United States Department of the Interior
Bureau of Land Management
Sonoran Desert National Monument

Appendix 3 - Final Land Health Evaluation

Sonoran Desert National Monument Complex

Arnold (#03004)
Beloat (#03007)
Big Horn (#03009)
Conley (#03018)
Hazen (#03042)
Lower Vekol (#03053)

March 1, 2024

Table of Contents

List of Appendices

1.0 Introduction

The Bureau of Land Management (BLM), Lower Sonoran Field Office (LSFO) completed a Land Health Evaluation (LHE) for the Sonoran Desert National Monument (SDNM) in 2012. The LHE results were analyzed in a compatibility study to determine if livestock grazing was compatible with the paramount purpose of protecting the objects of the SDNM. The LHE and the compatibility findings were used to inform the 2012 SDNM Proposed Resource Management plan (RMP)/Final Environmental Impact Statement (EIS).

The 2012 Record of Decision (ROD) and the Proposed RMP/EIS pertaining to livestock use were challenged in the U.S. District Court, for the District of Arizona. The court ordered the BLM to prepare a new LHE and compatibility determination to be incorporated into the 2012 RMP. The court did not vacate the grazing decisions for livestock use contained in the RMP, as approved by the 2012 ROD. As a result, the 2012 ROD decisions pertaining to livestock use remains in effect.

The 2012 LHE addressed the achievement of Arizona Standards for Rangeland Health and determined if livestock grazing was the causal factor for not achieving Standards for those portions of allotments found within the SDNM. In response to the court order, the BLM determined a landscape-level analysis was needed because most of the allotments have permitted use for public lands inside and outside of the SDNM that should be addressed holistically (Appendix A).

The BLM re-inventoried the soils and vegetation and collected additional monitoring data to assess land health on the SDNM. In 2016, the BLM developed a new study design to address the resource conditions of the SDNM at the landscape scale for public lands inside/outside of the SDNM north of Interstate 8 (I-8), here after referred to as the SDNM Complex. This resulted in an extensive soil and vegetation data analysis of rangeland health and the biological objects of the SDNM. The new study design included new data collection protocols for improved statistical analysis and repeatability.

The purpose of this new LHE is to re-evaluate the Arizona Standards for Rangeland Health (Standards) on the BLM-administered public lands available for livestock use as provided for under the 2012 SDNM RMP. This updated LHE report contains preliminary conclusions on achievement or non-achievement of Standards and causal factors for non-achievement of Standard 1 or 3 or both. If current or historical grazing is a significant causal factor, the BLM may propose actions to correct the results of that use.

As part of the LHE process, desired plant community (DPC) objectives were established for the biological objects of the SDNM. This updated LHE proposes management recommendations that will assure soil conditions and ecosystem function, as described in Standards 1 and 3, will continue to be achieved or if not achieved make significant progress toward achieving the Standards.

The Secretary of the Interior approved Arizona's Standards for Rangeland Health (Standards) and Guidelines for Grazing Administration (Guidelines) in April 1997. The Decision Record signed by the BLM State Director (April 1997) provides for full

implementation of the Standards and Guidelines in Arizona BLM Land Use Plans including all Resource Management Plans developed after 1997. See Appendix B for Arizona's Standards for Rangeland Health. Standards are measurable and attainable goals for the desired condition of the biological resources and physical components/characteristics of desert ecosystems found within the SDNM.

2.0 Complex Profile

2.1 SDNM Complex Description

The SDNM Complex is located northeast of the town of Gila Bend, AZ, and is bound by the Gila River to the north, I-8 to the south, the Estrella and Palo Verde mountains to the east, and the Gila River and Highway 85 to the west. The Complex ranges from 780 to 3,182 feet in elevation and contains mountainous areas separated by broad alluvial valleys. Mining, utility right-of-ways, agriculture, livestock grazing, industrial land use, horseback riding, and off-highway vehicle (OHV) use are common on the Complex. The Complex is comprised of six grazing allotments, all of which have portions within the SDNM (Map 1).

2.2 Physical Description of the SDNM Complex

The following is a general description of the location of the allotments within the Complex. See Table 1 for land status and allotment acreages, and Map 1 for the location of the allotments.

2.2.1 Arnold

The Arnold Allotment has three defined pastures. It is bound by the Gila River to the north, Highway 85 to the west, the Maricopa Mountains to the south, and the Beloat Allotment to the east. Approximately 2,621 acres of public land at the south end of the allotment are within the SDNM. Mining (outside the SDNM), utility right-of-ways, and OHV use are common on the Arnold. The Buckeye Hills span the northern portion of the Arnold and taper down into the Little Rainbow Valley in the south. The soils range from shallow granitic hills in the north to deeper alluvial fans in the south. Elevation in the area ranges from 900 ft. to 1,500 ft.

2.2.2 Beloat

The Beloat Allotment is bound by the Gila River to the north, the Estrella Mountains to the east, the Maricopa Mountains to the west, and the Conley Allotment to the south. The Beloat spans the majority of the Rainbow Valley area which encompasses a large amount of private, residential, agricultural, and State land near the City of Buckeye, AZ. The urban/rural interface facilitates OHV use and utility right-of-ways are common in this area. Approximately one quarter of the Beloat is within the SDNM. The Beloat is roughly bisected by Rainbow Valley Road and split into six pastures, three in the east and three in the west. The soils range from shallow calcaric granitic hills in the west, and deep alluvial fans in the valley, to moderately deep non-calcaric soils in the east. Elevation in the area ranges from 1,100 ft. to 2,493 ft.

2.2.3 Big Horn

The Big Horn Allotment is bound by Highway 85 to the west, I-8 to the south, the Hazen Allotment to the north and the Maricopa Mountains to the east. Almost the entire Big Horn is within the SDNM with the exception of 16,436 acres of State land and a small portion with no available water south of I-8. The SDNM portion of the Big Horn south of Interstate 8 was closed to grazing in the designating Presidential Proclamation. Three pastures remain, north and south, bisected by State Route 238, and the Big Horn pasture in the southeast corner. The State land in the Big Horn is unfenced, authorized for perennial grazing, and almost exclusively located in the north pasture. The Big Horn

has relatively low recreational activity and few utility right-of-ways. The soils range from shallow granitic hills in the east to broad alluvial fans with well-developed shallow calcaric duripans in the west. Elevation ranges from 780 ft. to 3,182 ft.

2.2.4 Conley

The Conley Allotment is bound by the Maricopa Mountains to the west, the Beloat Allotment to the north, the Palo Verde Mountains to the east and the Lower Vekol Allotment to the south. The Conley spans the majority of the Mobile Valley which includes a large amount of private land, dispersed residential, landfills, and some State land. OHV use, utility corridors, and industrial land uses are common in the Conley. Approximately 60 percent of the allotment lies within the SDNM boundary. The Conley is split into four pastures, two in the north and two in the south, roughly bisected by State Route 238. The soils range from shallow granitic hills in the west to deep alluvial fans in the Mobile Valley. Elevation ranges from 1,260 ft. to 3,182 ft.

2.2.5 Hazen

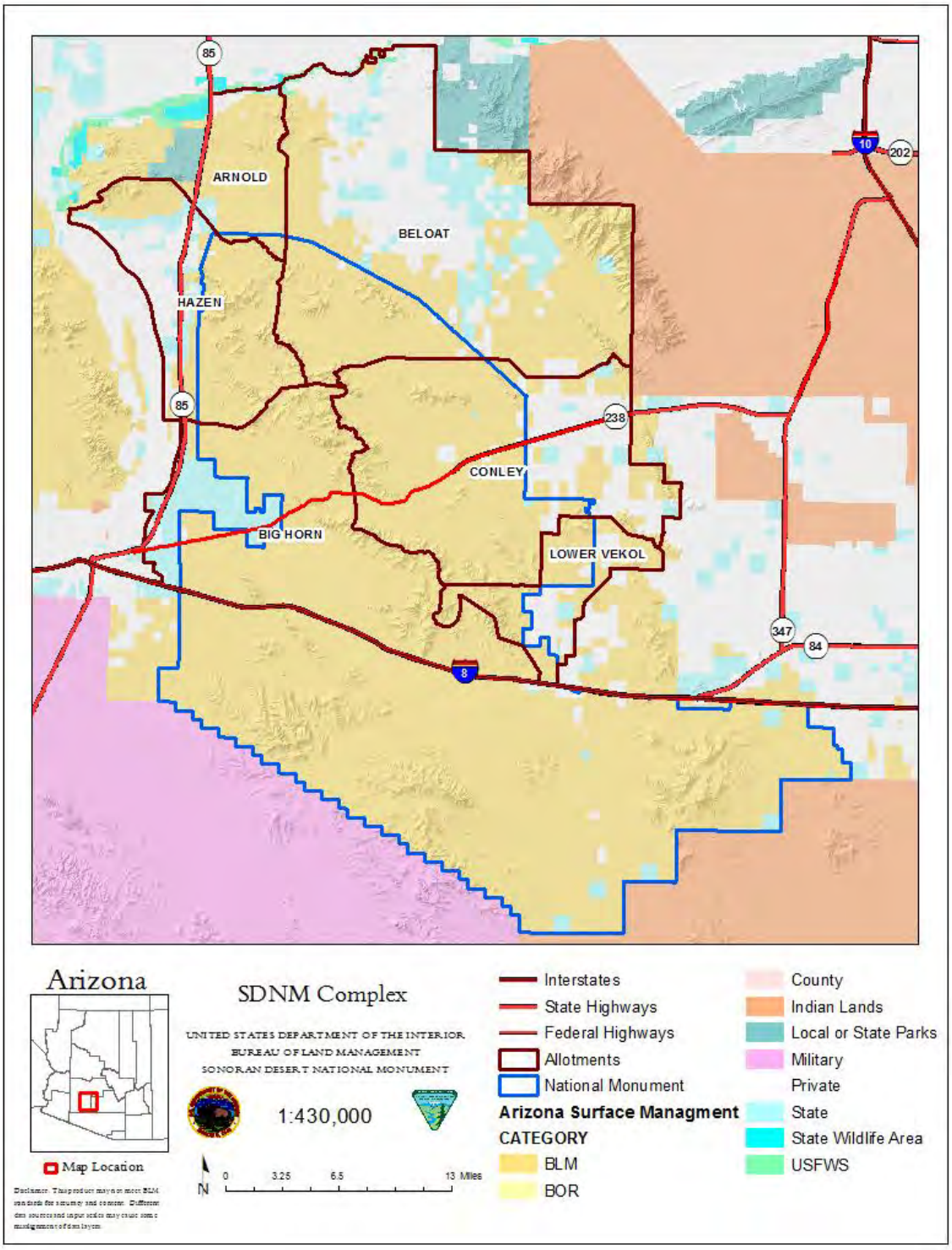
The Hazen Allotment is bound by the Buckeye Hills to the north, the Gila River to the west, the Maricopa Mountains to the east, and the Big Horn Allotment to the south. The majority of private, industrial and agricultural, and State lands reside west of Highway 85 that roughly bisects the Hazen. OHV use and utility right-of-ways are common on the Hazen. Approximately 50 percent of the Hazen lies within the SDNM. The Hazen is split into four pastures, three east of Highway 85 and one west. The soils are evenly dispersed throughout the Hazen ranging from shallow granitic hills in the Maricopa Mountains and Buckeye Hills to deeper alluvial fans in Little Rainbow Valley. Elevation in the area ranges in from 800 ft. on the Gila River to 2,493 ft.

2.2.6 Lower Vekol

The Lower Vekol Allotment is bound by the Booth Hills and the Conley Allotment to the north, the Maricopa Mountains to the west, the Kirian Allotment to the east, and Interstate-8 to the south. The Lower Vekol spans the Vekol Valley where the majority of the private, dispersed residential, and State land resides. Only the western portion of the Lower Vekol is within the SDNM. OHV use, horseback riding, and utility right-of-ways are common on the Lower Vekol. The Lower Vekol is split into five pastures, three in the north and two in the south. One of the smaller northern pastures contains a series of nine earthen dikes to reduce water velocity and improve infiltration. However, their effectiveness is limited. Elevation ranges from 1,600 ft. to around 2,600 ft.

Table 1. Land Status and Allotment acreage of the SDNM Complex.

Allotment	BLM Administered Public acres	BLM Administered Public acres within SDNM	Private acres	State acres	Total acres
Arnold	22,890	2,621	1,290	1,110	25,290
Beloat	101,860	34,405	52,020	22,710	176,590
Big Horn	97,195	91,986	1,090	16,436	114,721
Conley	91,140	80,368	24,310	3,020	118,470
Hazen	42,190	31,749	12,570	9,590	64,350
Lower Vekol	22,530	16,079	6,410	800	29,740



Map 1. SDNM Complex Allotments North of Interstate-8

3.0 Complex Resources

3.1 Major Land Resource Areas

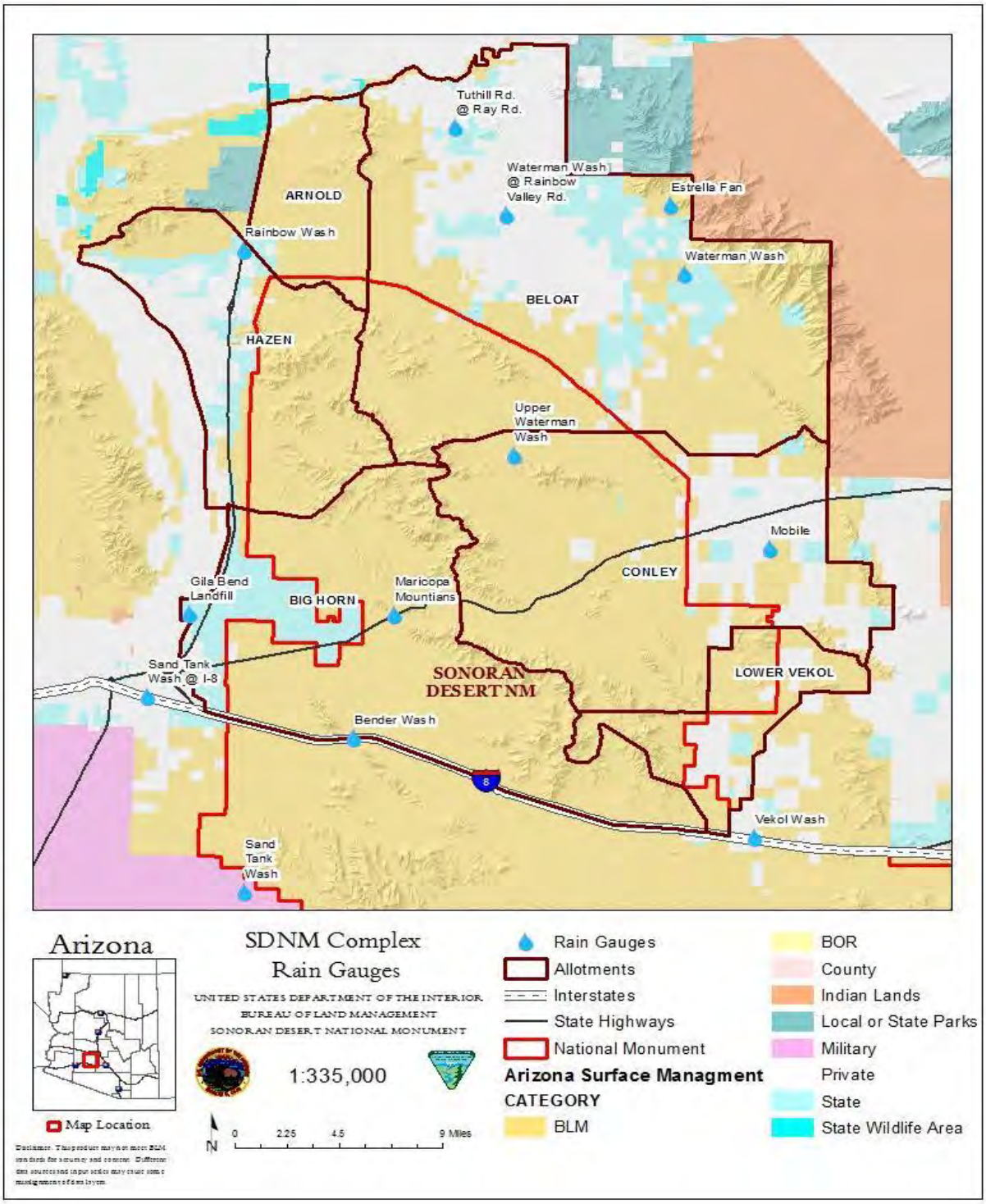
A Major Land Resource Area (MLRA) is a broad geographic area that is characterized by a particular pattern of soils, climate, water resources, vegetation, and land use. The SDNM Complex lies on the transition between the 40-3 MLRA Colorado (Lower) Sonoran Desert and the 40-2 MLRA Middle Sonoran Desert, exhibiting features from both where the majority of the SDNM Complex receives less than 7 inches of precipitation annually and the majority of the SDNM Complex is above 1,200 feet in elevation.

MLRA	(in)	Lower Limit	Upper Limit
40-3	3-7	300 ft.	1,200 ft.
40-2	7-10	1,200 ft.	2,000 ft.

3.2 Climate

3.2.1 Precipitation

The SDNM Complex exhibits a bi-modal precipitation seasonality that is characteristic of southern Arizona. During winter and spring, frontal storm systems move west-to-east guided by the jet stream. Summer monsoon thunderstorms also deliver significant amounts of precipitation to the area. The SDNM Complex, as well as the majority of southern Arizona, exhibits strong year-to-year variations in precipitation due to El Nino-Southern oscillations, with wet periods followed by dry periods. Precipitation data were obtained from the Maricopa County Flood Control District. Thirteen rain gauges are dispersed throughout and within close proximity to the SDNM Complex (Map 2). These gauges have been in operation from 10 to 31 years, depending on location, and their elevations range from 750 ft. to 1,720 ft. The mean annual precipitation from all thirteen locations is 5.8 inches with a maximum of 7.13 inches over a 25 year period at Vekol wash and a minimum of 4.71 inches over a 20 year period at the Gila Bend Landfill.



Map 2. SDNM Complex Rain Gauges and their Location.

3.2.2 Temperature

Winter temperatures are very mild with very few days recording freezing for short periods of time. Summertime temperatures are hot, to very hot, with many days in June and July exceeding 105 degrees Fahrenheit. Frost free days range from 280 days in major river valleys with cold air drainage, to 320 to 350 days in uplands.

3.3 Soils

The soils of the SDNM Complex were determined using a soil map produced by the Natural Resources Conservation Service (NRCS), Soil Survey AZ653, 1997. This survey covers the Gila Bend-Ajo Area, Arizona. This evaluation is primarily focused on potential livestock impacts to soils and vegetation, therefore, only the most common soils that are potentially accessible to livestock were included in this evaluation. Variables that limit livestock accessibility include slope (>30 percent), rockiness of terrain, and fencing/manmade barriers.

Soils in this area have a hyperthermic soil temperature regime and a typical aridic moisture regime and are often described as complexes due to the intimate intermingling of soil types. Many of the soils in this area are formed from granitic and or volcanic parent material. Each soil is described as a "map unit" in the NRCS soil survey. The following soils/map units make up 78 percent of the SDNM Complex and correspond with specific ecological sites.

3.3.1 Map Units

Map Unit:
Quilotosa-Momoli-Carrizo complex, 1 to 15 percent slope

The Quilotosa-Momoli-Carrizo complex map unit is found on low granite hills and fan terraces. The Quilotosa component makes up about 40 percent of the map unit and is found on gently sloping granitic hills/uplands. This soil is shallow to very shallow and somewhat excessively drained. It is formed in alluvium and colluvium derived dominantly from granite and granite-gneiss. Typically, 45 to 95 percent of the surface is covered with pebbles, cobbles, stones, and boulders. The soil is extremely gravelly and loamy with a depth of 4 to 16 inches. The Momoli component makes up about 20 percent of the map unit and is found on nearly level to strongly sloping fan terraces. This soil is deep and somewhat excessively drained. It is formed in alluvium derived dominantly from mixed rocks. Typically, 35 to 85 percent of the surface is covered with pebbles, cobbles, and stones. The soil is very gravelly and loamy. The Carrizo component makes up about 15 percent of the map unit and is found on nearly level alluvial fans and adjoining flood plains (washes). This soil is deep and excessively drained. It is formed in recent alluvium derived dominantly from mixed rocks. Typically, 40 to 80 percent of the surface is extremely gravelly sandy loam. This soil is subject to flooding during prolonged, high-intensity storms.

The corresponding ecological site for this map unit is Granitic Upland.

Map Units:
Dateland-Cuerda complex, 0 to 3% slopes
Denure-Rillito-Why complex, 1 to 5% slopes
Denure-Coolidge complex, 1 to 3% slopes

Dateland-Cuerda complex is found on fan terraces and flood plains (washes). The Dateland component makes up about 60 percent of the map unit and is found on nearly level fan terraces. These soils are deep and well drained. They formed in alluvium derived dominantly from mixed rocks. Typically, 5 to 15 percent of the surface is

covered with pebbles. The soils are loamy. The Cuerda component makes up about 30 percent of the map unit and is found on nearly level flood plains. These soils are deep and well drained. They are formed in stratified alluvium derived dominantly from mixed rocks. Typically, 1 to 10 percent of the surface is covered with pebbles. The soils are loamy to very gravely loam.

The Denure-Rillito-Why complex is found on fan terraces dissected by flood plains. The Denure component makes up about 40 percent of the map unit and is found on nearly level and gently sloping fan terraces. This soil is deep and somewhat excessively drained. It formed in alluvium derived dominantly from mixed rocks. Typically, 20 to 50 percent of the surface is covered with pebbles. This soil is gravelly and loamy throughout. The Rillito component makes up about 25 percent of the map unit and is found on nearly level and gently sloping fan terraces. This soil is deep and somewhat excessively drained. It formed in alluvium derived dominantly from mixed rocks. Typically, 35 to 80 percent of the surface is covered with pebbles. The soil is gravelly and loamy and is underlain by a very limy layer at a depth of 5 to 40 inches. The Why component makes up about 15 percent of the map unit and is found on nearly level flood plains. This soil is deep and somewhat excessively drained. It formed in stratified alluvium derived dominantly of mixed rocks. Typically, 1 to 10 percent of the surface is covered with pebbles. This soil is a sandy loam.

The Denure-Coolidge complex map unit is found on nearly level fan terraces. The Denure component makes up about 55 percent of the map unit and is described previously. The Coolidge component makes up about 25 percent of the map unit and is found on fan terraces. The soil is deep and well drained. It formed in alluvium derived dominantly from mixed rocks. Typically, 10 to 50 percent of the surface is covered with pebbles. This soil is a gravelly very fine sandy loam to fine sandy loam.

The corresponding ecological site for these soil map units is Limy Fan.

Map Unit:
Cipriano-Momoli complex, 1 to 7% slopes

The Cipriano-Momoli complex map unit is found on fan terraces dissected by shallow flood plains. The Cipriano component makes up about 60 percent of the map unit and is found on nearly level to moderately steep volcanic mountains and hills. This soil is shallow and very shallow and somewhat excessively drained. It formed in alluvium and colluvium derived dominantly from basalt. Typically, 50 to 85 percent of the surface is covered with pebbles, cobbles, stones, and hardpan fragments. This soil is very gravelly and loamy and is underlain by a hardpan at a depth of 6 to 20 inches. The Momoli component makes up about 15 percent of the map unit and is found on nearly level to strongly sloping fan terraces. This soil is deep and somewhat excessively drained. It is formed in alluvium derived dominantly from mixed rocks. Typically, 35 to 85 percent of the surface is covered with pebbles, cobbles, and stones. This soil is very gravelly and loamy.

The corresponding ecological site for this soil map unit is Limy Upland.

Map Units:
Gunsight-Rillito-Carrizo complex, 1 to 15% slopes
Momoli-Comobabi association, 5 to 15% slopes

The Gunsight-Rillito-Carrizo complex map unit is found on fan terraces dissected by narrow flood plains. The Gunsight component makes up about 45 percent of the map unit and is found on nearly level to moderately steep fan terraces. This soil is deep and somewhat excessively drained. It is formed in alluvium derived dominantly from mixed rocks. Typically, 40 to 70 percent of the surface is covered with pebbles. The soil is extremely gravelly and loamy and is underlain by a very limy layer at a depth of 5 to 24 inches. The Rillito component makes up about 35 percent of the map unit and is found on nearly level and gently sloping fan terraces. This soil is deep and somewhat excessively drained. It formed in alluvium derived dominantly from mixed rocks. Typically, 35 to 80 percent of the surface is covered with pebbles. The soil is gravelly and loamy and is underlain by a very limy layer at a depth of 5 to 40 inches. The Carrizo component makes up about 15 percent of the map unit and is found on nearly level alluvial fans and adjoining flood plains. This soil is deep and excessively drained. It is formed in recent alluvium derived dominantly from mixed rocks. Typically, 40 to 80 percent of the surface is extremely gravelly sandy loam. This soil is subject to flooding during prolonged, high-intensity storms.

The Momoli-Comobabi association map unit is found on fan terraces flanking granitic mountains. The Momoli component makes up about 50 percent of the map unit and is found on the higher nearly level to strongly sloping fan terraces. This soil is deep and somewhat excessively drained. It is formed in alluvium derived dominantly from mixed rocks. Typically, 35 to 85 percent of the surface is covered with pebbles, cobbles, and stones. This soil is very gravelly and loamy. The Comobabi component makes up about 25 percent of the map unit and is found in the lower fan terraces. This soil is shallow or very shallow and is well drained. It formed in alluvium derived dominantly from granite and gneiss. Typically, 50 to 90 percent of the surface is covered with cobbles and pebbles. This soil is an extremely cobbly sandy loam with an indurated hardpan ranging from 7 to 20 inches in depth.

The corresponding ecological site for these soil map units is Limy Upland Deep.

Map Units:
Carrizo-Momoli complex, 0 to 3% slopes
Why-Carrizo complex, 0 to 3% slopes

Carrizo-Momoli complex map unit is found on long, narrow flood plains and on fan terraces and alluvial fan in the areas where washes emerge from the mountains. The Carrizo component makes up about 65 percent of the map unit and is found on nearly level alluvial fans and adjoining flood plains. This soil is deep and excessively drained. It is formed in recent alluvium derived dominantly from mixed rocks. Typically, 40 to 80 percent of the surface is extremely gravelly sandy loam. This soil is subject to flooding during prolonged, high-intensity storms. The Momoli component makes up about 25 percent of the map unit and is found on nearly level to strongly sloping fan terraces. This soil is deep and somewhat excessively drained. It is formed in alluvium derived

dominantly from mixed rocks. Typically, 35 to 85 percent of the surface is covered with pebbles, cobbles, and stones. This soil is very gravelly and loamy.

The Why-Carrizo complex map unit is found on alluvial fans and flood plains. The Why component makes up about 30 percent of the map unit and is found on nearly level flood plains. This soil is deep and somewhat excessively drained. It formed in stratified alluvium derived dominantly of mixed rocks. Typically, 1 to 10 percent of the surface is covered with pebbles. This soil is a sandy loam. The Carrizo component makes up about 25 percent of the map unit and is described previously.

The corresponding ecological site for these soils is Sandy Bottom.

Map Unit:
Denure-Why complex, 1 to 5% slopes

The Denure-Why complex map unit is found on fan terraces and flood plains. The Denure component makes up about 60 percent of the map unit and is found on nearly level and gently sloping fan terraces. This soil is deep and somewhat excessively drained. It formed in alluvium derived dominantly from mixed rocks. Typically, 20 to 50 percent of the surface is covered with pebbles. This soil is gravelly and loamy throughout. The Why component makes up about 20 percent of the map unit and is found on nearly level flood plains. This soil is deep and somewhat excessively drained. It formed in stratified alluvium derived dominantly of mixed rocks. Typically, 1 to 10 percent of the surface is covered with pebbles. This soil is a sandy loam.

The corresponding ecological site for these soils is Sandy Loam Deep.

Map Unit:
Mohall complex, 0 to 3% slopes

The Mohall complex map unit is found on broad basin floors and adjoining fan terraces. Mohall soil is occasionally flooded and is in nearly level depression areas along ephemeral drainages. This soil is deep and well drained. It formed in alluvium derived dominantly from mixed rocks. Typically, 1 to 10 percent of the surface is covered with pebbles. The soils are a sandy loam to sandy clay loam. Depth to a very limey layer ranges from 20 to 40 inches.

The corresponding ecological site for these soils is Sandy Loam Upland.

3.4 Ecological Sites

An ecological site is a distinctive kind of land based on recurring soil, landform, geological, and climate characteristics that differs from other kinds of land in its ability to produce distinctive kinds and amounts of vegetation and in its ability to respond similarly to management actions and natural disturbances (Caudle et al. 2013). The ecological site concept provides a consistent way to classify and describe rangeland soils and vegetation by delineating land units with similar capabilities to respond to management activities or disturbance. Ecological site descriptions (ESD) are reports that provide information about a particular ecological site within a specific MLRA and

precipitation zone (p.z.). ESDs developed by the NRCS admit to the natural variability of the soil and plant communities of the ecological sites, but serves as a baseline for the attributes defined in ESDs. The ESDs for the ecological sites within the SDNM Complex are considered "provisional" meaning the ESD "represents the lowest tier of documentation that is releasable to the public" but contains enough information to distinguish unique ecological sites and has undergone quality control and quality assurance protocols. Due to the natural variability of ecological sites and the provisional status of the existing ESDs, the following descriptions of the seven most prevalent (major), by acreage and distribution, ecological sites that together make up more than 70 percent of the SDNM Complex are derived from both NRCS ESDs (https://esis.sc.egov.usda.gov/) and BLM field observations within the SDNM Complex. The remaining, less than 30 percent, ecological sites are either inaccessible to livestock due to steep rocky terrain or are very small in size.

3.4.1 Granitic Upland

Granitic Uplands make up approximately 2.5 percent of the SDNM Complex. This ecological site occurs on hills and terraces with slopes ranging from 1 to 15 percent and elevations from 937 to 1,498 ft. The soils are shallow and formed on acidic materials such as granite and gneiss. The soils are non-calcareous and coarse textured with well-developed covers of rock and gravel. However, calcareous precipitate can be found on the bedrock surfaces. Bedrock is often protruding the soil surface. Plant-soil moisture relationships are fair. The potential plant community is a diverse mixture of trees, shrubs, and cacti.

The corresponding vegetation community for this ecological site is Palo Verde-Mixed Cactus.

3.4.2 Limy Fan

Limy Fans make up approximately 34.8 percent of the SDNM Complex. This ecological site occurs on fan and stream terraces with slopes ranging from 1 to 3 percent and elevations from 860 to 1,575 ft. These are deep calcareous soils formed in loamy alluvium of moderate age and mixed origins. They range from sandy loam to loamy surface textures. Subsurface texture may include fine or coarse loam. Surface gravel and cryptogams can be common on this site. Plant-soil moisture relationships are poor to fair. The potential plant community is dominated by desert shrubs with few other shrub and cacti species. Most perennial species found on these sites are unpalatable to livestock (cattle). This site has the potential to produce large quantities of annual forbs and grasses during years with above average precipitation (ephemeral forage).

The corresponding vegetation communities for this ecological site are Creosote-Bursage desert scrub and Palo Verde-Mixed Cactus.

3.4.3 Limy Upland

Limy Uplands make up approximately 6.2 percent of the SDNM Complex. This ecological site occurs on fan terraces, ridgetops, pediments and mesa tops with slopes ranging from 1 to 7 percent and elevations from 294 to 1,678 ft. Soils are shallow over strongly cemented lime pans (duripans) which stop water movement and curtail root penetration. The soils are coarse to loamy textured formed in old alluvium of mixed

origins and are very calcareous. The soil surface is often protected by gravel or cryptogams or a combination of both. Plant-soil moisture relationships are poor. The potential plant community on this ecological site is a mixture of desert shrubs, cacti, and annual forbs and grasses. Most perennial species found on this ecological site are unpalatable to livestock (cattle).

The corresponding vegetation communities for this ecological site are Creosote-Bursage desert scrub and Palo Verde-Mixed Cactus.

3.4.4 Limy Upland Deep

Limy Upland Deep make up approximately 15.8 percent of the SDNM Complex. This ecological site occurs primarily on fan terraces and hills with slopes ranging from 1 to 15 percent and elevations from 836 to 1,693 ft. Soils are deep formed in very gravelly sandy loam alluvium of various ages and from mixed origins. They are calcareous and have over 35 percent gravels in the soil profile. The soil surface is often covered with gravels, lime pan fragments, and cryptogam crusts. Plant-soil moisture relationships are poor. The potential plant community is dominated by desert shrubs with a few other shrub and cacti species. Most perennial species found on this ecological site are unpalatable to livestock (cattle) and wildlife but can provide shade and cover.

The corresponding vegetation communities for this ecological site are Creosote-Bursage desert scrub and Palo Verde-Mixed Cactus.

3.4.5 Sandy Bottom

Sandy Bottoms make up approximately 6.3 percent of the SDNM Complex. This ecological site occurs on floodplains and alluvial fans with slopes ranging from 0 to 3 percent and elevations from 870 to 1,993 ft. Soils are very young on gravelly and sandy alluvium of mixed origin. Textures range from sandy loam to very gravely sands. They are deep and excessively drained. This ecological site receives significant run-on moisture from adjacent uplands and has good plant-soil moisture relationships. The potential plant community is dominated by trees, desert shrubs, and annual forbs and grasses. Many of the perennial species found on this ecological site are palatable to livestock (cattle) and provide shade and cover for livestock and wildlife. This ecological site is preferred by livestock and wildlife alike.

The corresponding vegetation community for this ecological site is Ephemeral Wash.

3.4.6 Sandy Loam Deep

Sandy Loam Deep make up approximately 4.6 percent of the SDNM Complex. This ecological site is found on fan and stream terraces with slopes ranging from 1 to 3 percent and elevations from 1,277 to 1,988 ft. Soils are deep formed from sandy alluvium of mixed origins. The soils are sandy loam throughout with non-clayey cambic horizons. These soils are non-calcareous in the first 4 to 6 inches. The soil surfaces are loamy with few gravels. Plant-soil moisture relationships are fair to good. The potential plant community is a mixture of trees, shrubs, cacti, and perennial grasses. This ecological site has the potential to produce a large amount of annual forbs and grasses during wet years (ephemeral forage).

The corresponding vegetation community for this ecological site is Palo Verde-Mixed Cactus.

3.4.7 Sandy Loam Upland

Sandy Loam Uplands make up approximately 8.3 percent of the SDNM Complex. This ecological site is found on fan and stream terraces with slopes ranging from 1 to 3 percent and elevations from 1,171 to 1,630 ft. Soils are deep formed from sandy alluvium of mixed origins. The soils are sandy loam throughout with a clayey horizon. These soils are non-calcareous in the first 4 to 6 inches. The soil surface is loamy with few gravels. Plant-soil moisture relationships are good. The potential plant community is a mixture of trees, shrubs, cacti, and perennial grasses. This ecological site has the potential to produce a large amount of annual forbs and grasses during wet years (ephemeral forage).

The corresponding vegetation community for this ecological site is Palo Verde-Mixed Cactus.

3.5 Vegetation

The SDNM Complex has three major vegetation communities: the Creosote-Bursage desert scrub, the Palo Verde- Mixed Cactus and the Ephemeral Wash vegetation communities (Map 3). These vegetation communities are identified in NRCS ESDs and their acreages/miles were obtained from the national Landfire data set for the Creosote-Bursage and Palo Verde-Mixed Cactus Communities and 100K topographic map for the Ephemeral Wash community.

3.5.1 Creosote-Bursage Desert Scrub

This vegetation community is generally in the lower elevations on desert flats and valley bottoms. Creosote-Bursage Desert Scrub is comprised primarily of creosote (*Larrea tridentata*) in the flats with minor amounts of shrubs such as triangle-leaf bursage (*Ambrosia deltoidea*), white or range ratany (*Krameria grayi or erecta*), and trees such as little-leaf palo verde (*Parkinsonia microphylla*) and ironwood (*Olneya tesota*). It covers approximately 52 percent of the SDNM Complex. During periods of above average precipitation, this vegetation community has the potential to produce a thousand pounds per acre of ephemeral forage in the form of annual grasses and forbs.

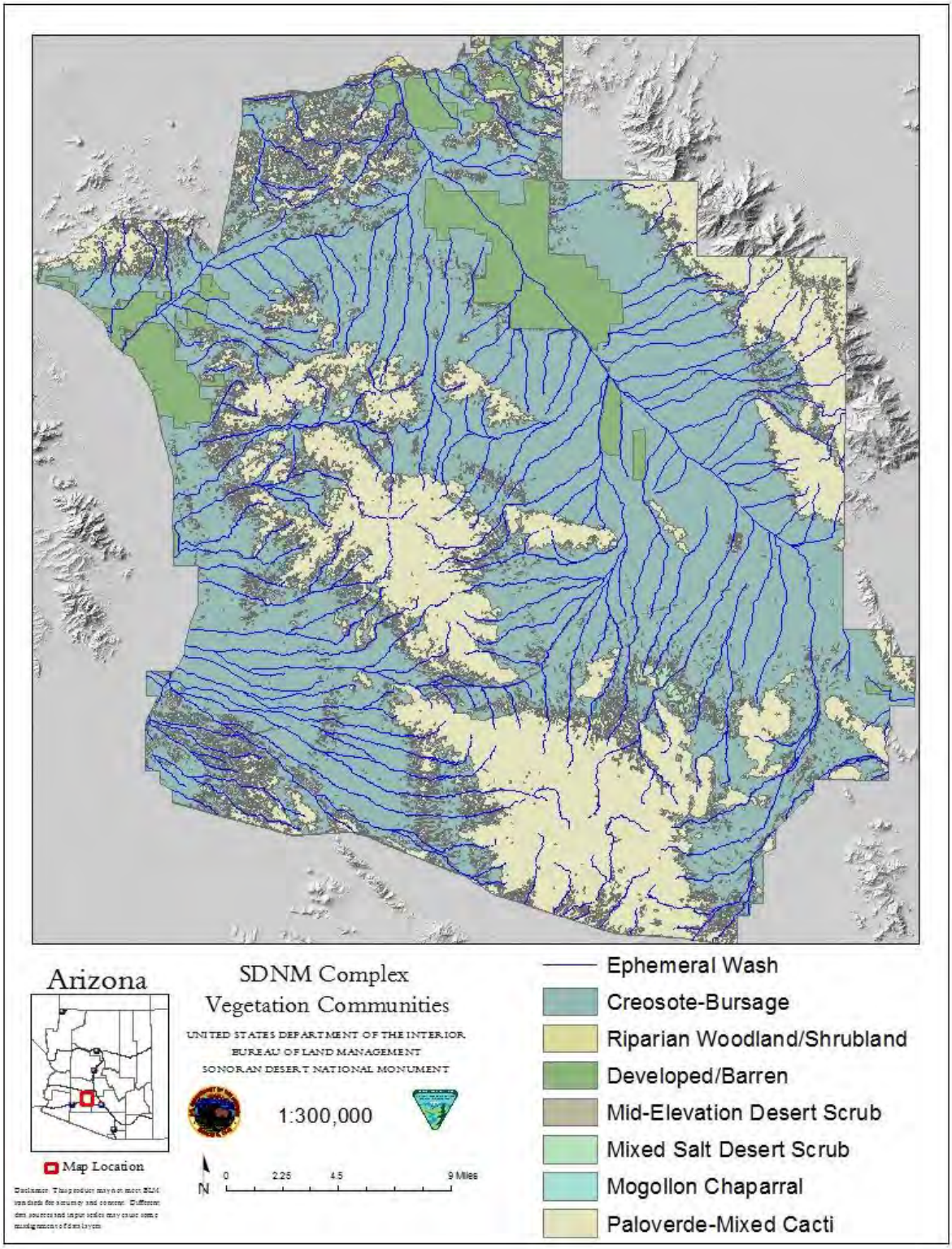
3.5.2 Palo Verde-Mixed Cactus

This vegetation community generally occupies the mountain slopes and upper bajadas. It is a mix of palo verde (*Parkinsonia* spp.), ironwood and varied shrub species like triangle-leaf bursage, white bursage (*Ambrosia dumosa*), white and range ratany and a mixed variety of cactus including cholla species (*Cylindropuntia* spp.), Engelmann's hedgehog (*Echinocereus engelmannii*) and barrel cactus (*Ferocactus* spp.). Ocotillo (*Fouquieria splendens*) also occur in this community. It comprises approximately 40 percent of the SDNM Complex. The highest densities of saguaro (*Carnegia gigantea*) are found in this vegetation community.

3.5.3 Ephemeral Wash

This site occurs in the larger drainage ways that dissect the bajadas and desert flats throughout the SDNM Complex. In some cases the drainage is braided and can cover a

large surface area. It is a multi-layered vegetation community that contains trees, large shrubs, small shrubs, and forbs. Trees include blue palo verde (*Parkinsonia florida*), ironwood, and desert willow (*Chilopsis linearis*). Common shrubs include wolfberry (*Lycium* spp.), desert lavender (*Hyptis emoryi*), burrobrush (*Hymenoclea monogyra*), and bricklebush (*Brickellia coulteri*). It covers approximately 6 percent of the SDNM Complex. During periods of above average precipitation, this community has the potential to produce a thousand pounds per acre of ephemeral forage. Both wildlife and cattle use ephemeral washes as travel corridors and are important foraging areas.



Map 3. Vegetation Communities of the SDNM Complex.

3.6 Wildlife Resources

3.6.1 Special Status Species

3.6.1.1 Sonoran Desert Tortoise

In December of 2010, the Sonoran desert tortoise (SDT) (*Gopherus morafkai*) was added to the US Fish and Wildlife Service (USFWS) candidate species list. However, the petition for listing was denied in October 2015 by the USFWS (USFWS 2015). The USFWS entered into a candidate conservation agreement (CCA) with assurances with cooperating agencies in Arizona and is classified as a BLM sensitive species. The CCA defines SDT habitat as:

The SDT occurs primarily on rocky slopes and bajadas of Mohave desert scrub and Arizona Upland and Lower Colorado River Valley subdivisions of Sonoran desert scrub. They most often occur in Palo Verde-mixed cacti associations, but have been documented in semi-desert grassland, interior chaparral, oak woodland, ponderosa pine-dominated coniferous forests, and thorn-scrub habitats.

Population densities and movements are correlated with available or potential shelter sites. Tortoises escape temperature extremes by retreating to their shelters, which stay cooler in summer and warmer in winter than outside temperatures. Most often, SDTs excavate burrows in loose soils at the base of boulders and rock outcrops. Natural rock cavities, caliche caves in incised cut banks of washes, and packrat middens are also used for shelter-sites. Tortoises occasionally dig soil shelters on more or less open slopes or under vegetation, or may rest directly under live or dead vegetation without constructing a shelter. Shelter-sites are rarely found in shallow soils (USFWS 2015).

The CCA does state, “there is little overlap in the habitat shared by livestock and SDT in most areas in Arizona” (USFWS 2015), although there is a potential for overlap to occur in areas that are classified as SDT habitat and in areas that the LHE defines as “sandy bottom” in and around tortoise habitat. In south-central Arizona the SDT were found to be using bursage habitat on alluvial slope around washes (Riedle et al. 2008). Within these areas there are plant species on the LHE “Key Species” and “Palatable Species” lists that are consumed by cattle and SDT.

There are many recommended conservation measures in the 2015 CCA in regards to grazing and some are listed below:

- Review on a case-by-case basis, all discretionary use requests to determine associated impacts to SDT and implement measures to avoid, minimize or mitigate impacts to achieve SDT population and habitat objectives described in land use plans.
- Avoid locating livestock concentration areas within ¼ mile of occupied SDT habitat.
- Evaluate plant community condition through Range Health Evaluation – permit renewal process.
- Continue to implement and enforce regulations.
- Set DPC objectives that incorporate SDT habitat requirements.

- Implement grazing management changes to achieve or make significant progress toward meeting DPC objectives.
- Ensure adequate forage remains for SDT following ephemeral use periods.
- Encourage livestock operators to rest or defer grazing during drought.

The 2012 Lower Sonoran-Sonoran Desert NM Proposed RMP/Final EIS includes a description of SDT habitat and habitat goals:

- Category I desert tortoise habitat includes habitat that is necessary to maintain populations with the highest densities, which are stable or increasing, and experiences the fewest conflicts with current land uses.
- Category II habitats may support stable populations and/or are contiguous with medium to high-density habitat.
- Category III habitats are the least manageable and contain medium to subpar habitats; however, these areas do exist between Category I and II habitats and should be managed for dispersal between Category I and II habitats.

The goal of the BLM is to maintain stable and viable populations with no net loss of habitat in Category I and II habitats and to limit population declines to the extent possible in Category III habitats by mitigating impacts (BLM 2012).

The SDNM Complex has approximately 154,258 acres of Category I, 60,280 acres of Category II and 15,958 acres of Category III SDT habitat (Map 4).

3.6.1.2 Lesser Long-Nosed Bat

The lesser long-nosed bat (*Leptonycteris yerbabuenae*) was removed from the list of threatened and endangered species in 2018 (83 FR 17093 17110). The lesser long-nosed bat continues to be a BLM sensitive species. The lesser long-nosed bat consumes high energy nectar, pollen and fruit produced by a variety of columnar cacti including saguaro and agaves. The migratory nature of the lesser long-nosed bat allows it to take advantage of the seasonal availability of flower and fruit of these cacti and agave species. Cactus flowers and fruit are available during the spring and early summer; agave flowers are available from July through October (BLM unpublished). Medium to high density columnar cactus habitat (30 or more saguaro per acre) within 40 miles of known roost sites are considered valuable habitat (BLM 2012).

Lesser long-nosed bats are efficient fliers and are known to fly considerable distances from roost sites to foraging sites. Foraging areas are those areas with sufficient food resources within 40 miles of a roost site. There is a known lessor long-nosed bat roost site within 40 miles of the entire SDNM Complex.

3.6.1.3 Cactus Ferruginous Pygmy-Owl

The cactus ferruginous pygmy owl (CFPO) (*Glaucidium brasilianum cactorum*) was delisted in 2006 (FR 73 (106) 31418-31424). Currently, the CFPO is on the BLM's sensitive species list.

The CFPO has not been documented on the SDNM, but potential and suitable habitat does occur in several locations throughout the SDNM, primarily in the bajadas, the

larger drainages and several larger livestock waters (dirt tanks). These livestock waters are also important for other wildlife species. The vegetation around four of the larger livestock waters in Conley and Beloat allotments were identified as potential CFPO habitat. A few of the larger livestock waters surrounded by dense vegetation, such as mesquite (*Prosopis* spp.), may also be considered suitable habitat. Suitable habitat for this species lies within uplands and washes of the Arizona Upland Subdivision; below 4,000 foot elevation. Suitable habitat patches are areas greater than three acres in size and consist of braided wash systems and/or other densely vegetated areas. Suitable habitat consists of dense thickets of vegetation such as palo verde, ironwood, mesquite, acacia (*Senegalia* spp.), and saguaro. It contains a diversity of species and a vegetation community structure comprised of shrubs, trees less than six inches in diameter, and/or saguaro with cavities. Structural height of vegetation is usually evenly divided in volume or density between herbaceous ground cover and low shrubs, medium-sized shrubs and trees.

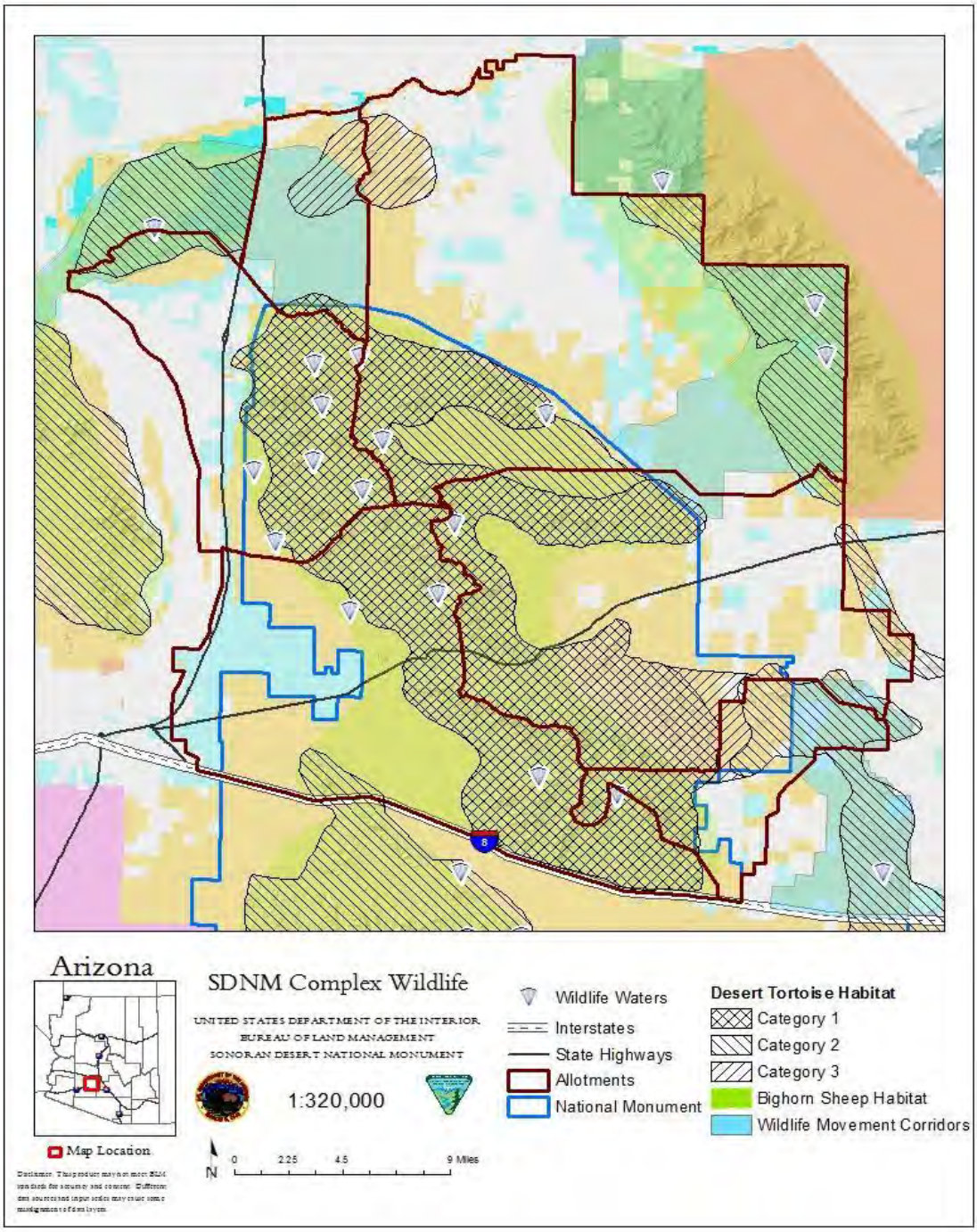
Surveys were conducted throughout the SDNM in 2001 and south of Interstate 8 in 2004, following the protocol developed by the Arizona Game and Fish Department (AGFD 2000). No CFPO were detected during those survey efforts. A 2018 review of the Arizona Game and Fish Departments Heritage Data Management System (HDMS), found that no CFPO have been documented within five miles of the SDNM Complex although their Predicted Range Models state that it is possible for them to occur in the SDNM Complex.

