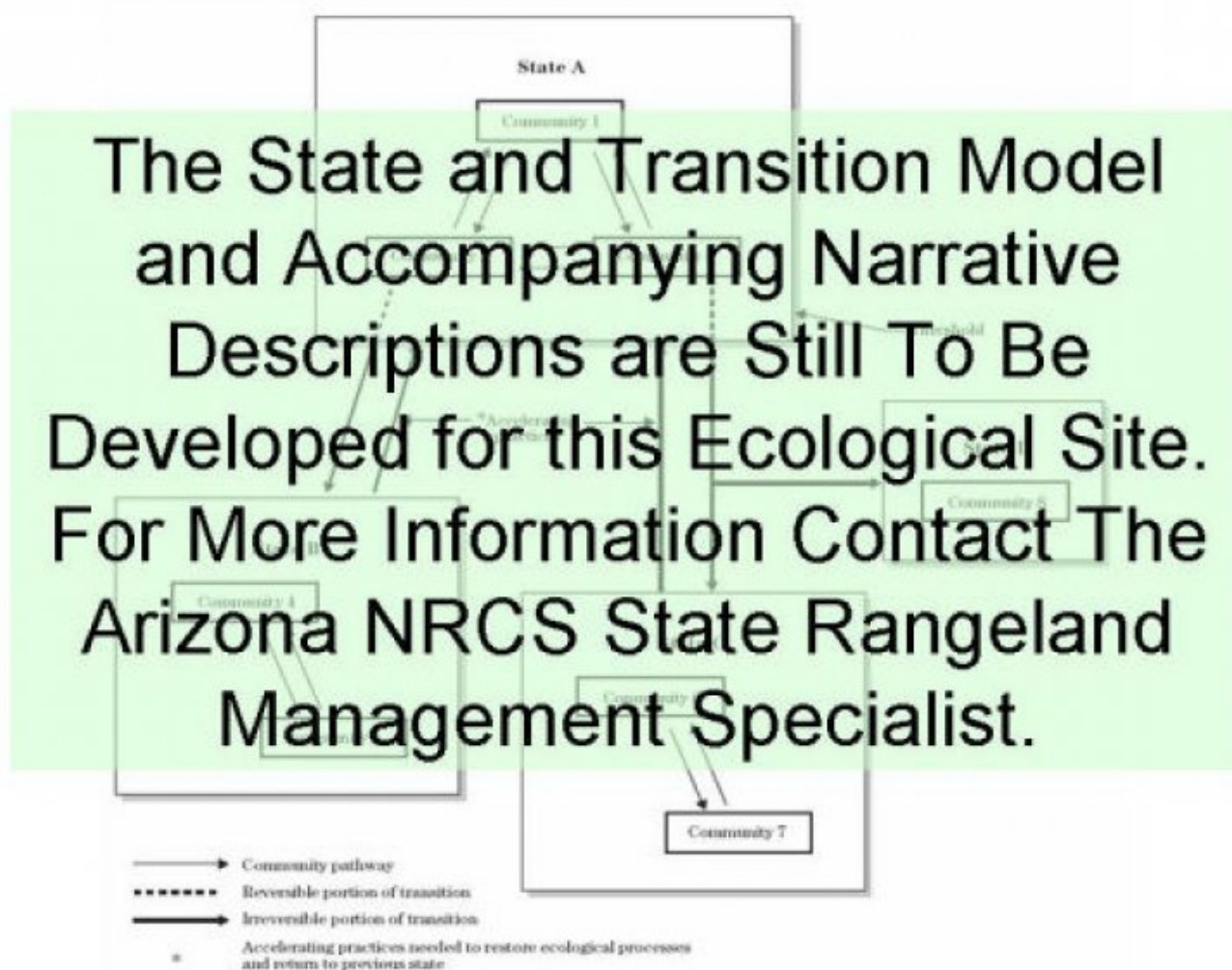
Ecological dynamics

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

State and transition model



State 1 Historic Climax Plant Community

Community 1.1 Historic Climax Plant Community

The plant community on this site is predominantly desert shrubs and trees. Perennial grasses present are very drought hardy and make up a small percentage of the community. This site produces very little usable forage; however, being adjacent to bottom sites, it is usually found in less than good condition. Continued use results in a loss of perennial grasses and forbs, and an increase in woody plants.

Table 5. Annual production by plant type

Plant Type	Low (Kg/Hectare)	Representative Value (Kg/Hectare)	High (Kg/Hectare)
Shrub/Vine	196	215	238
Forb	13	28	56
Grass/Grasslike	13	37	28
Total	222	280	322

Figure 4. Plant community growth curve (percent production by month). AZ3011, 30.1 3-6" p.z. all sites. Growth begins in late winter, most growth occurs in the spring..

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	7	30	32	13	7	3	5	2	1	0	0

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				2–13	
	threeawn	ARIST	<i>Aristida</i>	2–7	–
	bush muhly	MUPO2	<i>Muhlenbergia porteri</i>	2–7	–
	big galleta	PLRI3	<i>Pleuraphis rigida</i>	2–7	–
2				2–13	
	Grass, annual	2GA	<i>Grass, annual</i>	2–13	–
Forb					
3				13–56	
	Forb, annual	2FA	<i>Forb, annual</i>	13–28	–
	Forb, perennial	2FP	<i>Forb, perennial</i>	13–28	–
	devil's spineflower	CHRI	<i>Chorizanthe rigida</i>	13–28	–
Shrub/Vine					
4				28–56	
	creosote bush	LATR2	<i>Larrea tridentata</i>	28–56	–
5				13–43	
	triangle bur ragweed	AMDE4	<i>Ambrosia deltoidea</i>	13–43	–
6				0–13	
	yellow paloverde	PAMI5	<i>Parkinsonia microphylla</i>	0–13	–
7				99–126	
	burrobush	AMDU2	<i>Ambrosia dumosa</i>	0–63	–
	Engelmann's hedgehog cactus	ECEN	<i>Echinocereus engelmannii</i>	0–63	–
	longleaf jointfir	EPTR	<i>Ephedra trifurca</i>	0–63	–
	white ratany	KRGR	<i>Krameria grayi</i>	0–63	–
	desert-thorn	LYCIU	<i>Lycium</i>	0–63	–
	smoketree	PSSP3	<i>Psoralea argemone</i>	0–63	–

Animal community

As forage production on this site is very low, and as it is always next to a bottom site which produces much forage, it should be managed with and for the bottom areas.

Wildlife species on this site are usually in transit to or from adjacent sites used for food and cover.

Recreational uses

This site is located on breaks along major desert drainage ways. Desert shrubs provide a sparse cover. Ocotillo is prevalent enough in places to lend much to the aesthetics of the area. Very few days in the flad, winter or spring are too uncomfortable to enjoy outdoor activities. June, July and August activities are restricted by afternoon heat.

Horseback riding, wildlife observation, hunting, hiking, and photography are the main activities suited to this site.

Other information

Kingman, Phoenix, & Fredonia field offices.

Contributors

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Unknown

Rangeland health reference sheet

Interpreting Indicators of Rangeland Health is a qualitative assessment protocol used to determine ecosystem condition based on benchmark characteristics described in the Reference Sheet. A suite of 17 (or more) indicators are typically considered in an assessment. The ecological site(s) representative of an assessment location must be known prior to applying the protocol and must be verified based on soils and climate. Current plant community cannot be used to identify the ecological site.

Author(s)/participant(s)	
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:**
