Ecological site R035XB222AZ
Sandy Terrace 6-10" p.z.

Accessed: 04/19/2024

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.

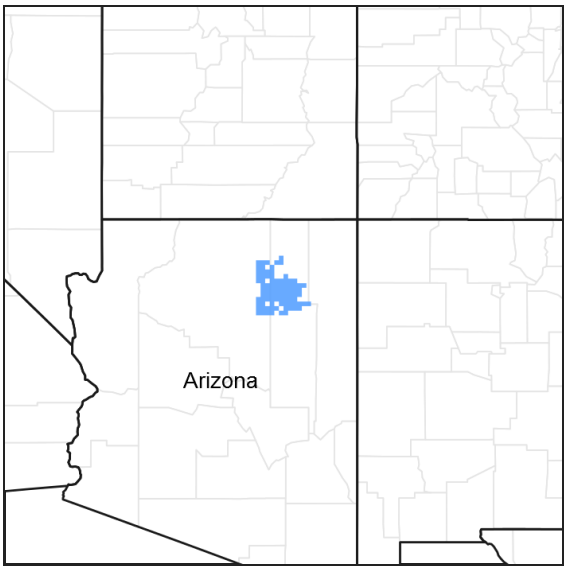

Figure 1. Mapped extent

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): 035X–Colorado Plateau

AZ CRA 35.2 - Colorado Plateau Shrub – Grasslands

Elevations range from 3500-5500 feet and precipitation averages 6 to 10 inches per year. Vegetation includes shadscale, fourwing saltbush, Mormon tea, blackbrush, Indian ricegrass, galleta, blue grama, and black grama. The soil temperature regime is mesic and the soil moisture regime is typic aridic. This unit occurs within the Colorado Plateau Physiographic Province and is characterized by a sequence of flat to gently dipping sedimentary rocks eroded into plateaus, valleys and deep canyons. Sedimentary rock classes dominate the plateau with volcanic fields occurring for the most part near its margin.

Table 1. Dominant plant species

Tree	Not specified
Shrub	(1) *Atriplex canescens*
Herbaceous	(1) *Achnatherum hymenoides* (2) *Pleuraphis jamesii*

Physiographic features

This site occurs on stream terraces and fan remnants. This site is usually adjacent to washes and intermittent stream drainages. Historically, this site was primarily stream bottoms or flood plains, but through deep gully erosion, they no longer benefit from excess run-in moisture.

This site occurs in an upland position.

Table 2. Representative physiographic features

Landforms	(1) Stream terrace (2) Fan remnant
Flooding duration	Extremely brief (0.1 to 4 hours) to very brief (4 to 48 hours)
Flooding frequency	Rare to occasional
Elevation	5,200–6,100 ft
Slope	0–5%
Aspect	Aspect is not a significant factor

Climatic features

Area has a very dry and windy climate that is hot in the summer and cold in the winter. Average annual precipitation is from 6 to 10 inches. Soil moisture regime is typic aridic and the soil temperature regime is mesic. A slight majority of the precipitation arrives during the late fall, winter, and early spring. this winter season moisture originates in the Pacific Ocean and arrives as rain, or sometimes snow, during widespread frontal storms of generally low intensity. The majority of the snow falls from December through February, but rarely lasts more than a few days. The driest period is from late May to early July. Summer rains occur from July through September during brief intense local thunderstorms. The rain is sporadic in intensity and location. Windy conditions are common year round with the strongest most frequently in the spring.

Table 3. Representative climatic features

Frost-free period (average)	181 days
Freeze-free period (average)	207 days
Precipitation total (average)	10 in

Influencing water features

Soil features

The soils grouped into this site are deep and well drained.
Surface texture ranges from loamy sand to loamy fine sand.
The subsurface textures commonly are loamy sand, loamy fine sand, sand or sandy loam.
Below a depth of 20" there can be strata of heavier textures. Permeability is moderate to moderately rapid.
Available water holding capacity is moderate. Runoff is slow and the hazard of water erosion is slight. The hazard of soil blowing is high. These soils are mildly to moderately alkaline.

Typical taxonomic units include:

SSA-701 Grand Canyon Area MU 43 Gypill (fine sandy loam);
SSA-713 Chinle Area MU 1013 Naha;
SSA 714 Hopi - MU's 10 Jeddito & 21 Naha;
SSA-715 Fort Defiance Area AZ/NM MU's 43 Jeddito & 65 Ives; and
SSA 717 Shiprock NM - MU's 10 Aneth & 90 Jeddito.