3.6.1.4 Other Special Status Species

In addition to the species listed previously, some of the other BLM special status species that could occur within the SDNM Complex are the gilded flicker (*Colaptes chrysoides*), LeConte's thrasher (*Toxostoma lecontei*), Townsend's big-eared bat (*Corynorhinus townsendii*), spotted bat (*Euderma maculatum*), western mastiff bat (*Eumops perotis*) and cave myotis (*Myotis velifer*).

3.6.2 Other Wildlife

There are many species within the SDNM Complex that the AGFD considers "Species of Economic and Recreation Importance Predicted within five Miles of Project Vicinity" (AGFD 2018). Wildlife species that occur within the SDNM Complex and associated allotments include, but are not limited to mule deer (*Odocoileus hemionus*), desert bighorn sheep (*Ovis canadensis mexicana*), Gambel's quail (*Callipepla gambelii*), javelina (*Pecari tajacu*), mourning dove (*Zenaida macroura*), and white-winged dove (*Zenaida asiatica*).



Map 4: Wildlife Habitat and Movement Corridors in the SDNM Complex

*Desert tortoise habitat and wildlife movement corridor layers source: 2012 BLM LSFO/SDNM RMP

4.0 SDNM Complex Grazing Management

4.1 Grazing History

Livestock grazing in Gila Bend and the surrounding areas began in the late 1700s with a few Native American rancherias where livestock were confined to the flood plains of the Gila River. At the time, the river was the only available reliable water source that could support livestock. Livestock use of the drier valleys and mountains did not occur until the drilling of wells and development of dirt stock tanks in the early 1900s. The first of these was a dirt stock tank developed around 1900 in the Little Rainbow Valley just north of the SDNM boundary. The first wells in the area were drilled in Rainbow Valley around 1910 to 1912, one of which was north of Mobile and would have provided some livestock access within what is now the SDNM. At this time the only waters in the Vekol valley area consisted of several dirt stock tanks that provided temporary water for cattle from the Tohono O'odham people. Ranching operations began in 1917 in the Sand Tank Mountain area. The first water sources for livestock included two hand dug wells, Lost Horse Tank (earthen) and the development of natural water sources in Sand Tank Mountains at Sand Tanks and Mesquite Tanks. The Vekol Valley was not developed for additional livestock use until the 1920s and 1930s (Robinett 1997).

Rangelands for the SDNM Complex allotments were classified between 1973 and 1976 as either perennial-ephemeral or ephemeral only pursuant to the special rule published in the Federal Register on December 7, 1968 (33 FR 18245). These classifications correspond to the following types of designated rangelands:

> Ephemeral rangelands is defined in the grazing regulations to mean "areas of the Hot Desert Biome (Region) that do not consistently produce enough forage to sustain a livestock operation but may briefly produce unusual volumes of forage to accommodate livestock grazing." "Ephemeral plant" means a short-lived annual plant that completes its life cycle in a few weeks. Examples include Indian wheat (*Plantago purshii*), filaree (*Erodium cicutarium*), Russian thistle (*Salsola kali tenifolia*), red brome (*Bromus rubens*), and six weeks grama (*Bouteloua barbata*).
>
> Perennial-ephemeral rangelands means areas of the Hot Desert Biome that produces enough perennial forage each year to support a year-round livestock operation and from time to time produces ephemeral vegetation suitable to accommodate additional livestock grazing.

Terms and conditions for Ephemeral use only or a combination of Perennial/Ephemeral use were stipulated on applicable permits (Table 2).

Ephemeral use authorization allows the permittee to apply to make use of ephemeral forage when it becomes available. After receiving an application to activate an ephemeral authorization, BLM must determine if ephemeral plant growth is sufficient to support the requested use. Upon approval of the application, the BLM will issue a grazing fee bill that specifies the allowed livestock numbers, period-of-use, the allotment and pasture as applicable, and the forage amount, in AUMs. Livestock were

last authorized to graze under an ephemeral grazing authorization on the Arnold in 2014 and 2015 for a total of 852 AUMs. This in the only ephemeral grazing that has been authorized on the SDNM Complex since 2012.

Perennial/Ephemeral Use Authorizations have Mandatory Terms and Conditions that specify number of livestock, type of livestock, period of use and permitted AUMs or perennial forage that may be consumed annually throughout the term of the authorization. Additional use of ephemeral forage may be authorized after the BLM has considered rangeland conditions and determined that such use will not cause detrimental effects to the perennial forage resource and does not present conflicts with other resource uses and values. Upon application approval, the BLM will issue a grazing fee bill that specifies the allowed livestock numbers, period-of-use, the allotment and pasture as applicable, and the ephemeral forage amount, in AUMs.

In 1941, 78,000 acres of "Area A" were withdrawn for military use, effectively ending livestock grazing. "Area A" was then re-conveyed to the BLM in the year 2001 under Public Law 106-65. Also in 2001, the Presidential Proclamation designating the SDNM did not allow grazing to continue on 156,938 acres south of I-8 following the end of the terms of the existing permits. Grazing in this area ended in 2009. This equates to 7,255 formerly authorized AUMs across five allotments, south of I-8, that are unavailable for grazing. Prior to the 2012 SDNM RMP, the remaining allotments, north of I-8, adhered to the terms and conditions as seen in Table 2.

Table 2. Mandatory terms and conditions and authorized animal unit months (AUMs) on the SDNM Allotment Complex pre 2012 RMP.

Allotment	Livestock Number	Livestock Kind	Grazing Period		Percent (%) Public Land	Type Use	AUMs
			Begin	End			
Arnold	0	Cattle	03/01	02/28	96	Ephemeral	0
Beloat	300	Cattle	03/01	02/28	83	Active*	2,988
Big Horn	559	Cattle	03/01	02/28	91	Active*	6,104
Conley	350	Cattle	03/01	02/28	99	Active*	4,158
Hazen	120	Cattle	03/01	02/28	82	Active*	1,181
Lower Vekol	101	Cattle	03/01	02/28	96	Active*	1,164

Active* = Perennial/Ephemeral

Other terms and conditions:
When forage conditions warrant, livestock grazing may be authorized upon application to utilize and ephemeral forage crop pursuant to federal grazing regulations, special management requirements and other guidance.

However, according to the Presidential Proclamation, the remaining allotments north of I-8 "…shall be allowed to continue [to be grazed] only to the extent that the Bureau of Land Management determines that grazing is compatible with the paramount purpose of protecting the objects identified in this proclamation." See Appendix C for the SDNM's Presidential Proclamation.

Current Management
The current management for the SDNM complex was established in the 2012 SDNM RMP and are described in Table 3.

Table 3. Current Mandatory terms and conditions and AUMs on the SDNM Complex.

Allotment	Livestock Number	Livestock Kind	Grazing Period		Percent (%) Public Land	Type Use	AUMs
			Begin	End			
Arnold	0	Cattle	03/01	02/28	96	Ephemeral	0
Beloat	300	Cattle	03/01	02/28	83	Active*	2,988
Big Horn	269	Cattle	03/01	02/28	91	Active*	2,960
Conley	40	Cattle	03/01	02/28	99	Active*	464
Hazen	120	Cattle	03/01	02/28	82	Active*	1,181
Lower Vekol	101	Cattle	03/01	02/28	96	Active*	1,164

Active* = Perennial/Ephemeral

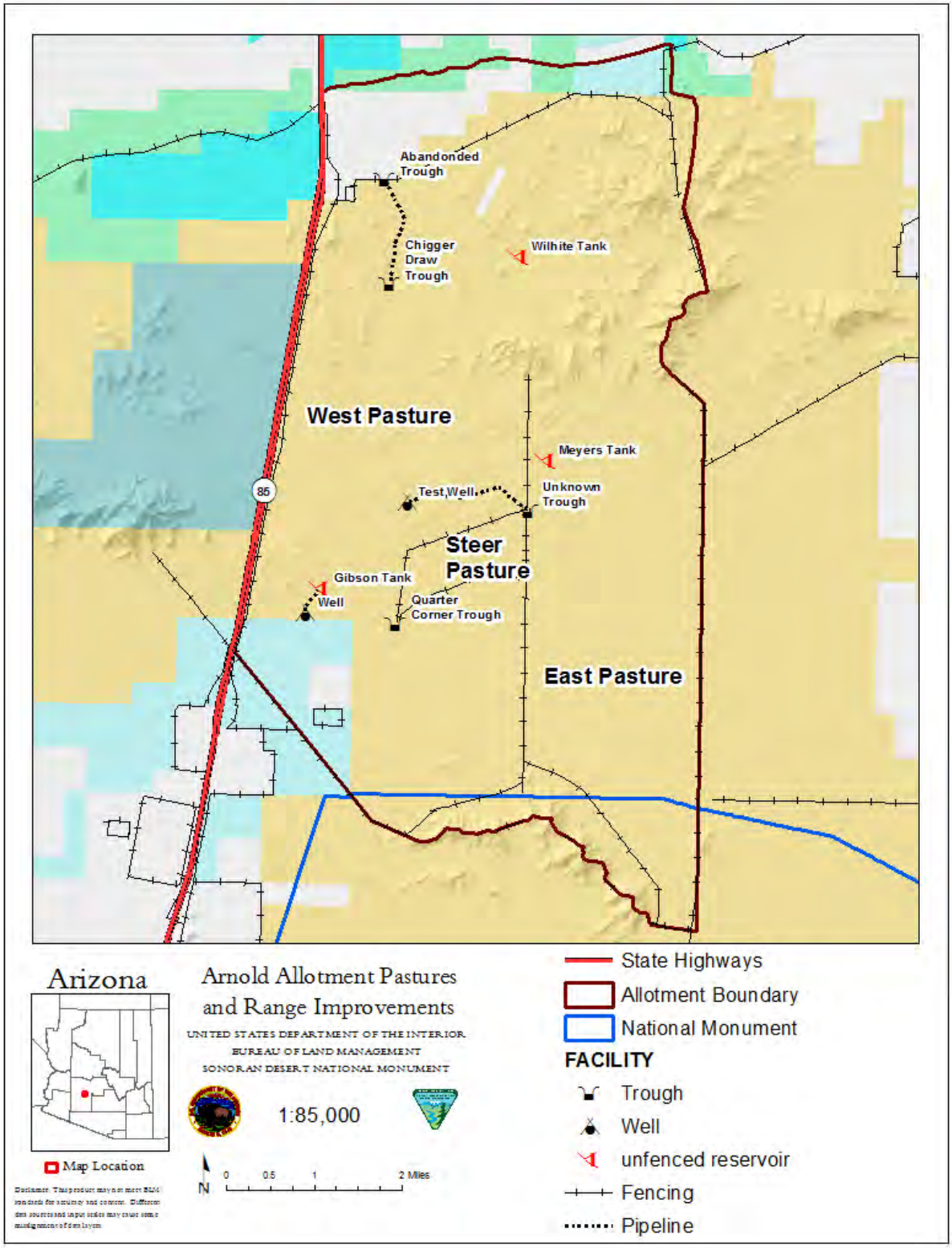
Other terms and conditions:
When forage conditions warrant, livestock grazing may be authorized upon application to utilize and ephemeral forage crop pursuant to federal grazing regulations, special management requirements and other guidance.

Each allotment's management changed over time with the addition/removal of fencing and water sources. The following descriptions describe allotment management before and after the SDNM's designation and 2012 RMP. No new range improvements have been installed since the 2012 RMP. However, range improvements have been more thoroughly inventoried for this analysis to accurately show the management of grazing allotments.

4.1.1 Arnold

The Arnold Allotment is classified as ephemeral use only. In years with sufficient precipitation, the grazing permittee may apply for use based on the available ephemeral forage. The Arnold is split into three pastures, one in the east, one in the west, and a smaller steer holding pasture in the center (Map 5). There are three dirt reservoirs and three well/pipeline served troughs. However, only one well, Chiggar well, is currently in working order. When grazing is authorized, cattle are distributed between the pastures

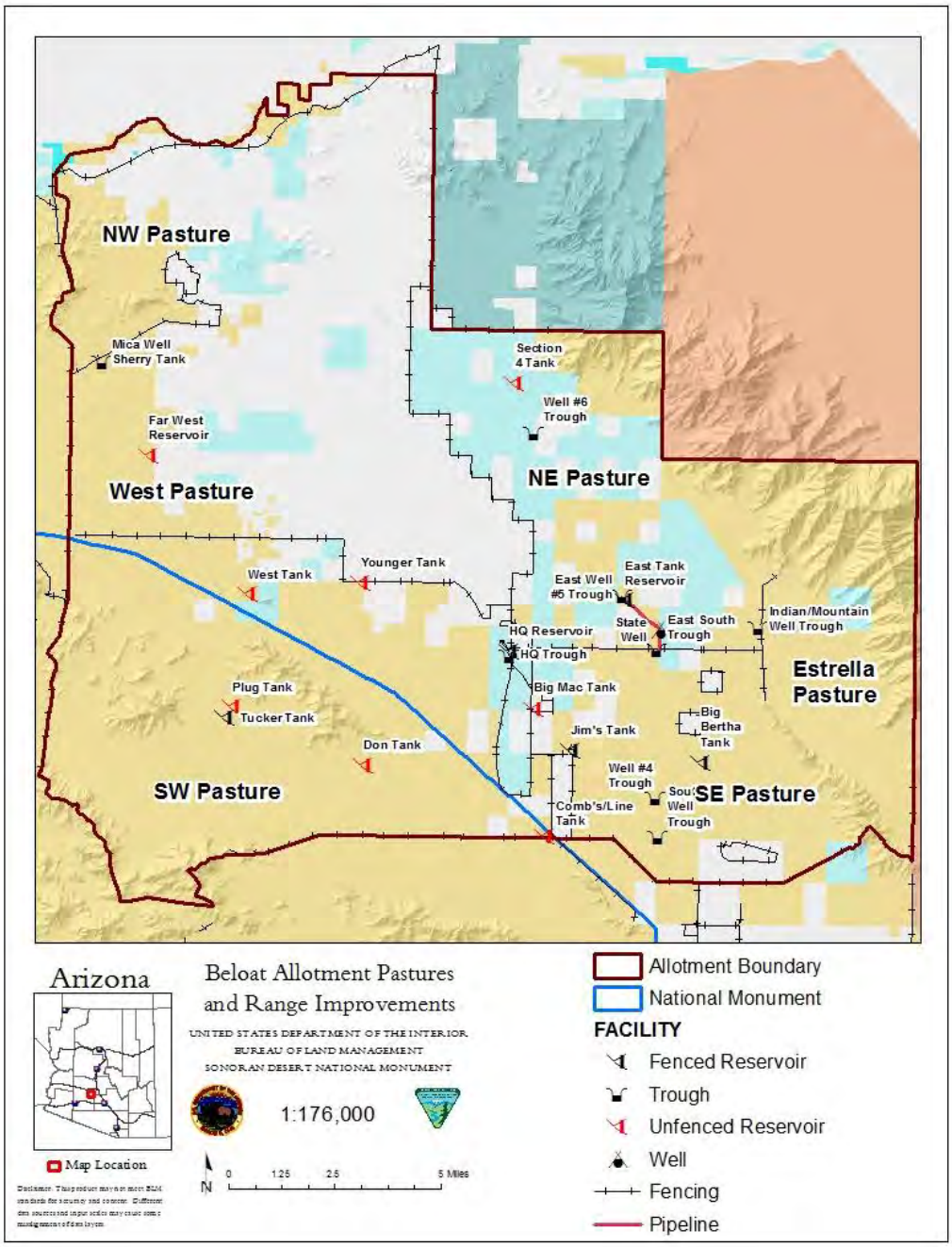
and water sources to utilize ephemeral forage. Approximately 45 percent, of the SDNM within the Arnold is fenced out from cattle use.



Map 5. Arnold Allotment Pastures and Range Improvements.

4.1.2 Beloat

The Beloat Allotment is classified as perennial/ephemeral. A maximum base herd of 300 cows graze the Beloat year round. Additional cattle may be added to utilize ephemeral forage during years with sufficient precipitation. The Beloat is split into six pastures, three in the east and three in the west (Map 6). However, the smallest pasture in the northwest has no available water at this time. There are seven well/pipeline served troughs and eleven dirt reservoirs. Fifty percent of the dirt reservoirs only hold water during years with above average precipitation. The most productive pastures with relatively even water distribution are the three eastern pastures along the Estrella Mountains. The western two pastures with available water are equal in size, but less productive. Therefore, the western pastures are used primarily as ephemeral pastures. Cattle are most frequently gathered and sorted at the Headquarters well and reservoir in the center of the Beloat off Bullard Avenue. Only the southwest pasture contains portions within the SDNM. The urban/rural interface introduces challenges such as land sales, utility right-of-ways, and gates frequently left open.

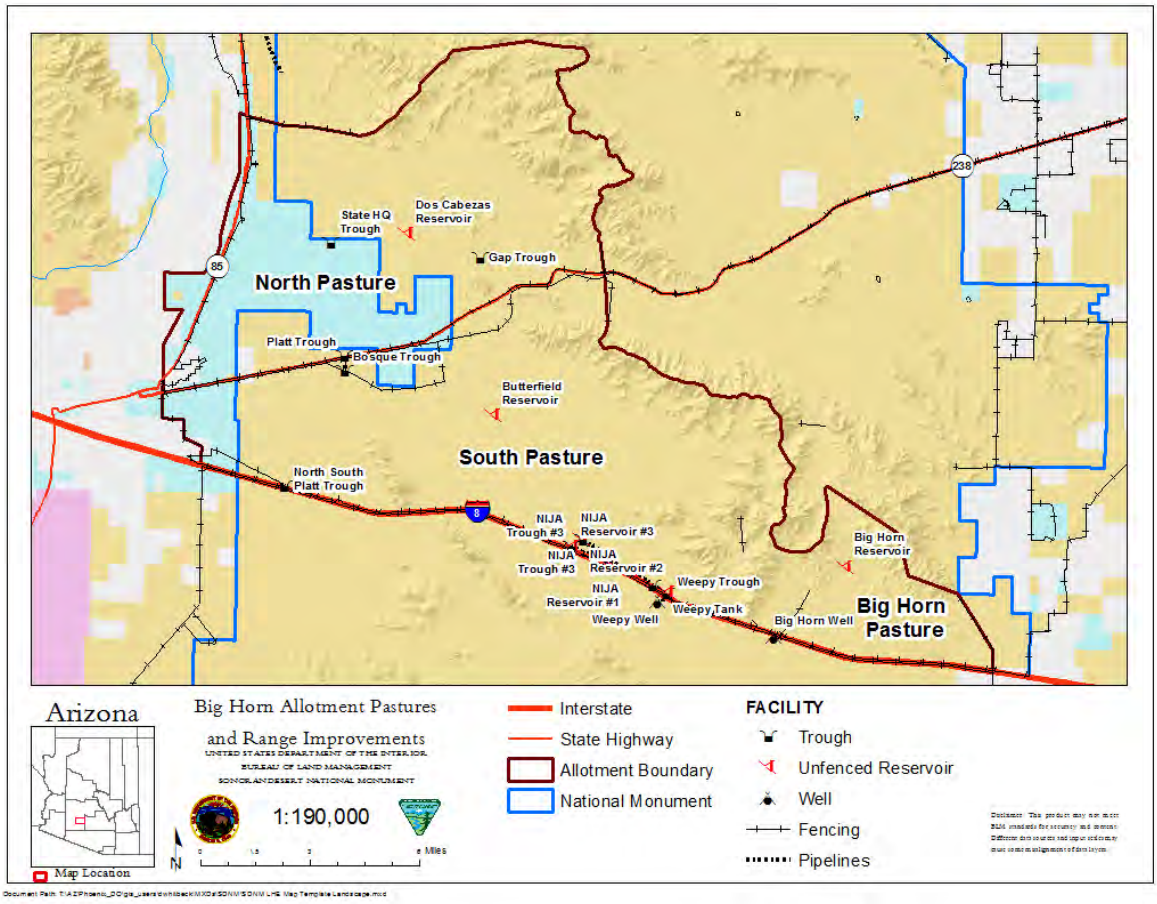


Map 6. Beloat Allotment Pastures and Range Improvements

4.1.3 Big Horn

The Big Horn Allotment is classified as perennial/ephemeral. Prior to the designation of the SDNM, a maximum base herd of 559 cattle were authorized to graze the Big Horn year round. Following the designation of the SDNM, the pasture south of I-8 (53,144 acres), became unavailable for grazing. In the 2012 RMP, a maximum base herd of 269 cattle was determined to be the new appropriate level to graze the Big Horn year round. The Big Horn permit expired in 2009 and cannot be renewed until final action on the court order is taken. Despite the expiration of the grazing permit in 2009, grazing has continued at an unknown level on the State lands in the northern pasture. The Big Horn

is split into three pastures, two south of State Route 238 and one north (Map 7). Water distribution across the Big Horn is fair, with four well/pipeline fed troughs and four dirt reservoirs that are only reliable during years with above average precipitation. The majority of the Big Horn is within the SDNM boundary.

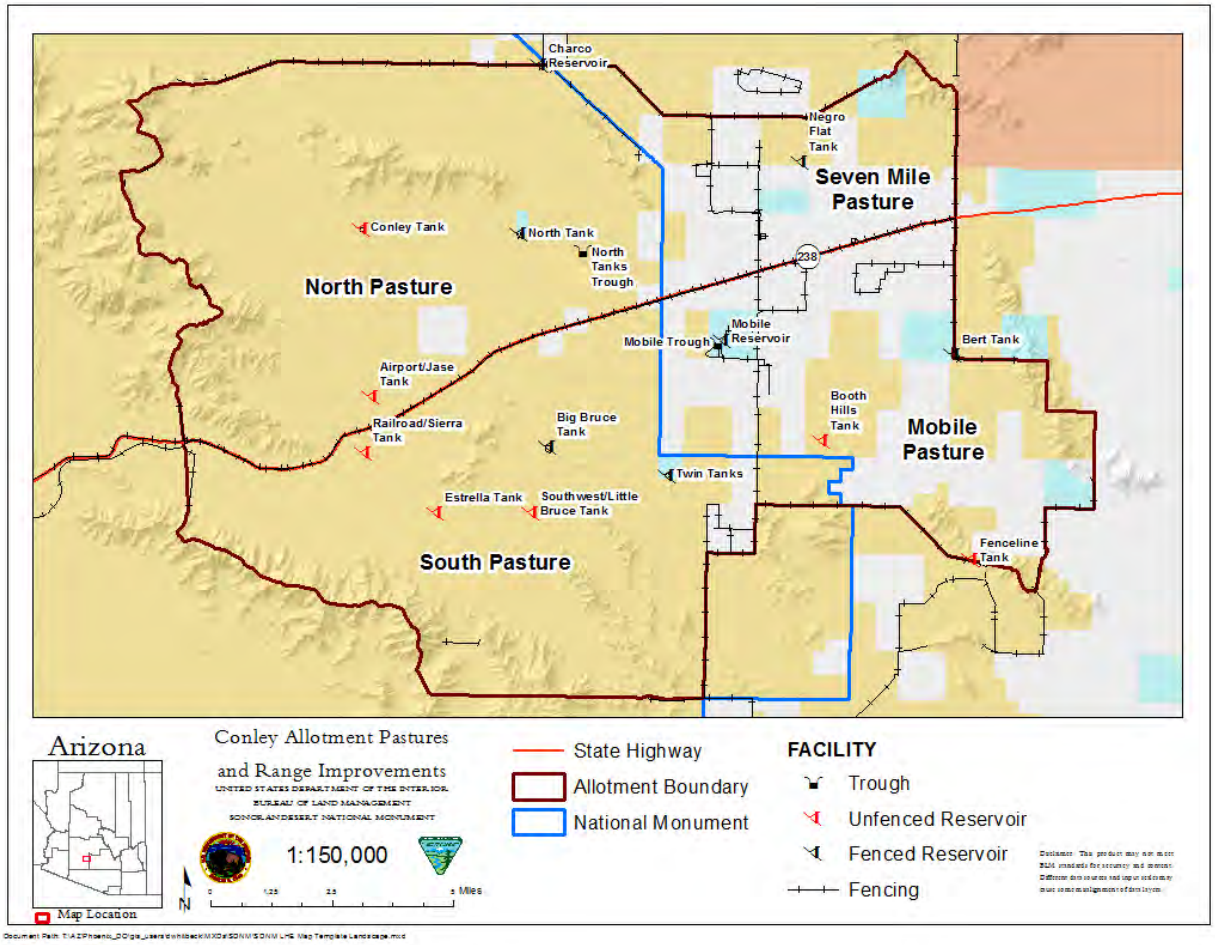


Map 7. Big Horn Pastures and Range Improvements

4.1.4 Conley

The Conley Allotment is classified as perennial/ephemeral. Prior to the 2012 RMP, 350 cattle were authorized to graze the Conley year round. The 2012 RMP/ROD made the SDNM portion of the Allotment unavailable for grazing which reduced the authorized maximum base herd to 40 cattle yearlong on the non-SDNM portions of the Conley. Following the permit's expiration in 2015, the BLM was unable to renew the permit for the Conley until the RMP/EIS for the SDNM is finalized. The Conley permit expired in 2015 and cannot be renewed until final action on the court order is taken. Therefore, no grazing has occurred since 2015. The Conley is split into four pastures, two in the north and two in the south, bisected by State Route 238 (Map 8). The Conley is served by two "well" fed water troughs and 13 dirt reservoirs, of which, all but four are reliable during drought years. These waters are evenly distributed across the Conley. Livestock were often gathered and sorted at North Tank Reservoir in the north pasture and at the Mobile Reservoir in the south pasture. During years with sufficient precipitation, stocker cattle are brought to the Conley to utilize the ephemeral forage. The entire

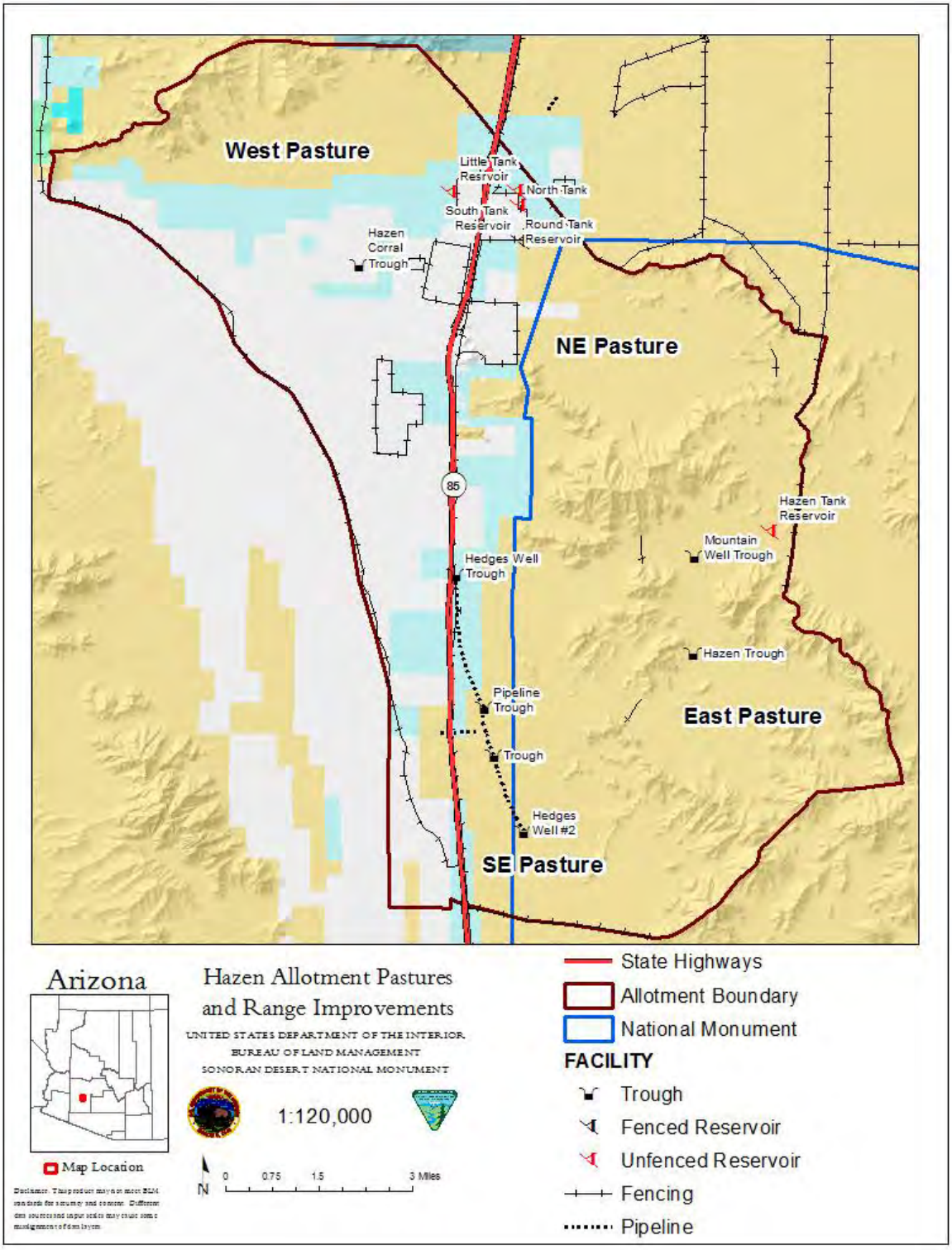
western two thirds of the Conley is within the SDNM boundary which includes eight dirt reservoirs and one well fed trough.



Map 8. Conley Allotment Pastures and Range Improvements

4.1.5 Hazen

The Hazen Allotment is classified as perennial/ephemeral. Before and after the 2012 RMP, a maximum base herd of 120 cattle were authorized to graze the Hazen year round. However, the Hazen has not been grazed in more than 10 years. The Hazen is split into four pastures, three east of Highway 85 and one west (Map 9). The Hazen was served by five well/pipeline fed troughs and five dirt reservoirs, however, none appear to have been operational in the past 10 years. The west pasture is served by only one trough in the eastern corner and is the least productive pasture on the Hazen. The majority of the eastern pastures are within the SDNM boundary.

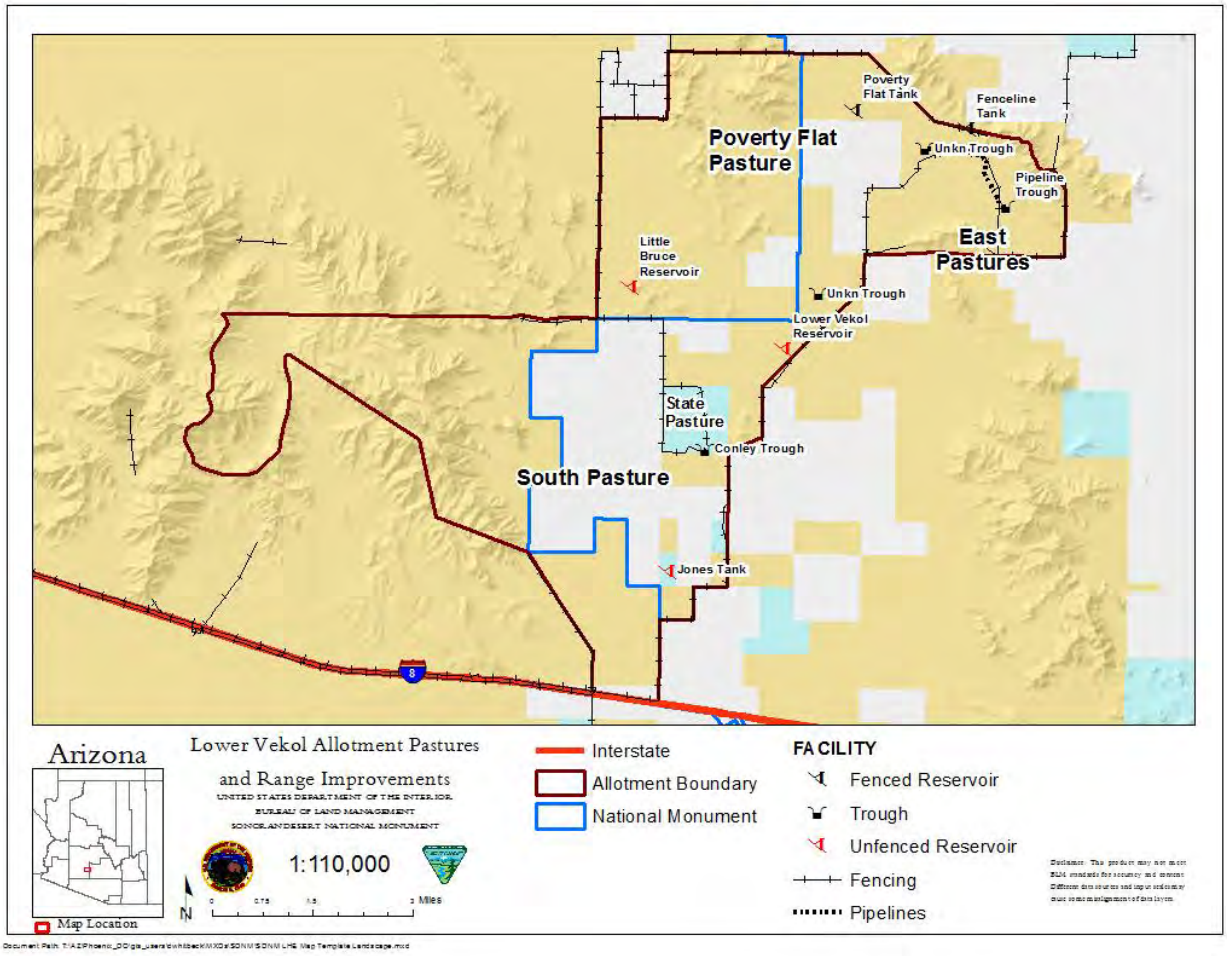


Map 9. Hazen Allotment Pastures and Range Improvements

4.1.6 Lower Vekol

The Lower Vekol Allotment is classified as perennial/ephemeral. Before and after the 2012 RMP, a maximum base herd of 101 cattle was authorized to graze the Lower Vekol year round. The Lower Vekol is split into five pastures, with three in the north and two

in the south (Map 10). The north pastures include two small pastures in the eastern portion, one of which encompasses a series of nine dikes. The smaller of the two southern pastures is a holding pasture adjacent to the ranch headquarters at Conley well. In the past, the Lower Vekol has been run in conjunction with the Kirian Allotment to the east. The Lower Vekol is served by five well/pipeline fed troughs and six dirt reservoirs. The entire west half of the Lower Vekol is within the SDNM boundary. Only one of the six dirt reservoirs, Little Bruce, is within the SDNM and is currently non-functional.



Map 10. Lower Vekol Allotment Pastures and Range Improvements

5.0 SDNM Complex Management Objectives

5.1 BLM Rangeland Management Objectives

The BLM's objectives for rangeland management are to carry out the intent of the Taylor Grazing Act of 1934, as amended and supplemented; the Federal Land Policy and Management Act of 1976; the Public Rangelands Improvement Act of 1978; presidential proclamations under the Antiquities Act of 1906; and other executive and public land orders. Objectives are: 1) to periodically and systematically inventory public lands and their resources and their present and future use projected through land use planning processes; 2) to manage public lands on the basis of multiple use and sustained yield; 3) to manage public lands in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archaeological values; 4) where appropriate, to preserve and protect certain public lands in their natural condition; 5) to provide food and habitat for fish and wildlife and domestic animals; 6) to provide for outdoor recreation and human occupancy and use; 7) to manage, maintain and improve the condition of the public rangelands so they become as productive as feasible for all rangeland values in accordance with management objectives and the land use planning process; and 8) to authorize grazing on the SDNM only to the extent that the BLM determines that grazing is compatible with the paramount purpose of protecting the objects of the SDNM.

Title 43 Code of Federal Regulations (CFR) Part 4100 governs grazing administration for public rangelands. Among other things, the regulations in subpart 4180 require the implementation of standards and guidelines to achieve the fundamentals of rangeland health.

The 2012 LSFO and SDNM Records of Decision address livestock management on public lands. The following are the goals and objectives from each Record of Decision regarding livestock grazing:

> GR-1: Manage livestock grazing in the Lower Sonoran Decision Area to provide for multiple uses while maintaining healthy ecosystems (2012a, p. 2-63).
>
> GR-1.1: Livestock grazing use and associated practices will be managed in a manner consistent with other multiple use needs and other desired resource condition objectives to ensure that the health of rangeland resources and ecosystems are maintained or improved. Management will achieve, or make significant progress toward achieving, Standards and produce a wide range of public values, such as wildlife habitat, livestock forage, recreation opportunities, clean water, and functional watersheds.
>
> GR-2: Manage livestock grazing in the SDNM Decision Area to provide for multiple uses while maintaining healthy ecosystems and protecting the Monument's biological and cultural resources (2012b, p. 2-66.).
>
> GR-2.1: Public lands in SDNM north of I-8 available to livestock use will be managed to achieve or make significant progress toward achieving Land Health Standards to ensure that the health of the biological resources are maintained or

improved. Livestock grazing use and associated practices will be managed in a manner consistent with other multiple use needs and other desired resource condition objectives to ensure that the health of rangeland resources and ecosystems are maintained or improved.

5.2 SDNM Complex Land Health Objectives

BLM land health objectives are specific to each of Arizona's Standards for Rangeland Health, and objectives were developed using indicators associated with these Standards. The achievement of these Standards assures rangeland health, State water quality standards, and wildlife habitat including endangered, threatened, and sensitives species. These Standards are as follows:

5.2.1 Standard 1 - Upland Sites

Upland soils exhibit infiltration, permeability, and erosion rates that are appropriate to soil type, climate and landform (ecological site).

Objective:
Maintain a departure of "Moderate" or less from the monitoring plot's corresponding ESD reference sheet. This is a qualitative and quantitative review of the site specific monitoring plot's 17 indicators for rangeland health where each indicator contributes to the assessment of the plot's attributes of soil site stability, hydrologic function, and biotic integrity. For all plots, the 3-7" p.z. ESD reference sheets were used unless the reference sheet was incomplete or unavailable, then the 7-10" p.z. ESD reference sheet for the same soil type was used.

Standard 1 achievement of ecological sites are assessed within each allotment. An ecological site within an allotment achieves Standard 1 if the majority, greater than 50 percent, of the plots representing the ecological site within the allotment are achieving at least two of the three rangeland health attributes (soil site stability, hydrologic function, and biotic integrity).

5.2.2 Standard 2 - Riparian - Wetland Site

Riparian-wetland areas are in proper functioning condition.

There are no riparian areas located within the SDNM Complex; therefore, this land health standard is not applicable and was not evaluated.

5.2.3 Standard 3 - Desired Resource Conditions

Productive and diverse upland and riparian-wetland communities of native species exist and are maintained.

Objective:
Achieve DPC objectives at the majority, more than 50 percent, of monitoring plots. DPC objectives are developed, with economic and social considerations, to meet and conserve the short-term and long-term potential for ecological sites to produce vegetation (Schacht 1993; Borman and Pyke 1994). DPC objectives are selected from vegetation community attributes observed on the ecological sites (Task Group on Unity of Concepts and Terminology Committee Members 1995). This is a quantitative

assessment of ground cover and vegetative community attributes for each plot's corresponding ecological site. DPC objectives were developed for each of the seven most prevalent ecological sites on the SDNM Complex by evaluating the data from randomly stratified monitoring plots on each of the most prevalent ecological sites without expected livestock use or unnatural disturbances. Areas with little livestock impact was defined as areas greater than 2 miles of livestock waters (See Appendix H). For each ecological site, DPC objectives were set one standard deviation from the average of each vegetation community attribute from data collected on plots located greater than two miles distance from livestock water, current or historic, and without additional unnatural disturbances (Table 4). This represents the average spread, natural variability, of the normally distributed data from the mean of each vegetation community attribute absent of unnatural disturbances.

The following objectives represent a sample of the natural condition of the vegetation communities on each ecological site due to limited potential for current or historical livestock disturbance and other unnatural disturbances in these areas. The bare ground DPC objective was set using the average plus one standard deviation. Percent bare ground is to be less than or equal to this objective. The foliar cover DPC objective was set using the average minus one standard deviation. Percent foliar cover is to be greater than or equal to this objective. The palatable species, palatable to both wildlife and livestock (Appendix D), DPC objective was set using the average minus one standard deviation. Percent palatable species is to be greater than or equal to this objective. The species diversity, Shannon Index, DPC objective was set using the average minus one standard deviation. Species diversity is to be greater than or equal to this objective.

Achievement of Standard 3 on ecological sites is assessed within each allotment. An ecological site within an allotment achieves Standard 3 if the majority, greater than 50 percent, of the plots representing the ecological site are achieving DPC objectives. A plot representing an ecological site achieves Standard 3 if more than 50 percent of the DPC objectives are achieved. Achievement of Standard 3 ensures productive and diverse upland communities of native species exist and are maintained and that the ecosystem is in functioning condition with vegetation community attributes consistent with soil protection and with providing forage and cover for both wildlife, general and sensitive species, and livestock. Literature defining forage and cover requirements for cactus ferruginous pygmy-owl, bighorn sheep, desert tortoise, lesser long-nosed bat, and mule deer were reviewed to ensure the DPC objectives for each ecological site are consistent with the species' requirements (AZGFD 2000; BLM 2012; Buechner 1960; Heffelfinger et al. 2006; Oftedal 2002; Van Devender et al. 2002).

Table 4. Desired Plant Community Objectives by Ecological Site.

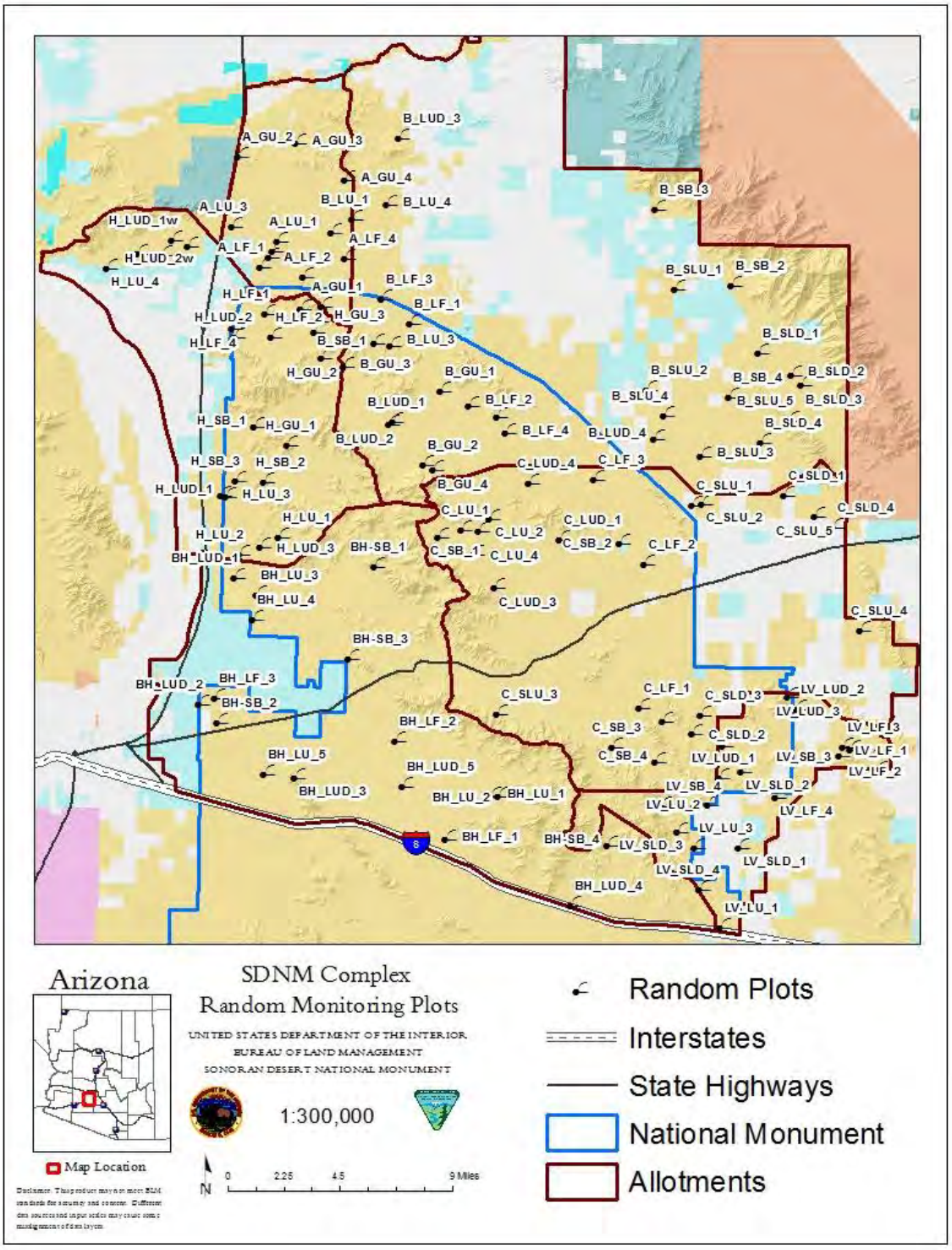
Desired Plant Community Objective	Granitic Upland	Limy Fan	Limy Upland Deep	Limy Upland	Sandy Bottom/Wash	Sandy Loam Deep	Sandy Loam Upland
Bare Ground	≤20%	≤22%	≤30%	≤24%	≤37%	≤72%	≤62%
Foliar Cover	≥13%	≥8%	≥7%	≥9%	≥17%	≥10%	≥14%
Palatable Species	≥7%	≥1%	≥1%	≥9%	≥33%	≥3%	≥10%
Species Diversity (Shannon Index)	≥1.11	≥0.24	≥0.37	≥0.49	≥1.18	≥0.52	≥0.45

6.0 Complex Inventory and Monitoring Methodology

6.1 Stratified Random Plots

A landscape approach was used to inventory soil and vegetation resource conditions and assess land health across the SDNM Complex. Random plot stratification and monitoring plot design in accordance with "BLM Technical Reference 1734-04" was implemented to provide an unbiased representation of soil and vegetation resources across the SDNM Complex. Data from the randomly stratified plots were used to determine the variability of ecological site and vegetation community attributes across the SDNM Complex. Ten plots were randomly stratified by allotment and the seven most prevalent ecological sites, as described above. The plots were visited in order, one through ten, until four sites matching the ecological site description were set. Plots with known disturbances, from sources other than livestock or livestock management infrastructure such as mining operations and right-of-ways, and areas inaccessible by livestock were excluded from the sample design. Mining operations, roads (300 foot buffer from the centerline), and steep slopes (>30 percent) were excluded from the sampling polygons. The sample design was based around a goal of four samples (plots) per stratum (ecological site within allotment). This number was selected because this is the maximum number of samples that could be monitored with the current resources available. However, some strata contain three samples due to the limited area suitable for plots to be established and some strata that needed additional plots to reduce data variability or represent underrepresented areas contain five samples. Generally, larger sample sizes provide increased precision when estimating unknown parameters.

The BLM interdisciplinary team reviewed attributes of the SDNM's objects and determined which monitoring methods are needed to adequately monitor those attributes and the Arizona Standards for Rangeland Health (Appendix E). Between 2017 and 2018, 124 random plots were monitored using Line Point Intercept, Belt Density, Soil Stability, and indicators of rangeland health (Map 11). Only perennial plants were the measured using these methods in order to relate the attributes of perennial vegetation communities to corresponding ESDs. Annual plants were excluded from this study due to the inherent variability of occurrence and production.



Map 11. Stratified Random Monitoring Plots and their Locations on the Complex

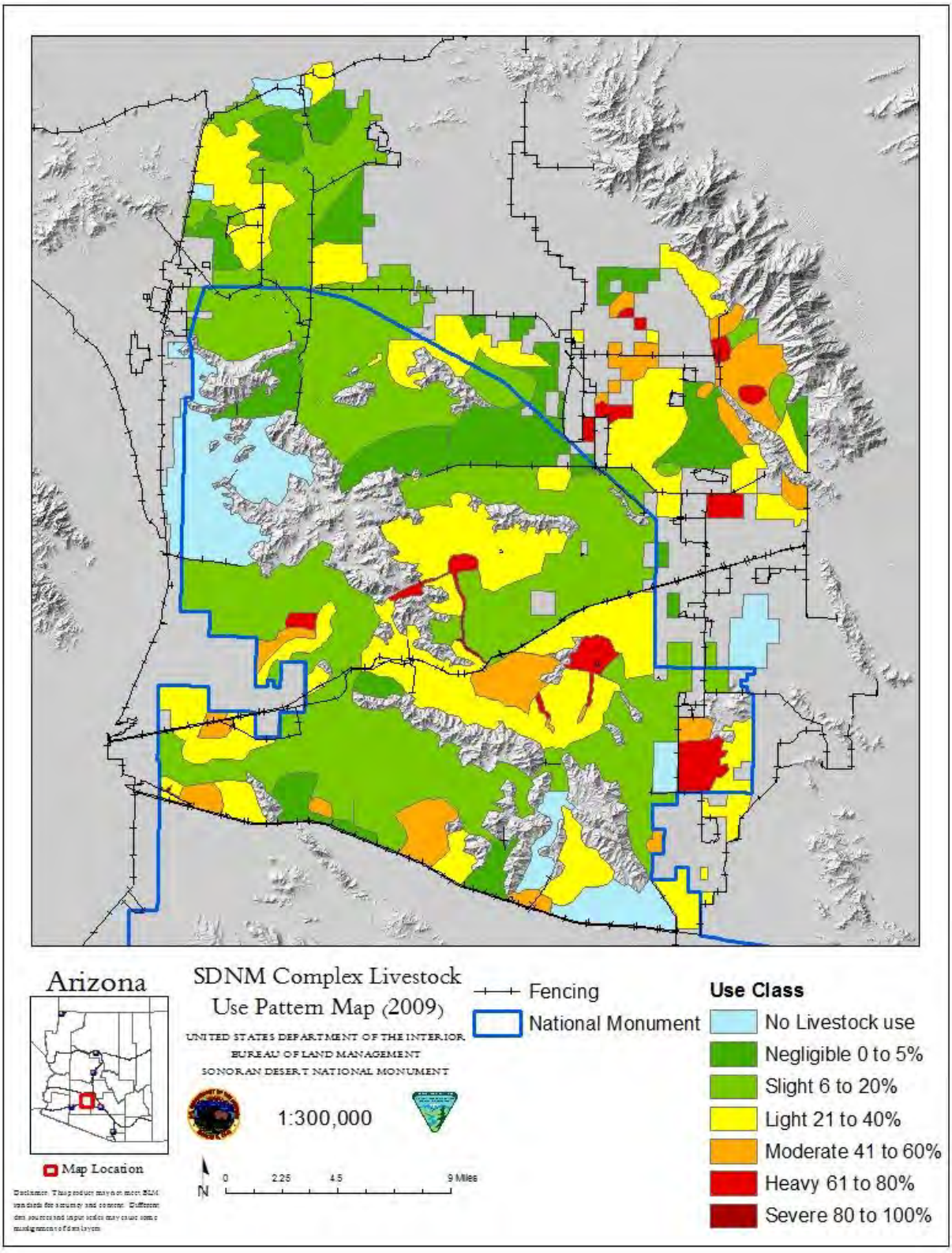
6.2 Livestock Utilization, Use Pattern mapping, and Use Probability Mapping

Utilization monitoring was conducted at several of the key areas multiple times between 2008 and 2012 using the Key Species Method found in "Technical Reference 1734-3 Utilization Studies and Residual Measurements, 1996". Key forage species are

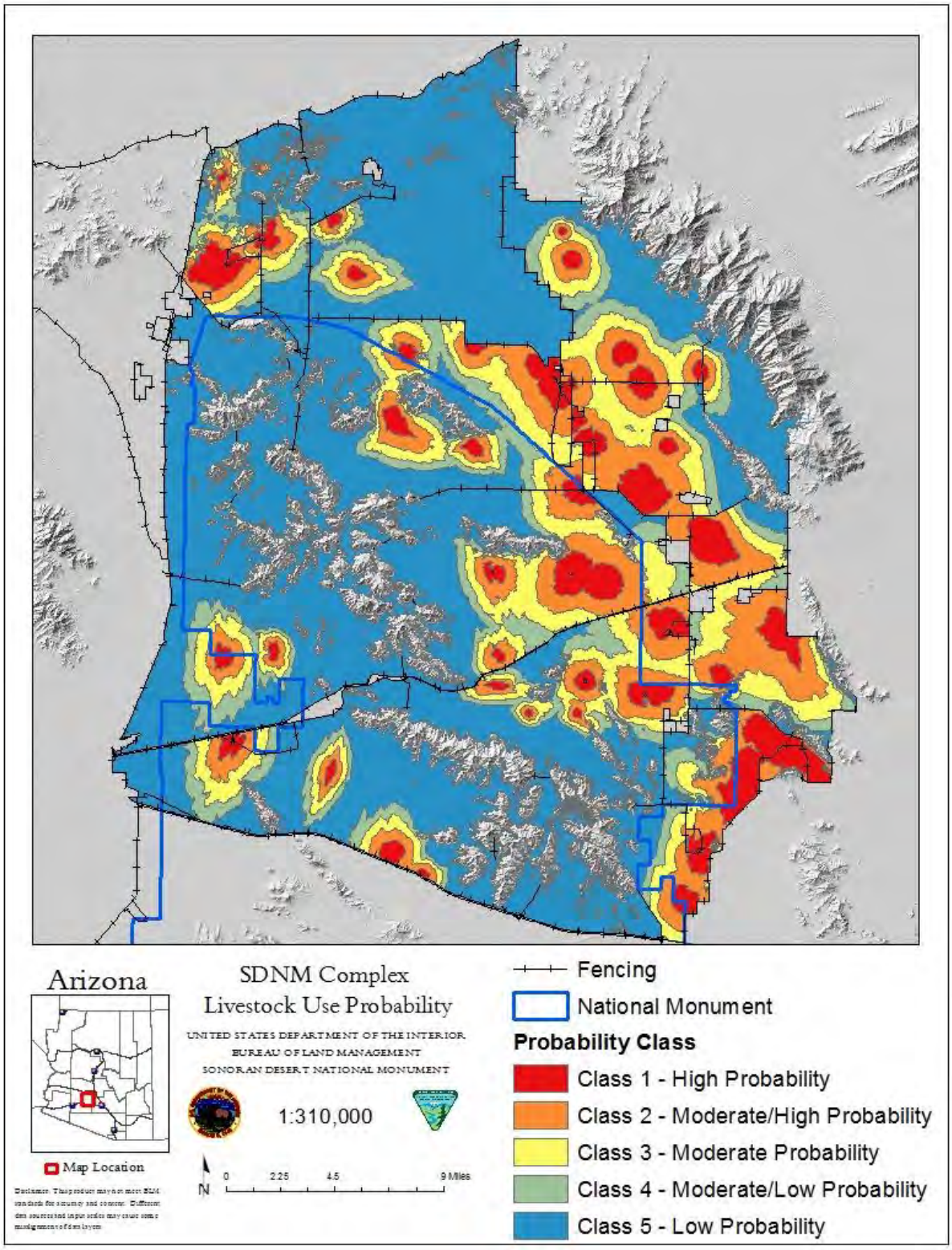
defined as important forage species that serve as indicators of status and/or trend for the entire vegetation community. Because key forage species are preferred, the utilization of key species can be extrapolated to judge the proper use of other less preferred palatable species of a site.

A livestock use pattern map was produced in 2009 using the "Mapping Utilization Patterns" methods as described in TR 1734-3. Mapping involved driving every road on each allotment to obtain a general concept of the use patterns. Observers stopped every one-half to one mile and collected utilization data using the Landscape Appearance Method, as described in TR 1734-3, which is an ocular assessment classifying the utilization of each key forage species. In addition, BLM used the Key Plant Method to collect utilization data at the key areas. The utilization measurements were used to delineate use zones on the final livestock use pattern map (Map 12).

Between 2007 and 2018, the number of livestock grazing the SDNM Complex has steadily declined (Figure 2). This is due, in part, to the expiration of four of the six grazing permits on the SDNM Complex. Therefore, current utilization data for the Big Horn, Hazen, Conley, and Lower Vekol allotments are unavailable. Using the best available data, a livestock use probability map was developed to illustrate areas with and without expected livestock use across the SDNM Complex (Map 13). This map was developed using tools in geographic information systems (GIS) software where geographic variables known to influence livestock grazing and distribution were considered (Appendix F). The map is classified into 5 classes corresponding to the potential intensity of past and future livestock use. Class 1 identifies areas with a high potential for livestock use and Class 5 identifies areas with a low potential for livestock use. This map supports the 2009 use pattern map, in terms of probability rather than actual use. For example, the use probability map predicted the probability of use in similar areas where use was mapped on the 2009 use pattern map. The livestock use probability map was used to assist in determining if current and/or historical livestock grazing is the causal factor for the non-achievement of Standards.



Map 12. SDNM Complex Livestock Use Pattern Map (2009)



Map 13. Probability/Potential for Livestock Use on the SDNM Complex

7.0 Evaluation and Summary of Studies Data

7.1 Precipitation

Precipitation data for the SDNM Complex were acquired from the Flood Control District of Maricopa County. Thirteen rain gauges are dispersed throughout and within close proximity the SDNM Complex. These gauges have been in operation from 10 to 31 years, depending on location, and their elevations range from 750 ft. to 1,720 ft. The mean precipitation from all thirteen locations is 5.8 inches annually (Figure 1) with a maximum of 7.13 inches over a 25 year period at Vekol wash rain gauge and a minimum of 4.71 inches over a 20 year period at the Gila Bend Landfill rain gauge.

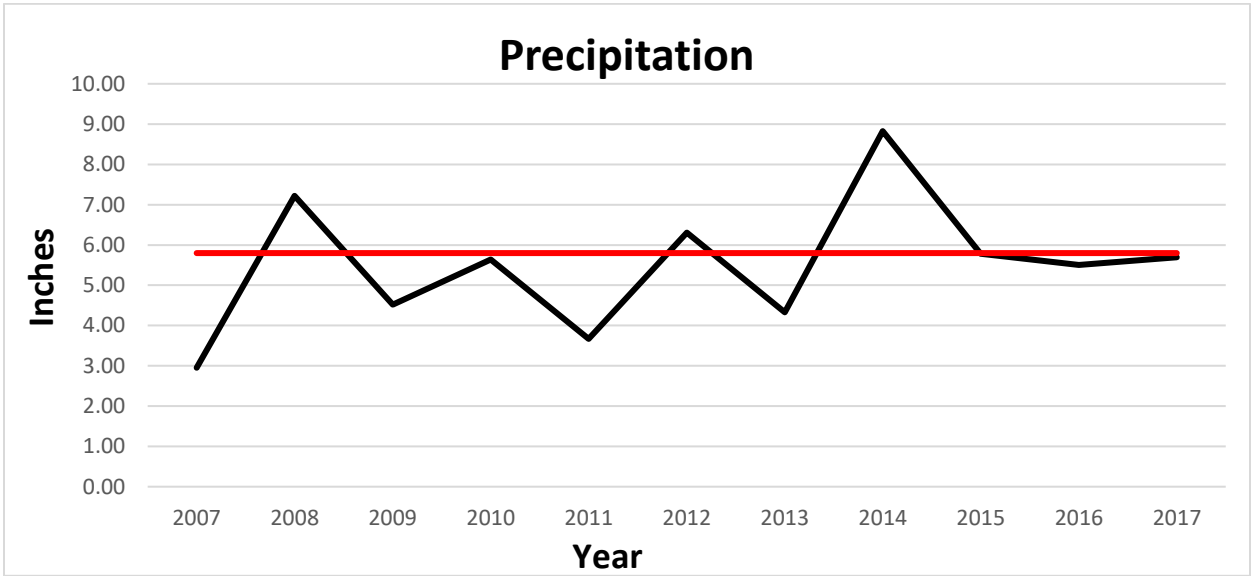


Figure 1. Yearly precipitation average across the SDNM Complex (black line), in each year from 2007 to 2017, and average annual precipitation (red line = 5.8 inches) on the SDNM Complex over the period 2007 to 2017.

7.2 Actual Use

Actual use data for livestock grazing is calculated from billing, actual use reporting, and grazing case files (Table 5 and Figure 2). Livestock actual use has varied from year to year due to annual fluctuations in forage conditions and the livestock market.

Table 5. Actual use estimates (AUMs) on the SDNM Complex.

Allotment	AUMs by Year											
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Arnold	0	0	2,462	0	0	0	0	114	738	0	0	0
Beloat	747	1,992	1,992	1,992	1,195	2,988	2,988	2,988	2,988	2,988	2,988	2,988
Big Horn	6,104	1,436	34	0	0	0	0	0	0	0	0	0
Conley	4,158	4,158	4,158	4,158	4,158	4,158	377	377	4,158	968	0	0
Hazen	1,181	1,181	1,181	1,181	1,181	1,181	1,181	1,181	0	0	0	0
Lower Vekol	0	1,164	1,164	1,164	0	0	288	0	0	0	0	0

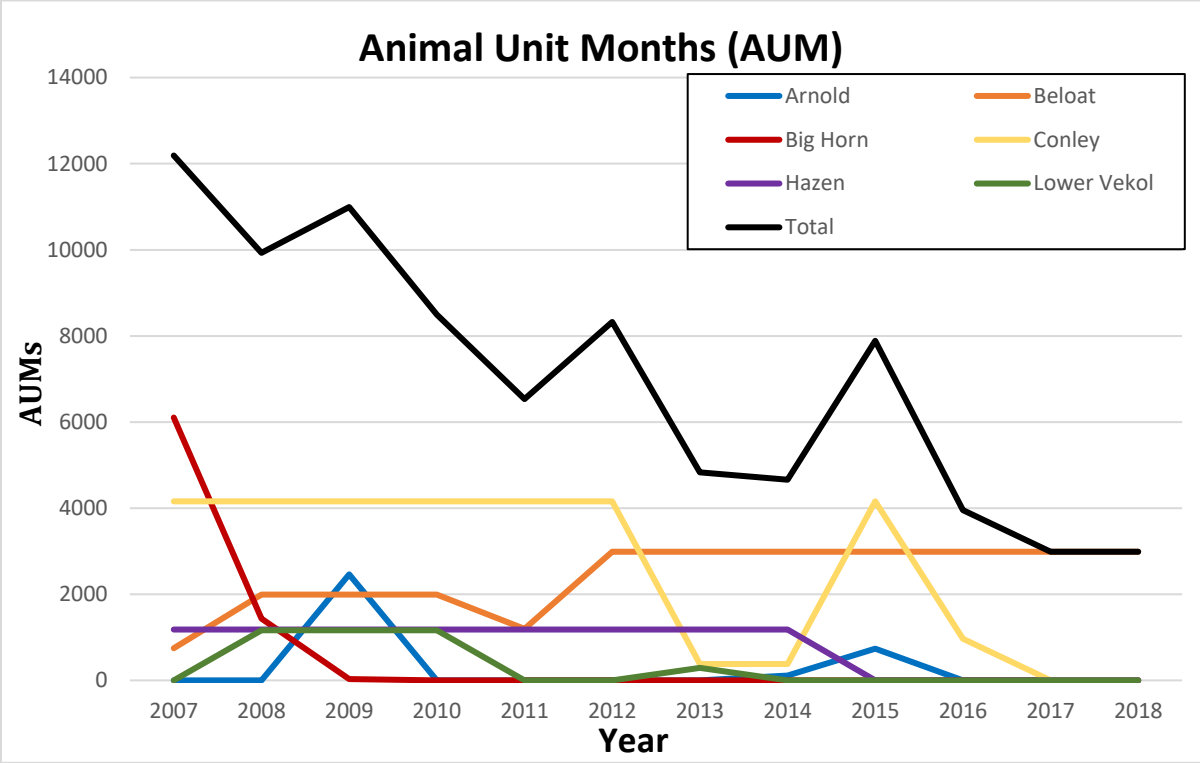


Figure 2. Authorized AUMs by year

7.3 Random Plot Data

See Appendix G for random plot data.

7.4 Livestock Use Probability Map

A livestock use probability map was developed to illustrate the distribution of potential livestock impacts near livestock waters that have been in operation over the past 10 years (Map 12). The higher the class number, the less likely livestock utilize the area due to distance from water, terrain, and other barriers. The percentage of the SDNM Complex within each use Class is listed in Table 6.

Table 6. Percentage of the SDNM Complex within each class.

Class	Percentage of SDNM Complex
Class 1 – High Use Probability	7.1
Class 2 – Moderate/High Use Probability	13.8
Class 3 – Moderate Use Probability	13.5
Class 4 – Moderate/Low Use Probability	10.9
Class 5 – Low Use Probability	54.6

8.0 Conclusions

The qualitative and quantitative data from the random monitoring plots were used to draw conclusions regarding the achievement or non-achievement Standards 1 and 3. Conclusions are summarized by allotment, major ecological site within allotment, vegetation community, and wildlife habitat areas within allotments. Only the most prevalent ecological sites present within each allotment are evaluated in this section. Not all prevalent ecological sites of the SDNM Complex are represented within each allotment. Section 5.2 defines the various management objectives for each prevalent ecological site of the SDNM Complex, and referring to the raw data in Appendix G, will aid in interpreting and verifying the presented conclusions.

The evaluation of livestock use probability mapping and field observations are used to determine if livestock grazing is the causal factor for non-achievement of either Standard 1 or 3. For example, if livestock sign (trails, hoof action, and dung) was observed on a plot failing to achieve a Standard and the plot is within livestock use probability Class 1 through 4, it is likely that livestock grazing is the causal factor for the non-achievement of the Standard in question.

The percentage of the three most common vegetation communities (creosote-bursage, palo verde-mixed cactus, and ephemeral wash) and wildlife habitat (bighorn sheep and SDT) failing to achieve Standards 1 and 3 are also summarized based on the proportion (percentage) each plot represents in the vegetation community/habitat area by allotment. Plots were weighted based on the number of plots within a given vegetation community/habitat area (acres) or ephemeral wash (miles). Some allotments may be absent of some vegetation communities and/or habitat types. The acres or miles of the vegetation communities presented in the tables below may not equal the total acreage of the allotment because of areas inaccessible to livestock and other vegetation communities that make up a small proportion of the allotment. Acres of wildlife habitat types only represent the areas with suitable habitat for each species within each grazing allotment. Vegetation communities and wildlife habitat areas overlap with multiple ecological site types. The analysis of these areas is not used to ascertain achievement or non-achievement of Standards but intended to show the condition of the vegetation communities/wildlife habitat.

8.1 Arnold Allotment

Land Health Standard 1 - Upland Sites
Upland soils exhibit infiltration, permeability, and erosion rates that are appropriate to soil type, climate and landform (ecological site).

The three major ecological sites within the Arnold Allotment are achieving Standard 1.

Ecological Site	Number of Plots	Number of Plots Achieving Standard 1	Ecological Site Achieving Standard 1?	Causal Factor For Non-Achievement
Granitic Upland	4	4	Yes	N/A
Limy Fan	4	3	Yes	N/A
Limy Upland	4	4	Yes	N/A

Rationale:
The majority of the plots representing Granitic Upland, Limy Fan, and Limy Upland are achieving Standard 1.

Proportion of vegetation communities and wildlife habitat not achieving Standard 1.

Vegetation Community/Species Habitat	Total Acres of Veg Community/Habitat	% Community Not Achieving Standard 1	% Community Not Achieving Standard 1 Due to Livestock Grazing
Creosote Bursage	16,130 ac	12.5	12.5
Palo Verde Mixed Cactus	5,110 ac	0.0	0.0
Bighorn Sheep	1,715 ac	0.0	0.0
SDT Category 1	1,760 ac	0.0	0.0
SDT Category 3	5,338 ac	0.0	0.0

Land Health Standard 3 - Desired Resource Conditions
Productive and diverse upland and riparian-wetland communities of native species exist and are maintained.

Two of the three major ecological sites within the Arnold Allotment are achieving Standard 3.

Ecological Site	Number of Plots	Number of Plots Achieving Standard 3	Ecological Site Achieving Standard 3?	Causal Factor For Non-Achievement
Granitic Upland	4	3	Yes	N/A
Limy Fan	4	0	No	Livestock Grazing
Limy Upland	4	3	Yes	N/A

Rational:
The majority of the plots representing the Granitic Upland and Limy Upland ecological sites are achieving Standard 3.

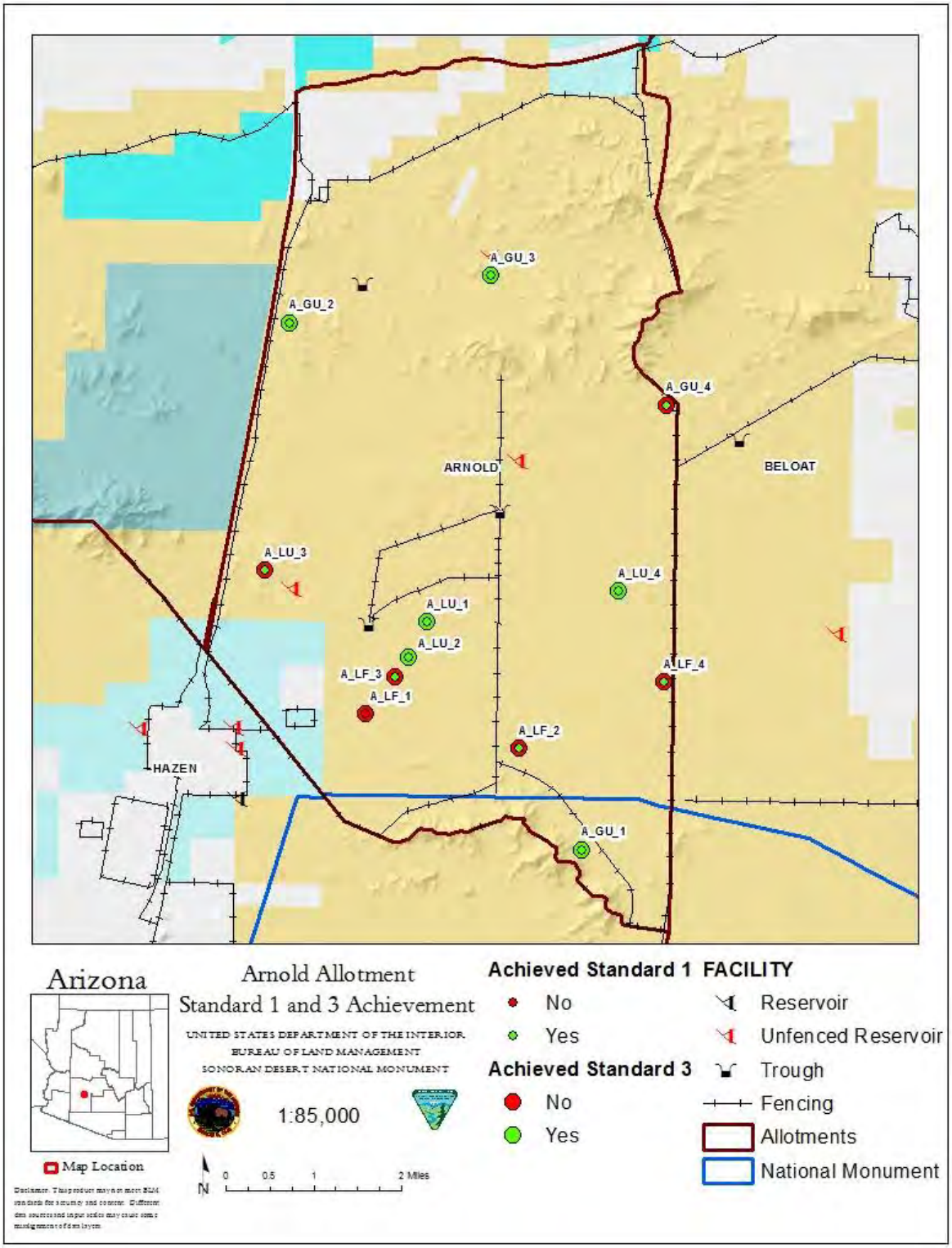
None of the monitoring plots representing the Limy Fan ecological site are achieving Standard 3. Two of the four Limy Fan monitoring plots not achieving Standard 3 are within livestock use probability Class 5 and two are within Class 2. The plots within Class 2 also showed livestock use in the form of trails, loitering areas, and scat. Therefore, historical livestock grazing was determined to be the causal factor for the non-achievement of Standard 3 on the Limy Fan ecological site.

Proportion of vegetation communities and wildlife habitat not achieving Standard 3.

Vegetation Community/Species Habitat	Total Acres of Veg Community/Habitat	% Community Not Achieving Standard 3	% Community Not Achieving Standard 3 Due to Livestock Grazing
Creosote Bursage	16,130 ac	62.5	25.0
Palo Verde Mixed Cactus	5,110 ac	25.0	0.0
Bighorn Sheep	1,715 ac	0.0	0.0
SDT Category 1	1,760 ac	0.0	0.0
SDT Category 3	5,338 ac	50.0	0.0

Summary of Ecological Site Analysis
Based on field observations and data collected, the Arnold allotment is achieving Standard 1 on the three major ecological sites and achieving Standard 3 on two of the three major ecological sites. The Limy Fan ecological site fails to achieve Standard 3 on all four monitoring plots. Livestock grazing is determined to be the causal factor for non-achievement on two of the four monitoring plots. The lack of palatable species and excessive bare ground are contributing factors for the non-achievement of Standard 3.

The monitoring plots where livestock grazing is determined to be the causal factor for the non-achievement of Standard 3 are located in the southern portion of the west pasture. The ecological sites in the northern portion of the allotment do not appear to have livestock grazing impacts.



Map 14. Arnold Standard 1 and 3 Achievement

8.2 Beloat Allotment

Land Health Standard 1 - Upland Sites

Upland soils exhibit infiltration, permeability, and erosion rates that are appropriate to soil type, climate and landform (ecological site).

Five of the seven major ecological sites within the Beloat Allotment are achieving Standard 1.

Ecological Site	Number of Plots	Number of Plots Achieving Standard 1	Ecological Site Achieving Standard 1?	Causal Factor For Non-Achievement
Granitic Upland	4	4	Yes	N/A
Limy Fan	4	3	Yes	N/A
Limy Upland	4	3	Yes	N/A
Limy Upland Deep	4	4	Yes	N/A
Sandy Bottom	4	4	Yes	N/A
Sandy Loam Deep	4	0	No	Livestock Grazing
Sandy Loam Upland	5	2	No	Livestock Grazing

Rationale:
The majority of the plots representing Granitic Upland, Limy Fan, Limy Upland, Limy Upland Deep, and Sandy Bottom ecological sites are achieving Standard 1.

Two of the five plots representing the Sandy Loam Upland ecological site are achieving Standard 1. Of the three Sandy Loam Upland plots failing to achieve Standard 1, one is in livestock use probability Class 2 with livestock trails and scat, one in is livestock use probability Class 3 with livestock trails and scat, and one is in livestock use probability Class 4 with livestock trails and scat. Based on field observations and data collected, livestock grazing is determined to be the causal factor for the non-achievement of Standard 1 on the Sandy Loam Upland ecological site.

None of the plots representing the Sandy Loam Deep ecological site are achieving Standard 1. Of the four Sandy Loam Deep plots failing to achieve Standard 1, one is in livestock use probability Class 1 with livestock trails and loitering areas, one is in livestock use probability Class 4 with historical livestock trails, loitering areas, and an absence of palatable species, and one is in livestock use probability Class 5 with recent livestock trails, substantial use of key species, and loitering areas, and one is in livestock use probability Class 5 with livestock trails and scat. Based on field observations and data collected, livestock grazing is determined to be the causal factor for the non-achievement of Standard 1 on the Sandy Loam Deep ecological site. The excessive use within livestock use probability Class 5 is likely due to the prolonged stocking of the pasture and the relatively high forage quality of these areas causing livestock to travel further in search of forage.

Proportion of vegetation communities and wildlife habitat not achieving Standard 1.

Vegetation Community/Species Habitat	Acres/Miles of Veg Community/Habitat	Percent Not Achieving Standard 1	Percent Not Achieving Standard 1 Due to Livestock Grazing
Creosote Bursage	65,614 ac	18.2	9.1
Palo Verde Mixed Cactus	16,703 ac	50	50
Ephemeral Wash	184.7 mi	0	0
Bighorn Sheep	72,259 ac	41.4	41.4
SDT Category 1	19,624 ac	11.1	11.1
SDT Category 2	35,667 ac	39.1	39.1
SDT Category 3	6,293 ac	0.0	0.0

Land Health Standard 3 - Desired Resource Conditions
Productive and diverse upland and riparian-wetland communities of native species exist and are maintained.

Five of the seven major ecological sites within the Beloat Allotment are achieving Standard 3.

Ecological Site	Number of plots	Number of Plots Achieving Standard 3	Ecological Site Achieving Standard 3?	Causal Factor For Non-Achievement
Granitic Upland	4	3	Yes	N/A
Limy Fan	4	4	Yes	N/A
Limy Upland	4	3	Yes	N/A
Limy Upland Deep	4	1	No	Unknown
Sandy Bottom	4	3	Yes	N/A
Sandy Loam Deep	4	2	No	Livestock Grazing
Sandy Loam Upland	5	3	Yes	N/A

Rationale:
The majority of the plots representing the Granitic Upland, Limy Fan, Limy Upland, Sandy Bottom, and Sandy Loam Upland ecological sites are achieving Standard 3.

Two of the four plots representing the Sandy Loam Deep ecological site are achieving Standard 3. Of the two Sandy Loam Deep plots failing to achieve Standard 3, one is in livestock use probability Class 1 with livestock trails and scat, and one is in livestock

use probability Class 4 with livestock trails and scat from the previous year and absent of palatable species. Based on field observations and data collected, livestock grazing is determined to be the causal factor for the non-achievement of Standard 3 on the Sandy Loam Deep ecological site.

One of the four plots representing the Limy Upland Deep ecological site is achieving Standard 3. Of the three plots failing to achieve Standard 3, one is in livestock use probability Class 2 with one livestock/wildlife trail present, absent of palatable species, and receives little additional moisture in the form of run-on moisture, and two are in livestock use probability Class 5 with no livestock impacts or use of palatable species. Based on field observations and data collected, livestock grazing is not the causal factor for the non-achievement of Standard 3 on the Limy Upland Deep ecological site.

Proportion of vegetation communities and wildlife habitat not achieving Standard 3.

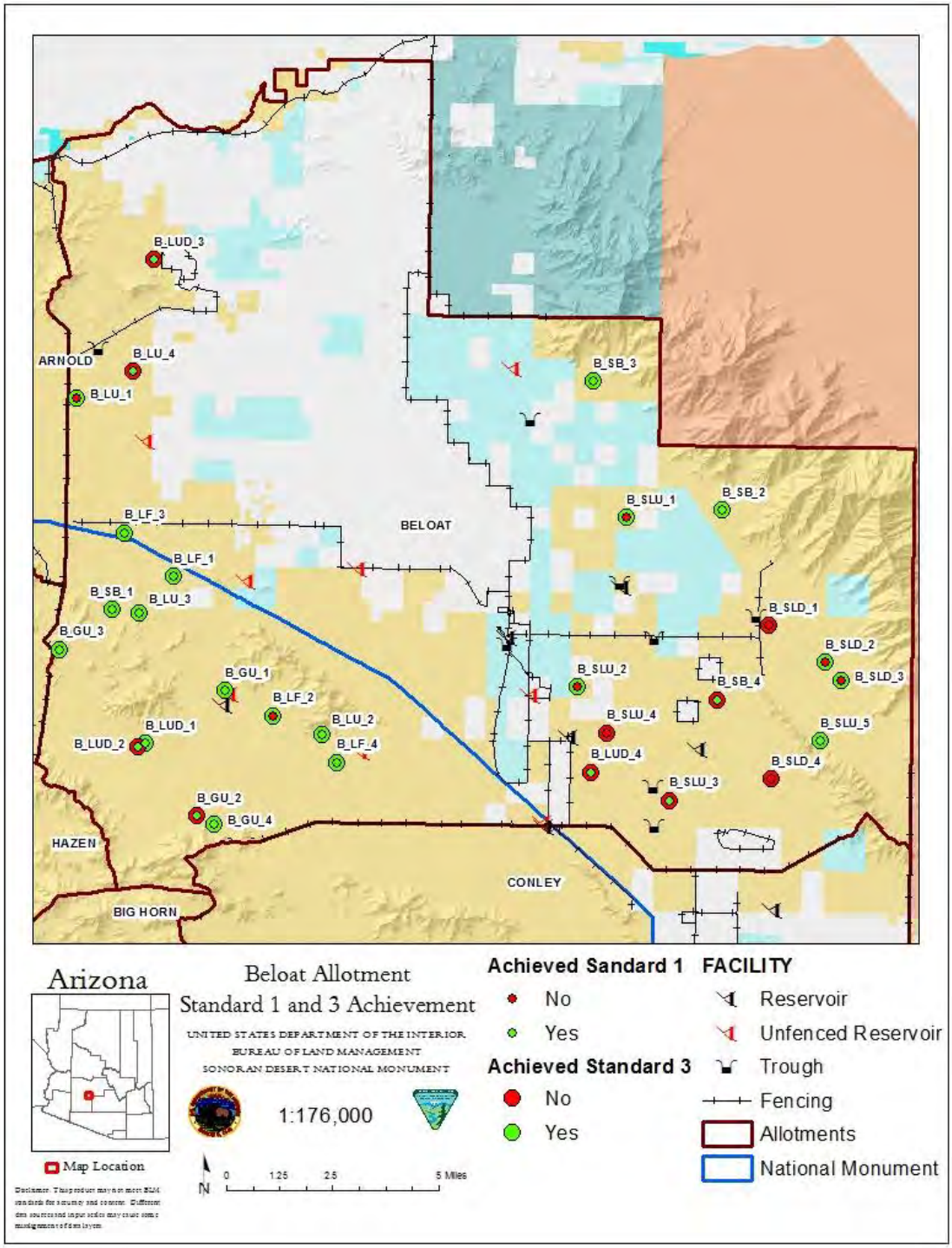
Vegetation Community/Species Habitat	Acres/Miles of Veg Community/Habitat	Percent Not Achieving Standard 3	Percent Not Achieving Standard 3 Due to Livestock Grazing
Creosote Bursage	65,614 ac	27.3	9.1
Palo Verde Mixed Cactus	16,703 ac	42.9	28.6
Ephemeral Wash	184.7 mi	25.0	25.0
Bighorn Sheep	72,259 ac	16.6	9.4
SDT Category 1	19,624 ac	11.1	0.0
SDT Category 2	35,667 ac	15.6	0.0
SDT Category 3	6,293 ac	100.0	0.0

Summary of Ecological Site Analysis

Based on field observations and data collected the Beloat Allotment is achieving Standard 1 and Standard 3 on five of the seven major ecological sites.

Objectives for Standard 1 are not achieved on the Sandy Loam Deep and Sandy Loam Upland ecological sites. Soil site stability and hydrologic function are the primary objectives not achieved on these ecological sites. Livestock grazing is determined to be the causal factor for the non-achievement for the majority of the monitoring plots on both ecological sites. Both ecological sites are only present in the eastern pastures near the Estrella Mountains where the majority of perennial livestock grazing occurs causing cattle to stray beyond livestock use probability Class 4 in search of forage.

Objectives for Standard 3 are not achieved on the Limy Upland Deep and Sandy Loam Deep ecological sites. All DPC objectives are not achieved on Sandy Loam Deep plots and foliar cover is the primary objective not achieved on Limy Upland Deep plots. Livestock grazing is determined to be the causal factor for the non-achievement of Standard 3 on the Sandy Loam Deep ecological site but not the causal factor for the non-achievement of Standard 3 for the Limy Upland Deep ecological site.



Map 15. Beloat Standard 1 and 3 Achievement

8.3 Big Horn Allotment

Land Health Standard 1 - Upland Sites
Upland soils exhibit infiltration, permeability, and erosion rates that are appropriate to soil type, climate and landform (ecological site).

Three of the four major ecological sites within the Big Horn Allotment achieve Standard 1.

Ecological Site	Number of Plots	Number of Plots Achieving Standard 1	Ecological Site Achieving Standard 1?	Causal Factor For Non-Achievement
Limy Fan	3	1	No	Unauthorized Current Livestock Grazing/Historical Livestock Grazing
Limy Upland	5	4	Yes	N/A
Limy Upland Deep	5	5	Yes	N/A
Sandy Bottom	4	4	Yes	N/A

Rationale:
The majority of the plots representing the Limy Upland, Limy Upland Deep, and Sandy Bottom ecological sites are achieving Standard 1.

One of the three plots representing the Limy Fan ecological site is achieving Standard 1. Of the two plots failing to achieve Standard 1 on the Limy Fan ecological site, one is in livestock use probability Class 1 with old livestock trails traversing the plot and no recent use of palatable species, and one is in livestock use probability Class 5 with recent livestock sign, trails and scat, and absent of palatable species. However, livestock have not been authorized to use the allotment since 2009. Based on field observations and data collected, current unauthorized livestock grazing and historical (greater than 2 years past) livestock grazing is the causal factor for non-achievement of Standard 1 on the Limy Fan ecological site.

Proportion of vegetation communities and wildlife habitat not achieving Standard 1

Vegetation Community/Species Habitat	Acres/Miles of Veg Community/Habitat	Percent Not Achieving Standard 1	Percent Not Achieving Standard 1 Due to Livestock Grazing
Creosote Bursage	44,335 ac	37.5	37.5
Palo Verde Mixed Cactus	28,681 ac	0.0	0.0
Ephemeral Wash	183.6 mi	0.0	0.0
Bighorn Sheep	73,024 ac	8.5	8.5
SDT Category 1	48,965 ac	0.0	0.0
SDT Category 2	2,705 ac	0.0	0.0

Land Health Standard 3 - Desired Resource Conditions
Productive and diverse upland and riparian-wetland communities of native species exist and are maintained.

All four major ecological sites within the Big Horn Allotment are achieving Standard 3.

Ecological Site	Number of plots	Number of Plots Achieving Standard 3	Ecological Site Achieving Standard 3?	Causal Factor For Non-Achievement
Limy Fan	3	2	Yes	N/A
Limy Upland	5	5	Yes	N/A
Limy Upland Deep	5	3	Yes	N/A
Sandy Bottom	4	4	Yes	N/A

Rationale:
The majority of plots representing the Limy Fan, Limy Upland, Limy Upland Deep and Sandy Bottom ecological sites are achieving Standard 3.

Proportion of vegetation communities and wildlife habitat not achieving Standard 3.

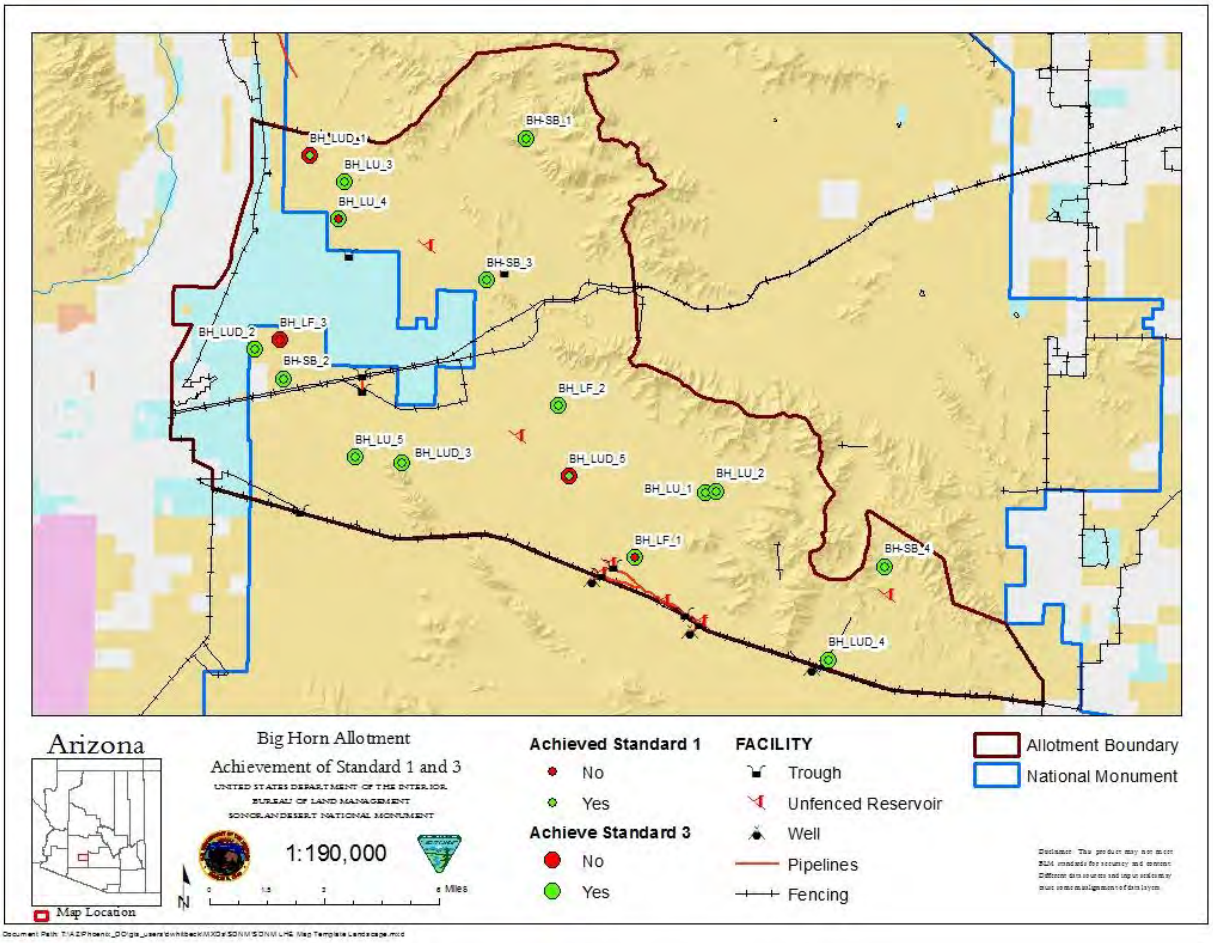
Vegetation Community/Species Habitat	Acres/Miles of Veg Community/Habitat	Percent Not Achieving Standard 3	Percent Not Achieving Standard 3 Due to Livestock Grazing
Creosote Bursage	44,335 ac	25.0	12.5
Palo Verde Mixed Cactus	28,681 ac	20.0	0.0
Ephemeral Wash	183.6 mi	0.0	0.0
Bighorn Sheep	73,024 ac	8.5	0.0
SDT Category 1	48,965 ac	0.0	0.0
SDT Category 2	2,705 ac	0.0	0.0

Summary of Ecological Site Analysis
Based on field observations and data collected, the Big Horn Allotment is achieving Standard 1 on three of the four major ecological sites and Standard 3 on all major ecological sites.

Objectives for Standard 1 are not achieved on the Limy Fan ecological site. Soil Site Stability and Hydrologic Function objectives are not achieved on the Limy Fan ecological site. Current livestock grazing and historical livestock grazing impacts in the form of livestock trails and loitering areas were observed and are determined to be the causal factors for non-achievement of Standard 1 for the Limy Fan ecological site.

Objectives for Standard 1 are not achieved on one Limy Upland plot. Numerous livestock trails and significant key species utilization was observed on the Limy Upland plot in the northern pasture. However, the remaining four Limy Upland plots are achieving Standard 1.

Objectives for Standard 3 are achieved on all four major ecological sites.



Map 16. Big Horn Standard 1 and 3 Achievement

8.4 Conley Allotment

Land Health Standard 1 - Upland Sites
Upland soils exhibit infiltration, permeability, and erosion rates that are appropriate to soil type, climate and landform (ecological site).

Four of the six major ecological sites within the Conley Allotment are achieving Standard 1.

Ecological Site	Number of Plots	Number of Plots Achieving Standard 1	Ecological Site Achieving Standard 1?	Causal Factor For Non-Achievement
Limy Fan	3	1	No	Livestock Grazing
Limy Upland	4	4	Yes	N/A
Limy Upland Deep	4	3	Yes	N/A
Sandy Bottom	4	3	Yes	N/A
Sandy Loam Deep	4	1	No	Livestock Grazing
Sandy Loam Upland	5	3	Yes	N/A

Rationale:
The majority of the plots representing Limy Upland, Limy Upland Deep, Sandy Bottom, and Sandy Loam Upland ecological sites achieve Standard 1.

One of the three plots representing the Limy Fan ecological site is achieving Standard 1. Of the two plots failing to achieve Standard 1 on the Limy Fan ecological site, one is in livestock use probability Class 1 with livestock trails and scat, and one is in livestock use probability Class 2 with livestock trails and scat and absent of palatable species. Based on field observations and data collected, livestock grazing is the causal factor for the non-achievement of Standard 1 on the Limy Fan ecological site.

One of four plots representing the Sandy Loam Deep ecological site is achieving Standard 1. Of the three plots failing to achieve Standard 1 on the Sandy Loam Deep ecological site; one is in livestock use probability Class 3 with historical livestock grazing impacts and several livestock trails on the plot, and one is in livestock use probability Class 3 with no recent livestock grazing impacts or use of palatable species, and one is in livestock use probability Class 5 with livestock trails but no recent use of palatable species. Based on field observations and data collected, livestock grazing is the causal factor for the non-achievement of Standard 1 on the Sandy Loam Deep ecological site in the southwest pasture but not the northeast pasture.

Proportion of vegetation communities and wildlife habitat not achieving Standard 1.

Vegetation Community/Species Habitat	Acres/Miles of Veg Community/Habitat	Percent Not Achieving Standard 1	Percent Not Achieving Standard 1 Due to Livestock Grazing
Creosote Bursage	55,329 ac	60.0	40.0
Palo Verde Mixed Cactus	20,426 ac	33.3	20.0
Ephemeral Wash	167.4 mi	25.0	25.0
Bighorn Sheep	45,687 ac	20.6	13.8
SDT Category 1	48,498 ac	27.2	18.1
SDT Category 2	8,526 ac	20.1	20.1
SDT Category 3	2,142 ac	100.0	100.0

Land Health Standard 3 - Desired Resource Conditions
Productive and diverse upland and riparian-wetland communities of native species exist and are maintained.

Two of the six major ecological sites within the Conley Allotment are achieving Standard 3.

Ecological Site	Number of plots	Number of Plots Achieving Standard 3	Ecological Site Achieving Standard 3?	Causal Factor For Non-Achievement
Limy Fan	3	1	No	Livestock Grazing
Limy Upland	4	3	Yes	N/A
Limy Upland Deep	4	2	No	Unknown
Sandy Bottom	4	4	Yes	N/A
Sandy Loam Deep	4	2	No	Livestock Grazing
Sandy Loam Upland	5	2	No	Unknown

Rationale:
The majority of the plots representing the Limy Upland and Sandy Bottom ecological sites are achieving Standard 3.

Two of the four plots representing the Limy Upland Deep ecological site are achieving Standard 3. Of the two plots failing to achieve Standard 3 on the Limy Upland Deep ecological site, one is in livestock use probability Class 3 with no significant livestock grazing impacts and absent of palatable species, and one is in livestock use probability Class 5 with no significant livestock grazing impacts. Based on field observations and

data collected, livestock grazing is not the causal factor for the failure of Standard 3 on the Limy Upland Deep ecological site.

Two of the four plots representing the Sandy Loam Deep ecological site are achieving Standard 3. Of the two plots failing to achieve Standard 3 on the Sandy Loam Deep ecological site, one is in livestock use probability Class 3 with no livestock grazing impacts, and one is in livestock use probability Class 3 with livestock trails. Based on field observations and data collected, livestock grazing is the causal factor for the non-achievement of Standard 3 on one of the two plots representing the Sandy Loam Deep ecological site in the northeast pasture.

One of the three plots representing the Limy Fan ecological site is achieving Standard 3. Of the two plots failing to achieve Standard 3 on the Limy Fan ecological site, one is in livestock use probability Class 2 with livestock trails and absent of palatable species, and one is in livestock use probability Class 3 and absent of palatable species. Based on field observations and data collected, livestock grazing is the causal factor for non-achievement of Standard 3 on the Limy Fan ecological site in the northwest pasture but not the southwest pasture.

Two of the five plots representing the Sandy Loam Upland ecological site are achieving Standard 3. Of the three plots failing to achieve Standard 3 on the Sandy Loam Upland ecological site, one is in livestock use probability Class 2 with historical livestock grazing impacts, and two are in livestock use probability Class 4 each with historical livestock sign and absent of palatable species. Based on field observations and data collected, livestock grazing is not the causal factor for non-achievement of Standard 3 on the Sandy Loam Upland ecological site.

Proportion of vegetation communities and wildlife habitat not achieving Standard 3.

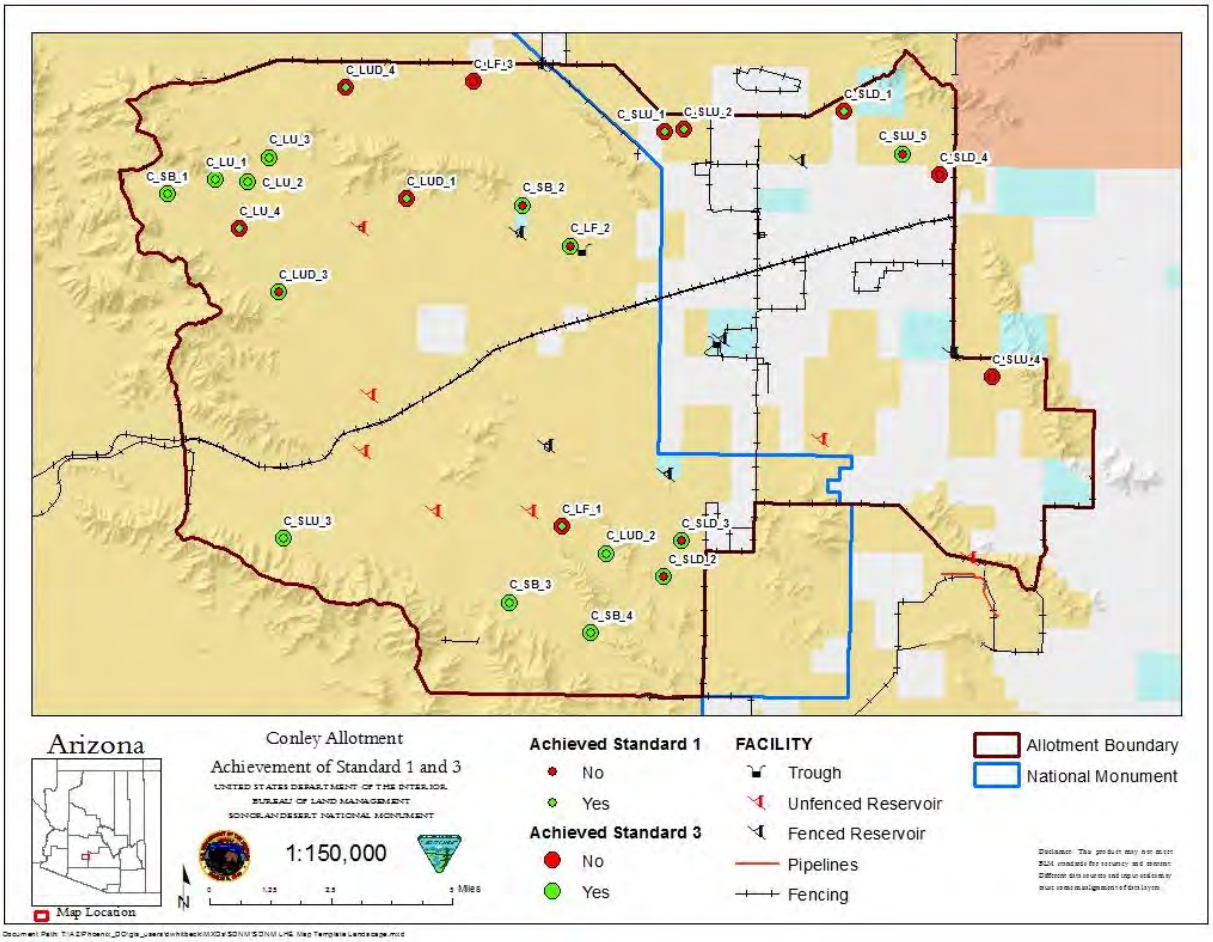
Vegetation Community/Species Habitat	Acres/Miles of Veg Community/Habitat	Percent Not Achieving Standard 3	Percent Not Achieving Standard 3 Due to Livestock Grazing
Creosote Bursage	55,329 ac	60.0	20.0
Palo Verde Mixed Cactus	20,426 ac	46.7	13.3
Ephemeral Wash	167.4 mi	0	0
Bighorn Sheep	45,687 ac	27.5	6.8
SDT Category 1	48,498 ac	18.1	0.0
SDT Category 2	8,526 ac	40.3	20.1
SDT Category 3	2,142 ac	0.0	0.0

Summary of Ecological Site Analysis

Based upon field observations and data collected the Conley Allotment is achieving Standard 1 on four of the six major ecological sites and Standard 3 on two of the six major ecological sites.

Objectives for Standard 1 are not achieved on the Limy Fan and Sandy Loam Deep ecological sites. The majority of plots representing the Limy Fan ecological site are not achieving soil site stability and hydrologic function objectives. Based on field observations and data collected, livestock grazing is the causal factor for the non-achievement of Standard 1 for the Limy Fan ecological site. The majority of plots representing the Sandy Loam Deep ecological site are not achieving the soil site stability, hydrologic function, and biotic integrity objectives for Standard 1. Based on field observations and data collected, livestock grazing is the causal factor for the non-achievement of Standard 1 in the southwest pasture but not the northeast pasture.

Objectives for Standard 3 are not achieved on the Limy Fan, Limy Upland Deep, Sandy Loam Deep, and Sandy Loam Upland ecological sites. The majority of the plots representing the Limy Fan ecological site indicated excessive bare ground and absence of palatable species. Based on field observations and data collected, livestock grazing is the causal factor for non-achievement of Standard 3 on the Limy Fan ecological site in the northwest pasture but not the southwest pasture. The majority of the plots representing the Limy Upland Deep ecological site indicate excessive bare ground and low foliar cover. Based on field observations and data collected, livestock grazing is not the causal factor for non-achievement of Standard 3 on the Limy Upland Deep ecological site. The plots representing the Sandy Loam Deep ecological site indicate low foliar cover, low palatable species composition, and low species diversity. Based on field observations and data collected livestock grazing is the causal factor for non-achievement of Standard 3 for the Sandy Loam Deep ecological site in the most northern portion of the northeast pasture. The plots representing the Sandy Loam Upland ecological site indicate excessive bare ground and low foliar cover. Based on field observations and data collected livestock grazing is not the causal factor for non-achievement of Standard 3 for the Sandy Loam Upland ecological site.