Table 4. Representative soil features

Parent material	(1) Residuum–sandstone and siltstone
Surface texture	(1) Loamy sand (2) Loamy fine sand
Family particle size	(1) Sandy
Drainage class	Moderately well drained to well drained
Permeability class	Moderate to moderately rapid
Soil depth	40–60 in
Available water capacity (0-40in)	2.5–5 in
Electrical conductivity (0-40in)	0–8 mmhos/cm
Sodium adsorption ratio (0-40in)	0–13
Soil reaction (1:1 water) (0-40in)	7.4–8.4

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

35.2 Sandy Terrace 6-10"p.z.

(R035XB222AZ)

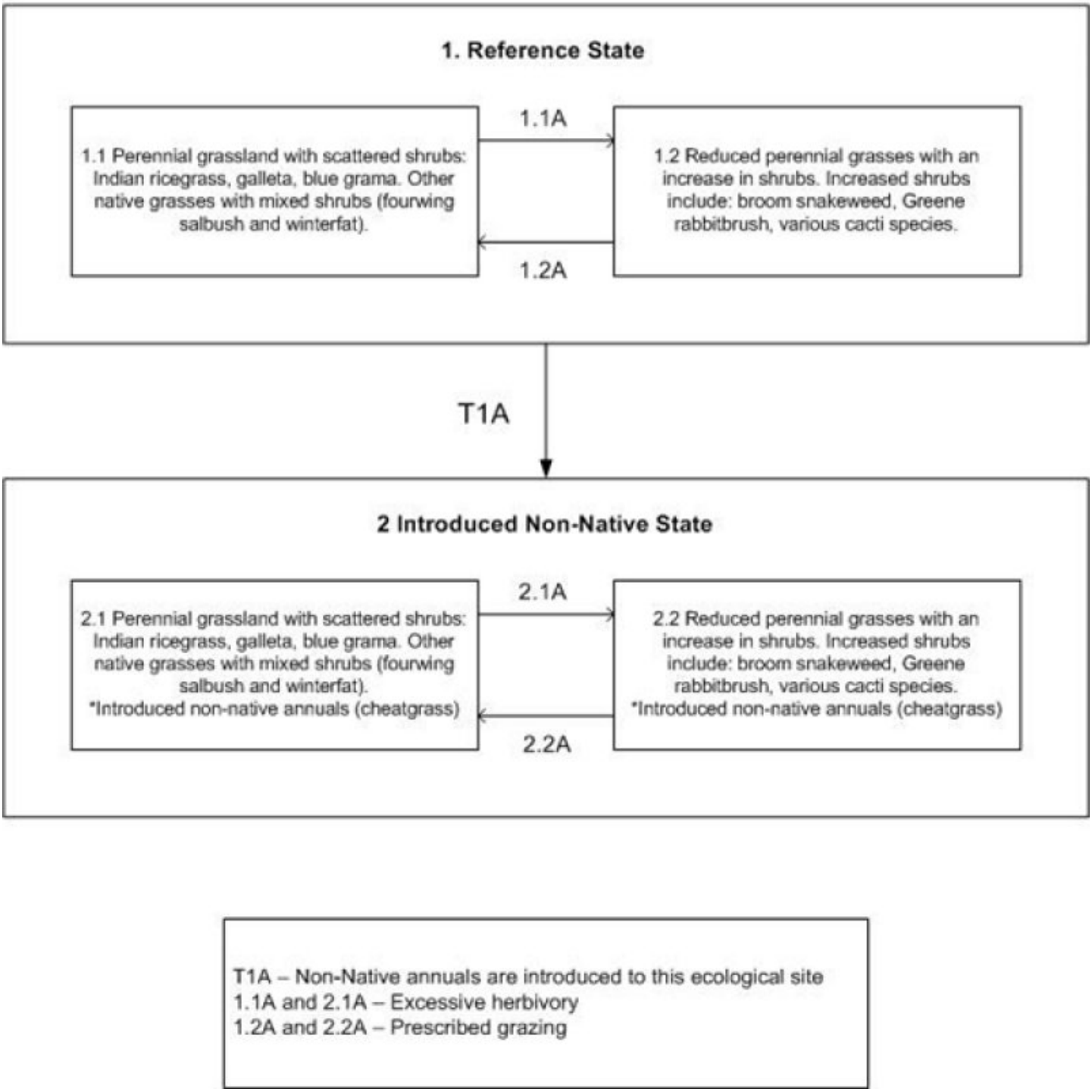

Figure 4. Sandy Terrace 6-10" p.z. State and Transition Mode

State 1
Historic Climax Plant Community

Community 1.1
Historic Climax Plant Community

This range site is composed of grasses intermixed with shrubs. This plant community has the potential for a mixture of cool and warm season species. Plant species most likely to increase or invade on the site through overgrazing or

other disturbance are Fendler threeawn, cheatgrass, six-weeks fescue, russian thistle, broom snakeweed and Greene's rabbitbrush.