Map 17. Conley Standard 1 and 3 Achievement

8.5 Hazen Allotment

Land Health Standard 1 - Upland Sites
Upland soils exhibit infiltration, permeability, and erosion rates that are appropriate to soil type, climate and landform (ecological site).

The five major ecological sites within the Hazen Allotment achieve Standard 1.

Ecological Site	Number of Plots	Number of Plots Achieving Standard 1	Ecological Site Achieving Standard 1?	Causal Factor For Non-Achievement
Granitic Upland	4	4	Yes	N/A
Limy Fan	4	4	Yes	N/A
Limy Upland	4	4	Yes	N/A
Limy Upland Deep	6	6	Yes	N/A
Sandy Bottom	5	5	Yes	N/A

Rationale:
All the plots representing the Granitic Upland, Limy Fan, Limy Upland, Limy Upland Deep, and Sandy Bottom ecological sites are achieving Standard 1.

Proportion of vegetation communities and wildlife habitat not achieving Standard 1.

Vegetation Community/Species Habitat	Acres/Miles of Veg Community/Habitat	Percent Not Achieving Standard 1	Percent Not Achieving Standard 1 Due to Livestock Grazing
Creosote Bursage	21,947 ac	0.0	0.0
Palo Verde Mixed Cactus	9,329 ac	0.0	0.0
Ephemeral Wash	76.9 mi	0.0	0.0
Bighorn Sheep	35,896 ac	0.0	0.0
SDT Category 1	28,431 ac	0.0	0.0
SDT Category 2	3,646 ac	0.0	0.0

Land Health Standard 3 - Desired Resource Conditions
Productive and diverse upland and riparian-wetland communities of native species exist and are maintained.

Four of the five major ecological sites within the Hazen Allotment are achieving Standard 3.

Ecological Site	Number of plots	Number of Plots Achieving Standard 3	Ecological Site Achieving Standard 3?	Causal Factor For Non-Achievement
Granitic Upland	4	4	Yes	N/A
Limy Fan	4	3	Yes	N/A
Limy Upland	4	2	No	Unknown
Limy Upland Deep	6	6	Yes	N/A
Sandy Bottom	5	3	Yes	N/A

Rationale:
The majority of the plots representing the Granitic Upland, Limy Fan, Limy Upland Deep, and Sandy Bottom ecological sites are achieving Standard 3. Two of the four plots representing the Limy Upland ecological site are achieving Standard 3. Of the two plots failing to achieve Standard 3 on the Limy Upland ecological site, one is in livestock use probability Class 5 with no livestock grazing impacts and absent of palatable species, and one is in livestock use probability Class 5 with no livestock grazing impacts. Based on field observations and data collected, livestock grazing is not the causal factor for the non-achievement of Standard 3 on the Limy Upland ecological site.

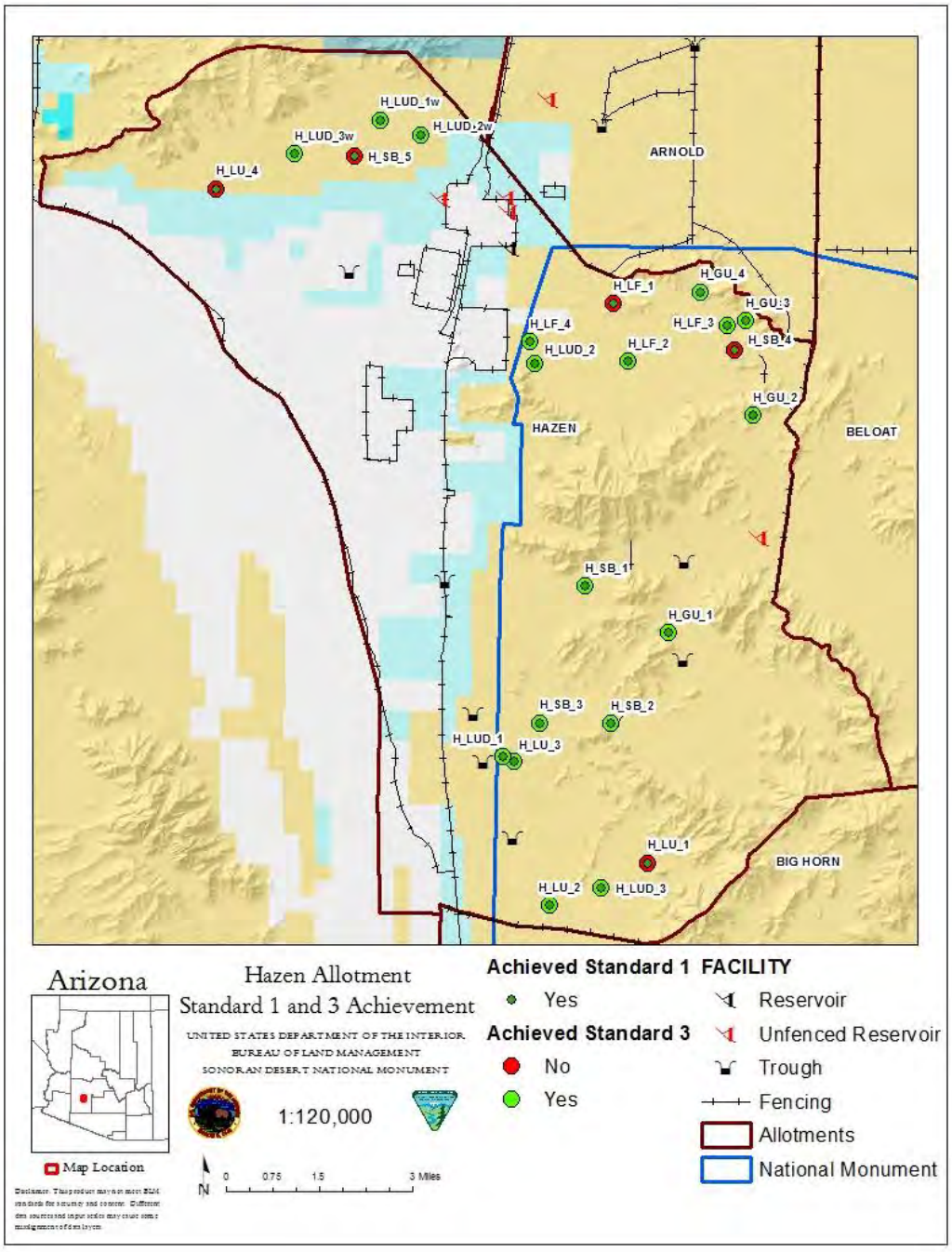
Proportion of vegetation communities and wildlife habitat not achieving Standard 3.

Vegetation Community/Species Habitat	Acres/Miles of Veg Community/Habitat	Percent Not Achieving Standard 3	Percent Not Achieving Standard 3 Due to Livestock Grazing
Creosote Bursage	21,947 ac	23.1	0.0
Palo Verde Mixed Cactus	9,329 ac	0.0	0.0
Ephemeral Wash	76.9 mi	40.0	0.0
Bighorn Sheep	35,896 ac	16.5	0.0
SDT Category 1	28,431 ac	21.4	0.0
SDT Category 2	3,646 ac	0.0	0.0

Summary of Ecological Site Analysis
Based upon field observations and data collected, the five major ecological sites are achieving Standard 1, and four of the five major ecological sites are achieving Standard 3.

Objectives for Standard 1 are achieved on all five major ecological sites.

Objectives for Standard 3 are achieved on four of the five major ecological sites. Objectives for Standard 3 are not achieved on the Limy Upland ecological site. Plots representing the Limy Upland ecological site indicate low foliar cover and low species diversity. Based on field observations and data collected, livestock grazing is not the causal factor for the non-achievement of Standard 3 on the Limy Upland ecological site.



Map 18. Hazen Standard 1 and 3 Achievement

8.6 Lower Vekol Allotment

Land Health Standard 1 - Upland Sites

Upland soils exhibit infiltration, permeability, and erosion rates that are appropriate to soil type, climate and landform (ecological site).

Three of the five major ecological sites within the Lower Vekol Allotment are achieving Standard 1.

Ecological Site	Number of Plots	Number of Plots Achieving Standard 1	Ecological Site Achieving Standard 1?	Causal Factor For Non-Achievement
Limy Fan	4	0	No	Human-altered Hydrology
Limy Upland	4	3	Yes	N/A
Limy Upland Deep	3	2	Yes	N/A
Sandy Bottom	4	4	Yes	N/A
Sandy Loam Deep	4	2	No	Historical Livestock Grazing

Rationale:
The majority of the plots representing Limy Upland, Limy Upland Deep, and Sandy Bottom ecological sites are achieving Standard 1.

Two of the four plots representing the Sandy Loam Deep ecological site are achieving Standard 1. Of the two plots failing to achieve Standard 1 on the Sandy Loam Deep ecological site, one is in livestock use probability Class 1 with livestock trails traversing the plot and absent of palatable species, and one is in livestock use probability Class 3 with no livestock grazing impacts but with absent of palatable species. Based on field observations and data collected, historical livestock grazing is the causal factor for the non-achievement of Standard 1 on the Sandy Loam Deep ecological site.

None of the plots representing the Limy Fan ecological site are achieving Standard 1. Of the four plots failing to achieve Standard 1 on the Limy Fan ecological site, two are in livestock use probability Class 1 with horse trails and scat but no recent cattle grazing impacts and absent of palatable species, and one is in livestock use probability Class 1 with no recent livestock grazing impacts and absent of palatable species, and one is in livestock use probability Class 1 with no livestock grazing impacts and absent of palatable species. Based on field observations and data collected, current livestock grazing is not the causal factor for non-achievement of Standard 1 on the Limy Fan ecological site. The Lower Vekol dyke system has altered the hydrology of the area resulting in Limy Fans with low soil site stability, low hydrologic function, and low biotic integrity.

Proportion of vegetation communities and wildlife habitat not achieving Standard 1.

Vegetation Community/Species Habitat	Acres/Miles of Veg Community/Habitat	Percent Not Achieving Standard 1	Percent Not Achieving Standard 1 Due to Livestock Grazing
Creosote Bursage	10,597 ac	55.6	11.1
Palo Verde Mixed Cactus	6,560 ac	16.7	16.7
Ephemeral Wash	34.7 mi	0.0	0.0
Bighorn Sheep	8,089 ac	0.0	0.0
SDT Category 1	6,992 ac	0.0	0.0
SDT Category 2	10,446 ac	42.8	14.2
SDT Category 3	2,139 ac	33.3	33.3

Land Health Standard 3 - Desired Resource Conditions
Productive and diverse upland and riparian-wetland communities of native species exist and are maintained.

Two of the five major ecological sites on the Lower Vekol Allotment are achieving Standard 3.

Ecological Site	Number of plots	Number of Plots Achieving Standard 3	Ecological Site Achieving Standard 3?	Causal Factor For Non-Achievement
Limy Fan	4	1	No	Human-altered Hydrology/Recreation
Limy Upland	4	1	No	Historical Livestock Grazing
Limy Upland Deep	3	2	Yes	N/A
Sandy Bottom	4	3	Yes	N/A
Sandy Loam Deep	4	2	No	Historical Livestock Grazing

Rationale:
The majority of the plots representing the Limy Upland Deep and Sandy Bottom ecological sites are achieving Standard 3.

One of the four plots representing the Limy Fan ecological site is achieving Standard 3. Of the three plots failing to achieve Standard 3 on the Limy Fan ecological site, one is in livestock use probability Class 1 with recreational horse riding impacts but no cattle grazing impacts and absent of palatable species, and one is in livestock use probability Class 1 with no recent livestock grazing impacts and absent of palatable species, and one is in livestock use probability Class 1 with no livestock grazing impacts and absent

of palatable species. Based on field observations and data collected, livestock grazing is not the causal factor for non-achievement of Standard 3 on the Limy Fan ecological site. The Lower Vekol dyke system has altered the hydrology by trapping surface flow and reducing run-on moisture to Limy Fans resulting in high bare ground, low foliar cover, limited palatable species, and low species diversity.

One of the four plots representing the Limy Upland ecological site is achieving Standard 3. Of the three plots failing to achieve Standard 3 on the Limy Upland ecological site, one is in livestock use probability Class 1 with livestock trails traversing the plot and absent of palatable species, and one is in livestock use probability Class 3 with livestock trails traversing the plot but no current use of the palatable species, and one is in livestock use probability Class 5 with livestock trails traversing the plot and absent of palatable species. Based on field observations and data collected, historical, greater than 2 years past, livestock grazing is the causal factor for the non-achievement of Standard 3 on the Limy Upland ecological site.

Two of the four plots representing the Sandy Loam Deep ecological site are achieving Standard 3. Of the two plots failing to achieve Standard 3 on the Sandy Loam Deep ecological site, one is in livestock use probability Class 1 with historical livestock trails traversing the plot and absent of palatable species, and one is in livestock use probability Class 3 with no livestock grazing impacts and absent of palatable species. Based on field observations and data collected, historical livestock grazing is the causal factor for the non-achievement of Standard 3 on one of the two plots representing the Sandy Loam Deep ecological site.

Proportion of vegetation communities and wildlife habitat not achieving Standard 3.

Vegetation Community/Species Habitat	Acres/Miles of Veg Community/Habitat	Percent Not Achieving Standard 3	Percent Not Achieving Standard 3 Due to Historical Livestock Grazing
Creosote Bursage	10,597 ac	66.7	22.2
Palo Verde Mixed Cactus	6,560 ac	50.0	33.3
Ephemeral Wash	34.7 mi	25.0	0.0
Bighorn Sheep	8,089 ac	0.0	0.0
SDT Category 1	6,992 ac	0.0	0.0
SDT Category 2	10,446 ac	71.4	28.5
SDT Category 3	2,139 ac	66.6	33.3

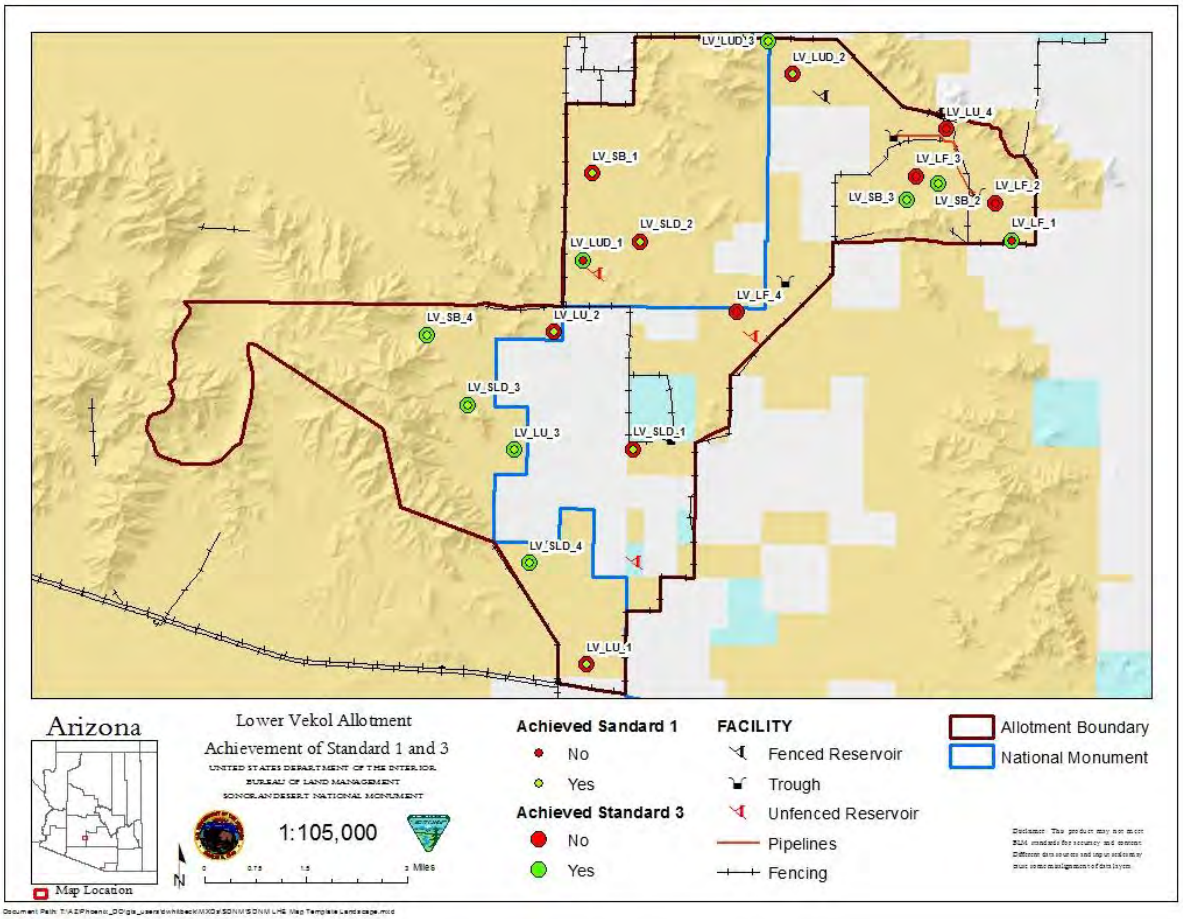
Summary of Ecological Site Analysis

Based upon field observations and data collected three of the five major ecological sites are achieving Standard 1 and two of the five major ecological sites are achieving Standard 3.

Objectives for Standard 1 are not achieved on the Limy Fan and Sandy Loam Deep ecological sites. The majority of the plots representing the Limy Fan ecological sites are

not achieving objectives for the soil site stability, hydrologic function, and biotic integrity attributes. Based on field observations and data collected, livestock grazing is not the causal factor for the non-achievement of Standard 1 on the Limy Fan ecological site. The majority of the plots representing the Sandy Loam Deep ecological site are not achieving objectives for soil site stability. Based on field observations and data collected, historical livestock grazing is the causal factor for the non-achievement of Standard 1 on the Sandy Loam Deep ecological site.

Objectives for Standard 3 are not achieved on the Limy Fan, Limy Upland, and Sandy Loam Deep ecological sites. The majority of the plots representing the Limy Fan ecological site are not achieving all DPC objectives. Based on field observations and data collected, livestock grazing is not the causal factor for the non-achievement of Standard 3 on the Limy Fan ecological site. The majority of the plots representing the Limy Upland ecological site are not achieving the bare ground objective indicating excessive bare ground. Based on field observations and data collected, historical, (greater than 2 years past), livestock grazing is the causal factor for the non-achievement of Standard 3 on the Limy Upland ecological site. The majority of plots representing the Sandy Loam Deep ecological site are not achieving the bare ground, foliar cover, and palatable species DPC objectives. Based on field observations and data collected (historical, greater than 2 years past), livestock grazing is the causal factor for the non-achievement of Standard 3 on one of the two plots representing the Sandy Loam Deep ecological site.



Map 19. Lower Vekol Standard 1 and 3 Achievement

9.0 Recommendations

Based on the analysis of monitoring data and field observations, it is suggested that grazing can remain available, with management modifications such as seasonal, deferred, or rotation grazing, on the SDNM portions of allotments that make up the SDNM Complex north of Interstate 8 with permitted use ranging from ephemeral use only to a maximum of 4,232 perennial AUMs.

Rationale:
The management of livestock grazing has differed between allotments and over the years, exhibiting a range of historical grazing impacts across the SDNM Complex. Some monitoring plots within the SDNM portion of the SDNM Complex are failing to achieve Standard 1 or 3 or both due to livestock grazing as previously authorized. Conversely, some monitoring plots within the SDNM portion of the SDNM Complex with known and expected historical livestock use are achieving Standard 1 or 3 or both. Varying grazing intensity and duration of historical livestock grazing is likely the causal factor for this contradiction. Additionally, the majority (54.6%) of the SDNM Complex is mapped as livestock use probability Class 5 where it is unlikely that substantial livestock grazing has or would occur. Without the redevelopment and/or addition of new water sources, grazing is likely to remain compatible with monument objects in these areas.

An adjustment in the management of livestock will be required to make progress towards the achievement of Standards within the SDNM. Grazing schemes, such as ephemeral grazing, deferred grazing, rotational grazing and seasonal grazing, featuring appropriate stocking rates that limit the use of perennial species, can prevent livestock grazing from significantly affecting the diversity and reproductive capability of forage species (Hall et al. 2005; Enright and Miller 2007).

It is recommended that no more than 4,232 perennial AUMs are authorized on the SDNM portion of the SDNM Complex. This maximum was calculated by averaging the perennially, non-ephemeral, authorized AUMs for each allotment between 2007 and 2018 and calculating the amount of AUMs within the SDNM portion of each allotment by the percentage of BLM land in the SDNM (Table 7).

Table 7. Maximum Perennial AUM Calculations

Allotment	Classification	Ave. Perennial Use 2007-2018	Percent BLM Acres in SDNM	Prorated Ave. Perennial AUMs
Arnold	Ephemeral	0.00	11.45	0.00
Beloat	Perennial/Ephemeral	2,402.83	33.77	811.43
Big Horn	Perennial/Ephemeral	356.83	94.64	337.70
Conley	Perennial/Ephemeral	2,569.00	88.18	2,265.34
Hazen	Perennial/Ephemeral	787.33	75.25	592.46
Lower Vekol	Perennial/Ephemeral	315.00	71.36	224.78
TOTAL				4,231.71

Source: BLM 2020

Livestock grazing management, including stocking rates and grazing systems, of allotments available for grazing will be analyzed, in accordance with the National Environmental Policy Act, on an implementation-level basis in the future.

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Appendix A - Executive Summary: Methodology and Process

The 2012 Record of Decision (ROD) and the Final RMP/EIS pertaining to livestock use on the Sonoran Desert National Monument (SDNM), north of Interstate 8 (I-8), was challenged in the U.S. District Court, District of Arizona. The court found that the Bureau of Land Management (BLM) did not adequately explain the process that led to the 2012 land health evaluation (LHE) and the compatibility determination used to inform the 2012 ROD and Final RMP/EIS. The court cited issues with 1) identifying desired plant community (DPC) objectives, 2) determining whether DPC objectives are being met, and 3) determining whether livestock grazing was the causal factor for the non-achievement of DPC objectives. Therefore, due to the SDNM's high level of scrutiny, the BLM implemented new methods and analysis to address the issues brought forth from the previous analysis.

In the 2012 LHE, the BLM used data from a variety of sources to set DPC objectives. Generally, ranges of values defined in Natural Resources Conservation Service (NRCS) ecological site descriptions (ESDs) are used to inform site specific DPC objectives. ESDs are organized by major land resource areas (MLRA) where soil types are broken out into precipitation zones to describe unique ecological sites. They often contain descriptions of vegetation community attributes, natural variability of those attributes, and state and transition models describing different vegetation communities an ecological site may produce given different management and or disturbance. The SDNM spans a transition zone between two MLRAs as defined by average annual precipitation and elevation. The ESDs describing the most prominent ecological sites on the SDNM, between the two MLRAs, are considered "provisional" by the NRCS, meaning the information within "represents the lowest tier of documentation that is releasable to the public" but contains enough information to distinguish between different ecological sites and have undergone quality control and quality assurance protocols. Due to these factors, the BLM determined the ESDs required supplemental data to develop the DPC objectives for the 2012 LHE.

The BLM attempted to supplement the information in the ESDs with data from ungrazed reference areas on the Barry M. Goldwater Air Force Range/Area A (BMGR/Area A), south of I-8. The BLM and Pacific Biodiversity Institute (PBI) collected data from BMGR/Area A on key areas that represented ecological sites also present on the SDNM north of I-8. However, the ecological sites north of I-8 receive, on average, less annual precipitation than ecological sites south of I-8. The vegetation community data collected from the key areas south of I-8 were averaged, by ecological site, and used to develop site specific DPC objectives with the consideration of less annual precipitation on sites north of I-8. The site specific reductions of DPC objectives between ecological site types varied widely because of site specific potentials. The court determined that the reductions were not adequately explained in the LHE or administrative record (AR) and were determined to be "arbitrary and capricious."

Monitoring was conducted on the SDNM by the BLM and PBI between 2002 and 2009 to inform the 2012 LHE where the monitoring plots visited and monitoring methods varied between years and observers. The BLM used the "best available data" at the time, which included a mix of BLM and PBI data, but was unable to use the data from every sample

collected between 2002 and 2009 because of differing monitoring styles between years and observers. The BLM monitored plots using the key area concept and PBI monitored plots along disturbance gradients extending from known livestock congregation areas. Additionally, the BLM and PBI used differing monitoring protocols at their respective monitoring plots. In the 2012 LHE, the BLM used PBI monitoring plots that fit the key area concept and compared them to the same DPC objectives, but were unable to determine if grazing was the causal factor for non-achievement of DPC objectives because utilization data was not collected on PBI plots. Despite the amount of data collected between 2002 and 2009, the BLM was only able to use one year of data at each monitoring plot because plots either lacked more than one year of data or had monitoring protocol inconsistencies between years. Peer reviewers of the 2012 LHE indicated that multiple years of vegetation and utilization data are ideal and would result in a stronger analysis and determination of livestock grazing as the causal factor for non-achievement of DPC objectives.

The absence of livestock grazing on the majority of the allotments that make up the SDNM since the 2012 LHE, inconsistencies of monitoring protocols, and incomplete documentation of monitoring protocols has continued to prevent the BLM from ascertaining the trend of potential livestock impacts on the SDNM. The 2012 LHE evaluated the SDNM portions of allotments, which are often unfenced portions of larger pastures, and are potentially affected by the overall management of the allotment. The BLM determined additional data collected on a broad scale would be necessary to adequately assess potential livestock grazing impacts on the SDNM.

Between 2012 and 2014 the BLM collected additional key area monitoring data on the allotments that make up the SDNM. This data was used to inform the Maricopa Mountains Allotment Complex LHE (2014) which was used to address the SDNM allotments at a broader scale, inside and outside the SDNM. However, this LHE relied on similar methods as the 2012 LHE including incomplete ESDs and contained monitoring inconsistencies which made it infeasible to set defensible DPC objectives and ascertain trend. For these reasons the 2014 LHE was not used to inform management decisions on the allotments that make up the SDNM.

Between 2016 and 2018, the BLM re-inventoried the soils and vegetation and collected additional monitoring data to assess land health and provide well documented and repeatable monitoring data to inform the development of new DPC objectives for the seven most prevalent ecological sites within the allotments that make up the SDNM (SDNM Complex). ESD reports and ecological site maps are periodically reviewed and modified by NRCS. For this reason, the ESDs and ecological site map used in 2016-2018 differ slightly from previous studies. Stratified random monitoring plots were monitored across the SDNM Complex with new protocols that limited variability and report statistically valid data that was used to develop new DPC objectives. The new DPC objectives provided a local representation of the vegetation data and natural variability of the data eliminating the need to develop DPC objectives from provisional ESDs or reference areas. Due to the unique nature of the SDNM existing between two MLRAs, no specific precipitation zone could be assigned to the ecological sites for which the new DPC objectives were developed. The new DPC objectives were used to determine the achievement of Standard 3 of the

Arizona Standards for Rangeland Health (Standards) on the stratified random plots but were incomparable with data collected on key area plots because of differing monitoring protocols, vegetation attributes collected, and ecological site definitions. Achievement of Standard 1 was assessed on the stratified random plots in a similar fashion as the key areas of the 2012 LHE where the most complete reference sheet between the 3-7" and 7-10" precipitation zones was used for the corresponding ecological site. The absence of livestock grazing on the majority of the SDNM Complex required detailed field observations of past livestock use at the stratified random plots and the development of a livestock use probability map to assist in determining if livestock grazing, current or historical, was the causal factor for the non-achievement of Standards.

The BLM has implemented these new methods to evaluate land health and provide a rationalized basis for grazing management decisions on the SDNM Complex. Methods like these, such as assessment inventory and monitoring (AIM) protocols, have been adopted by the BLM, across the west, to inform decision making in areas with similar levels of scrutiny and has successfully implemented management actions informed by data reported from these methods. Standardized landscape approaches like these can be scaled at multiple levels and can be easily re-monitored in the future to determine the trend of resource conditions.

Appendix B: Arizona Standard for Rangeland Health and Guidelines for Grazing Administration

ARIZONA STANDARDS
FOR
RANGELAND HEALTH
AND
GUIDELINES
FOR
GRAZING ADMINISTRATION
U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
ARIZONA

The following quotations from the Federal Register, Vol. 60, No. 35, page 9956, February 22, 1995, describe the purpose of standards and guidelines and their implementation:

> "The guiding principles for standards and guidelines require that State or regional standards and guidelines address the basic components of healthy rangelands. The Department believes that by implementing grazing-related actions that are consistent with the fundamentals of §4180.1 and the guiding principles of §4180.2, the long-term health of public rangelands can be ensured.
>
> "Standards and guidelines will be implemented through terms and conditions of grazing permits, leases, and other authorizations, grazing-related portions of activity plans (including Allotment Management Plans), and through range improvement-related activities.
>
> "The Department anticipates that in most cases the standards and guidelines themselves will not be terms and conditions of various authorizations but that the terms and conditions will reflect the standards and guidelines.
>
> "The Department intends that assessments and corrective actions will be undertaken in priority order as determined by BLM.
>
> "The Department will use a variety of data including monitoring records, assessments, and knowledge of the locale to assist in making the "significant

progress" determination. It is anticipated that in many cases it will take numerous grazing seasons to determine direction and magnitude of trend. However, actions will be taken to establish significant progress toward conformance as soon as sufficient data are available to make informed changes in grazing practices."

FUNDAMENTALS AND DEFINITION OF RANGELAND HEALTH

The Grazing Administration Regulations, at §4180.1 (43 Code of Federal Regulation [CFR] 4180.1), Federal Register Vol. 60, No. 35, pg. 9970, direct that the authorized officer ensures that the following conditions of rangeland health exist:

> (a)Watersheds are in, or are making significant progress toward, properly functioning physical condition, including their upland, riparian-wetland, and aquatic components; soil and plant conditions support infiltration, soil moisture storage, and the release of water that are in balance with climate and landform and maintain or improve water quality, water quantity, and timing and duration of flow.
>
> (b)Ecological processes, including the hydrologic cycle, nutrient cycle, and energy flow, are maintained, or there is significant progress toward their attainment, in order to support healthy biotic populations and communities.
>
> (c)Water quality complies with State water quality standards and achieves, or is making significant progress toward achieving, established BLM management objectives such as meeting wildlife needs.
>
> (d)Habitats are, or are making significant progress toward being, restored or maintained for Federal threatened and endangered species, Federal Proposed, Category 1 and 2 Federal candidate and other special status species.

These fundamentals focus on sustaining productivity of a rangeland rather than its uses. Emphasizing the physical and biological functioning of ecosystems to determine rangeland health is consistent with the definition of rangeland health as proposed by the Committee on Rangeland Classification, Board of Agriculture, National Research Council (Rangeland Health, 1994, pg. 4 and 5). This Committee defined Rangeland Health ". . .as the degree to which the integrity of the soil and the ecological processes of rangeland ecosystems are sustained." This committee emphasized ". . .the degree of integrity of the soil and ecological processes that are most important in sustaining the capacity of rangelands to satisfy values and produce commodities." The Committee also recommended that "The determination of whether a rangeland is healthy, at risk, or unhealthy should be based on the evaluation of three criteria: degree of soil stability and watershed function, integrity of nutrient cycles and energy flow, and presence of functioning mechanisms" (Rangeland Health, 1994, pg. 97-98).

Standards describe conditions necessary to encourage proper functioning of ecological processes on specific ecological sites. An ecological site is the logical and practical

ecosystem unit upon which to base an interpretation of rangeland health. Ecological site is defined as:

". . . a kind of land with specific physical characteristics which differs from other kinds of land in its ability to produce distinctive kinds and amounts of vegetation and in its response to management" (Journal of Range Management, 48:279, 1995). Ecological sites result from the interaction of climate, soils, and landform (slope, topographic position). The importance of this concept is that the "health" of different kinds of rangeland must be judged by standards specific to the potential of the ecological site. Acceptable erosion rates, water quality, productivity of plants and animals, and other features are different on each ecological site.

Since there is wide variation of ecological sites in Arizona, standards and guidelines covering these sites must be general. To make standards and guidelines too specific would reduce the ability of BLM and interested publics to select specific objectives, monitoring strategies, and grazing permit terms and conditions appropriate to specific land forms.

Ecological sites have the potential to support several different plant communities. Existing communities are the result of the combination of historical and recent uses and natural events. Management actions may be used to modify plant communities on a site. The desired plant community for a site is defined as follows: "Of the several plant communities that may occupy a site, the one that has been identified through a management plan to best meet the plan's objectives for the site. It must protect the site as a minimum." (Journal of Range Management, 48:279, 1995.)

Fundamentals (a) and (b) define physical and biological components of rangeland health and are consistent with the definition of rangeland health as defined by the Committee on Rangeland Classification, Board on Agriculture, National Research Council, as discussed in the paragraph above. These fundamentals provide the basis for sustainable rangelands. Fundamentals (c) and (d) emphasize compliance with existing laws and regulation and, therefore, define social and political components of rangeland health. Compliance with Fundamentals (c) and (d) is accomplished by managing to attain a specific plant community and associated wildlife species present on ecological sites. These desired plant communities are determined in the BLM planning process, or, where the desired plant community is not identified, a community may be selected that will meet the conditions of Fundamentals (a) and (b) and also adhere to laws and regulations. Arizona Standard 3 is written to comply with Fundamentals (c) and (d) and provide a logical combination of Standards and Guidelines for planning and management purposes.

STANDARD AND GUIDELINE DEFINITIONS

Standards are goals for the desired condition of the biological and physical components and characteristics of rangelands. Standards:

(1) are measurable and attainable; and

(2) comply with various Federal and State statutes, policies, and directives applicable to BLM Rangelands.

Guidelines are management approaches, methods, and practices that are intended to achieve a standard. Guidelines:

(1) typically identify and prescribe methods of influencing or controlling specific public land uses;
(2) are developed and applied consistent with the desired condition and within site capability; and
(3) may be adjusted over time.

IMPLEMENTING STANDARDS AND GUIDELINES

The authorized officer will review existing permitted livestock use, allotment management plans, or other activity plans which identify terms and conditions for management on public land. Existing management practices, and levels of use on grazing allotments will be reviewed and evaluated on a priority basis to determine if they meet, or are making significant progress toward meeting, the standards and are in conformance with the guidelines. The review will be interdisciplinary and conducted under existing rules which provide for cooperation, coordination, and consultation with affected individuals, federal, state, and local agencies, tribal governments, private landowners, and interested publics.

This review will use a variety of data, including monitoring records, assessments, and knowledge of the locale to assist in making the significant progress determination. Significance will be determined on a case by case basis, considering site potential, site condition, weather and financial commitment. It is anticipated there will be cases where numerous years will be needed to determine direction and magnitude of trend.

Upon completion of review, the authorized officer shall take appropriate action as soon as practicable but no later than the start of the next grazing year upon determining that the existing grazing management practices or level of use on public land are significant factors contributing to failure to achieve the standards and conform with the guidelines that are made effective under 43 CFR 4180.2. Appropriate action means implementing actions that will result in significant progress toward fulfillment of the standards and significant progress toward conformance with guidelines.

Livestock grazing will continue where significant progress toward meeting standards is being made. Additional activities and practices would not be needed on such allotments. Where new activities or practices are required to assure significant progress toward meeting standards, livestock grazing use can continue contingent upon determinations from monitoring data that the implemented actions are effective in making significant progress toward meeting the standards. In some cases, additional action may be needed as determined by monitoring data over time.
New plans will incorporate an interdisciplinary team approach (Arizona BLM Interdisciplinary Resource Management Handbook, April 1995). The terms and conditions for permitted grazing in these areas will be developed to comply with the goals and objectives of these plans which will be consistent with the standards and guidelines.

ARIZONA STANDARDS AND GUIDELINES

Arizona Standards and Guidelines (S&G) for grazing administration have been developed through a collaborative process involving the Bureau of Land Management State S&G Team and the Arizona Resource Advisory Council. Together, through meetings, conference calls, correspondence, and Open Houses with the public, the BLM State Team and RAC prepared Standards and Guidelines to address the minimum requirements outlined in the grazing regulations. The Standards and Guidelines, criteria for meeting Standards, and indicators are an integrated document that conforms to the fundamentals of rangeland health and the requirements of the regulations when taken as a whole.

Upland sites, riparian-wetland areas, and desired resource conditions are each addressed by a standard and associated guidelines.

Standard 1: Upland Sites

Upland soils exhibit infiltration, permeability, and erosion rates that are appropriate to soil type, climate and landform (ecological site).

Criteria for meeting Standard 1:

Soil conditions support proper functioning of hydrologic, energy, and nutrient cycles. Many factors interact to maintain stable soils and healthy soil conditions, including appropriate amounts of vegetative cover, litter, and soil porosity and organic matter. Under proper functioning conditions, rates of soil loss and infiltration are consistent with the potential of the site.

Ground cover in the form of plants, litter or rock is present in pattern, kind, and amount sufficient to prevent accelerated erosion for the ecological site; or ground cover is increasing as determined by monitoring over an established period of time.

Signs of accelerated erosion are minimal or diminishing for the ecological site as determined by monitoring over an established period of time.

As indicated by such factors as:

- Ground Cover
  - litter
  - live vegetation, amount and type (e.g., grass, shrubs, trees, etc.)
  - rock

- Signs of erosion
  - flow pattern
  - gullies
  - rills

•plant pedestaling

Exceptions and exemptions (where applicable):

•none

Guidelines:

1-1. Management activities will maintain or promote ground cover that will provide for infiltration, permeability, soil moisture storage, and soil stability appropriate for the ecological sites within management units. The ground cover should maintain soil organisms and plants and animals to support the hydrologic and nutrient cycles, and energy flow. Ground cover and signs of erosion are surrogate measures for hydrologic and nutrient cycles and energy flow.

1-2. When grazing practices alone are not likely to restore areas of low infiltration or permeability, land management treatments may be designed and implemented to attain improvement.

Standard 2: Riparian-Wetland Sites

Riparian-wetland areas are in properly functioning condition.

Criteria for meeting Standard 2:

Stream channel morphology and functions are appropriate for proper functioning condition for existing climate, landform, and channel reach characteristics. Riparian-wetland areas are functioning properly when adequate vegetation, land form, or large woody debris is present to dissipate stream energy associated with high water flows.

Riparian-wetland functioning condition assessments are based on examination of hydrologic, vegetative, soil and erosion-deposition factors. BLM has developed a standard checklist to address these factors and make functional assessments. Riparian-wetland areas are functioning properly as indicated by the results of the application of the appropriate checklist.

The checklist for riparian areas is in Technical Reference 1737-9 "Process for Assessing Proper Functioning Condition." The checklist for wetlands is in Technical Reference 1737-11 "Process for Assessing Proper Functioning Condition for Lentic Riparian-Wetland Areas." These checklists are reprinted on the pages following the Guidelines for Standard 3.

As indicated by such factors as:

•Gradient
•Width/depth ratio

•Channel roughness and sinuosity of stream channel
•Bank stabilization
•Reduced erosion
•Captured sediment
•Ground-water recharge
•Dissipation of energy by vegetation

Exceptions and exemptions (where applicable):

•Dirt tanks, wells, and other water facilities constructed or placed at a location for the purpose of providing water for livestock and/or wildlife and which have not been determined through local planning efforts to provide for riparian or wetland habitat are exempt.

•Water impoundments permitted for construction, mining, or other similar activities are exempt.

Guidelines:

2-1. Management practices maintain or promote sufficient vegetation to maintain, improve or restore riparian-wetland functions of energy dissipation, sediment capture, groundwater recharge and stream bank stability, thus promoting stream channel morphology (e.g., gradient, width/depth ratio, channel roughness and sinuosity) and functions appropriate to climate and landform.

2-2. New facilities are located away from riparian-wetland areas if they conflict with achieving or maintaining riparian-wetland function. Existing facilities are used in a way that does not conflict with riparian-wetland functions or are relocated or modified when incompatible with riparian-wetland functions.

2-3. The development of springs and seeps or other projects affecting water and associated resources shall be designed to protect ecological functions and processes.

Standard 3: Desired Resource Conditions

Productive and diverse upland and riparian-wetland plant communities of native species exist and are maintained.

Criteria for meeting Standard 3:

Upland and riparian-wetland plant communities meet desired plant community objectives. Plant community objectives are determined with consideration for all multiple uses. Objectives also address native species, and the requirements of the Taylor Grazing Act, Federal Land Policy and Management Act, Endangered Species Act, Clean Water Act, and appropriate laws, regulations, and policies.

Desired plant community objectives will be developed to assure that soil conditions and ecosystem function described in Standards 1 and 2 are met. They detail a site-specific plant community, which when obtained, will assure rangeland health, State water quality standards, and habitat for endangered, threatened, and sensitive species. Thus, desired plant community objectives will be used as an indicator of ecosystem function and rangeland health.

As indicated by such factors as:

•Composition
•Structure
•Distribution

Exceptions and exemptions (where applicable):

•Ecological sites or stream reaches on which a change in existing vegetation is physically, biologically, or economically impractical.

Guidelines:

3-1. The use and perpetuation of native species will be emphasized. However, when restoring or rehabilitating disturbed or degraded rangelands, non-intrusive, non-native plant species are appropriate for use where native species (a) are not available, (b) are not economically feasible, (c)cannot achieve ecological objectives as well as non-native species, and/or (d) cannot compete with already established non-native species.

3-2. Conservation of Federal threatened or endangered, proposed, candidate, and other special status species is promoted by the maintenance or restoration of their habitats.

3-3. Management practices maintain, restore, or enhance water quality in conformance with State or Federal standards.

3-4. Intensity, season and frequency of use, and distribution of grazing use should provide for growth and reproduction of those plant species needed to reach desired plant community objectives.

3-5. Grazing on designated ephemeral (annual and perennial) rangeland may be authorized if the following conditions are met:

•ephemeral vegetation is present in draws, washes, and under shrubs and has grown to useable levels at the time grazing begins;

•sufficient surface and subsurface soil moisture exists for continued plant growth;

•serviceable waters are capable of providing for proper grazing distribution;

- sufficient annual vegetation will remain on site to satisfy other resource concerns, (i.e., watershed, wildlife, wild horses and burros); and

- monitoring is conducted during grazing to determine if objectives are being met.

3-6. Management practices will target those populations of noxious weeds which can be controlled or eliminated by approved methods.

3-7. Management practices to achieve desired plant communities will consider protection and conservation of known cultural resources, including historical sites, and prehistoric sites and plants of significance to Native American peoples.

Appendix C: Sonoran Desert National Monument Proclamation

Sonoran Desert National Monument Proclamation
THE WHITE HOUSE
Office of the Press Secretary
For Immediate Release, January 17, 2001
ESTABLISHMENT OF THE SONORAN DESERT NATIONAL MONUMENT BY THE PRESIDENT OF THE UNITED STATES OF AMERICA

The Sonoran Desert National Monument is a magnificent example of untrammeled Sonoran desert landscape. The area encompasses a functioning desert ecosystem with an extraordinary array of biological, scientific, and historic resources. The most biologically diverse of the North American deserts, the monument consists of distinct mountain ranges separated by wide valleys, and includes large saguaro cactus forest communities that provide excellent habitat for a wide range of wildlife species.

The monument's biological resources include a spectacular diversity of plant and animal species. The higher peaks include unique woodland assemblages, while the lower elevation lands offer one of the most structurally complex examples of palo verde/mixed cacti association in the Sonoran Desert. The dense stands of leguminous trees and cacti are dominated by saguaros, palo-verde trees, ironwood, prickly pear, and cholla. Important natural water holes, known as tinajas, exist throughout the monument. The endangered acuna pineapple cactus is also found in the monument.

The most striking aspect of the plant communities within the monument are the abundant saguaro cactus forests. The saguaro is a signature plant of the Sonoran Desert. Individual saguaro plants are indeed magnificent, but a forest of these plants, together with the wide variety of trees, shrubs, and herbaceous plants that make up the forest community, is an impressive site to behold. The saguaro cactus forests within the monument are a national treasure, rivaling those within the Saguaro National Park.

The rich diversity, density, and distribution of plants in the Sand Tank Mountains area of the monument is especially striking and can be attributed to the management regime in place since the area was withdrawn for military purposes in 1941. In particular, while some public access to the area is allowed, no livestock grazing has occurred for nearly 50 years. To extend the extraordinary diversity and overall ecological health of the Sand Tanks Mountains area, land adjacent and with biological resources similar to the area withdrawn for military purposes should be subject to a similar management regime to the fullest extent possible.

The monument contains an abundance of packrat middens, allowing for scientific analysis of plant species and climates in past eras. Scientific analysis of the midden shows that the area received far more precipitation 20,000 years ago, and slowly became more arid. Vegetation for the area changed from juniper-oak-pinion pine woodland to the vegetation found today in the Sonoran Desert, although a few plants from the more mesic period, including the Kofa Mountain barberry, Arizona rosewood, and junipers, remain on higher elevations of north-facing slopes.

The lower elevations and flatter areas of the monument contain the creosote-bursage plant community. This plant community thrives in the open expanses between the mountain ranges, and connects the other plant communities together. Rare patches of desert grassland can also be found throughout the monument, especially in the Sand Tank Mountains area. The washes in the area support a much denser vegetation community than the surrounding desert, including mesquite, ironwood, paloverde, desert honeysuckle, chuperosa, and desert willow, as well as a variety of herbaceous plants. This vegetation offers the dense cover bird species need for successful nesting, foraging, and escape, and birds heavily use the washes during migration.

The diverse plant communities present in the monument support a wide variety of wildlife, including the endangered Sonoran pronghorn, a robust population of desert bighorn sheep, especially in the Maricopa Mountains area, and other mammalian species such as mule deer, javelina, mountain lion, gray fox, and bobcat. Bat species within the monument include the endangered lesser long-nosed bat, the California leaf-nosed bat, and the cave myotis. Over 200 species of birds are found in the monument, including 59 species known to nest in the Vekol Valley area. Numerous species of raptors and owls inhabit the monument, including the elf owl and the western screech owl. The monument also supports a diverse array of reptiles and amphibians, including the Sonoran desert tortoise and the red-backed whiptail. The Bureau of Land Management has designated approximately 25,000 acres of land in the Maricopa Mountains area as critical habitat for the desert tortoise. The Vekol Valley and Sand Tank Mountain areas contain especially diverse and robust populations of amphibians. During summer rainfall events, thousands of Sonoran green toads in the Vekol Valley can be heard moving around and calling out.

The monument also contains many significant archaeological and historic sites, including rock art sites, lithic quarries, and scattered artifacts. Vekol Wash is believed to have been an important prehistoric travel and trade corridor between the Hohokam and tribes located in what is now Mexico. Signs of large villages and permanent habitat sites occur throughout the area, and particularly along the bajadas of the Table Top Mountains. Occupants of these villages were the ancestors of today's O'odham, Quechan, Cocopah,

Maricopa, and other tribes. The monument also contains a much used trail corridor 23 miles long in which are found remnants of several important historic trails, including the Juan Bautista de Anza National Historic Trail, the Mormon Battalion Trail, and the Butterfield Overland Stage Route.

Section 2 of the Act of June 8, 1906 (34 Stat. 225, 16 U.S.C. 431), authorizes the President, in his discretion, to declare by public proclamation historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest that are situated upon the lands owned or controlled by the Government of the United States to be national monuments, and to reserve as a part thereof parcels of land, the limits of which in all cases shall be confined to the smallest area compatible with the proper care and management of the objects to be protected.

WHEREAS, it appears that it would be in the public interest to reserve such lands as a national monument to be known as the Sonoran Desert National Monument.

NOW, THEREFORE, I, WILLIAM J. CLINTON, President of the United States of America, by the authority vested in me by section 2 of the Act of June 8, 1906 (34 Stat. 225, 16 U.S.C. 431), do proclaim that there are hereby set apart and reserved as the Sonoran Desert National Monument, for the purpose of protecting the objects identified above, all lands and interest in lands owned or controlled by the United States within the boundaries of the area described on the map entitled "Sonoran Desert National Monument" attached to and forming a part of this proclamation. The Federal land and interests in land reserved consist of approximately 486,149 acres, which is the smallest area compatible with the proper care and management of the objects to be protected.

For the purpose of protecting the objects identified above, all motorized and mechanized vehicle use off road will be prohibited, except for emergency or authorized administrative purposes. Nothing in this proclamation shall be deemed to enlarge or diminish the jurisdiction of the State of Arizona with respect to fish and wildlife management.

The establishment of this monument is subject to valid existing rights.

All Federal lands and interests in lands within the boundaries of this monument are hereby appropriated and withdrawn from all forms of entry, location, selection, sale, or leasing or other disposition under the public land laws, including but not limited to withdrawal from location, entry, and patent under the mining laws, and from disposition under all laws relating to mineral and geothermal leasing, other than by exchange that furthers the protective purposes of the monument. Lands and interests in lands within the monument

not owned by the United States shall be reserved as a part of the monument upon acquisition of title thereto by the United States.

This proclamation does not reserve water as a matter of Federal law nor relinquish any water rights held by the Federal Government existing on this date. The Federal land management agencies shall work with appropriate State authorities to ensure that water resources needed for monument purposes are available.
The Secretary of the Interior shall manage the monument through the Bureau of Land Management, pursuant to applicable legal authorities, to implement the purposes of this proclamation. That portion identified as Area A on the map, however, shall be managed under the management arrangement established by section 3 of Public Law No. 99-606, 100 Stat. 3460-61, until November 6, 2001, at which time, pursuant to section 5(a) of Public Law No. 99-606, 100 Stat. 3462-63, the military withdrawal terminates. At that time, the Secretary of the Interior shall assume management responsibility for Area A through the Bureau of Land Management.

The Secretary of the Interior shall prepare a management plan that addresses the actions, including road closures or travel restrictions, necessary to protect the objects identified in this proclamation. Laws, regulations, and policies followed by the Bureau of Land Management in issuing and administering grazing permits or leases on all lands under its jurisdiction shall continue to apply with regard to the lands in the monument; provided, however, that grazing permits on Federal lands within the monument south of Interstate Highway 8 shall not be renewed at the end of their current term; and provided further, that grazing on Federal lands north of Interstate 8 shall be allowed to continue only to the extent that the Bureau of Land Management determines that grazing is compatible with the paramount purpose of protecting the objects identified in this proclamation.

Nothing in this proclamation shall be deemed to revoke any existing withdrawal, reservation, or appropriation; however, the national monument shall be the dominant reservation.

Nothing in this proclamation shall preclude low level overflights of military aircraft, the designation of new units of special use airspace, or the use or establishment of military flight training routes over the lands included in this proclamation.

In order to protect the public during operations at the adjacent Barry M. Goldwater Range, and to continue management practices that have resulted in an exceptionally well preserved natural resource, the current procedures for public access to the portion of the monument depicted as Area A on the attached map shall remain in full force and effect, except to the extent that the United States Air Force agrees to different procedures which

the Bureau of Land Management determines are compatible with the protection of the objects identified in this proclamation.

Warning is hereby given to all unauthorized persons not to appropriate, injure, destroy, or remove any feature of this monument and not to locate or settle upon any of the lands thereof.

IN WITNESS WHEREOF, I have hereunto set my hand this seventeenth day of January, in the year of our Lord two thousand one, and of the Independence of the United States of America the two hundred and twenty-fifth.

WILLIAM J. CLINTON

Appendix D – Palatable and Key Forage Species

Palatable Species	Key Forage Species
Acacia gregii	
Ambrosia dumosa	*Ambrosia dumosa*
Aristida spp.	
Atriplex canescens	
Bebbia juncea	
Brickellia spp.	
Calliandra eriophylla	
Clematis drummondii	
Cylindropuntia fulgida	
Ditaxis neomexicana	*Ditaxis neomexicana*
Ephedra spp.	
Eriogonum fasciculatum	
Eriogonum inflatum	
Hymenoclea salsola	
Hyptis emoryi	
Janusia gracilis	*Janusia gracilis*
Justicia californica	*Justicia californica*
Krameria grayi	*Krameria grayi*
Krameria erecta	*Krameria erecta*
Lycium spp.	
Lyrocarpa coulteri	*Lyrocarpa coulteri*
Marina parryi	
Menodora scabra	
Mirabilis spp.	
Olneya tesota	
Parkinsonia florida	
Parkinsonia microphylla	
Pleuraphis rigida	*Pleuraphis rigida*
Prosopis spp.	
Psilostrophe cooperi	
Sphaeralcea spp.	*Sphaeralcea spp.*
Stephanomeria pauciflora	
Trixis californica	*Trixis californica*
Viguiera dentata	
Muhlenbergia porteri	*Muhlenbergia porteri*

Appendix E – Random Plot Monitoring Methods

Photo Point Monitoring

Photos are taken at each monitoring location to document landscape changes over time. The first photo is taken facing the plot and in the direction of the transect bearing. Moving clockwise, three additional photos are taken every 90 degrees.

Line-Point Intercept/ Belt Density Study Setup

One 300 foot baseline is established starting from the study location stake and running in the direction of an assigned random bearing. Ten 100 foot transects are ran perpendicular to the baseline at predetermined random locations.

Line Point Intercept

Using a 3 mm diameter pointer tapered down to 1 mm, point intercept measurement is collected every 2 feet starting at the 2 foot mark. At each observation point, the pin is dropped straight down until it reaches the ground. The ground level hit is recorded as well as any vegetation and/or litter layer that intercepts the point.

The ground level hit categories are bare ground, gravel, cryptogam, vegetation basal, or bedrock. Bare ground and gravel are delineated through size; mineral earth is considered bare ground when it is less than 2 millimeters diameter. Gravel is separated into two classes: “gravel” (less than 3 inches diameter) and “big gravel” (greater than 3 inches diameter). Cryptogam is any living or dormant lichen, moss, or cryptobiotic crust growing on the soil or rock surface. Bedrock is solid rock or parent material protruding from the soil.

Cover hits are recorded when one of the following categories intercepts the projection of the observation point: any perennial species, litter, and attached litter. Litter is separated into two classes: “little litter” (less than ¼ inch in diameter) and “big litter” (greater than ¼ inch in diameter). Attached litter is dead plant material still attached to a perennial species. Attached litter is also separated into two classes: “herbaceous” (dead plant material less ¼ inch in diameter) and “woody” (dead plant material greater than ¼ inch in diameter).

Belt Density

Walking the line of each transect, density is collected for all perennial plant species growing within the 2 meter belt adjacent to and down-plot of the transect line. Individual plants growing within the 2 meter belt are counted and recorded for each species. The plants must be rooted within the 2 meter belt. Plants that only overhang into the 2 meter belt are ignored. For rhizomatous species such as creosote, multiple plant bases are counted as one individual if they are within 2 feet of each other. Annual species are not included in this count.

Soil Stability

The Soil Stability Test provides information about the integrity of soil aggregates, degree of soil structural development, and erosion resistance (Herrick et al.). Ten soil samples between 6 and 8 millimeters in diameter are collected at the center point of each line point intercept transect. The soil samples are exposed to rapid wetting while a trained observer ranks each sample on a scale from 1 to 6 indicating structural integrity. The average of all ten sample's ranking represents the study location's soil stability rating.

Literature Cited

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Appendix F - SDNM Complex Livestock Use Probability Map

Introduction

Cattle need to access resources for their survival, but cattle preferences often restrict their limited movement. Though salt and mineral supplements may be important, access to water plays a larger role cattle movement across a landscape (Ganskopp 2001, Bailey et al. 2010). Distance traveled from water is also dependent on the seasonal differences in forage availability and quality (Sheehy & Vavra 1996, Bailey et al. 2010, Spiegal et al. 2019) and temperature (Russell et al. 2012, Nyamuryekung'e et al. 2022) as well as individual familiarity with the landscape (Bailey et al. 2010) and cattle breed (Herbel et al. 1967, Russel et al. 2012, Spiegal et al. 2019). Despite these variables, the impact to vegetation by livestock on average is sparse and low or nonexistent beyond 2 miles from water, depending on plant system (Appendix H).

Cattle prefer flat terrain spending a disproportionate amount of time in areas with less than 10% slopes or if none is present, in areas with the shallowest slopes (Gillen et al. 1984, Millward et al. 2020, Bailey 2024). When slopes >10% predominate the landscape, impacts to seen up to 1 mile in terrain >10% slope (Mueggler 1965) except when the proportion of available land with <10% slope constitutes a low proportion of the available land (Millward et al. 2020, Bailey 2024).

Understanding the distribution of livestock grazing across rangelands is important when making rangeland management decisions. Range managers often rely on the percent utilization of key forage species to determine livestock use levels and potential impacts livestock grazing has on the local resources. However, this information is sometimes unavailable due to legal and financial constraints of the range or operation in question. Livestock use probability maps can assist range manager decision making in the absence of current or multiple years of utilization data.

The objective of this modeling effort is to create a map illustrating where cattle are likely to have the greatest impact on the landscape within the Sonoran Desert National Monument and how it can be used to determine if livestock grazing is the causal factor for the non-achievement of land health standards. Since distance from water and slope angle among the most important variables for predicting livestock distribution in almost every environment (Mueggler 1965, Foran 1980, Gillen et al. 1984, Holechek 1988, Sheehy & Vavra 1996, Blanco et al. 2009, Millward et al. 2020,) they were used to form the basis of the model.

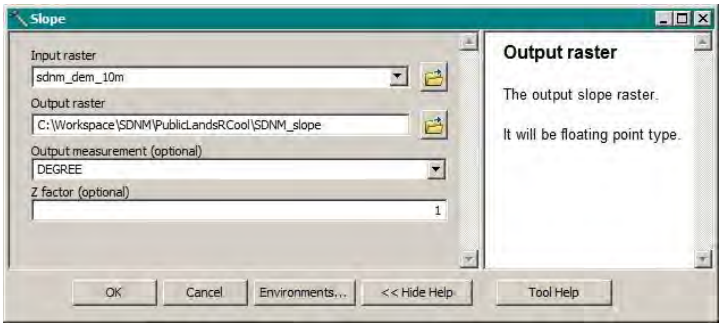
Methods

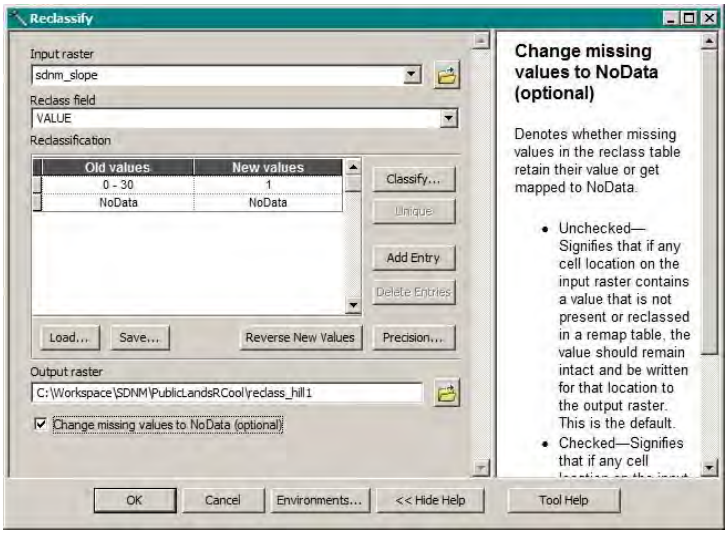
ESRI's geographic information systems (GIS) software ArcMap 10.4.1 and its affiliated data processing tools were used for this project. Livestock use probability maps are developed using multiple data sets representing geographic variables that may influence livestock use across the landscape. The data used for the SDNM Complex and their sources are listed in Table 1.

Layer	Source	Data Type
Digital Elevation Model (DEM) 10m	USGS	Raster
Slope 10m (derived from DEM)	USGS	Raster
Impassable Terrain (derived from DEM)	USGS	Vector – Polygon
Fencing	BLM	Vector – Polyline
Livestock Water Locations	BLM	Vector – Points (weighted)

Table 1. SDNM Complex geographic variables

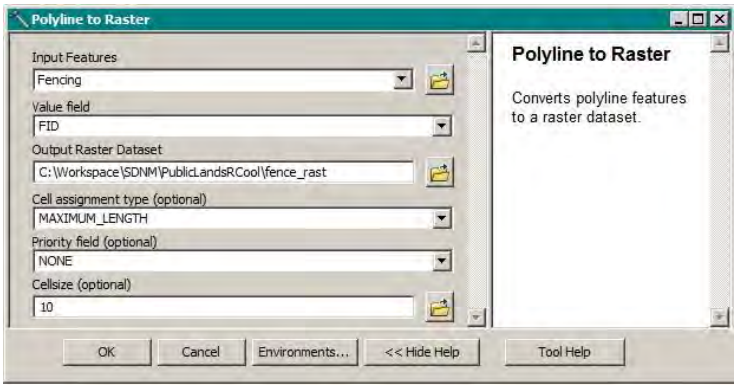
Layers representing slope and barriers, terrain and fencing, were developed to inform the cost surface of slope gradients and areas impassable by livestock. A Digital Elevation Model (DEM) of 10m resolution was used to develop two variables: slope and impassable terrain. Slope was simply derived from the 10m DEM using the "Slope" tool in the Spatial Analyst's Surface tool box. The impassable terrain surface was derived from the resulting slope raster through the reclassification of cells below 30% slope to values of 1, and cells above 30% slope to "NoData" where "NoData" equals impassable areas. A similar approach was used for fencing.

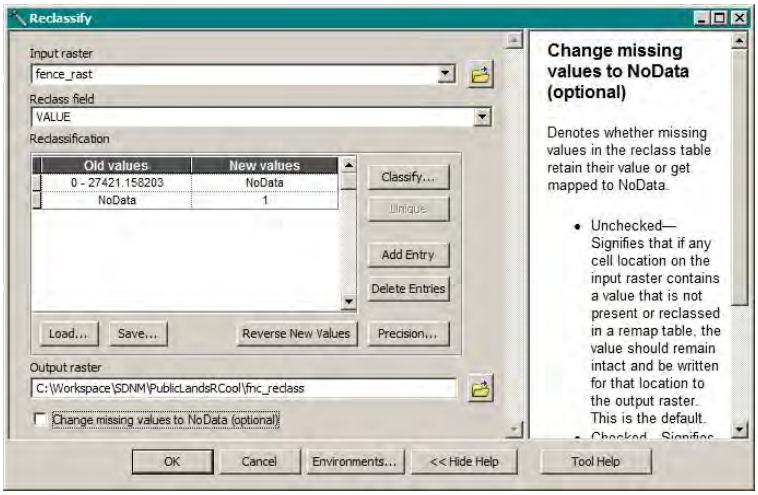


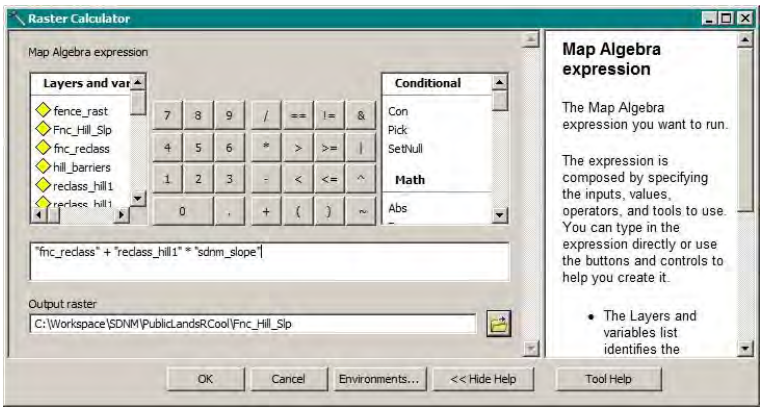


Fence lines were mapped over aerial imagery as polylines with the assistance of ground confirmation, local knowledge, and range improvement project files. Fence polylines were converted to a raster and reclassified where "values" or presence of fence equaled "NoData" and "NoData" equaled 1. "NoData" was used for the same purpose as the impassable terrain layer where

cells with “NoData” are equivalent to impassable barriers. ArcMap’s raster calculator was used to combine the slope, terrain, and fencing raster layers into one cost surface.



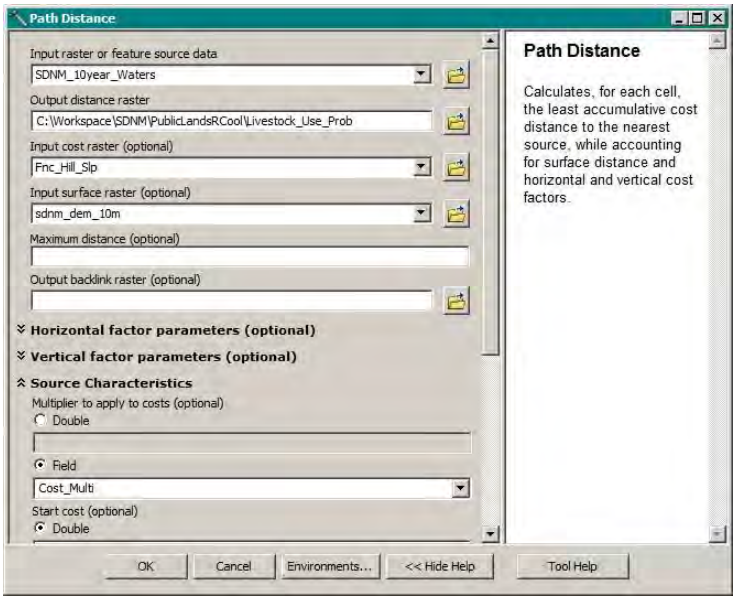




Livestock water locations were mapped over aerial imagery, as points, with the assistance of range improvement project files, field investigations, and local knowledge. To provide a recent representation of livestock use on the SDNM complex, only watering points used by livestock in the past 10 years were included in the data set. The remaining points were then weighted in the attribute table by their reliability. Weighting increases the cost to move away from a point based on its assigned multiplier. For this project, wells retained a weight of 1 and dirt reservoirs were

weighted between 1 and 1.99 where 1 equates to 100% reliability and 1.99 equates to 1% reliability. Dirt reservoir reliability was determined by assessing more than ten years of aerial and satellite imagery as well as range improvement inspection reports where a simple "wet/dry" count was made and converted into the percentage of years the reservoir was "wet".

The Path Distance Tool under the Spatial Analyst Tools was used to produce the final cost surface in relation to livestock use probability on the SDNM Complex. The resulting raster was classified to into 5 classes equating to "costs" (distance) to travel away from livestock watering points at half mile increments.

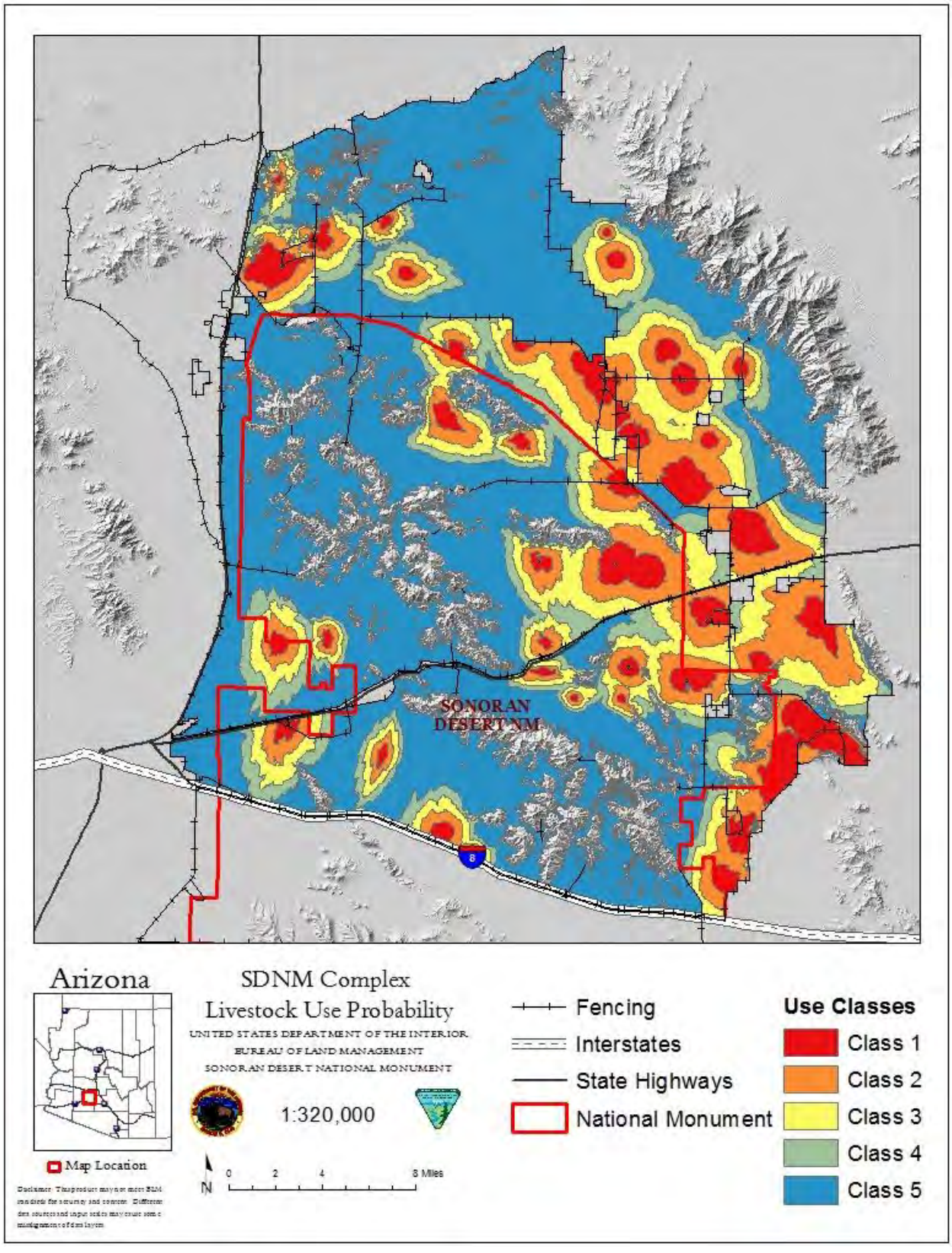


Results

The cell values of the cost surface are interpreted as the shortest distance, around terrain and fence barriers, between a cell and the nearest livestock water location multiplied by the unreliability of the water. Therefore, the values are a function of travel distance for livestock, the characteristics of the livestock waters (use of waters and their reliability) and characteristics of the surface the livestock is traversing. An interpretation of the resulting values is the potential intensity of livestock use – assuming the lower the class, the higher potential use intensity. Table 2 shows the percentage of the study area within each class.

Class	**Cost (distance in meters)**	**Cost (Distance in Miles)**	**Percentage of Study Area**
Class 1	0 to 804.67	0.5	7.1
Class 2	804.68 to 1,609.34	1	13.8
Class 3	1,609.35 to 2,414.02	1.5	13.5
Class 4	2,414.03 to 3,218.69	2	10.9
Class 5	3,218.70 to 91,864.76	2+	54.6

Table 2. Percentage of the study area within each class


SONORAN
DESERT NM
8
Arizona
Map Location
SDNM Complex
Livestock Use Probability
UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
SONORAN DESERT NATIONAL MONUMENT
1:320,000
0 2 4 8 Miles
N
Fencing
Interstates
State Highways
National Monument
Use Classes
Class 1
Class 2
Class 3
Class 4
Class 5

Discussion

Understanding cattle distribution is important for the management of livestock and conservation of the ecosystems. A considerable amount of research has been done on the topic, though the amount of research done in the Sonoran Desert is relatively small (Hall et al. 2005). In an attempt to understand the potential impact of cattle within the Sonoran Desert National Monument, monument staff used distance from water and slope to map the likely areas cattle will have an impact. Probability mapping efforts have been done elsewhere such as the Chihuahuan Desert (Nyamuryekung'e et al. 2022) and Lincoln National Forest (Halbritter et al. 2011).

Range condition is generally related to the distance from livestock water points (Foran 1980, Molinar et al. 2011, Nash et al. 1999, Fusco et al. 1995, Pickup & Bastin 1997 Blanco et al. 2009). Areas within 0.5 miles of a water source constitute 7.1% of the study area and would be heavily impact with diminishing impacts as distance from water increases (Appendix H). Within the study area, which extends beyond the monument boundary, 54.6% of the land is more than 2 miles from a water source indicating cattle are likely to have sparse to no measurable impact on vegetation or monument objects (Appendix H).

This map can be used to help determine whether livestock grazing is likely a causal factor for the non-achievement of rangeland health standards when this map is used in conjunction with field based monitoring plots. For instance, when a plot fails to achieve a standard for rangeland health and is located within Class 1 and there are clear signs of recent livestock use/presence, range managers can reasonably assume livestock grazing is the causal factor for the non-achievement of the standard in question. These determinations should be made with based on field observations livestock presence (e.g.- dung, hoof prints), impacts (e.g.- species composition), and utilization monitoring data.

Livestock use probability maps are useful when other information in regards to livestock use are limited. However, every modeling effort includes assumptions that may not explain every variable. This effort assumes all waters are used evenly when functional, wells are always functional, forage quality is evenly distributed across the landscape, and all livestock breeds and ages use the landscape in a similar fashion among others. Despite these assumptions, modeling the probability of livestock use is a useful tool to assist managers with decision making when utilization data is limited.

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Appendix G – Random Plot Monitoring Data

Arnold Allotment

Granitic Upland

A-GU-1

Soil Stability Rank: 4.8

Cover - Top Layer

Site Class: Phoenix District || Sonoran Desert NM || Arnold || AIM

Site ID: A-GU-1 **Date:** 12/15/2016

Examiner(s):

Cover

Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	7	6	7	6	4	5	5	2	3	2	47	9.40
Bedrock	0	0	1	0	4	3	6	4	4	3	25	5.00
Cryptogam	0	1	2	0	0	1	1	0	0	2	7	1.40
Gravel (<3")	29	21	21	20	31	25	30	33	33	27	270	54.00
Gravel (>3")	2	5	8	2	7	8	5	1	0	3	41	8.20
Ambrosia deltoidea	0	0	0	0	0	1	0	0	0	0	1	0.20
Encelia farinosa	0	0	6	0	0	4	0	5	1	0	16	3.20
Krameria grayi	1	0	0	0	0	0	1	3	0	0	5	1.00
Larrea tridentata	8	9	4	5	3	3	2	2	3	6	45	9.00
Olneya tesota	0	0	1	0	0	0	0	0	0	7	8	1.60
Parkinsonia microphylla	3	8	0	17	1	0	0	0	6	0	35	7.00

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Arnold > AIM

Site ID: A-GU-1 **Date:** 12/15/2016

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	11	16	10	12	5	6	6	4	6	5	81	16.20	16.20
Bedrock			1		5	3	7	7	5	3	31	6.20	6.20
Boulders (>25")											0	0.00	0.00
Cryptogam		1	2			1	1			4	9	1.80	1.80
Gravel (<3")	37	27	25	35	32	32	31	38	39	35	331	66.20	66.20
Gravel (>3")	2	6	12	3	8	8	5	1		3	48	9.60	9.60
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea						1				1	2	0.40	1.74
Encelia farinosa			7			4		5	1		17	3.40	14.78
Krameria grayi	1						1	3			5	1.00	4.35
Larrea tridentata	8	12	4	5	3	3	2	2	3	6	48	9.60	41.74
Olneya tesota			1							7	8	1.60	6.96
Parkinsonia microphylla	3	8		17	1				6		35	7.00	30.43

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Arnold > AIM

Site ID: A-GU-1 **Date:** 12/15/2016

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea						2.00	1.00		1.00	3.00	7	46.48
Carnegiea gigantea										1.00	1	6.64
Cylindropuntia acanthocarpa			1.00					1.00			2	13.28
Encelia farinosa	1.00	10.00	6.00	3.00	2.00	4.00	7.00	5.00	5.00	1.00	44	292.17
Krameria grayi			1.00			1.00	2.00	2.00			6	39.84
Larrea tridentata	4.00	5.00	2.00	4.00	1.00	1.00	4.00	2.00	1.00	10.00	34	225.77
Lycium		1.00									1	6.64
Olneya tesota										1.00	1	6.64
Parkinsonia microphylla			1.00	1.00	1.00						3	19.92
Unknown 9-Packrat Midden									1.00		1	6.64

* Number of decimal places does not imply level of precision

Notes:

A-GU-2

Soil Stability Rank: 4.6

Cover - Top Layer

Site Class: Phoenix District || Sonoran Desert NM || Arnold || AIM

Site ID: A-GU-2 **Date:** 12/16/2016

Examiner(s):

Cover												
Species	Transect (#Hits)											%Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	8	10	7	12	4	7	6	7	4	6	71	14.20
Bedrock	1	6	6	2	4	4	4	5	3	3	38	7.60
Cryptogam	12	5	7	7	9	3	8	2	7	2	62	12.40
Gravel (<3")	26	21	21	23	33	23	25	26	35	36	269	53.80
Gravel (>3")	0	0	0	1	0	9	1	0	0	0	11	2.20
Ambrosia deltoidea	1	0	0	0	0	0	0	0	0	0	1	0.20
Ambrosia dumosa	0	0	0	0	0	1	1	1	0	0	3	0.60
Larrea tridentata	2	2	2	0	0	0	0	0	1	2	9	1.80
Olneya tesota	0	0	0	0	0	3	2	6	0	0	11	2.20
Parkinsonia microphylla	0	6	7	5	0	0	3	3	0	1	25	5.00

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District || Sonoran Desert NM || Arnold || AIM

Site ID: A-GU-2 **Date:** 12/16/2016

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	10	16	13	17	4	8	6	13	4	7	98	19.60	19.60
Basal Vegetation	0	0	1	0	0	0	0	0	0	0	1	0.20	0.20
Bedrock	1	6	6	2	4	5	6	5	3	3	41	8.20	8.20
Boulders (>25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Cryptogam	12	6	7	7	9	4	8	2	7	2	64	12.80	12.80
Gravel (<3")	27	22	23	23	33	24	29	30	36	38	285	57.00	57.00
Gravel (>3")	0	0	0	1	0	9	1	0	0	0	11	2.20	2.20
HL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Litter (<0.25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Litter (>0.25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Scat - Livestock	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Stones (>10" - 25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
WL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea	1	0	0	0	0	0	0	0	0	0	1	0.20	1.92
Ambrosia dumosa	0	0	0	0	0	1	1	1	0	0	3	0.60	5.77
Celtis pallida	0	0	0	0	0	0	0	1	0	0	1	0.20	1.92
Encelia farinosa	0	0	0	1	0	1	0	0	0	0	2	0.40	3.85
Larrea tridentata	2	2	2	0	0	0	0	0	1	2	9	1.80	17.31
Olneya tesota	0	0	0	0	0	3	2	6	0	0	11	2.20	21.15
Parkinsonia microphylla	0	6	7	5	0	0	3	3	0	1	25	5.00	48.08

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Arnold > AIM

Site ID: A-GU-2 **Date:** 12/16/2016

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea	3.00										3	19.92
Ambrosia dumosa	3.00	5.00	6.00	1.00	6.00	5.00	3.00	3.00	2.00	4.00	38	252.33
Celtis pallida							1.00	1.00			2	13.28
Cylindropuntia acanthocarpa		1.00			1.00	1.00					3	19.92
Echinocereus engelmannii						1.00					1	6.64
Encelia farinosa	2.00	2.00		1.00		1.00	1.00	1.00			8	53.12
Krameria grayi		1.00									1	6.64
Larrea tridentata	3.00	2.00	2.00	1.00	1.00	2.00			4.00	1.00	16	106.24
Mammillaria					1.00						1	6.64
Olneya tesota							1.00				1	6.64
Parkinsonia microphylla			1.00				1.00	2.00	1.00		5	33.20

* Number of decimal places does not imply level of precision

Notes:

A-GU-3

Soil Stability Rank: 5.1

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Arnold > AIM

Site ID: A-GU-3 **Date:** 12/13/2016

Examiner(s):

Cover

Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	6	8	13	7	4	5	8	15	11	14	91	18.20
Bedrock	8	4	5	7	10	10	5	13	12	6	80	16.00
Cryptogam	14	7	7	5	5	1	7	4	9	9	68	13.60
Gravel (<3")	19	23	22	17	22	30	27	12	13	16	201	40.20
Gravel (>3")			1	2		2	2	1			8	1.60
HL Attached							1				1	0.20
Ambrosia dumosa	1	1			1						3	0.60
Celtis pallida									1		1	0.20
Cylindropuntia acanthocarpa var. acanthocarpa				1							1	0.20
Cylindropuntia versicolor										2	2	0.40
Echinocereus engelmannii				1							1	0.20
Eriogonum inflatum										1	1	0.20
Krameria grayi	1									2	3	0.60
Larrea tridentata	1	2	2	3		2					10	2.00
Parkinsonia microphylla		5		7	8			5	4		29	5.80

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Arnold > AIM

Site ID: A-GU-3 **Date:** 12/13/2016

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	8	10	15	13	6	7	8	15	12	17	111	22.20	22.20
Bedrock	8	5	5	9	12	10	5	15	13	8	90	18.00	18.00
Boulders (>25")											0	0.00	0.00
Cryptogam	14	8	7	7	6	1	7	4	10	9	73	14.60	14.60
Gravel (<3")	20	27	22	19	26	30	27	15	15	16	217	43.40	43.40
Gravel (>3")			1	2		2	2	1			8	1.60	1.60
HL Attached							1				1	0.20	0.20
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia dumosa	1	1		1	1						4	0.80	7.55
Celtis pallida									1		1	0.20	1.89
Cylindropuntia acanthocarpa var. acanthocarpa				1							1	0.20	1.89
Cylindropuntia versicolor				1						2	3	0.60	5.66
Echinocereus engelmannii				1							1	0.20	1.89
Eriogonum inflatum										1	1	0.20	1.89
Krameria grayi	1									2	3	0.60	5.66
Larrea tridentata	1	2	2	3		2					10	2.00	18.87
Parkinsonia microphylla		5		7	8			5	4		29	5.80	54.72

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Arnold > AIM

Site ID: A-GU-3 **Date:** 12/13/2016

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia dumosa	3.00	3.00	1.00	4.00	9.00	1.00		5.00	10.00	4.00	40	265.61
Carnegiea gigantea		1.00									1	6.64
Celtis pallida									1.00		1	6.64
Cylindropuntia acanthocarpa var. acanthocarpa	2.00			3.00							5	33.20
Cylindropuntia leptocaulis									1.00		1	6.64
Cylindropuntia versicolor			1.00	2.00	2.00	2.00	1.00	1.00	1.00	3.00	13	86.32
Echinocereus engelmannii	1.00			2.00		4.00					7	46.48
Ephedra								1.00			1	6.64
Eriogonum inflatum				2.00		1.00	2.00	15.00	4.00	3.00	27	179.29
Krameria grayi	1.00			1.00						1.00	3	19.92
Larrea tridentata	3.00	1.00	4.00			2.00	2.00			2.00	14	92.96
Mammillaria				1.00							1	6.64
Marina parryi					24.00					3.00	27	179.29
Muhlenbergia porteri					0.00						0	0.00
Parkinsonia microphylla					2.00		1.00	1.00			4	26.56

* Number of decimal places does not imply level of precision

Notes:

A-GU-4

Soil Stability Rank: 4.6

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Arnold > AIM

Site ID: A-GU-4 **Date:** 1/29/2018

Examiner(s):

Cover

Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	6	5	9	10	8	3	11	6	15	18	91	18.20
Cryptogam	3	4	8	5	12	5	8	6	10	8	69	13.80
Gravel (<3")	40	41	30	26	25	35	29	37	19	23	305	61.00
Larrea tridentata	1		3	9	5	7	2	1		1	29	5.80
Parkinsonia microphylla									6		6	1.20

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Arnold > AIM

Site ID: A-GU-4 **Date:** 1/29/2018

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	6	5	10	16	11	4	12	6	18	19	107	21.40	21.40
Basal Vegetation						1					1	0.20	0.20
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam	3	4	8	5	12	5	8	7	11	8	71	14.20	14.20
Gravel (<3")	41	41	32	29	27	40	30	37	21	23	321	64.20	64.20
Gravel (>3")											0	0.00	0.00
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover													
Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Larrea tridentata	1		3	9	5	7	2	1	2	1	31	6.20	83.78
Parkinsonia microphylla									6		6	1.20	16.22

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Arnold > AIM

Site ID: A-GU-4 **Date:** 1/29/2018

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea							1.00				1	6.64
Larrea tridentata		1.00	2.00	4.00	3.00	2.00	3.00	3.00	3.00	3.00	24	159.37

* Number of decimal places does not imply level of precision

Notes:

Limy Fan

A-LF-1

Soil Stability Rank: 4.7

Cover - Top Layer

Site Class: Phoenix District || Sonoran Desert NM || Arnold || AIM

Site ID: A-LF-1 **Date:** 12/19/2016

Examiner(s):

Cover												
Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	27	21	15	14	20	16	21	22	16	16	188	37.60
Cryptogam	8	5	5	2	5	3	6	4	6	5	49	9.80
Gravel (<3")	12	24	25	28	24	27	21	19	27	27	234	46.80
Larrea tridentata	3	0	5	6	1	4	2	5	1	2	29	5.80

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District || Sonoran Desert NM || Arnold || AIM

Site ID: A-LF-1 **Date:** 12/19/2016

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	29	21	18	18	20	18	22	23	17	17	203	40.60	40.60
Bedrock	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Boulders (>25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Cryptogam	8	5	5	2	5	3	6	4	6	5	49	9.80	9.80
Gravel (<3")	13	24	27	30	25	29	22	23	27	28	248	49.60	49.60
Gravel (>3")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
HL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Litter (<0.25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Litter (>0.25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Scat - Livestock	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Stones (>10" - 25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
WL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Larrea tridentata	3	0	5	6	1	4	2	5	1	2	29	5.80	100.00

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Arnold > AIM

Site ID: A-LF-1 **Date:** 12/19/2016

Examiner(s):

Density

Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Larrea tridentata	7.00	7.00	4.00	4.00	5.00	7.00	5.00	7.00	3.00	6.00	55	365.21

* Number of decimal places does not imply level of precision

Notes:

A-LF-2

Soil Stability Rank: 5.3

Cover - Top Layer

Site Class: Phoenix District || Sonoran Desert NM || Arnold || AIM

Site ID: A-LF-2 **Date:** 12/19/2016

Examiner(s):

Cover

Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	21	19	21	21	24	17	13	14	11	15	176	35.20
Cryptogam	4	9	12	1	1	6	5	11	7	10	66	13.20
Gravel (<3")	25	16	9	18	13	19	32	25	29	24	210	42.00
Larrea tridentata	0	6	8	10	12	8	0	0	3	1	48	9.60

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District || Sonoran Desert NM || Arnold || AIM

Site ID: A-LF-2 **Date:** 12/19/2016

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	21	22	24	30	34	20	13	14	11	15	204	40.80	40.80
Basal Vegetation	0	0	0	0	1	0	0	0	0	0	1	0.20	0.20
Bedrock	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Boulders (>25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Cryptogam	4	9	14	1	2	6	5	11	7	10	69	13.80	13.80
Gravel (<3")	25	19	12	19	13	24	32	25	32	25	226	45.20	45.20
Gravel (>3")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
HL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Litter (<0.25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Litter (>0.25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Scat - Livestock	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Stones (>10" - 25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
WL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover													
Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Larrea tridentata	0	6	8	10	12	8	0	0	3	1	48	9.60	100.00

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Arnold > AIM

Site ID: A-LF-2 **Date:** 12/19/2016

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea					1.00						1	6.64
Larrea tridentata	2.00	5.00	6.00	9.00	6.00	6.00	3.00	1.00	4.00	1.00	43	285.53

* Number of decimal places does not imply level of precision

Notes:

A-LF-3

Soil Stability Rank: 5.1

Cover - Top Layer

Site Class: Phoenix District || Sonoran Desert NM || Arnold || AIM

Site ID: A-LF-3 **Date:** 12/19/2016

Examiner(s):

Cover												
Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	31	31	27	25	25	29	30	28	34	30	290	58.00
Cryptogam	8	8	8	9	4	1	3	3	6	6	56	11.20
Gravel (<3")	11	8	11	12	12	14	10	10	7	4	99	19.80
Ambrosia deltoidea	0	0	0	0	5	2	0	4	0	0	11	2.20
Larrea tridentata	0	3	4	4	4	4	7	5	3	10	44	8.80

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District || Sonoran Desert NM || Arnold || AIM

Site ID: A-LF-3 **Date:** 12/19/2016

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	31	32	31	28	31	33	36	34	35	37	328	65.60	65.60
Basal Vegetation	0	0	0	1	0	0	0	0	0	0	1	0.20	0.20
Bedrock	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Boulders (>25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Cryptogam	8	9	8	9	4	3	4	4	6	6	61	12.20	12.20
Gravel (<3")	11	9	11	12	15	14	10	12	9	7	110	22.00	22.00
Gravel (>3")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
HL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Litter (<0.25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Litter (>0.25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Scat - Livestock	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Stones (>10" - 25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
WL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea	0	0	0	1	5	2	0	4	0	0	12	2.40	21.43
Larrea tridentata	0	3	4	4	4	4	7	5	3	10	44	8.80	78.57

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Arnold > AIM

Site ID: A-LF-3 **Date:** 12/19/2016

Examiner(s):

Density

Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea	2.00	1.00	1.00	2.00	8.00	3.00	1.00	2.00	1.00		21	139.45
Krameria grayi					1.00		1.00				2	13.28
Larrea tridentata	7.00	5.00	6.00	4.00	8.00	8.00	8.00	6.00	3.00	8.00	63	418.34

* Number of decimal places does not imply level of precision

Notes:

A-LF-4

Soil Stability Rank: 4.4

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Arnold > AIM

Site ID: A_LF_4 **Date:** 2/15/2018

Examiner(s):

Cover

Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	19	32	25	22	24	22	20	18	17	21	220	44.00
Cryptogam	6	5	1	5	2	7	4	2	6	2	40	8.00
Gravel (<3")	11	7	22	22	24	16	18	25	23	25	193	38.60
Ambrosia deltoidea							5	3			8	1.60
Larrea tridentata	14	6	2	1		5	3	2	4	2	39	7.80

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Arnold > AIM

Site ID: A_LF_4 **Date:** 2/15/2018

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	31	36	26	22	24	27	27	23	19	23	258	51.60	51.60
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam	7	6	1	5	2	7	4	2	7	2	43	8.60	8.60
Gravel (<3")	12	8	23	23	24	16	19	25	24	25	199	39.80	39.80
Gravel (>3")											0	0.00	0.00
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover													
Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea							5	3			8	1.60	17.02
Larrea tridentata	14	6	2	1		5	3	2	4	2	39	7.80	82.98

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Arnold > AIM

Site ID: A_LF_4 **Date:** 2/15/2018

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea	2.00						7.00	2.00			11	73.04
Larrea tridentata	8.00	8.00	2.00	3.00	2.00	3.00	4.00	6.00	6.00	4.00	46	305.45

* Number of decimal places does not imply level of precision

Notes:

Limy Upland

A-LU-1

Soil Stability Rank: 4.6

Cover - Top Layer

Site Class: Phoenix District || Sonoran Desert NM || Arnold || AIM

Site ID: A-LU-1 **Date:** 3/22/2017

Examiner(s):

Cover

Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	21	21	9	18	18	13	17	9	5	16	147	29.40
Cryptogam	7	1	0	5	7	5	4	3	6	6	44	8.80
Gravel (<3")	11	9	7	25	18	21	26	28	35	23	203	40.60
Gravel (>3")	1	0	0	0	0	1	0	0	0	0	2	0.40
Acacia greggii	0	0	2	0	0	0	0	0	0	0	2	0.40
Ambrosia deltoidea	0	2	5	0	0	0	0	0	0	0	7	1.40
Krameria grayi	3	7	5	0	0	0	0	0	1	0	16	3.20
Larrea tridentata	7	10	14	2	7	10	3	10	3	5	71	14.20
Lycium	0	0	1	0	0	0	0	0	0	0	1	0.20
Parkinsonia microphylla	0	0	2	0	0	0	0	0	0	0	2	0.40
Pleuraphis rigida	0	0	5	0	0	0	0	0	0	0	5	1.00

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District || Sonoran Desert NM || Arnold || AIM

Site ID: A-LU-1 **Date:** 3/22/2017

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	29	38	39	19	20	17	18	12	7	19	218	43.60	43.60
Basal Vegetation	0	0	1	0	0	0	0	1	0	0	2	0.40	0.40
Bedrock	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Boulders (>25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Cryptogam	7	2	0	5	8	5	4	3	6	7	47	9.40	9.40
Gravel (<3")	13	10	10	26	22	27	28	34	37	24	231	46.20	46.20
Gravel (>3")	1	0	0	0	0	1	0	0	0	0	2	0.40	0.40
HL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Litter (<0.25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Litter (>0.25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Scat - Livestock	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Stones (>10" - 25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
WL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Acacia greggii	0	0	4	0	0	0	0	0	0	0	4	0.80	3.42
Ambrosia deltoidea	0	3	8	0	0	0	0	0	0	0	11	2.20	9.40
Krameria grayi	3	9	8	0	0	0	0	0	1	0	21	4.20	17.95
Larrea tridentata	7	10	14	2	7	10	3	10	3	5	71	14.20	60.68
Lycium	0	0	1	0	0	0	0	0	0	0	1	0.20	0.85
Parkinsonia microphylla	0	0	3	0	0	0	0	0	0	0	3	0.60	2.56
Pleuraphis rigida	0	0	6	0	0	0	0	0	0	0	6	1.20	5.13

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Arnold > AIM

Site ID: A-LU-1 **Date:** 3/22/2017

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea		3.00	9.00								12	79.68
Ambrosia dumosa			2.00					2.00	1.00		5	33.20
Cylindropuntia ramosissima	1.00						1.00		1.00		3	19.92
Krameria grayi		3.00	4.00	1.00				1.00	1.00	1.00	11	73.04
Larrea tridentata	5.00	4.00	6.00	5.00	3.00	7.00	4.00	5.00	1.00	6.00	46	305.45
Pleuraphis rigida			2.00								2	13.28

* Number of decimal places does not imply level of precision

Notes:

A-LU-2

Soil Stability Rank: 4.0

Cover - Top Layer

Site Class: Phoenix District || Sonoran Desert NM || Arnold || AIM

Site ID: A-LU-2 **Date:** 3/22/2017

Examiner(s):

Cover												
Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	11	18	11	8	12	7	7	8	5	6	93	18.60
Cryptogam	7	8	7	4	7	5	4	9	5	8	64	12.80
Gravel (<3")	15	10	19	28	28	34	37	32	39	36	278	55.60
Gravel (>3")	0	0	0	0	1	0	0	0	0	0	1	0.20
Ambrosia deltoidea	0	0	1	1	0	0	0	0	0	0	2	0.40
Krameria grayi	3	0	0	0	0	0	0	0	0	0	3	0.60
Larrea tridentata	14	14	12	9	2	4	2	1	1	0	59	11.80

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District || Sonoran Desert NM || Arnold || AIM

Site ID: A-LU-2 **Date:** 3/22/2017

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	20	24	19	17	13	9	7	9	5	6	129	25.80	25.80
Basal Vegetation	2	1	1	0	0	0	0	0	0	0	4	0.80	0.80
Bedrock	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Boulders (>25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Cryptogam	10	9	9	4	8	5	4	9	5	8	71	14.20	14.20
Gravel (<3")	18	16	21	29	28	36	39	32	40	36	295	59.00	59.00
Gravel (>3")	0	0	0	0	1	0	0	0	0	0	1	0.20	0.20
HL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Litter (<0.25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Litter (>0.25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Scat - Livestock	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Stones (>10" - 25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
WL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea	0	1	4	3	0	0	0	0	0	0	8	1.60	11.27
Krameria grayi	3	0	0	0	0	0	0	0	0	0	3	0.60	4.23
Larrea tridentata	14	14	13	9	2	4	2	1	1	0	60	12.00	84.51

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Arnold > AIM

Site ID: A-LU-2 **Date:** 3/22/2017

Examiner(s):

Density											
Species	Transect (Count)										Density* / ac
	1	2	3	4	5	6	7	8	10	Total	
Ambrosia deltoidea	3.00	8.00	12.00	6.00	1.00					30	221.34
Krameria grayi	1.00									1	7.38
Larrea tridentata	10.00	6.00	6.00	7.00	5.00	4.00	4.00	3.00	3.00	48	354.15

* Number of decimal places does not imply level of precision

Notes:

A-LU-3

Soil Stability Rank: 4.7

Cover - Top Layer

Site Class: Phoenix District || Sonoran Desert NM || Arnold || AIM

Site ID: A-LU-3 **Date:** 3/23/2017

Examiner(s):

Cover												
Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	10	20	20	15	13	12	13	9	10	11	133	26.60
Cryptogam	15	12	11	3	2	9	6	6	8	13	85	17.00
Gravel (<3")	19	15	15	32	28	21	19	27	27	22	225	45.00
Gravel (>3")	2	1	0	0	0	4	2	2	2	3	16	3.20
Ambrosia deltoidea	0	0	0	0	0	0	1	0	0	0	1	0.20
Larrea tridentata	4	2	4	0	7	4	9	6	3	1	40	8.00

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District || Sonoran Desert NM || Arnold || AIM

Site ID: A-LU-3 **Date:** 3/23/2017

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	13	22	22	15	18	15	19	12	11	11	158	31.60	31.60
Bedrock	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Boulders (>25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Cryptogam	16	12	11	3	2	9	6	7	9	13	88	17.60	17.60
Gravel (<3")	19	15	17	32	30	21	23	28	28	23	236	47.20	47.20
Gravel (>3")	2	1	0	0	0	5	2	3	2	3	18	3.60	3.60
HL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Litter (<0.25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Litter (>0.25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Scat - Livestock	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Stones (>10" - 25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
WL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea	0	0	0	0	0	0	1	0	0	0	1	0.20	2.44
Larrea tridentata	4	2	4	0	7	4	9	6	3	1	40	8.00	97.56

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Arnold > AIM

Site ID: A-LU-3 **Date:** 3/23/2017

Examiner(s):

Density

Species	Transect (Count)										Density* / ac
	1	2	3	4	6	7	8	9	10	Total	
Ambrosia deltoidea				1.00						1	7.38
Cylindropuntia acanthocarpa var. major				1.00	1.00					2	14.76
Larrea tridentata	5.00	4.00	4.00	10.00	5.00	9.00	4.00	8.00	1.00	50	368.90
Unknown 9-Packrat Midden						1.00	1.00	1.00		3	22.13

* Number of decimal places does not imply level of precision

Notes:

A-LU-4

Soil Stability Rank: 5.2

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Arnold > AIM

Site ID: A-LU-4 **Date:** 2/6/2018

Examiner(s):

Cover												
Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	22	20	17	18	27	21	23	19	23	19	209	41.80
Cryptogam	8	8	9	6	6	5	3	4	4	7	60	12.00
Gravel (<3")	16	19	19	22	17	19	14	12	9	16	163	32.60
Gravel (>3")						1				1	2	0.40
Ambrosia deltoidea									1		1	0.20
Krameria grayi							2		1		3	0.60
Larrea tridentata	4	3	5	4		4	8	2	2	1	33	6.60
Parkinsonia microphylla								13	10	6	29	5.80

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Arnold > AIM

Site ID: A-LU-4 **Date:** 2/6/2018

Examiner(s):

Surface Cover													
Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	24	23	19	21	27	25	29	32	37	22	259	51.80	51.80
Basal Vegetation							1				1	0.20	0.20
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam	8	8	9	6	6	5	4	4	4	8	62	12.40	12.40
Gravel (<3")	18	19	22	23	17	19	16	14	9	18	175	35.00	35.00
Gravel (>3")						1				2	3	0.60	0.60
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover													
Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea									1	1	2	0.40	2.78
Ambrosia dumosa									1		1	0.20	1.39
Krameria grayi							2		1		3	0.60	4.17
Larrea tridentata	4	3	5	4		4	8	2	4	1	35	7.00	48.61
Lycium								2			2	0.40	2.78
Parkinsonia microphylla								13	10	6	29	5.80	40.28

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Arnold > AIM

Site ID: A-LU-4 **Date:** 2/6/2018

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea						1.00			5.00	2.00	8	53.12
Ditaxis neomexicana							2.00	40.00	4.00		46	305.45
Krameria grayi							1.00	1.00	2.00	1.00	5	33.20
Larrea tridentata	2.00	2.00	3.00	2.00	2.00	6.00	5.00	6.00	6.00	3.00	37	245.69
Lycium								1.00			1	6.64
Parkinsonia microphylla										1.00	1	6.64

* Number of decimal places does not imply level of precision

Notes:

Beloat Allotment

Granitic Uplands

B-GU-1

Soil Stability Rank: 4.1

Cover - Top Layer

Site Class: Phoenix District || Sonoran Desert NM || Beloat || AIM

Site ID: B-GU-1 **Date:** 3/1/2017

Examiner(s):

Cover

Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	5	5	3	1	8	8	3	5	8	1	47	9.40
Bedrock	0	1	3	2	1	0	0	0	0	1	8	1.60
Cryptogam	3	4	2	2	6	10	4	10	4	3	48	9.60
Gravel (<3")	39	39	42	45	19	26	41	26	35	42	354	70.80
Gravel (>3")	2	0	0	0	0	0	1	0	0	1	4	0.80
Ambrosia deltoidea	0	0	0	0	1	0	0	3	0	0	4	0.80
Ferocactus wislizeni	1	0	0	0	0	0	0	0	0	0	1	0.20
Krameria grayi	0	0	0	0	1	0	0	0	0	0	1	0.20
Larrea tridentata	0	1	0	0	5	6	1	2	3	2	20	4.00
Lycium	0	0	0	0	1	0	0	0	0	0	1	0.20
Parkinsonia microphylla	0	0	0	0	8	0	0	4	0	0	12	2.40

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District || Sonoran Desert NM || Beloat || AIM