Table 5. Annual production by plant type

Plant Type	Low (Lb/Acre)	Representative Value (Lb/Acre)	High (Lb/Acre)
Grass/Grasslike	228	258	488
Shrub/Vine	70	110	150
Forb	26	41	56
Total	**324**	**409**	**694**

Figure 6. Plant community growth curve (percent production by month). AZ3521, 35.2 6-10" p.z. all sites. Growth begins in the spring and continues through the summer. Most growth in this CRA occurs in the spring using stored winter moisture..

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	1	9	20	27	14	10	11	5	3	0	0

Figure 7. Plant community growth curve (percent production by month). AZ5201, 35.2 6-10" p.z. galleta. Growth begins in spring, most growth occurs during summer rains..

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	0	5	10	20	10	15	35	5	0	0	0

Figure 8. Plant community growth curve (percent production by month). AZ5202, Indian ricegrass, 35.2 6-10" p.z.. Growth begins in spring, most growth occurs in May, goes dormant during summer heat..

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	0	10	15	40	20	0	0	10	5	0	0

Figure 9. Plant community growth curve (percent production by month). AZ5211, 35.2 6-10" p.z. fourwing saltbush. Growth begins in spring and continues through the summer. Seed stalk extension occurs in summer with seed set in the fall..

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	0	5	10	15	20	20	15	10	5	0	0

Additional community tables

Table 6. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production (Lb/Acre)	Foliar Cover (%)
Shrub/Vine					
0				83–138	
	fourwing saltbush	ATCA2	*Atriplex canescens*	28–83	–
	Greene's rabbitbrush	CHGR6	*Chrysothamnus greenei*	11–28	–
	winterfat	KRLA2	*Krascheninnikovia lanata*	0–28	–
	broom snakeweed	GUSA2	*Gutierrezia sarothrae*	0–17	–
	pricklypear	OPUNT	*Opuntia*	0–6	–
Grass/Grasslike					
0				330–385	
	Indian ricegrass	ACHY	*Achnatherum hymenoides*	110–165	–
	James' galleta	PLJA	*Pleuraphis jamesii*	83–110	–
	blue grama	BOGR2	*Bouteloua gracilis*	28–55	–
	squirreltail	ELELE	*Elymus elymoides ssp. elymoides*	6–28	–
	needle and thread	HECOC8	*Hesperostipa comata ssp. comata*	0–28	–
	western wheatgrass	PASM	*Pascopyrum smithii*	0–28	–
	sand dropseed	SPCR	*Sporobolus cryptandrus*	0–28	–
	alkali sacaton	SPAI	*Sporobolus airoides*	0–17	–
	sandhill muhly	MUPU2	*Muhlenbergia pungens*	0–17	–
	Fendler's threeawn	ARPUF	*Aristida purpurea var. fendleriana*	0–11	–
Forb					
0				28–55	
	Forb, perennial	2FP	*Forb, perennial*	17–33	–
	Forb, annual	2FA	*Forb, annual*	6–11	–
	rose heath	CHER2	*Chaetopappa ericoides*	0–6	–
	small-leaf globemallow	SPPA2	*Sphaeralcea parvifolia*	0–6	–

Animal community

This site is suitable for yearlong grazing by either cows and calves or stocker cattle and is easily traversed by all classes of livestock. Prescribed Grazing systems adapt very well to use on this site. Soils on this site have a moderate to high erosion hazard, particularly on overgrazed areas, roads, cattle trails and concentration areas.

This site offers a fair diversity in the vegetative complex for wildlife. In higher condition classes the site is most suitable to grassland wildlife species. Because this site is adjacent to washes and drainages, it is an important feeding area. The potential for competition with cattle grazing is high.

Recreational uses

This site occurs as entrenched floodplains, alluvial fans and terraces.
This site is characterized by open grasslands interspersed with a few flowering forbs and shrubs. The landscape breaks the monotony of the surrounding rolling plains and are aesthetically very pleasing.
Winters are cold, however, relatively mild spring, fall and summer months are attractive to recreationists. Springtime is usually windy.
Activities include horseback riding, wildlife observation and hunting.

Type locality

Location 1: Navajo County, AZ

Township/Range/Section	T25N R18E S7,8
General legal description	Along Jeddito Wash, 15 miles south of Second Mesa and 2 miles NW of Egloffstein Butte on the Hopi Reservation.

Other references

Information and updates collected during 2009-2010 for this ESD was conducted as part of an Interagency Technical Assistance Agreement between the Bureau of Indian Affairs–Navajo Region and the NRCS-Arizona.

Contributors

Larry D. Ellicott
Steve Barker

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:**