Site ID: B-GU-1 **Date:** 3/1/2017

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	6	6	3	1	16	9	3	9	8	1	62	12.40	12.40
Bedrock	0	1	3	2	1	0	0	0	0	1	8	1.60	1.60
Boulders (>25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Cryptogam	3	4	2	2	7	11	4	11	4	3	51	10.20	10.20
Gravel (<3")	39	39	42	45	26	30	42	30	38	44	375	75.00	75.00
Gravel (>3")	2	0	0	0	0	0	1	0	0	1	4	0.80	0.80
HL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Litter (<0.25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Litter (>0.25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Scat - Livestock	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Stones (>10" - 25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
WL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea	0	0	0	0	3	0	0	4	0	0	7	1.40	16.28
Ferocactus wislizeni	1	0	0	0	0	0	0	0	0	0	1	0.20	2.33
Krameria grayi	0	0	0	0	1	0	0	0	0	0	1	0.20	2.33
Larrea tridentata	0	1	0	0	5	6	1	2	3	2	20	4.00	46.51
Lycium	0	0	0	0	2	0	0	0	0	0	2	0.40	4.65
Parkinsonia microphylla	0	0	0	0	8	0	0	4	0	0	12	2.40	27.91

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Beloat > AIM

Site ID: B-GU-1 **Date:** 3/1/2017

Examiner(s):

Density

Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea	1.00				4.00			5.00	1.00	1.00	12	79.68
Carnegiea gigantea				2.00							2	13.28
Krameria grayi					1.00			3.00	1.00	1.00	6	39.84
Larrea tridentata	1.00	2.00			5.00	6.00	5.00	1.00	3.00	2.00	25	166.01
Lycium					1.00						1	6.64
Parkinsonia microphylla								1.00			1	6.64
Unknown 9-Packrat Midden								1.00			1	6.64

* Number of decimal places does not imply level of precision

Notes:

B-GU-2

Soil Stability Rank: 4.4

Cover - Top Layer

Site Class: Phoenix District || Sonoran Desert NM || Beloat || AIM

Site ID: B-GU-2 **Date:** 2/28/2017

Examiner(s):

Cover

Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	3	2	7	7	6	6	11	9	4	2	57	11.40
Bedrock	0	0	0	2	2	1	1	1	0	1	8	1.60
Cryptogam	1	1	0	0	0	0	1	0	0	0	3	0.60
Gravel (<3")	35	44	32	37	30	35	31	34	36	37	351	70.20
Gravel (>3")	2	0	0	1	2	1	1	0	1	2	10	2.00
Ambrosia deltoidea	4	0	2	1	3	2	5	4	7	3	31	6.20
Cylindropuntia bigelovii	0	0	0	1	0	0	0	0	0	0	1	0.20
Larrea tridentata	5	3	9	1	7	5	0	2	2	5	39	7.80

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District || Sonoran Desert NM || Beloat || AIM

Site ID: B-GU-2 **Date:** 2/28/2017

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	5	2	10	9	8	7	14	10	7	4	76	15.20	15.20
Basal Vegetation	0	1	0	0	1	1	1	0	0	0	4	0.80	0.80
Bedrock	0	0	0	2	2	1	1	1	0	1	8	1.60	1.60
Boulders (>25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Cryptogam	1	1	0	0	1	0	1	0	0	0	4	0.80	0.80
Gravel (<3")	42	46	40	38	36	40	32	39	42	43	398	79.60	79.60
Gravel (>3")	2	0	0	1	2	1	1	0	1	2	10	2.00	2.00
HL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Litter (<0.25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Litter (>0.25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Scat - Livestock	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Stones (>10" - 25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
WL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea	4	0	2	1	4	2	5	4	7	3	32	6.40	43.84
Cylindropuntia bigelovii	0	0	0	1	0	0	0	0	0	0	1	0.20	1.37
Larrea tridentata	5	3	9	1	8	5	0	2	2	5	40	8.00	54.79

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Beloat > AIM

Site ID: B-GU-2 **Date:** 2/28/2017

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea	6.00	2.00	5.00	5.00	5.00	6.00	8.00	6.00	3.00	5.00	51	338.65
Carnegiea gigantea	1.00										1	6.64
Cylindropuntia acanthocarpa var. major							1.00				1	6.64
Cylindropuntia bigelovii				2.00							2	13.28
Echinocereus engelmannii			1.00								1	6.64
Krameria grayi				1.00							1	6.64
Larrea tridentata	6.00	6.00	4.00	5.00	5.00	6.00	2.00	3.00	3.00	2.00	42	278.89
Mammillaria			1.00						1.00		2	13.28

* Number of decimal places does not imply level of precision

Notes:

B-GU-3

Soil Stability Rank: 5.3

Cover - Top Layer

Site Class: Phoenix District || Sonoran Desert NM || Beloat || AIM

Site ID: B-GU-3 **Date:** 3/23/2017

Examiner(s):

Cover												
Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	3	3	4	7	5	4	2	3	4	12	47	9.40
Bedrock	0	6	0	0	0	0	0	0	0	1	7	1.40
Cryptogam	1	2	1	2	0	0	0	0	0	0	6	1.20
Gravel (<3")	41	31	40	31	41	46	31	42	44	25	372	74.40
Litter (<0.25")	0	0	0	0	0	0	4	0	0	0	4	0.80
Encelia farinosa	3	3	0	3	0	0	0	2	0	2	13	2.60
Larrea tridentata	2	3	3	5	4	0	4	3	2	4	30	6.00
Lycium	0	0	2	0	0	0	0	0	0	0	2	0.40
Olneya tesota	0	2	0	2	0	0	0	0	0	0	4	0.80
Parkinsonia microphylla	0	0	0	0	0	0	9	0	0	6	15	3.00

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District || Sonoran Desert NM || Beloat || AIM

Site ID: B-GU-3 **Date:** 3/23/2017

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	3	5	7	12	5	4	8	3	5	17	69	13.80	13.80
Basal Vegetation	1	2	0	0	0	0	0	0	0	0	3	0.60	0.60
Bedrock	1	7	0	0	0	0	0	0	0	1	9	1.80	1.80
Boulders (>25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Cryptogam	1	2	1	2	0	0	0	0	0	0	6	1.20	1.20
Gravel (<3")	44	34	42	36	45	46	37	47	45	32	408	81.60	81.60
Gravel (>3")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
HL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Litter (<0.25")	0	0	0	0	0	0	5	0	0	0	5	1.00	1.00
Litter (>0.25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Scat - Livestock	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Stones (>10" - 25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
WL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Encelia farinosa	3	3	1	4	0	0	2	2	0	3	18	3.60	26.09
Larrea tridentata	2	3	3	5	4	0	4	3	2	4	30	6.00	43.48
Lycium	0	0	2	0	0	0	0	0	0	0	2	0.40	2.90
Olneya tesota	0	2	0	2	0	0	0	0	0	0	4	0.80	5.80
Parkinsonia microphylla	0	0	0	0	0	0	9	0	0	6	15	3.00	21.74

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Beloat > AIM

Site ID: B-GU-3 **Date:** 3/23/2017

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea				1.00	1.00	1.00		2.00	1.00		6	39.84
Carnegiea gigantea					1.00						1	6.64
Cylindropuntia bigelovii			1.00		2.00	1.00	2.00				6	39.84
Encelia farinosa	49.00	25.00	8.00	9.00	12.00	3.00	9.00	6.00	1.00	12.00	134	889.79
Fagonia laevis	4.00	7.00	11.00	3.00	2.00						27	179.29
Krameria grayi	1.00										1	6.64
Larrea tridentata	3.00	2.00	4.00	1.00		3.00	2.00	3.00	2.00	4.00	24	159.37
Lycium			1.00							1.00	2	13.28
Olneya tesota		1.00		1.00							2	13.28
Parkinsonia microphylla							1.00				1	6.64
Unknown 9-Packrat Midden										1.00	1	6.64

* Number of decimal places does not imply level of precision

Notes:

B-GU-4

Soil Stability Rank: 4.8

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Beloat > AIM

Site ID: B-GU-4 **Date:** 2/21/2018

Examiner(s):

Cover												
Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	8	8	8	7	8	7	6	9	10	6	77	15.40
Cryptogam	1	1	2	1	1					2	8	1.60
Gravel (<3")	33	31	28	26	30	43	36	29	39	35	330	66.00
Ambrosia deltoidea	2										2	0.40
Krameria grayi				1					1	1	3	0.60
Larrea tridentata	4	5	12	4	11		8	5		6	55	11.00
Parkinsonia microphylla	2	5		11				7			25	5.00

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Beloat > AIM

Site ID: B-GU-4 **Date:** 2/21/2018

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	11	10	11	16	8	7	8	13	10	10	104	20.80	20.80
Basal Vegetation			1								1	0.20	0.20
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam	3	2	2	1	1					2	11	2.20	2.20
Gravel (<3")	36	38	36	33	41	43	42	37	40	38	384	76.80	76.80
Gravel (>3")											0	0.00	0.00
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea	2	3	1					1			7	1.40	7.45
Krameria grayi		1		2					1	1	5	1.00	5.32
Larrea tridentata	4	6	12	5	11		8	5		6	57	11.40	60.64
Parkinsonia microphylla	2	5		11				7			25	5.00	26.60

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Beloat > AIM

Site ID: B-GU-4 **Date:** 2/21/2018

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea	2.00	7.00	1.00	3.00				3.00			16	106.24
Ambrosia dumosa		1.00									1	6.64
Carnegiea gigantea	1.00										1	6.64
Cylindropuntia bigelovii								1.00	1.00	5.00	7	46.48
Echinocereus engelmannii						1.00					1	6.64
Encelia farinosa				1.00							1	6.64
Krameria grayi	2.00	1.00	2.00	1.00		2.00	1.00		1.00	3.00	13	86.32
Larrea tridentata	5.00	3.00	9.00	6.00	6.00	2.00	5.00	4.00	2.00	4.00	46	305.45
Lycium	1.00										1	6.64
Parkinsonia microphylla	1.00										1	6.64

* Number of decimal places does not imply level of precision

Notes:

Limy Fan

B-LF-1

Soil Stability Rank: 6.0

Cover - Top Layer

Site Class: Phoenix District || Sonoran Desert NM || Beloat || AIM

Site ID: B-LF-1 **Date:** 3/16/2017

Examiner(s):

Cover												
Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	8	9	20	3	6	14	8	20	18	10	116	23.20
Cryptogam	12	5	8	7	8	2	2	10	3	1	58	11.60
Gravel (<3")	22	31	19	38	35	31	33	19	5	29	262	52.40
Scat - Livestock	0	0	1	0	0	0	0	0	0	0	1	0.20
Ambrosia deltoidea	1	0	0	0	0	0	0	0	0	0	1	0.20
Larrea tridentata	7	5	2	2	1	3	7	1	24	0	52	10.40
Lycium	0	0	0	0	0	0	0	0	0	2	2	0.40
Olneya tesota	0	0	0	0	0	0	0	0	0	8	8	1.60

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District || Sonoran Desert NM || Beloat || AIM

Site ID: B-LF-1 **Date:** 3/16/2017

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	11	10	21	3	6	14	10	20	29	19	143	28.60	28.60
Basal Vegetation	0	0	0	0	0	0	1	0	2	1	4	0.80	0.80
Bedrock	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Boulders (>25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Cryptogam	12	5	9	8	8	2	2	10	3	1	60	12.00	12.00
Gravel (<3")	27	35	19	39	36	34	37	20	16	29	292	58.40	58.40
Gravel (>3")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
HL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Litter (<0.25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Litter (>0.25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Scat - Livestock	0	0	1	0	0	0	0	0	0	0	1	0.20	0.20
Stones (>10" - 25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
WL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea	1	0	0	0	0	0	0	0	0	0	1	0.20	1.59
Larrea tridentata	7	5	2	2	1	3	7	1	24	0	52	10.40	82.54
Lycium	0	0	0	0	0	0	0	0	0	2	2	0.40	3.17
Olneya tesota	0	0	0	0	0	0	0	0	0	8	8	1.60	12.70

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Beloat > AIM

Site ID: B-LF-1 **Date:** 3/16/2017

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea						1.00			5.00		6	39.84
Larrea tridentata	5.00	8.00	3.00	3.00	3.00	4.00	8.00	2.00	12.00	2.00	50	332.01
Lycium										1.00	1	6.64
Olneya tesota										1.00	1	6.64
Sphaeralcea										6.00	6	39.84

* Number of decimal places does not imply level of precision

Notes:

B-LF-2

Soil Stability Rank: 5.6

Cover - Top Layer

Site Class: Phoenix District || Sonoran Desert NM || Beloat || AIM

Site ID: B-LF-2 **Date:** 3/1/2017

Examiner(s):

Cover												
Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	22	25	19	24	17	34	26	24	28	25	244	48.80
Cryptogam	10	6	10	10	1	2	5	13	4	15	76	15.20
Gravel (<3")	17	18	13	6	9	10	6	12	12	9	112	22.40
Ambrosia deltoidea	0	0	5	5	0	0	0	0	1	0	11	2.20
Larrea tridentata	1	1	3	0	4	4	13	1	3	1	31	6.20
Lycium	0	0	0	5	4	0	0	0	0	0	9	1.80
Prosopis velutina	0	0	0	0	15	0	0	0	2	0	17	3.40

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District || Sonoran Desert NM || Beloat || AIM

Site ID: B-LF-2 **Date:** 3/1/2017

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	23	25	25	34	38	37	36	24	34	25	301	60.20	60.20
Basal Vegetation	0	0	0	0	0	0	1	0	0	0	1	0.20	0.20
Bedrock	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Boulders (>25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Cryptogam	10	6	10	10	2	2	5	13	4	15	77	15.40	15.40
Gravel (<3")	17	19	15	6	10	11	8	13	12	10	121	24.20	24.20
Gravel (>3")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
HL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Litter (<0.25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Litter (>0.25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Scat - Livestock	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Stones (>10" - 25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
WL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea	0	0	5	6	0	0	0	0	1	0	12	2.40	17.39
Larrea tridentata	1	1	3	0	4	4	13	1	3	1	31	6.20	44.93
Lycium	0	0	0	5	4	0	0	0	0	0	9	1.80	13.04
Prosopis velutina	0	0	0	0	15	0	0	0	2	0	17	3.40	24.64

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Beloat > AIM

Site ID: B-LF-2 **Date:** 3/1/2017

Examiner(s):

Density											
Species	Transect (Count)										Density* / ac
	1	2	3	4	5	6	7	8	9	Total	
Ambrosia deltoidea			9.00	13.00	1.00				5.00	28	206.59
Larrea tridentata	1.00	2.00	1.00	1.00	9.00	4.00	4.00	5.00	4.00	31	228.72
Lycium				1.00	3.00					4	29.51

* Number of decimal places does not imply level of precision

Notes:

B-LF-3

Soil Stability Rank: 4.5

Cover - Top Layer

Site Class: Phoenix District || Sonoran Desert NM || Beloat || AIM

Site ID: B-LF-3 **Date:** 3/16/2017

Examiner(s):

Cover												
Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	6	4	11	11	9	6	8	12	10	11	88	17.60
Cryptogam	7	5	6	15	15	13	9	11	14	2	97	19.40
Gravel (<3")	33	37	32	23	25	28	24	18	19	31	270	54.00
Gravel (>3")	0	0	0	0	0	0	0	1	0	0	1	0.20
Scat - Livestock	1	0	0	0	0	0	0	0	0	0	1	0.20
Ambrosia deltoidea	0	0	0	0	0	0	3	4	4	2	13	2.60
Krameria grayi	0	0	0	0	0	0	0	0	2	0	2	0.40
Larrea tridentata	3	4	1	1	1	3	6	4	1	4	28	5.60

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District || Sonoran Desert NM || Beloat || AIM

Site ID: B-LF-3 **Date:** 3/16/2017

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	8	5	11	11	10	6	11	17	13	14	106	21.20	21.20
Basal Vegetation	0	0	0	1	0	0	0	0	0	0	1	0.20	0.20
Bedrock	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Boulders (>25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Cryptogam	8	6	6	15	15	14	13	11	16	3	107	21.40	21.40
Gravel (<3")	33	39	33	23	25	30	26	21	21	33	284	56.80	56.80
Gravel (>3")	0	0	0	0	0	0	0	1	0	0	1	0.20	0.20
HL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Litter (<0.25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Litter (>0.25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Scat - Livestock	1	0	0	0	0	0	0	0	0	0	1	0.20	0.20
Stones (>10" - 25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
WL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea	0	0	0	0	0	0	4	4	4	2	14	2.80	31.82
Krameria grayi	0	0	0	0	0	0	0	0	2	0	2	0.40	4.55
Larrea tridentata	3	4	1	1	1	3	6	4	1	4	28	5.60	63.64

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Beloat > AIM

Site ID: B-LF-3 **Date:** 3/16/2017

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea						1.00	4.00	6.00	10.00	3.00	24	159.37
Krameria grayi						1.00		2.00	3.00	1.00	7	46.48
Larrea tridentata	5.00	3.00	5.00	3.00	3.00	3.00	10.00	4.00	4.00	9.00	49	325.37

* Number of decimal places does not imply level of precision

Notes:

B-LF-4

Soil Stability Rank: 5.0

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Beloat > AIM

Site ID: B-LF-4 **Date:** 2/12/2018

Examiner(s):

Cover												
Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	21	21	23	23	14	14	18	20	11	15	180	36.00
Cryptogam	12	8	21	15	13	21	13	13	21	11	148	29.60
Gravel (<3")	7	2	3	9	22	7	18	16	15	17	116	23.20
Ambrosia deltoidea	2										2	0.40
Larrea tridentata	8	19	3	3	1	8	1	1	3	7	54	10.80

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Beloat > AIM

Site ID: B-LF-4 **Date:** 2/12/2018

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	27	34	25	24	14	16	19	20	11	15	205	41.00	41.00
Basal Vegetation	1	2									3	0.60	0.60
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam	12	9	22	15	13	22	13	13	21	12	152	30.40	30.40
Gravel (<3")	9	5	3	11	23	12	18	17	18	23	139	27.80	27.80
Gravel (>3")	1										1	0.20	0.20
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea	2										2	0.40	3.51
Larrea tridentata	8	19	3	3	1	8	1	1	3	7	54	10.80	94.74
Lycium		1									1	0.20	1.75

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Beloat > AIM

Site ID: B-LF-4 **Date:** 2/12/2018

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea	3.00	2.00									5	33.20
Ditaxis neomexicana	20.00	8.00									28	185.93
Larrea tridentata	5.00	7.00	4.00	4.00	4.00	14.00	3.00	3.00	9.00	7.00	60	398.41

* Number of decimal places does not imply level of precision

Notes:

Limy Uplands

B-LU-1

Soil Stability Rank: 3.7

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Beloat > AIM

Site ID: B-LU-1 **Date:** 1/29/2018

Examiner(s):

Cover												
Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	15	8	8	10	16	15	18	12	7	9	118	23.60
Cryptogam	4	6	1	6	7	5	5	10	8	3	55	11.00
Gravel (<3")	27	36	39	28	23	22	19	23	28	33	278	55.60
Gravel (>3")	2		1							2	5	1.00
Krameria grayi								1			1	0.20
Larrea tridentata	2		1	2	4	2	8	4		3	26	5.20
Parkinsonia microphylla				4		6			7		17	3.40

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Beloat > AIM

Site ID: B-LU-1 **Date:** 1/29/2018

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	16	8	9	16	16	19	24	15	11	9	143	28.60	28.60
Basal Vegetation					1		1				2	0.40	0.40
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam	4	6	1	6	7	8	5	11	9	3	60	12.00	12.00
Gravel (<3")	28	36	39	28	26	23	20	24	29	36	289	57.80	57.80
Gravel (>3")	2		1						1	2	6	1.20	1.20
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Krameria grayi								1			1	0.20	2.17
Larrea tridentata	2		1	2	4	4	8	4		3	28	5.60	60.87
Parkinsonia microphylla				4		6			7		17	3.40	36.96

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Beloat > AIM

Site ID: B-LU-1 **Date:** 1/29/2018

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Krameria grayi				2.00			1.00	4.00			7	46.48
Larrea tridentata	5.00		2.00	5.00	8.00	3.00	5.00	3.00	4.00	2.00	37	245.69
Sphaeralcea ambigua								1.00			1	6.64

* Number of decimal places does not imply level of precision

Notes:

B-LU-2

Soil Stability Rank: 4.5

Cover - Top Layer

Site Class: Phoenix District || Sonoran Desert NM || Beloat || AIM

Site ID: B-LU-2 **Date:** 4/6/2017

Examiner(s):

Cover												
Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	17	23	30	29	31	27	25	18	23	24	247	49.40
Cryptogam	5	0	2	10	3	3	5	9	3	0	40	8.00
Gravel (<3")	21	23	11	7	3	5	13	12	18	21	134	26.80
Gravel (>3")	0	2	1	0	0	0	0	1	0	0	4	0.80
Ambrosia deltoidea	2	0	0	0	1	1	0	2	0	0	6	1.20
Hyptis emoryi	0	0	0	0	1	0	0	0	0	0	1	0.20
Krameria grayi	0	0	0	0	0	0	1	0	0	0	1	0.20
Larrea tridentata	5	2	6	4	9	14	4	8	6	5	63	12.60
Lycium	0	0	0	0	0	0	2	0	0	0	2	0.40
Pleuraphis rigida	0	0	0	0	2	0	0	0	0	0	2	0.40

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District || Sonoran Desert NM || Beloat || AIM

Site ID: B-LU-2 **Date:** 4/6/2017

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	22	23	32	31	41	40	28	23	25	28	293	58.60	58.60
Basal Vegetation	0	0	0	0	0	0	0	0	0	1	1	0.20	0.20
Bedrock	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Boulders (>25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Cryptogam	5	0	3	10	4	5	7	9	3	0	46	9.20	9.20
Gravel (<3")	22	25	14	9	5	5	15	17	21	21	154	30.80	30.80
Gravel (>3")	1	2	1	0	0	0	0	1	1	0	6	1.20	1.20
HL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Litter (<0.25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Litter (>0.25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Scat - Livestock	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Stones (>10" - 25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
WL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea	2	0	0	0	1	2	0	2	0	0	7	1.40	9.21
Hyptis emoryi	0	0	0	0	1	0	0	0	0	0	1	0.20	1.32
Krameria grayi	0	0	0	0	0	0	1	0	0	0	1	0.20	1.32
Larrea tridentata	5	2	6	4	9	14	4	8	6	5	63	12.60	82.89
Lycium	0	0	0	0	0	0	2	0	0	0	2	0.40	2.63
Pleuraphis rigida	0	0	0	0	2	0	0	0	0	0	2	0.40	2.63

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Beloat > AIM

Site ID: B-LU-2 **Date:** 4/6/2017

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea	4.00	1.00			1.00	4.00	4.00	1.00	4.00		19	126.16
Krameria grayi	1.00	3.00									4	26.56
Larrea tridentata	4.00	8.00	6.00	7.00	6.00	8.00	8.00	9.00	5.00	4.00	65	431.62
Lycium						1.00	1.00				2	13.28
Pleuraphis rigida					8.00						8	53.12

* Number of decimal places does not imply level of precision

Notes:

B-LU-3

Soil Stability Rank: 4.4

Cover - Top Layer

Site Class: Phoenix District || Sonoran Desert NM || Beloat || AIM

Site ID: B-LU-3 **Date:** 3/7/2017

Examiner(s):

Cover												
Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	7	5	4	8	7	9	10	4	5	5	64	12.80
Cryptogam	1	1	4	2	2	0	1	2	0	3	16	3.20
Gravel (<3")	40	40	35	35	35	30	28	37	43	38	361	72.20
Gravel (>3")	0	1	1	1	1	1	0	1	1	1	8	1.60
Litter (<0.25")	0	0	0	0	0	0	1	0	0	0	1	0.20
Ambrosia deltoidea	0	0	0	1	0	1	1	0	0	0	3	0.60
Krameria grayi	0	0	0	0	5	0	2	0	0	0	7	1.40
Larrea tridentata	2	3	6	1	0	3	7	6	1	3	32	6.40
Lycium	0	0	0	2	0	0	0	0	0	0	2	0.40
Parkinsonia microphylla	0	0	0	0	0	6	0	0	0	0	6	1.20

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District || Sonoran Desert NM || Beloat || AIM

Site ID: B-LU-3 **Date:** 3/7/2017

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	7	6	5	9	8	12	17	5	5	6	80	16.00	16.00
Basal Vegetation	0	0	0	0	0	0	1	0	0	0	1	0.20	0.20
Bedrock	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Boulders (>25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Cryptogam	1	1	5	3	2	1	1	2	0	3	19	3.80	3.80
Gravel (<3")	42	42	39	36	39	36	30	42	44	40	390	78.00	78.00
Gravel (>3")	0	1	1	2	1	1	0	1	1	1	9	1.80	1.80
HL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Litter (<0.25")	0	0	0	0	0	0	1	0	0	0	1	0.20	0.20
Litter (>0.25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Scat - Livestock	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Stones (>10" - 25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
WL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea	0	0	0	1	0	1	1	0	0	0	3	0.60	5.66
Krameria grayi	0	0	0	0	5	0	3	0	0	0	8	1.60	15.09
Larrea tridentata	2	3	6	1	0	3	7	6	1	3	32	6.40	60.38
Lycium	0	0	0	2	0	2	0	0	0	0	4	0.80	7.55
Parkinsonia microphylla	0	0	0	0	0	6	0	0	0	0	6	1.20	11.32

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Beloat > AIM

Site ID: B-LU-3 **Date:** 3/7/2017

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea				2.00	1.00	2.00					5	33.20
Krameria grayi		1.00	2.00	1.00	1.00	1.00	1.00				7	46.48
Larrea tridentata	4.00	3.00	8.00	4.00	4.00	1.00	7.00	6.00	4.00	3.00	44	292.17
Lycium				1.00							1	6.64

* Number of decimal places does not imply level of precision

Notes:

B-LU-4

Soil Stability Rank: 4.5

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Beloat > AIM

Site ID: B-LU-4 **Date:** 2/6/2018

Examiner(s):

Cover												
Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	16	15	20	14	12	6	9	6	16	19	133	26.60
Cryptogam	9	7	8	10	16	2		4	4	7	67	13.40
Gravel (<3")	20	25	14	20	14	40	40	40	27	20	260	52.00
Gravel (>3")				1		2	1				4	0.80
Litter (<0.25")					1						1	0.20
Krameria grayi			2								2	0.40
Larrea tridentata	3	3	6	5	7				3	4	31	6.20
Parkinsonia microphylla	2										2	0.40

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Beloat > AIM

Site ID: B-LU-4 **Date:** 2/6/2018

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	18	17	23	15	16	6	9	6	19	21	150	30.00	30.00
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam	11	7	9	11	16	2		4	4	7	71	14.20	14.20
Gravel (<3")	21	26	18	23	17	40	40	40	27	22	274	54.80	54.80
Gravel (>3")				1		2	1				4	0.80	0.80
HL Attached											0	0.00	0.00
Litter (<0.25")					1						1	0.20	0.20
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Krameria grayi			2								2	0.40	5.71
Larrea tridentata	3	3	6	5	7				3	4	31	6.20	88.57
Parkinsonia microphylla	2										2	0.40	5.71

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Beloat > AIM

Site ID: B-LU-4 **Date:** 2/6/2018

Examiner(s):

Density

Species	Transect (Count)										Density* / ac
	1	2	3	4	5	6	8	9	10	Total	
Krameria grayi									1.00	1	7.38
Larrea tridentata	2.00	2.00	4.00	5.00	3.00	1.00	5.00	3.00	3.00	28	206.59

* Number of decimal places does not imply level of precision

Notes:

Limy Upland Deep

B-LUD-1

Soil Stability Rank: 3.9

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Beloat > AIM

Site ID: B-LUD-1 **Date:** 3/3/2017

Examiner(s):

Cover

Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	10	6	7	19	12	12	14	16	8	21	125	25.00
Cryptogam	5	1	1	2	1	4	3	3	1	3	24	4.80
Gravel (<3")	35	42	37	29	35	25	28	23	28	20	302	60.40
Gravel (>3")					1				1		2	0.40
Acacia greggii										1	1	0.20
Ambrosia deltoidea								1	2	3	6	1.20
Celtis pallida								4			4	0.80
Hymenoclea salsola								1			1	0.20
Larrea tridentata		1	5		1	9	5	2	8		31	6.20
Lycium										2	2	0.40
Parkinsonia florida									2		2	0.40

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Beloat > AIM

Site ID: B-LUD-1 **Date:** 3/3/2017

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	10	6	11	19	13	17	16	23	17	26	158	31.60	31.60
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam	5	1	1	2	1	4	3	3	2	3	25	5.00	5.00
Gravel (<3")	35	43	38	29	35	29	31	24	30	21	315	63.00	63.00
Gravel (>3")					1				1		2	0.40	0.40
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Acacia greggii										3	3	0.60	5.88
Ambrosia deltoidea								1	3	3	7	1.40	13.73
Celtis pallida								4			4	0.80	7.84
Hymenoclea salsola								1			1	0.20	1.96
Larrea tridentata		1	5		1	9	5	2	8		31	6.20	60.78
Lycium									1	2	3	0.60	5.88
Parkinsonia florida									2		2	0.40	3.92

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Beloat > AIM

Site ID: B-LUD-1 **Date:** 3/3/2017

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea				3.00			2.00		3.00	2.00	10	66.40
Celtis pallida								1.00			1	6.64
Larrea tridentata		1.00	6.00	1.00	3.00	7.00	4.00	5.00	4.00	1.00	32	212.49
Lycium							2.00		1.00		3	19.92
Parkinsonia florida									1.00		1	6.64
Unknown 9-Packrat Midden								1.00			1	6.64

* Number of decimal places does not imply level of precision

Notes:

B-LUD-2

Soil Stability Rank: 4.8

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Beloat > AIM

Site ID: B-LUD-2 **Date:** 3/3/2017

Examiner(s):

Cover												
Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	5	4	9	9	4	4	4	5	9	5	58	11.60
Cryptogam	10	6	4	1		2	3	2	2	1	31	6.20
Gravel (<3")	33	37	30	38	45	42	43	37	29	38	372	74.40
Gravel (>3")						1				2	3	0.60
Ambrosia deltoidea									1	1	2	0.40
Larrea tridentata	2	3	7	2	1	1		6	9	3	34	6.80

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Beloat > AIM

Site ID: B-LUD-2 **Date:** 3/3/2017

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	5	6	11	11	5	4	4	10	15	6	77	15.40	15.40
Basal Vegetation			1								1	0.20	0.20
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam	10	6	5	1		2	3	3	5	1	36	7.20	7.20
Gravel (<3")	35	38	33	38	45	43	43	37	30	41	383	76.60	76.60
Gravel (>3")						1				2	3	0.60	0.60
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea									1	1	2	0.40	5.56
Larrea tridentata	2	3	7	2	1	1		6	9	3	34	6.80	94.44

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Beloat > AIM

Site ID: B-LUD-2 **Date:** 3/3/2017

Examiner(s):

Density

Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea			1.00					3.00	2.00	2.00	8	53.12
Larrea tridentata	5.00	8.00	4.00	2.00	4.00	4.00	3.00	3.00	9.00	7.00	49	325.37

* Number of decimal places does not imply level of precision

Notes:

B-LUD-3

Soil Stability Rank: 5.1

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Beloat > AIM

Site ID: B-LUD-3 **Date:** 4/20/2017

Examiner(s):

Cover												
Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	22	19	25	18	12	25	16	23	21	21	202	40.40
Cryptogam		1	1	6		4	2	4	2	2	22	4.40
Gravel (<3")	17	25	19	19	21	16	26	18	23	23	207	41.40
Gravel (>3")	8	4	2	3	4		2	2		1	26	5.20
Krameria grayi				1							1	0.20
Larrea tridentata	3	1	3	3	10	5	4	3	4	3	39	7.80
Olneya tesota					3						3	0.60

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Beloat > AIM

Site ID: B-LUD-3 **Date:** 4/20/2017

Examiner(s):

Surface Cover													
Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	25	19	27	22	24	29	18	24	23	23	234	46.80	46.80
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam		1	1	6	1	5	2	4	2	2	24	4.80	4.80
Gravel (<3")	17	26	20	19	21	16	28	20	25	24	216	43.20	43.20
Gravel (>3")	8	4	2	3	4		2	2		1	26	5.20	5.20
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover													
Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Krameria grayi				1							1	0.20	2.33
Larrea tridentata	3	1	3	3	10	5	4	3	4	3	39	7.80	90.70
Olneya tesota					3						3	0.60	6.98

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Beloat > AIM

Site ID: B-LUD-3 **Date:** 4/20/2017

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ferocactus wislizeni					1.00						1	6.64
Krameria grayi		1.00		2.00	2.00						5	33.20
Larrea tridentata	9.00	5.00	5.00	6.00	7.00	3.00	5.00	9.00	5.00	3.00	57	378.49
Lycium					1.00						1	6.64
Olneya tesota					1.00						1	6.64

* Number of decimal places does not imply level of precision

Notes:

B-LUD-4

Soil Stability Rank: 4.1

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Beloat > AIM

Site ID: B-LUD-4 **Date:** 2/12/2018

Examiner(s):

Cover												
Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	28	25	33	28	20	23	27	19	29	25	257	51.40
Cryptogam	4	16	6	6	19	8	8	7	1	4	79	15.80
Gravel (<3")	14	7	8	14	9	15	15	20	19	19	140	28.00
Larrea tridentata	4	2	3	2	2	4		4	1	2	24	4.80

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Beloat > AIM

Site ID: B-LUD-4 **Date:** 2/12/2018

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	32	26	34	29	21	26	27	22	29	27	273	54.60	54.60
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam	4	16	8	6	19	8	8	7	1	4	81	16.20	16.20
Gravel (<3")	14	8	8	15	10	16	15	21	20	19	146	29.20	29.20
Gravel (>3")											0	0.00	0.00
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Larrea tridentata	4	2	3	2	2	4		4	1	2	24	4.80	100.00

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Beloat > AIM

Site ID: B-LUD-4 **Date:** 2/12/2018

Examiner(s):

Density

Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Larrea tridentata	9.00	5.00	7.00	7.00	7.00	9.00	6.00	5.00	8.00	6.00	69	458.18

* Number of decimal places does not imply level of precision

Notes:

Sandy Bottom

B-SB-1

Soil Stability Rank: 5.0

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Beloat > AIM

Site ID: B-SB-1 **Date:** 3/7/2017

Examiner(s):

Cover

Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	11	13	4	5	12	14	19	7	11	11	107	21.40
Cryptogam	2	1				4	5		2		14	2.80
Gravel (<3")	22	31	21	22	29	12	17	28	27	13	222	44.40
Ambrosia deltoidea	1		3								4	0.80
Encelia farinosa				1							1	0.20
Larrea tridentata	12	3	11	14	5	14	1	8	1	8	77	15.40
Lycium	2	2	5	5	4	6	8	1	7	7	47	9.40
Parkinsonia microphylla			6	3				6	2	11	28	5.60

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Beloat > AIM

Site ID: B-SB-1 **Date:** 3/7/2017

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	18	16	22	18	19	28	24	14	17	21	197	39.40	39.40
Basal Vegetation										1	1	0.20	0.20
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam	3	1				4	7	1	3	1	20	4.00	4.00
Gravel (<3")	29	33	28	32	31	18	19	35	30	27	282	56.40	56.40
Gravel (>3")											0	0.00	0.00
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea	1		4					1			6	1.20	3.53
Encelia farinosa				1							1	0.20	0.59
Larrea tridentata	12	3	11	14	5	14	1	8	1	9	78	15.60	45.88
Lycium	3	2	7	5	4	6	8	1	7	9	52	10.40	30.59
Olneya tesota			1								1	0.20	0.59
Parkinsonia microphylla			6	3				6	2	11	28	5.60	16.47
Trixis californica			4								4	0.80	2.35

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Beloat > AIM

Site ID: B-SB-1 **Date:** 3/7/2017

Examiner(s):

Density

Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea	3.00	2.00	2.00	1.00	1.00	1.00	1.00	3.00			14	92.96
Encelia farinosa			3.00	2.00	12.00		1.00	8.00		8.00	34	225.77
Larrea tridentata	4.00		3.00	2.00	4.00	3.00		2.00	1.00	6.00	25	166.01
Lycium	1.00		3.00	1.00	3.00	4.00	6.00	1.00	4.00	1.00	24	159.37
Parkinsonia microphylla			1.00								1	6.64
Trixis californica			5.00								5	33.20
Unknown 9-Packrat Midden									1.00		1	6.64

* Number of decimal places does not imply level of precision

Notes:

B-SB-2

Soil Stability Rank: 4.1

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Beloat > AIM

Site ID: B-SB-2 **Date:** 4/20/2017

Examiner(s):

Cover

Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	14	17	10	13	9	8	18	13	24	23	149	29.80
Cryptogam			1				1		1		3	0.60
Gravel (<3")	12	19	9	13	6	8	9	10	12	8	106	21.20
Gravel (>3")	13	7	6	14	12	4	5	8	5	1	75	15.00
Ambrosia deltoidea						2					2	0.40
Encelia farinosa				1			2		4		7	1.40
Hymenoclea salsola					2						2	0.40
Justicia californica					2						2	0.40
Larrea tridentata	6			1	3	1	3	3	2		19	3.80
Lycium		7	10			2	1	1			21	4.20
Olneya tesota			6					8		9	23	4.60
Parkinsonia microphylla	5		8	8	16	25	11	7	2	9	91	18.20

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Beloat > AIM

Site ID: B-SB-2 **Date:** 4/20/2017

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	21	20	19	18	24	26	28	24	31	40	251	50.20	50.20
Basal Vegetation	1										1	0.20	0.20
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam			1			1	1	1	2		6	1.20	1.20
Gravel (<3")	13	22	19	18	10	15	13	14	12	8	144	28.80	28.80
Gravel (>3")	15	8	11	14	15	8	8	11	5	2	97	19.40	19.40
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")					1						1	0.20	0.20
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea						2				1	3	0.60	1.66
Encelia farinosa				1		1	4		4		10	2.00	5.52
Hymenoclea salsola	1				2						3	0.60	1.66
Justicia californica				3	2						5	1.00	2.76
Larrea tridentata	6			1	3	2	3	3	2		20	4.00	11.05
Lycium		7	12			3	1	1			24	4.80	13.26
Lyrocarpa coulteri	1										1	0.20	0.55
Olneya tesota			6					8		9	23	4.60	12.71
Parkinsonia microphylla	5		8	8	16	25	11	7	2	9	91	18.20	50.28
Tridax accedens					1						1	0.20	0.55

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Beloat > AIM

Site ID: B-SB-2 **Date:** 4/20/2017

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea										2.00	2	13.28
Ambrosia dumosa								1.00			1	6.64
Cylindropuntia acanthocarpa var. major		3.00						1.00			4	26.56
Ditaxis neomexicana					1.00						1	6.64
Encelia farinosa		1.00	8.00	2.00	3.00	4.00	6.00	4.00	5.00	2.00	35	232.41
Hymenoclea salsola	1.00				1.00				2.00		4	26.56
Justicia californica				1.00	3.00		1.00	2.00		2.00	9	59.76
Larrea tridentata	1.00	2.00		1.00	1.00	3.00	2.00		1.00	2.00	13	86.32
Lycium	1.00	1.00	9.00				1.00	2.00			14	92.96
Lyrocarpa coulteri	1.00										1	6.64
Olneya tesota									1.00		1	6.64
Parkinsonia microphylla	1.00		1.00		1.00	1.00	1.00				5	33.20

* Number of decimal places does not imply level of precision

Notes:

B-SB-3

Soil Stability Rank: 3.7

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Beloat > AIM

Site ID: B-SB-3 **Date:** 3/10/2017

Examiner(s):

Cover

Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	17	12	22	22	30	12	16	20	25	24	200	40.00
Cryptogam				1				1			2	0.40
Gravel (<3")	17	11	10	5	8	11	13	8	9	5	97	19.40
Gravel (>3")	1		1	1							3	0.60
Scat - Livestock								1			1	0.20
Acacia greggii						9		5		4	18	3.60
Ambrosia dumosa	2	2									4	0.80
Cylindropuntia acanthocarpa var. major	1										1	0.20
Cylindropuntia ramosissima							1				1	0.20
Hymenoclea salsola	2		2						2	1	7	1.40
Larrea tridentata	4	1	4		6	7	8		10	1	41	8.20
Lycium				6			4	5	4	4	23	4.60
Olneya tesota	5		11					10		11	37	7.40
Parkinsonia microphylla	1	24		15	6	11	8				65	13.00

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Conley > AIM

Site ID: C-SB-3 **Date:** 10/4/2017

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	13	5	10	11	14	7	10	9	11	12	102	20.40	20.40
Basal Vegetation		1									1	0.20	0.20
Bedrock	1	6	2	1						7	17	3.40	3.40
Boulders (>25")											0	0.00	0.00
Cryptogam		4		4		1	1	1	2	2	15	3.00	3.00
Gravel (<3")	35	31	32	31	33	39	39	37	37	29	343	68.60	68.60
Gravel (>3")	1	2	3	3	2	1		3			15	3.00	3.00
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")		1									1	0.20	0.20
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")			3		1	2					6	1.20	1.20
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Acacia constricta		7	3					1			11	2.20	6.55
Ambrosia deltoidea	2	1	2					2	2	2	11	2.20	6.55
Carnegiea gigantea					1						1	0.20	0.60
Hymenoclea salsola			1								1	0.20	0.60
Krameria grayi					3	3					6	1.20	3.57
Larrea tridentata	10	4	1	7		2	8	4	1		37	7.40	22.02
Lycium			2					4	1	1	8	1.60	4.76
Olneya tesota		5	14		4		2		8	6	39	7.80	23.21
Parkinsonia microphylla	11			2	7	7	4	3	3	17	54	10.80	32.14

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Beloat > AIM

Site ID: B-SB-3 **Date:** 3/10/2017

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Acacia greggii						2.00		1.00		1.00	4	26.56
Adenophyllum porophylloides										1.00	1	6.64
Ambrosia ambrosioides						1.00					1	6.64
Ambrosia dumosa	3.00	4.00	1.00								8	53.12
Baccharis sarothroides					1.00						1	6.64
Carnegiea gigantea		1.00									1	6.64
Cylindropuntia acanthocarpa var. major	2.00										2	13.28
Encelia farinosa		1.00		1.00		1.00	2.00	1.00	1.00	1.00	8	53.12
Hyptis emoryi					2.00		3.00			2.00	7	46.48
Hymenoclea salsola	1.00	2.00	2.00		2.00				1.00	6.00	14	92.96
Larrea tridentata	1.00	1.00	2.00		1.00		2.00	1.00	4.00		12	79.68
Lycium			2.00	3.00		1.00	4.00	4.00			14	92.96
Olneya tesota			2.00					1.00			3	19.92
Parkinsonia microphylla		2.00		1.00		1.00	1.00				5	33.20
Sphaeralcea					1.00	1.00	3.00				5	33.20

* Number of decimal places does not imply level of precision

Notes:

B-SB-4

Soil Stability Rank: 3.1

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Beloat > AIM

Site ID: B-SB-4 **Date:** 2/14/2018

Examiner(s):

Cover

Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	36	30	28	24	41	30	22	24	15	28	278	55.60
Cryptogam			1								1	0.20
Gravel (<3")	2	4	13	8	3	8	8	13	7	6	72	14.40
Larrea tridentata	7	3		1		5			10		26	5.20
Lycium		1	2	3		7	9	7	6	1	36	7.20
Olneya tesota	2			7	6		11	3		15	44	8.80
Parkinsonia florida				7							7	1.40
Prosopis velutina	3	12	6					3	12		36	7.20

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Beloat > AIM

Site ID: B-SB-4 **Date:** 2/14/2018

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	48	45	36	40	46	42	40	37	43	42	419	83.80	83.80
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam			1								1	0.20	0.20
Gravel (<3")	2	5	13	10	4	8	10	13	7	8	80	16.00	16.00
Gravel (>3")											0	0.00	0.00
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover													
Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Larrea tridentata	7	3		1		5			10		26	5.20	16.25
Lycium		5	2	3	1	7	11	7	10	1	47	9.40	29.38
Olneya tesota	2			7	6		11	3		15	44	8.80	27.50
Parkinsonia florida				7							7	1.40	4.38
Prosopis velutina	3	12	6					3	12		36	7.20	22.50

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Beloat > AIM

Site ID: B-SB-4 **Date:** 2/14/2018

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Hymenoclea salsola				1.00					1.00		2	13.28
Larrea tridentata	5.00	2.00	1.00	3.00	1.00	1.00		2.00	1.00		16	106.24
Lycium		1.00		2.00		4.00	6.00	6.00	8.00	4.00	31	205.85
Olneya tesota							1.00				1	6.64
Pleuraphis rigida			1.00			2.00					3	19.92

* Number of decimal places does not imply level of precision

Notes:

Sandy Loam Deep

B-SLD-1

Soil Stability Rank: 2.4

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Beloat > AIM

Site ID: B-SLD-1 **Date:** 2/8/2018

Examiner(s):

Cover												
Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	47	48	47	46	37	46	43	47	41	42	444	88.80
Cryptogam		1	1	2	1	2					7	1.40
Gravel (<3")	1	1	2		2	1	3	2	2	5	19	3.80
Larrea tridentata	2			2	2		3		5		14	2.80
Lycium						1				3	4	0.80
Parkinsonia microphylla					8						8	1.60
Pleuraphis rigida							1	1	2		4	0.80

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Beloat > AIM

Site ID: B-SLD-1 **Date:** 2/8/2018

Examiner(s):

Surface Cover													
Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	49	48	47	48	47	47	47	48	48	43	472	94.40	94.40
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam		1	1	2	1	2				1	8	1.60	1.60
Gravel (<3")	1	1	2		2	1	3	2	2	6	20	4.00	4.00
Gravel (>3")											0	0.00	0.00
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover													
Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Larrea tridentata	2			2	2		3		5		14	2.80	46.67
Lycium						1				3	4	0.80	13.33
Parkinsonia microphylla					8						8	1.60	26.67
Pleuraphis rigida							1	1	2		4	0.80	13.33

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Beloat > AIM

Site ID: B-SLD-1 **Date:** 2/8/2018

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea	1.00		1.00								2	13.28
Ambrosia dumosa			1.00			1.00		1.00	1.00	1.00	5	33.20
Larrea tridentata	3.00	1.00		3.00	3.00		2.00	1.00	2.00	1.00	16	106.24
Parkinsonia microphylla					1.00						1	6.64
Pleuraphis rigida	2.00	1.00	1.00	2.00	8.00	2.00	7.00	11.00	10.00	1.00	45	298.81

* Number of decimal places does not imply level of precision

Notes:

B-SLD-2

Soil Stability Rank: 3.1

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Beloat > AIM

Site ID: B-SLD-2 **Date:** 2/8/2018

Examiner(s):

Cover

Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	38	39	41	25	34	35	26	35	38	27	338	67.60
Cryptogam	1	1	5	1	1	4	3	2	1		19	3.80
Gravel (<3")	8	4	3	3	6	4	4	5	6	3	46	9.20
Acacia greggii								4			4	0.80
Ambrosia deltoidea						1					1	0.20
Ambrosia dumosa								1	2	4	7	1.40
Cylindropuntia acanthocarpa var. major					3	2	2	1		4	12	2.40
Hymenoclea salsola		5	1				5				11	2.20
Larrea tridentata	2	1		3						5	11	2.20
Lycium					5						5	1.00
Olneya tesota				13			10		2		25	5.00
Pleuraphis rigida	1			5	1	4		2	1	7	21	4.20

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Beloat > AIM

Site ID: B-SLD-2 **Date:** 2/8/2018

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	41	44	41	44	41	40	43	43	43	42	422	84.40	84.40
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam	1	2	5	1	2	4	3	2	1	2	23	4.60	4.60
Gravel (<3")	8	4	4	5	7	6	4	5	6	6	55	11.00	11.00
Gravel (>3")											0	0.00	0.00
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Acacia greggii								4			4	0.80	3.92
Ambrosia deltoidea						1					1	0.20	0.98
Ambrosia dumosa								1	2	4	7	1.40	6.86
Cylindropuntia acanthocarpa var. major					3	2	2	1		4	12	2.40	11.76
Funastrum cynanchoides - Milkweed				1							1	0.20	0.98
Hymenoclea salsola		5	1	1			5				12	2.40	11.76
Larrea tridentata	2	1		3						5	11	2.20	10.78
Lycium				2	5						7	1.40	6.86
Olneya tesota				13			10		2		25	5.00	24.51
Pleuraphis rigida	1			5	1	4		3	1	7	22	4.40	21.57

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Beloat > AIM

Site ID: B-SLD-2 **Date:** 2/8/2018

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Acacia greggii			1.00		1.00			2.00			4	26.56
Ambrosia deltoidea	4.00	2.00	2.00		2.00						10	66.40
Ambrosia dumosa					1.00			3.00	5.00	10.00	19	126.16
Carnegiea gigantea		1.00									1	6.64
Cylindropuntia acanthocarpa var. major		1.00			1.00	2.00	2.00	1.00		7.00	14	92.96
Ferocactus wislizeni						1.00					1	6.64
Funastrum cynanchoides-Milkweed				1.00							1	6.64
Hymenoclea salsola	1.00	2.00	1.00		1.00		3.00				8	53.12
Larrea tridentata	1.00	2.00		1.00				1.00		3.00	8	53.12
Lycium				5.00	8.00	2.00		1.00			16	106.24
Olneya tesota				1.00			1.00				2	13.28
Pleuraphis rigida		3.00	3.00	5.00	4.00	8.00	5.00	14.00	13.00	12.00	67	444.90
Unknown 9-Packrat Midden			1.00								1	6.64

* Number of decimal places does not imply level of precision

Notes:

B-SLD-3

Soil Stability Rank: 1.7

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Beloat > AIM

Site ID: B-SLD-3 **Date:** 2/8/2018

Examiner(s):

Cover												
Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	36	36	35	30	33	41	32	35	28	38	344	68.80
Cryptogam		5	1				1		1		8	1.60
Gravel (<3")	4	5	9	4	11	1	11	4	9	7	65	13.00
Gravel (>3")		1									1	0.20
Ambrosia deltoidea		1						2			3	0.60
Ambrosia dumosa	5	1	2		2	5		8			23	4.60
Krameria grayi						1					1	0.20
Larrea tridentata	5	1	3	3	4		4	1		1	22	4.40
Parkinsonia microphylla				11					12	2	25	5.00
Pleuraphis rigida				2		2	2			2	8	1.60

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Beloat > AIM

Site ID: B-SLD-3 **Date:** 2/8/2018

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	46	37	40	45	39	49	37	46	40	42	421	84.20	84.20
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam		5	1	1			1		1		9	1.80	1.80
Gravel (<3")	4	7	9	4	11	1	12	4	9	8	69	13.80	13.80
Gravel (>3")		1									1	0.20	0.20
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea		1						2			3	0.60	3.61
Ambrosia dumosa	5	1	2		2	5		8			23	4.60	27.71
Krameria grayi						1					1	0.20	1.20
Larrea tridentata	5	1	3	3	4		4	1		1	22	4.40	26.51
Parkinsonia microphylla				11					12	2	25	5.00	30.12
Pleuraphis rigida				2		2	2			3	9	1.80	10.84

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Beloat > AIM

Site ID: B-SLD-3 **Date:** 2/8/2018

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea	1.00	2.00	1.00	2.00			1.00		1.00	1.00	9	59.76
Ambrosia dumosa	3.00	1.00	5.00	1.00	4.00	5.00	2.00	12.00	2.00	5.00	40	265.61
Echinocereus engelmannii			1.00								1	6.64
Ferocactus wislizeni										1.00	1	6.64
Larrea tridentata	3.00	2.00	1.00	2.00	4.00	3.00	4.00	2.00	1.00	3.00	25	166.01
Parkinsonia microphylla									1.00	1.00	2	13.28
Pleuraphis rigida	3.00					1.00	1.00	1.00		7.00	13	86.32
Ziziphus obtusifolia									1.00		1	6.64

* Number of decimal places does not imply level of precision

Notes:

B-SLD-4

Soil Stability Rank: 3.6

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Beloat > AIM

Site ID: B-SLD-4 **Date:** 2/12/2018

Examiner(s):

Cover												
Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	32	26	22	24	18	22	27	14	24	25	234	46.80
Cryptogam	7	5	5	1	1	3	5	3	1		31	6.20
Gravel (<3")	8	5	15	22	23	18	7	29	18	14	159	31.80
Ambrosia deltoidea	2	1								1	4	0.80
Larrea tridentata	1	13	8	3	8	7	11	4	7	10	72	14.40

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Beloat > AIM

Site ID: B-SLD-4 **Date:** 2/12/2018

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	35	38	27	26	22	28	34	14	27	29	280	56.00	56.00
Basal Vegetation				1	1						2	0.40	0.40
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam	7	5	6	1	1	3	5	5	1	1	35	7.00	7.00
Gravel (<3")	8	7	17	22	26	19	11	31	22	20	183	36.60	36.60
Gravel (>3")											0	0.00	0.00
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea	2	1								1	4	0.80	5.26
Larrea tridentata	1	13	8	3	8	7	11	4	7	10	72	14.40	94.74

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Beloat > AIM

Site ID: B-SLD-4 **Date:** 2/12/2018

Examiner(s):

Density

Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea	2.00	1.00		1.00		1.00	1.00			1.00	7	46.48
Larrea tridentata	6.00	5.00	4.00	2.00	7.00	8.00	8.00	4.00	5.00	7.00	56	371.85

* Number of decimal places does not imply level of precision

Notes:

Sandy Loam Upland

B-SLU-1

Soil Stability Rank: 4.2

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Beloat > AIM

Site ID: B-SLU-1 **Date:** 2/8/2018

Examiner(s):

Cover

Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	49	44	44	44	46	49	44	40	31	29	420	84.00
Cryptogam				1	1						2	0.40
Gravel (<3")			1	1							2	0.40
Ambrosia deltoidea	1					1			1		3	0.60
Larrea tridentata		6	5	4	3		5	7	9	3	42	8.40
Lycium								2		1	3	0.60
Olneya tesota									9	17	26	5.20
Parkinsonia microphylla							1				1	0.20
Pleuraphis rigida								1			1	0.20

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Beloat > AIM

Site ID: B-SLU-1 **Date:** 2/8/2018

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	50	50	49	48	49	50	50	47	49	49	491	98.20	98.20
Basal Vegetation									1	1	2	0.40	0.40
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam				1	1						2	0.40	0.40
Gravel (<3")			1	1							2	0.40	0.40
Gravel (>3")											0	0.00	0.00
HL Attached											0	0.00	0.00
Litter (<0.25")								3			3	0.60	0.60
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea	1					1	1		2		5	1.00	6.25
Larrea tridentata		6	5	4	3		5	7	9	3	42	8.40	52.50
Lycium								2		1	3	0.60	3.75
Olneya tesota							1		9	17	27	5.40	33.75
Parkinsonia microphylla							1				1	0.20	1.25
Pleuraphis rigida							1	1			2	0.40	2.50

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Beloat > AIM

Site ID: B-SLU-1 **Date:** 2/8/2018

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea	2.00		1.00		1.00	3.00	2.00	2.00	2.00		13	86.32
Cylindropuntia acanthocarpa var. major								1.00			1	6.64
Ferocactus wislizeni								1.00			1	6.64
Larrea tridentata		7.00	4.00	4.00	9.00	2.00	7.00	5.00	6.00	2.00	46	305.45
Lycium								3.00		1.00	4	26.56
Olneya tesota									1.00	3.00	4	26.56
Pleuraphis rigida		3.00					5.00	4.00	3.00		15	99.60

* Number of decimal places does not imply level of precision

Notes:

B-SLU-2

Soil Stability Rank: 3.9

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Beloat > AIM

Site ID: B-SLU-2 **Date:** 2/20/2018

Examiner(s):

Cover												
Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	34	17	29	38	23	26	21	26	23	29	266	53.20
Cryptogam	6	22	12	5	22	18	14	8	17	15	139	27.80
Gravel (<3")		4	3			4	2	2	6	3	24	4.80
Ambrosia dumosa		2									2	0.40
Larrea tridentata	9	3	6	7	5	2	13	11	4	3	63	12.60
Pleuraphis rigida	1	2									3	0.60
Prosopis velutina								3			3	0.60

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Beloat > AIM

Site ID: B-SLU-2 **Date:** 2/20/2018

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	42	22	35	45	25	28	33	38	25	31	324	64.80	64.80
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam	8	24	12	5	25	18	15	10	18	16	151	30.20	30.20
Gravel (<3")		4	3			4	2	2	7	3	25	5.00	5.00
Gravel (>3")											0	0.00	0.00
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia dumosa		2									2	0.40	2.82
Larrea tridentata	9	3	6	7	5	2	13	11	4	3	63	12.60	88.73
Pleuraphis rigida	1	2									3	0.60	4.23
Prosopis velutina								3			3	0.60	4.23

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Beloat > AIM

Site ID: B-SLU-2 **Date:** 2/20/2018

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea	1.00										1	6.64
Ambrosia dumosa	3.00	4.00						1.00			8	53.12
Larrea tridentata	6.00	2.00	2.00	2.00	5.00	3.00	4.00	2.00	2.00	4.00	32	212.49
Pleuraphis rigida	1.00	7.00									8	53.12

* Number of decimal places does not imply level of precision

Notes:

B-SLU-3

Soil Stability Rank: 4..6

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Beloat > AIM

Site ID: B-SLU-3 **Date:** 2/12/2018

Examiner(s):

Cover												
Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	34	40	41	29	38	38	23	28	27	27	325	65.00
Cryptogam	4	1	2	11	6	8	9	13	16	21	91	18.20
Gravel (<3")	4	1	2	1	3						11	2.20
Ferocactus wislizeni					1						1	0.20
Larrea tridentata	8	8	5	9	2	4	18	9	7	2	72	14.40

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Beloat > AIM

Site ID: B-SLU-3 **Date:** 2/12/2018

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	42	48	46	36	41	41	41	36	32	28	391	78.20	78.20
Basal Vegetation				1							1	0.20	0.20
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam	4	1	2	12	6	9	9	14	17	22	96	19.20	19.20
Gravel (<3")	4	1	2	1	3				1		12	2.40	2.40
Gravel (>3")											0	0.00	0.00
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ferocactus wislizeni					1						1	0.20	1.37
Larrea tridentata	8	8	5	9	2	4	18	9	7	2	72	14.40	98.63

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Beloat > AIM

Site ID: B-SLU-3 **Date:** 2/12/2018

Examiner(s):

Density

Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia dumosa	1.00										1	6.64
Larrea tridentata	3.00	4.00	5.00	5.00	4.00	4.00	9.00	5.00	7.00	4.00	50	332.01

* Number of decimal places does not imply level of precision

Notes:

B-SLU-4

Soil Stability Rank: 4.1

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Beloat > AIM

Site ID: B-SLU-4 **Date:** 2/20/2018

Examiner(s):

Cover												
Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	23	38	31	30	37	35	33	31	28	26	312	62.40
Cryptogam	18	4	14	12	9	11	9	9	6	12	104	20.80
Gravel (<3")		2	3	6	2	1	4	6	12	11	47	9.40
Gravel (>3")	1	1									2	0.40
Ambrosia dumosa	1	4		1			1				7	1.40
Encelia farinosa			1								1	0.20
Larrea tridentata	7	1	1	1	2	3	3	4	4	1	27	5.40

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Beloat > AIM

Site ID: B-SLU-4 **Date:** 2/20/2018

Examiner(s):

Surface Cover													
Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	28	43	33	32	39	38	37	34	30	26	340	68.00	68.00
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam	21	4	14	12	9	11	9	9	6	13	108	21.60	21.60
Gravel (<3")		2	3	6	2	1	4	7	14	11	50	10.00	10.00
Gravel (>3")	1	1									2	0.40	0.40
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover													
Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia dumosa	1	4		1			1				7	1.40	20.00
Encelia farinosa			1								1	0.20	2.86
Larrea tridentata	7	1	1	1	2	3	3	4	4	1	27	5.40	77.14

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Beloat > AIM

Site ID: B-SLU-4 **Date:** 2/20/2018

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia dumosa		7.00	2.00	1.00	2.00	2.00	1.00	1.00			16	106.24
Larrea tridentata	2.00	2.00	6.00	4.00	6.00	6.00	3.00	6.00	2.00	2.00	39	258.97
Pleuraphis rigida	1.00				4.00						5	33.20

* Number of decimal places does not imply level of precision

Notes:

B-SLU-5

Soil Stability Rank: 3.4

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Beloat > AIM

Site ID: B-SLU-5 **Date:** 6/28/2018

Examiner(s):

Cover												
Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	15	12	6	26	14	30	16	14	26	16	175	35.00
Cryptogam	1	1	3	1		2	1	3		2	14	2.80
Gravel (<3")	22	22	32	19	28	10	19	29	15	28	224	44.80
Ambrosia deltoidea		4					1			1	6	1.20
Larrea tridentata	12	11	9	4	8	3	6	4	9	3	69	13.80
Parkinsonia florida						5	7				12	2.40

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Beloat > AIM

Site ID: B-SLU-5 **Date:** 6/28/2018

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	23	23	8	29	21	36	26	17	30	18	231	46.20	46.20
Basal Vegetation		1									1	0.20	0.20
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam	2	1	3	1		3	1	3	1	2	17	3.40	3.40
Gravel (<3")	25	25	39	20	29	11	23	30	19	30	251	50.20	50.20
Gravel (>3")											0	0.00	0.00
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea		4					2			1	7	1.40	7.53
Larrea tridentata	12	11	9	4	8	7	7	4	9	3	74	14.80	79.57
Parkinsonia florida						5	7				12	2.40	12.90

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Beloat > AIM

Site ID: B-SLU-5 **Date:** 6/28/2018

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea	7.00	6.00	3.00	1.00	1.00		2.00			3.00	23	152.73
Krameria grayi	1.00										1	6.64
Larrea tridentata	4.00	6.00	6.00	4.00	7.00	7.00	11.00	2.00	8.00	3.00	58	385.13

* Number of decimal places does not imply level of precision

Notes:

Bighorn Allotment

Limy Fan

BH-LF-1

Soil Stability Rank: 4.5

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Bighorn > aim

Site ID: BH-LF-1 **Date:** 9/13/2017

Examiner(s):

Cover												
Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	9	6	3	6	10	7	17	22	15	13	108	21.60
Cryptogam	3	9	9	2	7	4	1	5	2	3	45	9.00
Gravel (<3")	32	32	37	39	31	30	27	23	23	19	293	58.60
Ambrosia deltoidea						2					2	0.40
Larrea tridentata	6	3	1	3	2	7	5		10	4	41	8.20
Olneya tesota										11	11	2.20

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Bighorn > aim

Site ID: BH-LF-1 **Date:** 9/13/2017

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	11	6	3	7	10	9	18	22	22	27	135	27.00	27.00
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam	3	9	9	3	7	6	1	5	2	3	48	9.60	9.60
Gravel (<3")	36	35	38	40	33	35	31	23	26	20	317	63.40	63.40
Gravel (>3")											0	0.00	0.00
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea						2					2	0.40	3.70
Larrea tridentata	6	3	1	3	2	7	5		10	4	41	8.20	75.93
Olneya tesota										11	11	2.20	20.37

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Bighorn > aim

Site ID: BH-LF-1 **Date:** 9/13/2017

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea		1.00				2.00	2.00	1.00	1.00	1.00	8	53.12
Krameria grayi								3.00	1.00		4	26.56
Larrea tridentata	9.00	8.00	3.00	7.00	5.00	7.00	7.00	2.00	7.00	6.00	61	405.05
Olneya tesota										1.00	1	6.64

* Number of decimal places does not imply level of precision

Notes:

BH-LF-2

Soil Stability Rank: 4.0

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Bighorn > aim

Site ID: BH-LF-2 **Date:** 9/28/2017

Examiner(s):

Cover												
Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	7	12	13	13	9	9	17	16	16	10	122	24.40
Cryptogam	5	5	3	8	2	8	1	3	4	6	45	9.00
Gravel (<3")	34	24	26	7	25	22	16	26	26	30	236	47.20
Gravel (>3")	1										1	0.20
Litter (<0.25")						1					1	0.20
Ambrosia deltoidea			2			2					4	0.80
Krameria grayi	2		1	4	5		6				18	3.60
Larrea tridentata	1	9	5	18	9	8	10	5	4	4	73	14.60

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Bighorn > aim

Site ID: BH-LF-2 **Date:** 9/28/2017

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	8	17	19	30	18	19	32	20	16	13	192	38.40	38.40
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam	5	6	3	9	5	8	1	3	4	6	50	10.00	10.00
Gravel (<3")	36	26	28	11	27	22	17	27	30	31	255	51.00	51.00
Gravel (>3")	1										1	0.20	0.20
HL Attached											0	0.00	0.00
Litter (<0.25")						1					1	0.20	0.20
Litter (>0.25")											0	0.00	0.00
Scat - Livestock		1									1	0.20	0.20
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea			2			2					4	0.80	4.17
Krameria grayi	2	1	1	4	5		6				19	3.80	19.79
Larrea tridentata	1	9	5	18	9	8	10	5	4	4	73	14.60	76.04

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Bighorn > aim

Site ID: BH-LF-2 **Date:** 9/28/2017

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea			2.00		1.00	2.00	2.00				7	46.48
Cylindropuntia leptocaulis			1.00								1	6.64
Krameria grayi	1.00		3.00	4.00	3.00	1.00	5.00	2.00			19	126.16
Larrea tridentata	4.00	6.00	5.00	7.00	7.00	3.00	7.00	6.00	6.00	6.00	57	378.49
Parkinsonia microphylla							1.00				1	6.64

* Number of decimal places does not imply level of precision

Notes:

BH-LF-3

Soil Stability Rank: 5.1

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Bighorn > aim

Site ID: BH-LF-3 **Date:** 9/19/2017

Examiner(s):

Cover												
Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	6	7	4	2	3	3	1	3	3	8	40	8.00
Cryptogam	10	11	10	10	13	17	16	12	17	17	133	26.60
Gravel (<3")	25	23	36	37	31	25	33	34	28	18	290	58.00
Larrea tridentata	9	9		1	3	5		1	2	7	37	7.40

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Bighorn > aim

Site ID: BH-LF-3 **Date:** 9/19/2017

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	11	11	4	2	3	3	1	3	3	11	52	10.40	10.40
Basal Vegetation	1										1	0.20	0.20
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam	11	11	10	10	13	18	16	12	18	17	136	27.20	27.20
Gravel (<3")	27	28	36	38	34	29	33	35	29	21	310	62.00	62.00
Gravel (>3")											0	0.00	0.00
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")										1	1	0.20	0.20
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Larrea tridentata	9	9		1	3	5		1	2	7	37	7.40	100.00

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Bighorn > aim

Site ID: BH-LF-3 **Date:** 9/19/2017

Examiner(s):

Density

Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea	1.00										1	6.64
Larrea tridentata	4.00	4.00	2.00	3.00	2.00	3.00		2.00	1.00	3.00	24	159.37

* Number of decimal places does not imply level of precision

Notes:

Limy Upland

BH-LU-1

Soil Stability Rank: 4.7

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Bighorn > aim

Site ID: BH-LU-1 **Date:** 9/21/2017

Examiner(s):

Cover

Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	2	2	1	3	1	2	1	5	2	3	22	4.40
Cryptogam		3		2	4	2	2	3	3		19	3.80
Gravel (<3")	41	41	38	36	32	42	43	39	38	42	392	78.40
Gravel (>3")		1						1	1	1	4	0.80
Ambrosia deltoidea	2	2	2	3	2	1	1	2	2		17	3.40
Carnegiea gigantea	1										1	0.20
Krameria grayi			1	2					2		5	1.00
Larrea tridentata	4	1			4	3	3		2	4	21	4.20
Olneya tesota			1		7						8	1.60
Parkinsonia microphylla			7	4							11	2.20

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Bighorn > aim

Site ID: BH-LU-1 **Date:** 9/21/2017

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	3	3	8	6	4	2	1	5	4	4	40	8.00	8.00
Basal Vegetation	1										1	0.20	0.20
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam		3		4	8	4	2	3	5		29	5.80	5.80
Gravel (<3")	46	43	42	40	37	44	47	41	40	45	425	85.00	85.00
Gravel (>3")		1			1			1	1	1	5	1.00	1.00
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea	2	2	2	3	2	1	1	2	2		17	3.40	26.56
Carnegiea gigantea	1										1	0.20	1.56
Krameria grayi			1	3					2		6	1.20	9.38
Larrea tridentata	4	1			4	3	3		2	4	21	4.20	32.81
Olneya tesota			1		7						8	1.60	12.50
Parkinsonia microphylla			7	4							11	2.20	17.19

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Bighorn > aim

Site ID: BH-LU-1 **Date:** 9/21/2017

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea	9.00	10.00	13.00	12.00	8.00	7.00	6.00	8.00	7.00		80	531.22
Krameria grayi		2.00	3.00	3.00		1.00	2.00	1.00	6.00		18	119.52
Larrea tridentata	4.00	3.00	1.00	1.00	3.00	1.00	2.00	4.00	2.00	7.00	28	185.93
Parkinsonia microphylla			1.00								1	6.64

* Number of decimal places does not imply level of precision

Notes:

BH-LU-2

Soil Stability Rank: 3.9

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Bighorn > aim

Site ID: BH-LU-2 **Date:** 9/21/2017

Examiner(s):

Cover												
Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	3	2	4	3	8	3	1	5	3	2	34	6.80
Cryptogam	3	1			2			6			12	2.40
Gravel (<3")	39	47	42	39	35	30	41	28	35	39	375	75.00
Gravel (>3")										1	1	0.20
Ambrosia deltoidea	1				1		3	5	2	1	13	2.60
Fouquieria splendens								3			3	0.60
Krameria grayi							1	2			3	0.60
Larrea tridentata	1		4	8	4	4				5	26	5.20
Olneya tesota	3								10		13	2.60
Parkinsonia microphylla						13	4	1		2	20	4.00

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Bighorn > aim

Site ID: BH-LU-2 **Date:** 9/21/2017

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	6	2	7	6	9	10	3	11	10	6	70	14.00	14.00
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam	3	1			2			7			13	2.60	2.60
Gravel (<3")	41	47	43	44	39	40	47	32	40	43	416	83.20	83.20
Gravel (>3")										1	1	0.20	0.20
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea	1				1		3	5	2	1	13	2.60	16.46
Ephedra									1		1	0.20	1.27
Fouquieria splendens								3			3	0.60	3.80
Krameria grayi							1	2			3	0.60	3.80
Larrea tridentata	1		4	8	4	4				5	26	5.20	32.91
Olneya tesota	3								10		13	2.60	16.46
Parkinsonia microphylla						13	4	1		2	20	4.00	25.32

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Bighorn > aim

Site ID: BH-LU-2 **Date:** 9/21/2017

Examiner(s):

Density

Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea	6.00	3.00	4.00		4.00	8.00	23.00	13.00	15.00	19.00	95	630.82
Ambrosia dumosa									1.00		1	6.64
Carnegiea gigantea	1.00						1.00			1.00	3	19.92
Cylindropuntia acanthocarpa var. major						1.00			1.00		2	13.28
Echinocereus engelmannii						1.00				1.00	2	13.28
Eriogonum ephedroides									1.00		1	6.64
Krameria grayi	1.00	2.00	1.00			1.00	3.00	5.00	3.00		16	106.24
Larrea tridentata	2.00	4.00	3.00	5.00	5.00	2.00	1.00	2.00		2.00	26	172.65
Lycium									1.00		1	6.64
Olneya tesota									1.00	1.00	2	13.28
Parkinsonia microphylla							1.00				1	6.64

* Number of decimal places does not imply level of precision

Notes:

BH-LU-3

Soil Stability Rank: 3.5

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Bighorn > aim

Site ID: BH-LU-3 **Date:** 9/21/2017

Examiner(s):

Cover

Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	8	12	10	5	2	11	9	6	8	1	72	14.40
Cryptogam	7	1	6	2	1	1	4	3	4	3	32	6.40
Gravel (<3")	32	34	27	42	45	32	35	36	25	39	347	69.40
Gravel (>3")			1				1	1	1	1	5	1.00
Ambrosia deltoidea									2		2	0.40
Ambrosia dumosa										2	2	0.40
Krameria grayi									1		1	0.20
Larrea tridentata	3	3	6	1	2	6	1	4	2	4	32	6.40
Parkinsonia microphylla									7		7	1.40

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Bighorn > aim

Site ID: BH-LU-3 **Date:** 9/21/2017

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	8	13	11	5	2	11	9	7	13	1	80	16.00	16.00
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam	7	2	9	2	1	1	4	4	5	4	39	7.80	7.80
Gravel (<3")	35	35	29	43	47	38	36	38	31	44	376	75.20	75.20
Gravel (>3")			1				1	1	1	1	5	1.00	1.00
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover													
Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea									2		2	0.40	4.44
Ambrosia dumosa										2	2	0.40	4.44
Krameria grayi									2		2	0.40	4.44
Larrea tridentata	3	3	6	1	2	6	1	4	2	4	32	6.40	71.11
Parkinsonia microphylla									7		7	1.40	15.56

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Bighorn > aim

Site ID: BH-LU-3 **Date:** 9/21/2017

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea								1.00	1.00		2	13.28
Ambrosia dumosa							1.00			3.00	4	26.56
Echinocereus engelmannii								1.00			1	6.64
Krameria grayi									1.00	1.00	2	13.28
Larrea tridentata	4.00	6.00	8.00	6.00	5.00	4.00	6.00	4.00	6.00	3.00	52	345.29
Parkinsonia microphylla									1.00		1	6.64

* Number of decimal places does not imply level of precision

Notes:

BH-LU-4

Soil Stability Rank: 4.2

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Bighorn > aim

Site ID: BH-LU-4 **Date:** 1/25/2018

Examiner(s):

Cover												
Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	7	15	14	6	12	13	12	19	10	11	119	23.80
Cryptogam	1	2	5	1	13	1	1	5	2	14	45	9.00
Gravel (<3")	39	28	29	39	23	34	29	25	7	22	275	55.00
Larrea tridentata	3	5	2	4	2	2	8	1	12	3	42	8.40
Lycium									8		8	1.60
Olneya tesota									11		11	2.20

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Bighorn > aim

Site ID: BH-LU-4 **Date:** 1/25/2018

Examiner(s):

Surface Cover													
Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	7	18	14	6	12	13	14	19	37	13	153	30.60	30.60
Basal Vegetation				1							1	0.20	0.20
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam	1	2	5	1	13	1	2	5	4	14	48	9.60	9.60
Gravel (<3")	42	30	31	42	25	36	34	26	9	23	298	59.60	59.60
Gravel (>3")											0	0.00	0.00
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover													
Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea									3		3	0.60	4.11
Larrea tridentata	3	5	2	4	2	2	8	1	17	3	47	9.40	64.38
Lycium									12		12	2.40	16.44
Olneya tesota									11		11	2.20	15.07

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Bighorn > aim

Site ID: BH-LU-4 **Date:** 1/25/2018

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea		5.00				2.00			11.00		18	119.52
Krameria grayi								3.00	1.00		4	26.56
Larrea tridentata	4.00	8.00	4.00	3.00	5.00	4.00	6.00	8.00	7.00	1.00	50	332.01
Lycium									10.00		10	66.40
Olneya tesota									1.00		1	6.64

* Number of decimal places does not imply level of precision

Notes:

BH-LU-5

Soil Stability Rank: 2.4

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Bighorn > aim

Site ID: BH-LU-5 **Date:** 2/22/2018

Examiner(s):

Cover												
Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	2	7	3	10	12	1	1	5	7	6	54	10.80
Cryptogam		1		1	1				2		5	1.00
Gravel (<3")	46	41	47	32	28	47	48	43	41	42	415	83.00
Gravel (>3")	1					1	1				3	0.60
Ambrosia deltoidea				1	3						4	0.80
Krameria grayi				4							4	0.80
Larrea tridentata	1	1		2	6	1		2		2	15	3.00

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Bighorn > aim

Site ID: BH-LU-5 **Date:** 2/22/2018

Examiner(s):

Surface Cover													
Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	2	7	3	15	19	1	1	7	7	8	70	14.00	14.00
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam		1		1	2				2		6	1.20	1.20
Gravel (<3")	47	42	47	34	29	48	48	43	41	42	421	84.20	84.20
Gravel (>3")	1					1	1				3	0.60	0.60
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover													
Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea				1	3						4	0.80	17.39
Krameria grayi				4							4	0.80	17.39
Larrea tridentata	1	1		2	6	1		2		2	15	3.00	65.22

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Bighorn > aim

Site ID: BH-LU-5 **Date:** 2/22/2018

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea				3.00	7.00						10	66.40
Cylindropuntia acanthocarpa var. major					1.00						1	6.64
Cylindropuntia bigelovii						2.00					2	13.28
Krameria grayi				3.00							3	19.92
Larrea tridentata	3.00		1.00	4.00	4.00	1.00	1.00	2.00	4.00	3.00	23	152.73

* Number of decimal places does not imply level of precision

Notes:

Limy Upland Deep

BH-LUD-1

Soil Stability Rank: 4.7

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Bighorn > aim

Site ID: BH-LUD-1 **Date:** 9/21/2017

Examiner(s):

Cover

Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	2	1		1	2		2	7	2	4	21	4.20
Cryptogam	3	6	2	12	16	12	11	4	7	5	78	15.60
Gravel (<3")	40	41	44	35	31	33	34	34	36	32	360	72.00
Gravel (>3")				1	1	2	1				5	1.00
Scat - Livestock			1								1	0.20
Ambrosia deltoidea				1							1	0.20
Larrea tridentata	5	2	3			3	2	5	5	9	34	6.80

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Bighorn > aim

Site ID: BH-LUD-1 **Date:** 9/21/2017

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	2	1		1	2		2	7	2	5	22	4.40	4.40
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam	3	6	2	12	16	12	11	5	7	7	81	16.20	16.20
Gravel (<3")	45	43	47	36	31	36	36	38	41	38	391	78.20	78.20
Gravel (>3")				1	1	2	1				5	1.00	1.00
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")											0	0.00	0.00
Scat - Livestock			1								1	0.20	0.20
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover													
Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea				1							1	0.20	2.86
Larrea tridentata	5	2	3			3	2	5	5	9	34	6.80	97.14

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Bighorn > aim

Site ID: BH-LUD-1 **Date:** 9/21/2017

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea			1.00	1.00							2	13.28
Larrea tridentata	4.00	1.00	3.00	2.00	4.00	5.00	3.00	8.00	9.00	6.00	45	298.81

* Number of decimal places does not imply level of precision

Notes:

BH-LUD-2

Soil Stability Rank: 4.8

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Bighorn > aim

Site ID: BH-LUD-2 **Date:** 9/11/2017

Examiner(s):

Cover												
Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	4	1	2	2	4	1		5	5	5	29	5.80
Cryptogam	7		1		4		2	7	8	15	44	8.80
Gravel (<3")	34	49	45	44	31	35	43	36	22	20	359	71.80
Ambrosia deltoidea					4	3					7	1.40
Krameria grayi					2	5				2	9	1.80
Larrea tridentata	5		2	4	5	6	5	2	4	7	40	8.00
Olneya tesota										1	1	0.20
Parkinsonia microphylla									11		11	2.20

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Bighorn > aim

Site ID: BH-LUD-2 **Date:** 9/11/2017

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	5	1	2	2	5	7	1	6	14	5	48	9.60	9.60
Basal Vegetation						1					1	0.20	0.20
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam	7		1		10	1	2	7	10	15	53	10.60	10.60
Gravel (<3")	38	49	47	48	35	41	47	37	26	30	398	79.60	79.60
Gravel (>3")											0	0.00	0.00
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea					4	3					7	1.40	10.14
Krameria grayi					2	5			1	2	10	2.00	14.49
Larrea tridentata	5		2	4	5	6	5	2	4	7	40	8.00	57.97
Olneya tesota										1	1	0.20	1.45
Parkinsonia microphylla									11		11	2.20	15.94

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Bighorn > aim

Site ID: BH-LUD-2 **Date:** 9/11/2017

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea					5.00	2.00				1.00	8	53.12
Krameria grayi					2.00	1.00			2.00	2.00	7	46.48
Larrea tridentata	4.00	4.00	9.00	3.00	5.00	8.00	8.00	3.00	7.00	5.00	56	371.85

* Number of decimal places does not imply level of precision

Notes:

BH-LUD-3

Soil Stability Rank: 4.8

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Bighorn > aim

Site ID: BH-LUD-3 **Date:** 8/30/2017

Examiner(s):

Cover												
Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	4	1	1	9	6	2	1	2	4	8	38	7.60
Bedrock					1						1	0.20
Cryptogam	3	1	4	3	4	4	8		8	9	44	8.80
Gravel (<3")	41	45	45	38	18	38	35	48	34	28	370	74.00
Gravel (>3")		1									1	0.20
Litter (<0.25")										1	1	0.20
Ambrosia deltoidea						1					1	0.20
Cylindropuntia bigelovii									1		1	0.20
Krameria grayi					2				1	1	4	0.80
Larrea tridentata	2	2			1	5	1		2	3	16	3.20
Olneya tesota					6		5				11	2.20
Parkinsonia microphylla					12						12	2.40

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Bighorn > aim

Site ID: BH-LUD-3 **Date:** 8/30/2017

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	6	3	1	9	15	4	3	2	5	10	58	11.60	11.60
Bedrock					4						4	0.80	0.80
Boulders (>25")											0	0.00	0.00
Cryptogam	3	1	4	3	5	4	8		8	9	45	9.00	9.00
Gravel (<3")	41	45	45	38	26	42	39	48	37	30	391	78.20	78.20
Gravel (>3")		1									1	0.20	0.20
HL Attached											0	0.00	0.00
Litter (<0.25")										1	1	0.20	0.20
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea					2	1					3	0.60	6.38
Cylindropuntia bigelovii									1		1	0.20	2.13
Krameria grayi					2				1	1	4	0.80	8.51
Larrea tridentata	2	2			1	5	1		2	3	16	3.20	34.04
Olneya tesota					6		5				11	2.20	23.40
Parkinsonia microphylla					12						12	2.40	25.53

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Bighorn > aim

Site ID: BH-LUD-3 **Date:** 8/30/2017

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea					14.00	1.00			1.00	1.00	17	112.88
Cylindropuntia acanthocarpa var. major										1.00	1	6.64
Cylindropuntia bigelovii		1.00							1.00		2	13.28
Krameria grayi									2.00	1.00	3	19.92
Larrea tridentata	3.00	2.00		5.00	1.00	4.00	3.00	2.00	2.00	2.00	24	159.37
Olneya tesota							1.00				1	6.64
Parkinsonia microphylla					2.00						2	13.28

* Number of decimal places does not imply level of precision

Notes:

BH-LUD-4

Soil Stability Rank: 3.1

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Bighorn > aim

Site ID: BH-LUD-4 **Date:** 1/31/2018

Examiner(s):

Cover												
Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	14	15	5	14	16	19	17	15	25	15	155	31.00
Cryptogam			3	3	2	1	2	8	4		23	4.60
Gravel (<3")	21	25	31	24	29	24	25	21	13	30	243	48.60
Gravel (>3")		1	2	2	1	2					8	1.60
Ambrosia deltoidea	1	1				1	1	1			5	1.00
Ambrosia dumosa					1		1				2	0.40
Cylindropuntia acanthocarpa var. major			1								1	0.20
Cylindropuntia versicolor						1					1	0.20
Krameria grayi			2						1	1	4	0.80
Larrea tridentata	13	8	6	7	1	2	4		1	4	46	9.20
Parkinsonia microphylla	1							5	6		12	2.40

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Bighorn > aim

Site ID: BH-LUD-4 **Date:** 1/31/2018

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	23	20	10	20	17	21	21	16	33	17	198	39.60	39.60
Basal Vegetation	1		1								2	0.40	0.40
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam	1	1	3	3	2	2	4	9	4	1	30	6.00	6.00
Gravel (<3")	25	28	34	25	30	25	25	24	13	32	261	52.20	52.20
Gravel (>3")		1	2	2	1	2		1			9	1.80	1.80
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea	1	1	1			1	1	1			6	1.20	8.11
Ambrosia dumosa					1		1			1	3	0.60	4.05
Cylindropuntia acanthocarpa var. major			1								1	0.20	1.35
Cylindropuntia versicolor						1					1	0.20	1.35
Krameria grayi			2						1	1	4	0.80	5.41
Larrea tridentata	13	8	6	7	1	3	4		1	4	47	9.40	63.51
Parkinsonia microphylla	1							5	6		12	2.40	16.22

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Bighorn > aim

Site ID: BH-LUD-4 **Date:** 1/31/2018

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea	3.00	5.00	1.00			1.00	4.00	6.00			20	132.80
Ambrosia dumosa		1.00			2.00	1.00	1.00	2.00	5.00	4.00	16	106.24
Cylindropuntia acanthocarpa var. major	1.00					1.00	1.00	1.00			4	26.56
Cylindropuntia versicolor						1.00					1	6.64
Ferocactus wislizeni		1.00									1	6.64
Krameria grayi			1.00		2.00				1.00	1.00	5	33.20
Larrea tridentata	7.00	4.00	5.00	3.00	3.00	5.00	4.00	4.00	3.00	3.00	41	272.25
Parkinsonia microphylla									1.00		1	6.64

* Number of decimal places does not imply level of precision

Notes:

BH-LUD-5

Soil Stability Rank: 4.9

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Bighorn > aim

Site ID: BH-LUD-5 **Date:** 2/22/2018

Examiner(s):

Cover												
Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	8	13	12	13	9	12	8	7	12	9	103	20.60
Cryptogam			6	2		4	2	3	6	4	27	5.40
Gravel (<3")	39	31	27	31	37	31	35	38	29	37	335	67.00
Gravel (>3")							1				1	0.20
Litter (<0.25")	1										1	0.20
Larrea tridentata	2	6	5	4	4	3	4	2	3		33	6.60

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Bighorn > aim

Site ID: BH-LUD-5 **Date:** 2/22/2018

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	8	13	14	13	12	12	10	8	15	9	114	22.80	22.80
Basal Vegetation		1									1	0.20	0.20
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam		1	7	2	1	6	3	3	6	4	33	6.60	6.60
Gravel (<3")	41	35	29	35	37	32	36	39	29	37	350	70.00	70.00
Gravel (>3")							1				1	0.20	0.20
HL Attached											0	0.00	0.00
Litter (<0.25")	1										1	0.20	0.20
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Larrea tridentata	2	6	5	4	4	3	4	2	3		33	6.60	100.00

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Bighorn > aim

Site ID: BH-LUD-5 **Date:** 2/22/2018

Examiner(s):

Density

Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea					1.00			1.00	1.00		3	19.92
Krameria grayi					1.00		1.00				2	13.28
Larrea tridentata	7.00	11.00	8.00	9.00	3.00	7.00	5.00	4.00	5.00	4.00	63	418.34

* Number of decimal places does not imply level of precision

Notes:

Sandy Bottom

BH-SB-1

Soil Stability Rank: 1.8

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Bighorn > aim

Site ID: BH-SB-1 **Date:** 2/23/2018

Examiner(s):

Cover

Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	13	13	7	8	15	12	13	15	11	13	120	24.00
Cryptogam	1	1	1						1		4	0.80
Gravel (<3")	25	20	22	31	34	27	26	31	32	24	272	54.40
Gravel (>3")										1	1	0.20
Litter (>0.25")							1				1	0.20
Ambrosia deltoidea		2			1	3		1		2	9	1.80
Cylindropuntia leptocaulis									2		2	0.40
Hymenoclea salsola									1		1	0.20
Larrea tridentata	6	6	9	5		8	3	3	3	3	46	9.20
Lycium	2	3									5	1.00
Olneya tesota	3	5	11	6							25	5.00
Parkinsonia microphylla							7			7	14	2.80

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Bighorn > aim

Site ID: BH-SB-1 **Date:** 2/23/2018

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	21	25	15	12	16	19	14	17	16	19	174	34.80	34.80
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam	1	1	1						1		4	0.80	0.80
Gravel (<3")	28	24	34	38	34	31	35	33	33	30	320	64.00	64.00
Gravel (>3")										1	1	0.20	0.20
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")							1				1	0.20	0.20
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea		2	1		1	3		1		2	10	2.00	9.17
Cylindropuntia leptocaulis									2		2	0.40	1.83
Hymenoclea salsola									1		1	0.20	0.92
Larrea tridentata	8	6	9	5		8	3	3	3	3	48	9.60	44.04
Lycium	2	6									8	1.60	7.34
Olneya tesota	3	5	11	6							25	5.00	22.94
Parkinsonia microphylla							7	1		7	15	3.00	13.76

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Bighorn > aim

Site ID: BH-SB-1 **Date:** 2/23/2018

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea	3.00	2.00	3.00		2.00	3.00	2.00	1.00	1.00	1.00	18	119.52
Carnegiea gigantea							1.00				1	6.64
Cylindropuntia acanthocarpa var. major	1.00							1.00			2	13.28
Cylindropuntia leptocaulis									1.00		1	6.64
Hymenoclea salsola		2.00	1.00			1.00		1.00			5	33.20
Larrea tridentata	5.00	4.00	5.00	3.00	1.00	6.00	3.00	4.00	2.00		33	219.13
Lycium	1.00	1.00			1.00				1.00		4	26.56
Lyrocarpa coulteri					1.00						1	6.64
Olneya tesota			1.00								1	6.64
Parkinsonia microphylla								1.00			1	6.64

* Number of decimal places does not imply level of precision

Notes:

BH-SB-2

Soil Stability Rank: 4.7

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Bighorn > aim

Site ID: BH-SB-2 **Date:** 9/19/2017

Examiner(s):

Cover

Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	5	2	8	7	5		6	1	1	7	42	8.40
Cryptogam	2	4	3	3	1	6	6	9		2	36	7.20
Gravel (<3")	36	39	30	38	19	33	37	34	37	41	344	68.80
Gravel (>3")			1	1		2		2			6	1.20
Litter (<0.25")			1								1	0.20
Stones (>10" - 25")	1										1	0.20
WL Attached	1										1	0.20
Acacia greggii									10		10	2.00
Krameria grayi				1							1	0.20
Larrea tridentata	4	5				2	1				12	2.40
Lycium					3			4			7	1.40
Olneya tesota	1		7		21	7			2		38	7.60
Sphaeralcea ambigua					1						1	0.20

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Bighorn > aim

Site ID: BH-SB-2 **Date:** 9/19/2017

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	6	3	8	8	9	2	6	1	2	7	52	10.40	10.40
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam	2	4	3	3	1	6	7	9		2	37	7.40	7.40
Gravel (<3")	40	43	37	38	40	39	37	38	48	41	401	80.20	80.20
Gravel (>3")			1	1		3		2			7	1.40	1.40
HL Attached											0	0.00	0.00
Litter (<0.25")			1								1	0.20	0.20
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")	1										1	0.20	0.20
WL Attached	1										1	0.20	0.20

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Acacia greggii									10		10	2.00	13.70
Krameria grayi				1							1	0.20	1.37
Larrea tridentata	4	5				2	1				12	2.40	16.44
Lycium					3	3		4			10	2.00	13.70
Olneya tesota	1		7		21	7			2		38	7.60	52.05
Sphaeralcea ambigua					2						2	0.40	2.74

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Bighorn > aim

Site ID: BH-SB-2 **Date:** 9/19/2017

Examiner(s):

Density											
Species	Transect (Count)										Density* / ac
	1	2	4	5	6	7	8	9	10	Total	
Acacia greggii								2.00		2	14.76
Ambrosia deltoidea	1.00	4.00								5	36.89
Hymenoclea salsola				2.00						2	14.76
Krameria grayi			1.00							1	7.38
Larrea tridentata	1.00	2.00			2.00		1.00		1.00	7	51.65
Lycium				3.00		1.00	2.00			6	44.27
Olneya tesota	1.00			1.00	1.00					3	22.13
Sphaeralcea ambigua				1.00						1	7.38

* Number of decimal places does not imply level of precision

Notes:

BH-SB-3

Soil Stability Rank: 4.3

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Bighorn > aim

Site ID: BH-SB-3 **Date:** 9/6/2017

Examiner(s):

Cover												
Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	6	11	4	8	5	9	8	5	10	7	73	14.60
Cryptogam	3	2		3			2	4	1	10	25	5.00
Gravel (<3")	34	33	33	30	40	40	29	30	30	26	325	65.00
Acacia greggii				2							2	0.40
Baccharis sarothroides				1		1		3		7	12	2.40
Hyptis emoryi					4						4	0.80
Krameria grayi								1			1	0.20
Larrea tridentata	7	4		1			11	7			30	6.00
Lycium				3	1						4	0.80
Olneya tesota			13	2							15	3.00
Parkinsonia florida									9		9	1.80

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Bighorn > aim

Site ID: BH-SB-3 **Date:** 9/6/2017

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	11	14	9	11	6	10	13	10	15	8	107	21.40	21.40
Basal Vegetation							1				1	0.20	0.20
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam	4	2	2	3			3	6	2	11	33	6.60	6.60
Gravel (<3")	35	34	39	36	44	40	33	34	33	31	359	71.80	71.80
Gravel (>3")											0	0.00	0.00
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Acacia greggii				2							2	0.40	2.60
Baccharis sarothroides				1		1		3		7	12	2.40	15.58
Hyptis emoryi					4						4	0.80	5.19
Krameria grayi								1			1	0.20	1.30
Larrea tridentata	7	4		1			11	7			30	6.00	38.96
Lycium				3	1						4	0.80	5.19
Olneya tesota			13	2							15	3.00	19.48
Parkinsonia florida									9		9	1.80	11.69

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Bighorn > aim

Site ID: BH-SB-3 **Date:** 9/6/2017

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Acacia greggii									1.00		1	6.64
Baccharis sarothroides				3.00	2.00	5.00		2.00	2.00	5.00	19	126.16
Ditaxis neomexicana				1.00				1.00		3.00	5	33.20
Krameria grayi								1.00			1	6.64
Larrea tridentata	1.00	2.00		1.00			3.00	2.00			9	59.76
Lycium				5.00	3.00	1.00	2.00				11	73.04
Nicotiana obtusifolia						1.00					1	6.64
Parkinsonia florida									1.00		1	6.64
Parkinsonia florida-seedling		1.00			1.00		1.00	1.00	4.00	1.00	9	59.76
Parkinsonia microphylla									1.00		1	6.64
Parkinsonia microphyl.-seedling									1.00		1	6.64

* Number of decimal places does not imply level of precision

Notes:

BH-SB-4

Soil Stability Rank: 4.0

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Bighorn > aim

Site ID: BH-SB-4 **Date:** 1/31/2018

Examiner(s):

Cover

Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	21	21	18	21	18	31	24	20	16	24	214	42.80
Cryptogam	2	3	4	1	3	1			1	2	17	3.40
Gravel (<3")	13	12	20	14	14	10	7	14	12	7	123	24.60
Gravel (>3")	1			3						1	5	1.00
Acacia greggii	2				6	2		7	1		18	3.60
Ambrosia deltoidea								2		2	4	0.80
Celtis pallida		5									5	1.00
Cylindropuntia leptocaulis							2				2	0.40
Hymenoclea salsola	2	1		4	2	6	5	2	2		24	4.80
Larrea tridentata			4		2				5	10	21	4.20
Lycium		1	2	6	3				3		15	3.00
Olneya tesota				1	2		9				12	2.40
Parkinsonia florida	9	7	2				3	5	3	4	33	6.60
Parkinsonia microphylla									7		7	1.40

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Bighorn > aim

Site ID: BH-SB-4 **Date:** 1/31/2018

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	34	35	25	27	32	37	42	31	32	40	335	67.00	67.00
Basal Vegetation				1							1	0.20	0.20
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam	2	3	4	1	3	1			1	2	17	3.40	3.40
Gravel (<3")	13	12	21	17	15	12	7	19	16	7	139	27.80	27.80
Gravel (>3")	1			4					1	1	7	1.40	1.40
HL Attached											0	0.00	0.00
Litter (<0.25")							1				1	0.20	0.20
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Acacia greggii	3				7	2		7	1		20	4.00	12.35
Ambrosia deltoidea								2		2	4	0.80	2.47
Celtis pallida		5									5	1.00	3.09
Cylindropuntia leptocaulis	1						3				4	0.80	2.47
Hymenoclea salsola	2	2	2	4	2	6	8	2	3	2	33	6.60	20.37
Larrea tridentata			4		2				5	10	21	4.20	12.96
Lycium	2	4	2	6	6				3		23	4.60	14.20
Olneya tesota				1	2		9				12	2.40	7.41
Parkinsonia florida	9	7	2				3	5	3	4	33	6.60	20.37
Parkinsonia microphylla									7		7	1.40	4.32

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Bighorn > aim

Site ID: BH-SB-4 **Date:** 1/31/2018

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Acacia greggii	1.00	1.00	1.00	2.00	1.00			2.00	1.00		9	59.76
Ambrosia ambrosioides							1.00			1.00	2	13.28
Ambrosia deltoidea		1.00						1.00	1.00		3	19.92
Carnegiea gigantea								1.00			1	6.64
Cylindropuntia acanthocarpa var. major	1.00							2.00		1.00	4	26.56
Cylindropuntia leptocaulis	2.00			1.00		1.00	1.00			1.00	6	39.84
Hymenoclea salsola	5.00	2.00	2.00	5.00	3.00	8.00	6.00	5.00	6.00	2.00	44	292.17
Jatropha cardiophylla		1.00			2.00						3	19.92
Larrea tridentata			1.00		1.00			1.00	1.00	2.00	6	39.84
Lycium	1.00	1.00		1.00	4.00		1.00				8	53.12
Olneya tesota				1.00			1.00				2	13.28
Parkinsonia florida							1.00				1	6.64
Parkinsonia microphylla									1.00		1	6.64

* Number of decimal places does not imply level of precision

Notes:

Conley Allotment

Limy Fan

C-LF-1

Soil Stability Rank: 4.5

Cover - Top Layer

Site Class: Phoenix District || Sonoran Desert NM || Conley || AIM

Site ID: C-LF-1 **Date:** 3/14/2017

Examiner(s):

Cover

Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	17	20	31	29	27	36	32	41	32	35	300	60.00
Cryptogam	1	5	0	5	6	2	7	0	3	3	32	6.40
Gravel (<3")	23	15	12	9	9	7	7	5	11	5	103	20.60
Ambrosia deltoidea	0	0	0	2	1	0	0	0	0	0	3	0.60
Ferocactus wislizeni	0	0	0	1	0	0	0	0	0	0	1	0.20
Larrea tridentata	9	10	7	4	7	5	4	4	4	7	61	12.20

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District || Sonoran Desert NM || Conley || AIM

Site ID: C-LF-1 **Date:** 3/14/2017

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	22	25	33	34	33	41	36	44	36	42	346	69.20	69.20
Basal Vegetation	0	0	0	1	0	0	0	0	0	0	1	0.20	0.20
Bedrock	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Boulders (>25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Cryptogam	1	6	1	5	7	2	7	0	3	3	35	7.00	7.00
Gravel (<3")	27	19	16	10	10	7	7	6	11	5	118	23.60	23.60
Gravel (>3")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
HL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Litter (<0.25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Litter (>0.25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Scat - Livestock	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Stones (>10" - 25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
WL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea	0	0	0	2	1	0	0	0	0	0	3	0.60	4.62
Ferocactus wislizeni	0	0	0	1	0	0	0	0	0	0	1	0.20	1.54
Larrea tridentata	9	10	7	4	7	5	4	4	4	7	61	12.20	93.85

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Conley > AIM

Site ID: C-LF-1 **Date:** 3/14/2017

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea			7.00	4.00	3.00						14	92.96
Ferocactus wislizeni				1.00							1	6.64
Larrea tridentata	11.00	10.00	8.00	6.00	6.00	4.00	5.00	6.00	1.00	3.00	60	398.41

* Number of decimal places does not imply level of precision

Notes:

C-LF-2

Soil Stability Rank: 4.4

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Conley > AIM

Site ID: C-LF-2 **Date:** 5/3/2017

Examiner(s):

Cover												
Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	31	29	30	33	37	42	40	45	40	41	368	73.60
Cryptogam	2	2	2	1	6	2	2	2	1		20	4.00
Gravel (<3")	5	2	3	6	6	1	2	3	7	9	44	8.80
Ambrosia deltoidea	4	6	1	2							13	2.60
Larrea tridentata	6	11	14	8	1	5	6		2		53	10.60
Prosopis velutina	2										2	0.40

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Conley > AIM

Site ID: C-LF-2 **Date:** 5/3/2017

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	41	41	41	42	38	47	45	45	42	41	423	84.60	84.60
Basal Vegetation			1	1							2	0.40	0.40
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam	4	6	5	1	6	2	3	2	1		30	6.00	6.00
Gravel (<3")	5	3	3	6	6	1	2	3	7	9	45	9.00	9.00
Gravel (>3")											0	0.00	0.00
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea	5	7	2	2							16	3.20	22.54
Larrea tridentata	6	11	14	8	1	5	6		2		53	10.60	74.65
Prosopis velutina	2										2	0.40	2.82

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Conley > AIM

Site ID: C-LF-2 **Date:** 5/3/2017

Examiner(s):

Density

Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea	18.00	9.00	9.00								36	239.05
Larrea tridentata	5.00	7.00	4.00	6.00	6.00	7.00	3.00	4.00	7.00	2.00	51	338.65

* Number of decimal places does not imply level of precision

Notes:

C-LF-3

Soil Stability Rank: 4.0

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Conley > AIM

Site ID: C-LF-3 **Date:** 5/3/2017

Examiner(s):

Cover

Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	35	30	30	10	17	25	34	24	31	26	262	52.40
Cryptogam	1	1	5	1	2	4	5	1	4		24	4.80
Gravel (<3")	1	2	5	37	25	21	8	21	12	24	156	31.20
Ambrosia deltoidea		1									1	0.20
Larrea tridentata	13	16	10	2	6		3	4	3		57	11.40

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Conley > AIM

Site ID: C-LF-3 **Date:** 5/3/2017

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	46	46	37	10	17	25	37	24	33	26	301	60.20	60.20
Basal Vegetation	1	1	1								3	0.60	0.60
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam	2	1	6	1	2	4	5	3	4		28	5.60	5.60
Gravel (<3")	1	2	6	39	31	21	8	23	13	24	168	33.60	33.60
Gravel (>3")											0	0.00	0.00
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover													
Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea		1									1	0.20	1.72
Larrea tridentata	13	16	10	2	6		3	4	3		57	11.40	98.28

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Conley > AIM

Site ID: C-LF-3 **Date:** 5/3/2017

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea	1.00	2.00									3	19.92
Larrea tridentata	5.00	6.00	11.00	11.00	7.00	1.00	4.00	6.00	7.00	2.00	60	398.41

* Number of decimal places does not imply level of precision

Notes:

Limy Upland

C-LU-1

Soil Stability Rank: 5.0

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Conley > AIM

Site ID: C-LU-1 **Date:** 4/12/2017

Examiner(s):

Cover

Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	7	8	8	13	7	8	6	11	8	9	85	17.00
Cryptogam	2	3	3			1			2	3	14	2.80
Gravel (<3")	38	32	27	34	30	36	35	31	31	27	321	64.20
Gravel (>3")							1				1	0.20
Ambrosia deltoidea		2			4	1	2			3	12	2.40
Ambrosia dumosa							1				1	0.20
Carnegiea gigantea							1				1	0.20
Krameria grayi						2					2	0.40
Larrea tridentata	3	5	12	3	1	2	4	8	9	8	55	11.00
Parkinsonia microphylla					8						8	1.60

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Conley > AIM

Site ID: C-LU-1 **Date:** 4/12/2017

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	8	8	9	14	14	8	7	13	11	17	109	21.80	21.80
Basal Vegetation										1	1	0.20	0.20
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam	2	3	3			1			2	4	15	3.00	3.00
Gravel (<3")	40	39	38	36	36	41	42	37	37	28	374	74.80	74.80
Gravel (>3")							1				1	0.20	0.20
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea		2			7	1	2			3	15	3.00	18.29
Ambrosia dumosa							1				1	0.20	1.22
Carnegiea gigantea							1				1	0.20	1.22
Krameria grayi						2					2	0.40	2.44
Larrea tridentata	3	5	12	3	1	2	4	8	9	8	55	11.00	67.07
Parkinsonia microphylla					8						8	1.60	9.76

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Conley > AIM

Site ID: C-LU-1 **Date:** 4/12/2017

Examiner(s):

Density

Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea				1.00	4.00	3.00	2.00	1.00		2.00	13	86.32
Ambrosia dumosa							1.00				1	6.64
Carnegiea gigantea							1.00				1	6.64
Cylindropuntia acanthocarpa var. major					1.00						1	6.64
Ditaxis neomexicana					3.00	7.00	2.00				12	79.68
Hymenoclea salsola					1.00						1	6.64
Krameria grayi			1.00		1.00	2.00	4.00			3.00	11	73.04
Larrea tridentata	8.00	2.00	5.00	5.00	3.00	3.00	3.00	3.00	9.00	2.00	43	285.53
Parkinsonia microphylla					1.00						1	6.64

* Number of decimal places does not imply level of precision

Notes:

C-LU-2

Soil Stability Rank: 3.9

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Conley > AIM

Site ID: C-LU-2 **Date:** 4/12/2017

Examiner(s):

Cover

Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	10	4	6	7	10	6	8	11	4	3	69	13.80
Bedrock	2	3	7	1	1						14	2.80
Cryptogam	2	1	2	3	4	3	4		3	4	26	5.20
Gravel (<3")	31	20	27	29	28	37	30	32	35	26	295	59.00
Gravel (>3")		1		1	1				3		6	1.20
Ambrosia deltoidea	1			2	1						4	0.80
Ambrosia dumosa					1						1	0.20
Krameria grayi			1	1						1	3	0.60
Larrea tridentata	4	1	3	6	4	4	8	6	5	6	47	9.40
Olneya tesota			4								4	0.80
Parkinsonia microphylla		20						1		10	31	6.20

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Conley > AIM

Site ID: C-LU-2 **Date:** 4/12/2017

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	12	8	8	9	14	7	12	14	4	7	95	19.00	19.00
Basal Vegetation	1										1	0.20	0.20
Bedrock	2	4	9	1	1					1	18	3.60	3.60
Boulders (>25")											0	0.00	0.00
Cryptogam	3	1	3	5	4	3	4		3	8	34	6.80	6.80
Gravel (<3")	32	36	30	34	30	40	34	36	40	33	345	69.00	69.00
Gravel (>3")		1		1	1				3		6	1.20	1.20
HL Attached											0	0.00	0.00
Litter (<0.25")										1	1	0.20	0.20
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea	1			2	2					3	8	1.60	8.42
Ambrosia dumosa					1						1	0.20	1.05
Krameria grayi			1	1				1		1	4	0.80	4.21
Larrea tridentata	4	1	3	6	4	4	8	6	5	6	47	9.40	49.47
Olneya tesota			4								4	0.80	4.21
Parkinsonia microphylla		20						1		10	31	6.20	32.63

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Conley > AIM

Site ID: C-LU-2 **Date:** 4/12/2017

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea	4.00	1.00	3.00		2.00					5.00	15	99.60
Ambrosia dumosa	3.00	3.00		2.00	3.00			1.00	1.00		13	86.32
Ditaxis neomexicana		1.00			1.00						2	13.28
Krameria grayi	2.00		1.00	2.00				1.00		3.00	9	59.76
Larrea tridentata	5.00	2.00	4.00	6.00	6.00	9.00	14.00	9.00	7.00	4.00	66	438.26
Parkinsonia microphylla		1.00		1.00						2.00	4	26.56

* Number of decimal places does not imply level of precision

Notes:

C-LU-3

Soil Stability Rank: 4.3

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Conley > AIM

Site ID: C-LU-3 **Date:** 4/6/2016

Examiner(s):

Cover												
Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	11	11	9	6	9	7	5	5	9	11	83	16.63
Bedrock							3				3	0.60
Cryptogam	1	4	2	5	1	1	1	3	2	6	26	5.21
Gravel (<3")	34	30	35	34	37	25	29	16	31	28	299	59.92
Gravel (>3")	1							2			3	0.60
Ambrosia deltoidea						2	2	2			6	1.20
Ambrosia dumosa					2	1					3	0.60
Krameria grayi					1	3		2			6	1.20
Larrea tridentata	3	5	4	5		2	9	4	8	5	45	9.02
Olneya tesota						9					9	1.80
Parkinsonia microphylla								16			16	3.21

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Conley > AIM

Site ID: C-LU-3 **Date:** 4/6/2016

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	11	11	11	7	11	11	10	12	11	11	106	21.24	21.24
Bedrock							3				3	0.60	0.60
Boulders (>25")											0	0.00	0.00
Cryptogam	1	4	2	5	1	1	1	4	3	6	28	5.61	5.61
Gravel (<3")	37	35	37	38	38	38	35	31	36	33	358	71.74	71.74
Gravel (>3")	1							3			4	0.80	0.80
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea						2	2	2			6	1.20	6.82
Ambrosia dumosa					2	1					3	0.60	3.41
Krameria grayi					1	3		5			9	1.80	10.23
Larrea tridentata	3	5	4	5		2	9	4	8	5	45	9.02	51.14
Olneya tesota						9					9	1.80	10.23
Parkinsonia microphylla								16			16	3.21	18.18

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Conley > AIM

Site ID: C-LU-3 **Date:** 4/6/2016

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Acourtia nana								1.00			1	6.64
Ambrosia deltoidea						2.00	2.00	3.00			7	46.48
Ambrosia dumosa				2.00	3.00						5	33.20
Carnegiea gigantea					1.00						1	6.64
Fouquieria splendens					1.00						1	6.64
Krameria grayi				1.00	1.00	4.00	2.00	2.00			10	66.40
Larrea tridentata	5.00	8.00	8.00	11.00	1.00	6.00	5.00	4.00	5.00	4.00	57	378.49
Mirabilis								2.00			2	13.28
Parkinsonia microphylla								1.00			1	6.64

* Number of decimal places does not imply level of precision

Notes:

C-LU-4

Soil Stability Rank: 4.7

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Conley > AIM

Site ID: C-LU-4 **Date:** 2/21/2018

Examiner(s):

Cover												
Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	14	22	18	14	14	13	16	14	10	7	142	28.40
Cryptogam	2	2	3	12	2	3	3				27	5.40
Gravel (<3")	31	15	27	22	31	33	28	32	29	37	285	57.00
Krameria grayi					1						1	0.20
Larrea tridentata	3	11	2	2	2	1	3	4	11	6	45	9.00

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Conley > AIM

Site ID: C-LU-4 **Date:** 2/21/2018

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	16	30	19	15	16	13	17	17	13	8	164	32.80	32.80
Basal Vegetation							1				1	0.20	0.20
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam	2	2	3	12	2	3	3			1	28	5.60	5.60
Gravel (<3")	32	18	28	23	32	34	29	33	37	41	307	61.40	61.40
Gravel (>3")											0	0.00	0.00
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Krameria grayi					1						1	0.20	2.17
Larrea tridentata	3	11	2	2	2	1	3	4	11	6	45	9.00	97.83

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Conley > AIM

Site ID: C-LU-4 **Date:** 2/21/2018

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea									1.00		1	6.64
Ferocactus wislizeni									1.00		1	6.64
Krameria grayi					2.00						2	13.28
Larrea tridentata	7.00	12.00	5.00	6.00	11.00	6.00	10.00	9.00	7.00	4.00	77	511.30

* Number of decimal places does not imply level of precision

Notes:

Limy Upland Deep

C-LUD-1

Soil Stability Rank: 3.5

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Conley > AIM

Site ID: C-LUD-1 **Date:** 4/13/2017

Examiner(s):

Cover												
Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	22	25	22	17	25	26	27	17	20	17	218	43.60
Cryptogam	2	5	11	21	23	1	2	12	9	1	87	17.40
Gravel (<3")	23	16	16	10	2	21	20	18	16	29	171	34.20
Gravel (>3")										3	3	0.60
Ferocactus wislizeni			1								1	0.20
Larrea tridentata	3	4		2		2	1	3	5		20	4.00

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Conley > AIM

Site ID: C-LUD-1 **Date:** 4/13/2017

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	23	29	22	19	25	26	28	17	22	17	228	45.60	45.60
Basal Vegetation						1			1		2	0.40	0.40
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam	2	5	11	21	23	1	2	12	10	1	88	17.60	17.60
Gravel (<3")	25	16	17	10	2	22	20	21	17	29	179	35.80	35.80
Gravel (>3")										3	3	0.60	0.60
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ferocactus wislizeni			1								1	0.20	4.76
Larrea tridentata	3	4		2		2	1	3	5		20	4.00	95.24

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Conley > AIM

Site ID: C-LUD-1 **Date:** 4/13/2017

Examiner(s):

Density

Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Larrea tridentata	4.00	3.00	2.00	5.00	3.00	5.00	4.00	1.00	2.00	3.00	32	212.49

* Number of decimal places does not imply level of precision

Notes:

C-LUD-2

Soil Stability Rank: 4.3

Cover - Top Layer

Site Class: Phoenix District || Sonoran Desert NM || Conley || AIM

Site ID: C-LUD-2 **Date:** 3/13/2017

Examiner(s):

Cover

Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	7	1	3	11	7	6	4	4	2	11	56	11.20
Cryptogam	1	2	4	9	4	4	4	2	2	6	38	7.60
Gravel (<3")	37	39	37	16	31	31	30	42	23	26	312	62.40
Gravel (>3")	4	8	4	5	6	5	11	1	7	3	54	10.80
Stones (>10" - 25")	0	0	0	0	0	0	0	0	1	0	1	0.20
Ambrosia deltoidea	0	0	0	5	0	0	0	0	1	2	8	1.60
Krameria grayi	0	0	0	0	0	0	0	0	2	0	2	0.40
Larrea tridentata	1	0	2	4	2	4	1	1	1	2	18	3.60
Parkinsonia microphylla	0	0	0	0	0	0	0	0	11	0	11	2.20

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District || Sonoran Desert NM || Conley || AIM

Site ID: C-LUD-2 **Date:** 3/13/2017

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	7	1	5	18	7	7	5	5	6	13	74	14.80	14.80
Basal Vegetation	0	0	0	0	1	0	0	0	0	0	1	0.20	0.20
Bedrock	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Boulders (>25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Cryptogam	1	2	4	10	4	4	4	2	3	6	40	8.00	8.00
Gravel (<3")	38	39	37	17	32	34	30	42	32	27	328	65.60	65.60
Gravel (>3")	4	8	4	5	6	5	11	1	8	4	56	11.20	11.20
HL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Litter (<0.25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Litter (>0.25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Scat - Livestock	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Stones (>10" - 25")	0	0	0	0	0	0	0	0	1	0	1	0.20	0.20
WL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea	0	0	0	6	0	0	0	0	1	2	9	1.80	21.43
Krameria grayi	0	0	0	0	0	0	0	0	2	0	2	0.40	4.76
Larrea tridentata	1	0	2	4	2	4	1	1	3	2	20	4.00	47.62
Parkinsonia microphylla	0	0	0	0	0	0	0	0	11	0	11	2.20	26.19

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Conley > AIM

Site ID: C-LUD-2 **Date:** 3/13/2017

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea				6.00				4.00	2.00	9.00	21	139.45
Carnegiea gigantea									1.00	2.00	3	19.92
Cylindropuntia acanthocarpa var. major				1.00			1.00	1.00			3	19.92
Cylindropuntia fulgida							1.00				1	6.64
Echinocereus engelmannii				1.00	2.00						3	19.92
Krameria grayi									1.00	1.00	2	13.28
Larrea tridentata	7.00	5.00	5.00	4.00	8.00	4.00	4.00	11.00	6.00	8.00	62	411.70
Parkinsonia microphylla								1.00			1	6.64
Trixis californica									1.00		1	6.64

* Number of decimal places does not imply level of precision

Notes:

C-LUD-3

Soil Stability Rank: 3.6

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Conley > AIM

Site ID: C-LUD-3 **Date:** 4/13/2017

Examiner(s):

Cover												
Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	12	7	8	15	13	6	14	6	14	11	106	21.20
Cryptogam	15	17	21	15	10	13	12	16	10	16	145	29.00
Gravel (<3")	19	12	14	16	18	25	19	20	21	18	182	36.40
Gravel (>3")						1		3			4	0.80
Ambrosia deltoidea		5		1	2			1		1	10	2.00
Krameria grayi				2	2			1		1	6	1.20
Larrea tridentata	4	8	7	1	5	5	5	3	5	3	46	9.20
Pleuraphis rigida		1									1	0.20

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Conley > AIM

Site ID: C-LUD-3 **Date:** 4/13/2017

Examiner(s):

Surface Cover													
Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	14	12	12	16	15	7	17	8	15	14	130	26.00	26.00
Basal Vegetation		1			2			1			4	0.80	0.80
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam	15	21	22	17	12	17	12	17	10	17	160	32.00	32.00
Gravel (<3")	21	16	16	17	21	25	21	21	24	19	201	40.20	40.20
Gravel (>3")						1		3	1		5	1.00	1.00
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover													
Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea		6		2	2			1		1	12	2.40	18.46
Krameria grayi				2	2			1		1	6	1.20	9.23
Larrea tridentata	4	8	7	1	5	5	5	3	5	3	46	9.20	70.77
Pleuraphis rigida		1									1	0.20	1.54

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Conley > AIM

Site ID: C-LUD-3 **Date:** 4/13/2017

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea	2.00	5.00	3.00	2.00	4.00	1.00	1.00	2.00	2.00	5.00	27	179.29
Celtis pallida				1.00							1	6.64
Ditaxis neomexicana						16.00		4.00			20	132.80
Krameria grayi				2.00	1.00	1.00		2.00		2.00	8	53.12
Larrea tridentata	4.00	7.00	4.00	5.00	6.00	10.00	12.00	8.00	5.00	11.00	72	478.10
Lycium				1.00							1	6.64
Muhlenbergia porteri				1.00							1	6.64
Pleuraphis rigida		1.00			1.00						2	13.28

* Number of decimal places does not imply level of precision

Notes:

C-LUD-4

Soil Stability Rank: 4.7

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Conley > AIM

Site ID: C-LUD-4 **Date:** 1/19/2018

Examiner(s):

Cover												
Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	13	13	13	26	12	19	18	11	20	10	155	31.00
Cryptogam	21	17	24	11	11	10	12	20	20	6	152	30.40
Gravel (<3")	11	18	11	10	21	21	18	18	8	31	167	33.40
Ambrosia deltoidea	1										1	0.20
Ditaxis neomexicana										2	2	0.40
Encelia farinosa					1						1	0.20
Larrea tridentata	4	2	2	3	5		2	1	2	1	22	4.40

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Conley > AIM

Site ID: C-LUD-4 **Date:** 1/19/2018

Examiner(s):

Surface Cover													
Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	17	14	15	27	16	19	19	11	20	12	170	34.00	34.00
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam	21	17	24	11	11	10	12	20	20	7	153	30.60	30.60
Gravel (<3")	12	19	11	12	23	21	19	19	10	31	177	35.40	35.40
Gravel (>3")											0	0.00	0.00
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover													
Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea	1										1	0.20	3.85
Ditaxis neomexicana										2	2	0.40	7.69
Encelia farinosa					1						1	0.20	3.85
Larrea tridentata	4	2	2	3	5		2	1	2	1	22	4.40	84.62

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Conley > AIM

Site ID: C-LUD-4 **Date:** 1/19/2018

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ditaxis neomexicana	10.00									15.00	25	166.01
Larrea tridentata	7.00	7.00	3.00	5.00	2.00	3.00	5.00	3.00	3.00	5.00	43	285.53

* Number of decimal places does not imply level of precision

Notes:

Sandy Bottom

C-SB-1

Soil Stability Rank: 3.2

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Conley > AIM

Site ID: C-SB-1 **Date:** 1/19/2018

Examiner(s):

Cover

Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	14	9	6	11	13	7	5	10	10	11	96	19.20
Cryptogam	7	7	4	2		2	2		2	3	29	5.80
Gravel (<3")	22	24	39	19	23	23	17	28	18	27	240	48.00
Ambrosia deltoidea	2	7	1	4	4	4	6	1	4	6	39	7.80
Krameria grayi					1						1	0.20
Larrea tridentata	1	3		3	9	12	2	11	5	1	47	9.40
Olneya tesota						2	18			2	22	4.40
Parkinsonia microphylla	4			11					11		26	5.20

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Conley > AIM

Site ID: C-SB-1 **Date:** 1/19/2018

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	15	16	6	20	23	16	16	15	19	13	159	31.80	31.80
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam	7	9	4	3	3	4	2	2	4	5	43	8.60	8.60
Gravel (<3")	28	25	40	27	24	30	31	33	27	32	297	59.40	59.40
Gravel (>3")							1				1	0.20	0.20
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea	2	7	1	4	4	5	6	2	4	6	41	8.20	29.71
Krameria grayi					1						1	0.20	0.72
Larrea tridentata	1	3		3	9	12	2	11	5	2	48	9.60	34.78
Olneya tesota						2	18			2	22	4.40	15.94
Parkinsonia microphylla	4			11					11		26	5.20	18.84

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Conley > AIM

Site ID: C-SB-1 **Date:** 1/19/2018

Examiner(s):

Density

Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Acacia greggii	1.00										1	6.64
Ambrosia deltoidea	4.00	7.00	8.00	6.00	4.00	10.00	5.00	4.00	8.00	8.00	64	424.98
Carnegiea gigantea				1.00			1.00	1.00			3	19.92
Cylindropuntia acanthocarpa var. major			1.00								1	6.64
Ditaxis neomexicana						3.00					3	19.92
Krameria grayi					1.00	2.00	1.00	1.00			5	33.20
Larrea tridentata	3.00	1.00	2.00	4.00	8.00	8.00	2.00	5.00	3.00	5.00	41	272.25
Lycium							2.00				2	13.28
Olneya tesota							1.00				1	6.64
Olneya tesota-seedling						4.00					4	26.56
Parkinsonia microphylla				1.00							1	6.64

* Number of decimal places does not imply level of precision

Notes:

C-SB-2

Soil Stability Rank: 3.3

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Conley > AIM

Site ID: C-SB-2 **Date:** 1/18/2018

Examiner(s):

Cover

Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	18	12	15	5	6	3	11	12	13	6	101	20.20
Cryptogam								1			1	0.20
Gravel (<3")	16	15	7	13	10	8	8	15	12	32	136	27.20
Acacia greggii			18								18	3.60
Ambrosia ambrosioides		3	2	2		3					10	2.00
Hymenoclea salsola						1	4			1	6	1.20
Larrea tridentata										1	1	0.20
Lycium					1		3	4	5		13	2.60
Parkinsonia florida	16	20	8		33	16	2	18	20	10	143	28.60
Prosopis velutina				30		19	22				71	14.20

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Conley > AIM

Site ID: C-SB-2 **Date:** 1/18/2018

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	28	33	38	22	25	28	28	24	33	12	271	54.20	54.20
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam								1			1	0.20	0.20
Gravel (<3")	22	17	12	28	25	22	22	25	17	38	228	45.60	45.60
Gravel (>3")											0	0.00	0.00
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Acacia greggii			18								18	3.60	5.73
Ambrosia ambrosioides		4	6	11	6	8			2		37	7.40	11.78
Hymenoclea salsola						2	4			2	8	1.60	2.55
Larrea tridentata										1	1	0.20	0.32
Lycium				2	11	4	7	4	6		34	6.80	10.83
Parkinsonia florida	16	20	8		33	16	4	18	20	10	145	29.00	46.18
Prosopis velutina				30		19	22				71	14.20	22.61

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Conley > AIM

Site ID: C-SB-2 **Date:** 1/18/2018

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Acacia greggii			1.00								1	6.64
Ambrosia ambrosioides		2.00	4.00	3.00	2.00						11	73.04
Ambrosia deltoidea						1.00		1.00			2	13.28
Ambrosia dumosa						1.00					1	6.64
Hymenoclea salsola					1.00	6.00	3.00	1.00			11	73.04
Larrea tridentata								2.00			2	13.28
Lycium	1.00		1.00	1.00	6.00	4.00	6.00	3.00	2.00		24	159.37
Parkinsonia florida	2.00	1.00			1.00	1.00		1.00	1.00		7	46.48
Parkinsonia florida-SEEDLING			1.00				1.00				2	13.28
Prosopis velutina						1.00					1	6.64
Sphaeralcea ambigua			2.00								2	13.28

* Number of decimal places does not imply level of precision

Notes:

C-SB-3

Soil Stability Rank: 2.6

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Conley > AIM

Site ID: C-SB-3 **Date:** 10/4/2017

Examiner(s):

Cover

Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	6	1	6	8	10	6	8	5	5	2	57	11.40
Bedrock	1	4	1	1						3	10	2.00
Cryptogam		4		4		1	1	1	1	1	13	2.60
Gravel (<3")	22	21	21	25	27	31	27	28	30	18	250	50.00
Gravel (>3")	1	2	3	3	2			2			13	2.60
Litter (>0.25")		1									1	0.20
Stones (>10" - 25")					1	1					2	0.40
Acacia constricta		7	3					1			11	2.20
Ambrosia deltoidea	2	1						2	1	2	8	1.60
Hymenoclea salsola			1								1	0.20
Krameria grayi					3	2					5	1.00
Larrea tridentata	7	4	1	7		2	8	4	1		34	6.80
Lycium								4	1	1	6	1.20
Olneya tesota		5	14		4		2		8	6	39	7.80
Parkinsonia microphylla	11			2	3	7	4	3	3	17	50	10.00

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Conley > AIM

Site ID: C-SB-3 **Date:** 10/4/2017

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	13	5	10	11	14	7	10	9	11	12	102	20.40	20.40
Basal Vegetation		1									1	0.20	0.20
Bedrock	1	6	2	1						7	17	3.40	3.40
Boulders (>25")											0	0.00	0.00
Cryptogam		4		4		1	1	1	2	2	15	3.00	3.00
Gravel (<3")	35	31	32	31	33	39	39	37	37	29	343	68.60	68.60
Gravel (>3")	1	2	3	3	2	1		3			15	3.00	3.00
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")		1									1	0.20	0.20
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")			3		1	2					6	1.20	1.20
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Acacia constricta		7	3					1			11	2.20	6.55
Ambrosia deltoidea	2	1	2					2	2	2	11	2.20	6.55
Carnegiea gigantea					1						1	0.20	0.60
Hymenoclea salsola			1								1	0.20	0.60
Krameria grayi					3	3					6	1.20	3.57
Larrea tridentata	10	4	1	7		2	8	4	1		37	7.40	22.02
Lycium			2					4	1	1	8	1.60	4.76
Olneya tesota		5	14		4		2		8	6	39	7.80	23.21
Parkinsonia microphylla	11			2	7	7	4	3	3	17	54	10.80	32.14

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Conley > AIM

Site ID: C-SB-3 **Date:** 10/4/2017

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Acacia constricta		1.00		3.00	1.00	1.00	1.00	1.00			8	53.12
Ambrosia deltoidea	7.00	7.00	5.00		9.00	5.00	4.00	9.00	14.00	3.00	63	418.34
Ambrosia dumosa								1.00		1.00	2	13.28
Brickellia		1.00									1	6.64
Carnegiea gigantea	1.00			1.00	1.00						3	19.92
Cylindropuntia acanthocarpa var. major							1.00				1	6.64
Encelia farinosa			2.00					1.00			3	19.92
Ephedra		1.00				1.00				1.00	3	19.92
Krameria grayi		1.00			2.00	3.00	1.00				7	46.48
Larrea tridentata	6.00	8.00	3.00	3.00	1.00	3.00	3.00	2.00	2.00	1.00	32	212.49
Lycium						1.00	1.00		1.00	1.00	4	26.56
Olneya tesota		2.00	2.00						2.00		6	39.84
Parkinsonia florida							1.00				1	6.64
Parkinsonia microphylla			1.00	1.00		1.00		1.00		1.00	5	33.20
Sphaeralcea ambigua							1.00				1	6.64
Stephanomeria		2.00		1.00							3	19.92
Trixis californica		1.00		1.00							2	13.28

* Number of decimal places does not imply level of precision

Notes:

C-SB-4

Soil Stability Rank: 4.2

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Conley > AIM

Site ID: C-SB-4 **Date:** 2/14/2018

Examiner(s):

Cover

Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	27	21	23	28	11	21	26	25	23	23	228	45.60
Cryptogam	2	4	3	1		2	2	3	6	10	33	6.60
Gravel (<3")	4	4	7	5	16	10	8	8	16	7	85	17.00
Scat - Livestock							1				1	0.20
Acacia constricta	7										7	1.40
Acacia greggii				2	2	2					6	1.20
Ambrosia deltoidea										3	3	0.60
Hymenoclea salsola			3		2	3	2				10	2.00
Krameria grayi	4	1									5	1.00
Larrea tridentata	3	13			2	6	3	7	5	3	42	8.40
Lycium	3	7	9	1				4		4	28	5.60
Olneya tesota			5	7			8				20	4.00
Parkinsonia florida				6	16	6		2			30	6.00
Unknown 1 - red mustard					1						1	0.20
Unknown 2 - night blooming								1			1	0.20

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Conley > AIM

Site ID: C-SB-4 **Date:** 2/14/2018

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	40	32	34	44	29	28	38	35	24	30	334	66.80	66.80
Basal Vegetation						1					1	0.20	0.20
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam	2	9	4	1		3	2	5	10	13	49	9.80	9.80
Gravel (<3")	8	9	12	5	21	18	9	10	16	7	115	23.00	23.00
Gravel (>3")											0	0.00	0.00
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")											0	0.00	0.00
Scat - Livestock							1				1	0.20	0.20
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Acacia constricta	7										7	1.40	4.32
Acacia greggii				3	2	2					7	1.40	4.32
Ambrosia deltoidea										3	3	0.60	1.85
Cylindropuntia leptocaulis	1										1	0.20	0.62
Hymenoclea salsola			3		2	3	2				10	2.00	6.17
Krameria grayi	4	3									7	1.40	4.32
Larrea tridentata	3	13			2	6	3	7	5	3	42	8.40	25.93
Lycium	3	7	9	1	5			4		4	33	6.60	20.37
Olneya tesota			5	7			8				20	4.00	12.35
Parkinsonia florida				6	16	6		2			30	6.00	18.52
Unknown 1 - red mustard					1						1	0.20	0.62
Unknown 2 - night blooming								1			1	0.20	0.62

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Conley > AIM

Site ID: C-SB-4 **Date:** 2/14/2018

Examiner(s):

Density											
Species	Transect (Count)										Density* / ac
	1	2	3	5	6	7	8	9	10	Total	
Acacia greggii					2.00					2	14.76
Ambrosia deltoidea	2.00						1.00		12.00	15	110.67
Cylindropuntia acanthocarpa var. major						1.00		1.00		2	14.76
Cylindropuntia leptocaulis	1.00	1.00								2	14.76
Hymenoclea salsola			4.00	5.00	7.00	2.00		1.00		19	140.18
Krameria grayi	3.00	2.00								5	36.89
Larrea tridentata	3.00	2.00		2.00	1.00	1.00	3.00	3.00	1.00	16	118.05
Lycium	4.00	1.00	6.00			2.00	1.00		2.00	16	118.05
Parkinsonia florida					1.00					1	7.38
Unknown 1-red mustard				2.00						2	14.76
Unknown 2-night blooming							1.00			1	7.38

* Number of decimal places does not imply level of precision

Notes:

Sandy Loam Deep

C-SLD-1

Soil Stability Rank: 4.3

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Conley > AIM

Site ID: C-SLD-1 **Date:** 2/13/2018

Examiner(s):

Cover												
Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	21	13	9	23	20	21	19	12	17	12	167	33.40
Cryptogam	6	5	9	3	6	14	9	10	10	9	81	16.20
Gravel (<3")	21	26	29	23	22	10	21	24	19	15	210	42.00
Larrea tridentata	2	6	3	1	2	5	1	4	4	3	31	6.20
Parkinsonia microphylla										11	11	2.20

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Conley > AIM

Site ID: C-SLD-1 **Date:** 2/13/2018

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	21	16	10	24	20	22	19	13	18	25	188	37.60	37.60
Basal Vegetation						1					1	0.20	0.20
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam	6	5	9	3	6	14	9	10	10	9	81	16.20	16.20
Gravel (<3")	23	29	31	23	24	13	22	27	22	16	230	46.00	46.00
Gravel (>3")											0	0.00	0.00
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Larrea tridentata	2	6	3	1	2	5	1	4	4	7	35	7.00	76.09
Parkinsonia microphylla										11	11	2.20	23.91

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Conley > AIM

Site ID: C-SLD-1 **Date:** 2/13/2018

Examiner(s):

Density

Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea				1.00							1	6.64
Larrea tridentata	5.00	4.00	7.00	8.00	9.00	10.00	4.00	4.00	8.00	8.00	67	444.90

* Number of decimal places does not imply level of precision

Notes:

C-SLD-2

Soil Stability Rank: 5.6

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Conley > AIM

Site ID: C-SLD-2 **Date:** 3/13/2017

Examiner(s):

Cover												
Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	12	16	25	20	21	15	25	16	24	22	196	39.20
Cryptogam	4	8	6	5	8	2			6	3	42	8.40
Gravel (<3")	31	25	19	17	21	19	22	26	18	9	207	41.40
Ambrosia deltoidea								2		3	5	1.00
Larrea tridentata	3	1		8		5	3	1	2	10	33	6.60
Lycium										3	3	0.60
Olneya tesota						9		5			14	2.80

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Conley > AIM

Site ID: C-SLD-2 **Date:** 3/13/2017

Examiner(s):

Surface Cover													
Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	13	16	25	25	21	20	25	22	25	33	225	45.00	45.00
Basal Vegetation								1		1	2	0.40	0.40
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam	4	8	6	5	8	2			6	3	42	8.40	8.40
Gravel (<3")	33	26	19	20	21	28	25	27	19	13	231	46.20	46.20
Gravel (>3")											0	0.00	0.00
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover													
Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea								4	1	3	8	1.60	13.33
Larrea tridentata	3	1		8		5	3	1	2	12	35	7.00	58.33
Lycium										3	3	0.60	5.00
Olneya tesota						9		5			14	2.80	23.33

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Conley > AIM

Site ID: C-SLD-2 **Date:** 3/13/2017

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea		3.00						5.00	2.00	4.00	14	92.96
Ambrosia dumosa								1.00			1	6.64
Carnegiea gigantea								1.00			1	6.64
Larrea tridentata	5.00	7.00	6.00	10.00	4.00	5.00	5.00	9.00	4.00	7.00	62	411.70
Lycium								1.00			1	6.64
Olneya tesota						1.00		3.00			4	26.56
Unknown 9-Packrat Midden						1.00		1.00			2	13.28

* Number of decimal places does not imply level of precision

Notes:

C-SLD-3

Soil Stability Rank: 3.3

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Conley > AIM

Site ID: C-SLD-3 **Date:** 1/13/2011

Examiner(s):

Cover

Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	32	33	29	32	25	29	28	30	41	40	319	63.80
Cryptogam	4	8		1	2	3	4	1	1		24	4.80
Gravel (<3")	7	5	3	8	14	17	16	19	5	8	102	20.40
Gravel (>3")	1						1				2	0.40
Scat - Livestock	1										1	0.20
Ambrosia deltoidea										2	2	0.40
Larrea tridentata	5	3	6	9	9	1	1		3		37	7.40
Lycium		1									1	0.20
Parkinsonia florida			12								12	2.40

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Conley > AIM

Site ID: C-SLD-3 **Date:** 1/13/2011

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	36	37	46	41	34	30	29	30	44	42	369	73.80	73.80
Basal Vegetation			1								1	0.20	0.20
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam	5	8		1	2	3	4	1	1		25	5.00	5.00
Gravel (<3")	7	5	3	8	14	17	16	19	5	8	102	20.40	20.40
Gravel (>3")	1						1				2	0.40	0.40
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")											0	0.00	0.00
Scat - Livestock	1										1	0.20	0.20
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea										2	2	0.40	3.77
Larrea tridentata	5	3	7	9	9	1	1		3		38	7.60	71.70
Lycium		1									1	0.20	1.89
Parkinsonia florida			12								12	2.40	22.64

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Conley > AIM

Site ID: C-SLD-3 **Date:** 3/8/2017

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea		2.00	1.00	5.00			1.00		1.00	2.00	12	79.68
Ferocactus wislizeni					2.00						2	13.28
Larrea tridentata	12.00	6.00	6.00	9.00	14.00	3.00	7.00	3.00	5.00	4.00	69	458.18
Lycium		1.00									1	6.64

* Number of decimal places does not imply level of precision

Notes:

C-SLD-4

Soil Stability Rank: 3.0

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Conley > AIM

Site ID: C-SLD-4 **Date:** 2/13/2018

Examiner(s):

Cover												
Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	40	37	44	31	40	31	28	33	33	35	352	70.40
Cryptogam				1	3	1	4	2	3	1	15	3.00
Gravel (<3")	7	12	5	3	3	15	11	8	10	13	87	17.40
Ambrosia deltoidea				1			1				2	0.40
Larrea tridentata	3	1	1	14	4	3	6	7	4	1	44	8.80

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Conley > AIM

Site ID: C-SLD-4 **Date:** 2/13/2018

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	43	38	45	45	43	32	34	38	37	36	391	78.20	78.20
Basal Vegetation						1					1	0.20	0.20
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam				1	4	1	4	3	3	1	17	3.40	3.40
Gravel (<3")	7	12	5	4	3	16	12	9	10	13	91	18.20	18.20
Gravel (>3")											0	0.00	0.00
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea				1			1				2	0.40	4.35
Larrea tridentata	3	1	1	14	4	3	6	7	4	1	44	8.80	95.65

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Conley > AIM

Site ID: C-SLD-4 **Date:** 2/13/2018

Examiner(s):

Density

Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea				3.00	2.00		1.00				6	39.84
Ambrosia dumosa				3.00	1.00						4	26.56
Larrea tridentata	4.00	5.00	4.00	8.00	6.00	8.00	6.00	4.00	6.00	4.00	55	365.21

* Number of decimal places does not imply level of precision

Notes:

Sandy Loam Upland

C-SLU-1

Soil Stability Rank: 5.9

Cover - Top Layer

Site Class: Phoenix District || Sonoran Desert NM || Conley || AIM

Site ID: C-SLU-1 **Date:** 3/15/2017

Examiner(s):

Cover

Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	40	33	34	30	37	41	34	42	35	38	364	72.80
Cryptogam	5	5	8	10	3	5	5	5	6	6	58	11.60
Gravel (<3")	3	5	3	8	3	1	0	1	2	4	30	6.00
Larrea tridentata	2	7	5	2	7	3	11	2	7	2	48	9.60

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District || Sonoran Desert NM || Conley || AIM

Site ID: C-SLU-1 **Date:** 3/15/2017

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	42	38	38	31	42	43	41	44	38	39	396	79.20	79.20
Bedrock	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Boulders (>25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Cryptogam	5	5	8	10	3	5	7	5	6	7	61	12.20	12.20
Gravel (<3")	3	7	4	9	5	2	2	1	6	4	43	8.60	8.60
Gravel (>3")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
HL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Litter (<0.25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Litter (>0.25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Scat - Livestock	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Stones (>10" - 25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
WL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover													
Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Larrea tridentata	2	7	5	2	7	3	11	2	7	2	48	9.60	100.00

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Conley > AIM

Site ID: C-SLU-1 **Date:** 3/15/2017

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea						1.00	6.00			1.00	8	53.12
Canotia holacantha	1.00										1	6.64
Larrea tridentata	4.00	5.00	5.00	5.00	2.00	7.00	4.00	5.00	3.00	1.00	41	272.25

* Number of decimal places does not imply level of precision

Notes:

C-SLU-2

Soil Stability Rank: 5.9

Cover - Top Layer

Site Class: Phoenix District || Sonoran Desert NM || Conley || AIM

Site ID: C-SLU-2 **Date:** 3/15/2017

Examiner(s):

Cover												
Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	35	29	40	35	41	34	35	40	37	40	366	73.20
Cryptogam	9	6	6	11	3	9	1	7	5	3	60	12.00
Gravel (<3")	0	2	1	2	2	2	3	1	1	3	17	3.40
Larrea tridentata	6	13	3	2	4	5	11	2	7	4	57	11.40

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District || Sonoran Desert NM || Conley || AIM

Site ID: C-SLU-2 **Date:** 3/15/2017

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	41	41	43	37	44	37	46	42	44	44	419	83.80	83.80
Basal Vegetation	0	0	0	0	0	1	0	0	0	0	1	0.20	0.20
Bedrock	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Boulders (>25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Cryptogam	9	7	6	11	3	9	1	7	5	3	61	12.20	12.20
Gravel (<3")	0	2	1	2	3	3	3	1	1	3	19	3.80	3.80
Gravel (>3")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
HL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Litter (<0.25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Litter (>0.25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Scat - Livestock	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Stones (>10" - 25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
WL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Larrea tridentata	6	13	3	2	4	5	11	2	7	4	57	11.40	100.00

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Conley > AIM

Site ID: C-SLU-2 **Date:** 3/15/2017

Examiner(s):

Density

Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea						1.00					1	6.64
Larrea tridentata	6.00	5.00	2.00	3.00	5.00	6.00	5.00	3.00	5.00	4.00	44	292.17
Lycium					1.00						1	6.64

* Number of decimal places does not imply level of precision

Notes:

C-SLU-3

Soil Stability Rank: 3.1

Cover - Top Layer

Site Class: Phoenix District || Sonoran Desert NM || Conley || AIM

Site ID: C-SLU-3 **Date:** 3/14/2014

Examiner(s):

Cover

Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	6	5	7	9	6	6	6	5	5	7	62	12.40
Cryptogam	0	0	0	0	0	1	0	0	1	0	2	0.40
Gravel (<3")	32	28	32	32	41	26	35	34	31	30	321	64.20
Gravel (>3")	1	0	1	4	1	2	0	0	2	0	11	2.20
Ambrosia deltoidea	2	2	3	2	2	4	7	4	3	0	29	5.80
Cylindropuntia acanthocarpa var. major	0	0	2	1	0	0	0	0	3	0	6	1.20
Krameria grayi	2	1	2	0	0	0	1	0	1	3	10	2.00
Larrea tridentata	4	13	3	2	0	11	1	1	4	1	40	8.00
Parkinsonia microphylla	3	1	0	0	0	0	0	6	0	9	19	3.80

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District || Sonoran Desert NM || Conley || AIM

Site ID: C-SLU-3 **Date:** 3/14/2017

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	8	10	10	10	6	7	7	7	7	10	82	16.40	16.40
Basal Vegetation	0	0	1	0	0	0	0	0	0	0	1	0.20	0.20
Bedrock	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Boulders (>25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Cryptogam	0	0	0	0	0	1	0	0	1	0	2	0.40	0.40
Gravel (<3")	41	40	38	36	43	39	43	43	40	40	403	80.60	80.60
Gravel (>3")	1	0	1	4	1	3	0	0	2	0	12	2.40	2.40
HL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Litter (<0.25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Litter (>0.25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Scat - Livestock	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Stones (>10" - 25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
WL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea	2	2	3	3	2	4	8	4	3	0	31	6.20	28.44
Cylindropuntia acanthocarpa var. major	0	0	2	1	0	0	0	0	3	0	6	1.20	5.50
Krameria grayi	2	1	3	0	0	0	1	0	2	3	12	2.40	11.01
Larrea tridentata	4	13	3	2	0	11	1	1	4	2	41	8.20	37.61
Parkinsonia microphylla	3	1	0	0	0	0	0	6	0	9	19	3.80	17.43

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Conley > AIM

Site ID: C-SLU-3 **Date:** 3/14/2017

Examiner(s):

Density

Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea	3.00	5.00	7.00	10.00	2.00	8.00	5.00	6.00	3.00	1.00	50	332.01
Carnegiea gigantea		2.00					1.00				3	19.92
Cylindropuntia acanthocarpa var. major			1.00						2.00		3	19.92
Echinocereus engelmannii			1.00								1	6.64
Krameria grayi	1.00	3.00	1.00				1.00	3.00	1.00	7.00	17	112.88
Larrea tridentata	3.00	7.00	6.00	2.00		4.00	2.00	3.00		5.00	32	212.49
Mammillaria			2.00								2	13.28
Parkinsonia microphylla							1.00			1.00	2	13.28
Unknown 9-Packrat Midden						1.00					1	6.64

* Number of decimal places does not imply level of precision

Notes:

C-SLU-4

Soil Stability Rank: 5.1

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Conley > AIM

Site ID: C-SLU-4 **Date:** 1/31/2018

Examiner(s):

Cover												
Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	34	43	42	35	37	36	31	44	34	38	374	74.80
Cryptogam	5	3	4	6	2	4	8	2	5		39	7.80
Gravel (<3")	3	2	3	5	5	2	2	3	1	3	29	5.80
Gravel (>3")	1										1	0.20
Ambrosia deltoidea	7	2				1					10	2.00
Larrea tridentata			1	4	1	4		1	2	5	18	3.60
Olneya tesota					5				8	4	17	3.40
Prosopis velutina						3	9				12	2.40

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Conley > AIM

Site ID: C-SLU-4 **Date:** 1/31/2018

Examiner(s):

Surface Cover													
Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	40	45	43	39	42	44	40	45	43	46	427	85.40	85.40
Basal Vegetation	1								1	1	3	0.60	0.60
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam	5	3	4	6	2	4	8	2	5		39	7.80	7.80
Gravel (<3")	3	2	3	5	6	2	2	3	1	3	30	6.00	6.00
Gravel (>3")	1										1	0.20	0.20
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover													
Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea	7	2			1	1					11	2.20	18.03
Larrea tridentata			1	4	1	4	1	1	2	5	19	3.80	31.15
Lycium										2	2	0.40	3.28
Olneya tesota					5				8	4	17	3.40	27.87
Prosopis velutina						3	9				12	2.40	19.67

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Conley > AIM

Site ID: C-SLU-4 **Date:** 1/31/2018

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea	6.00	4.00	2.00	1.00	2.00	1.00		2.00	1.00	2.00	21	139.45
Larrea tridentata	2.00	3.00	4.00	4.00	1.00	3.00	2.00	2.00	1.00	13.00	35	232.41
Lycium										1.00	1	6.64
Olneya tesota									1.00		1	6.64
Olneya tesota-seedling										2.00	2	13.28

* Number of decimal places does not imply level of precision

Notes:

C-SLU-5

Soil Stability Rank: 4.3

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Conley > AIM

Site ID: C-SLU-5 **Date:** 6/28/2018

Examiner(s):

Cover

Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	29	30	30	27	42	34	32	38	29	26	317	63.40
Cryptogam	15	12	9	14	2	8	5	2	6	3	76	15.20
Gravel (<3")	5	4	8	4		2	2	2	7	1	35	7.00
Ambrosia deltoidea								2	1	1	4	0.80
Krameria grayi								1			1	0.20
Larrea tridentata	1	4	3	5	6	3	11	5	7	12	57	11.40
Parkinsonia microphylla						3				7	10	2.00

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

PINT_3

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Conley > AIM

Site ID: C-SLU-5 **Date:** 6/28/2018

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	29	34	33	31	48	40	43	46	37	46	387	77.40	77.40
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam	16	12	9	15	2	8	5	2	6	3	78	15.60	15.60
Gravel (<3")	5	4	8	4		2	2	2	7	1	35	7.00	7.00
Gravel (>3")											0	0.00	0.00
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea							1	2	1	2	6	1.20	8.11
Krameria grayi								1			1	0.20	1.35
Larrea tridentata	1	4	3	5	6	3	11	5	7	12	57	11.40	77.03
Parkinsonia microphylla						3				7	10	2.00	13.51

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Conley > AIM

Site ID: C-SLU-5 **Date:** 6/28/2018

Examiner(s):

Density

Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea						1.00	2.00	4.00	2.00	2.00	11	73.04
Ambrosia dumosa										1.00	1	6.64
Krameria grayi								1.00			1	6.64
Larrea tridentata	4.00	3.00	6.00	4.00	6.00	3.00	8.00	5.00	6.00	6.00	51	338.65

* Number of decimal places does not imply level of precision

Notes:

Hazen Allotment

Granitic Upland

H-GU-1

Soil Stability Rank: 5.5

Cover - Top Layer

Site Class: Phoenix District || Sonoran Desert NM || Hazen || AIM

Site ID: H-GU-1 **Date:** 1/10/2017

Examiner(s):

Cover

Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	5	4	3	5	5	9	7	12	7	7	64	12.80
Bedrock	1	2	6	6	1	0	2	1	6	0	25	5.00
Cryptogam	4	3	2	1	1	2	4	2	4	3	26	5.20
Gravel (<3")	36	34	26	35	38	36	28	25	24	30	312	62.40
Gravel (>3")	1	1	0	2	1	0	0	0	0	0	5	1.00
Litter (<0.25")	1	0	0	0	0	1	0	0	0	0	2	0.40
Ambrosia deltoidea	0	2	1	1	0	0	1	3	3	0	11	2.20
Cylindropuntia acanthocarpa var. acanthocarpa	0	0	0	0	1	0	0	0	0	0	1	0.20
Larrea tridentata	2	4	0	0	3	1	7	4	6	6	33	6.60
Olneya tesota	0	0	3	0	0	0	0	3	0	0	6	1.20
Parkinsonia microphylla	0	0	9	0	0	1	1	0	0	4	15	3.00

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District || Sonoran Desert NM || Hazen || AIM

Site ID: H-GU-1 **Date:** 1/10/2017

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	5	4	9	5	7	11	13	15	13	12	94	18.80	18.80
Basal Vegetation	0	1	0	0	1	0	0	0	0	0	2	0.40	0.40
Bedrock	1	3	8	6	1	0	2	1	6	0	28	5.60	5.60
Boulders (>25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Cryptogam	4	3	3	1	1	2	4	2	4	3	27	5.40	5.40
Gravel (<3")	38	38	27	36	39	36	31	32	27	35	339	67.80	67.80
Gravel (>3")	1	1	1	2	1	0	0	0	0	0	6	1.20	1.20
HL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Litter (<0.25")	1	0	1	0	0	1	0	0	0	0	3	0.60	0.60
Litter (>0.25")	0	0	1	0	0	0	0	0	0	0	1	0.20	0.20
Scat - Livestock	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Stones (>10" - 25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
WL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea	0	2	2	1	0	0	2	3	3	0	13	2.60	18.84
Cylindropuntia acanthocarpa var. acanthocarpa	0	0	0	0	1	0	0	0	0	0	1	0.20	1.45
Larrea tridentata	2	4	0	0	3	1	7	4	6	7	34	6.80	49.28
Olneya tesota	0	0	3	0	0	0	0	3	0	0	6	1.20	8.70
Parkinsonia microphylla	0	0	9	0	0	1	1	0	0	4	15	3.00	21.74

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Hazen > AIM

Site ID: H-GU-1 **Date:** 1/10/2017

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea	1.00	4.00	4.00	2.00		2.00	2.00	4.00	3.00		22	146.09
Cylindropuntia acanthocarpa var. acanthocarpa						1.00					1	6.64
Echinocereus engelmannii				1.00							1	6.64
Encelia farinosa									1.00		1	6.64
Krameria grayi								1.00			1	6.64
Larrea tridentata	2.00	4.00	7.00	4.00	2.00	2.00	9.00	4.00	5.00	6.00	45	298.81
Lycium									1.00		1	6.64

* Number of decimal places does not imply level of precision

Notes:

H-GU-2

Soil Stability Rank: 3.0

Cover - Top Layer

Site Class: Phoenix District || Sonoran Desert NM || Hazen || AIM

Site ID: H-GU-2 **Date:** 1/19/2017

Examiner(s):

Cover												
Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	12	6	3	4	4	5	5	8	3	4	54	10.80
Bedrock	11	0	0	5	7	0	0	8	0	1	32	6.40
Cryptogam	4	1	0	1	0	2	3	4	2	6	23	4.60
Gravel (<3")	17	25	31	30	29	36	35	23	32	29	287	57.40
Carnegiea gigantea	0	1	0	0	0	0	0	0	0	0	1	0.20
Encelia farinosa	0	0	0	1	0	0	0	0	0	0	1	0.20
Fouquieria splendens	0	2	0	0	0	0	0	0	0	0	2	0.40
Krameria grayi	0	0	1	2	0	0	2	0	0	0	5	1.00
Larrea tridentata	6	9	8	3	7	7	5	3	3	4	55	11.00
Olneya tesota	0	0	5	4	0	0	0	0	0	0	9	1.80
Parkinsonia microphylla	0	6	2	0	3	0	0	4	10	6	31	6.20

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District || Sonoran Desert NM || Hazen || AIM

Site ID: H-GU-2 **Date:** 1/19/2017

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	14	13	10	6	10	6	7	14	8	5	93	18.60	18.60
Bedrock	11	4	0	6	8	0	0	8	1	2	40	8.00	8.00
Boulders (>25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Cryptogam	5	2	0	1	1	2	5	4	4	7	31	6.20	6.20
Gravel (<3")	20	31	40	37	31	42	38	24	37	36	336	67.20	67.20
Gravel (>3")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
HL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Litter (<0.25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Litter (>0.25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Scat - Livestock	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Stones (>10" - 25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
WL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Carnegiea gigantea	0	1	0	0	0	0	0	0	0	0	1	0.20	0.93
Cylindropuntia acanthocarpa var. major	1	0	0	0	0	0	0	0	0	0	1	0.20	0.93
Encelia farinosa	0	0	0	1	0	0	0	0	0	0	1	0.20	0.93
Fouquieria splendens	0	2	0	0	0	0	0	0	0	0	2	0.40	1.85
Krameria grayi	0	0	1	2	0	0	2	0	0	0	5	1.00	4.63
Larrea tridentata	6	10	8	3	7	7	5	3	3	5	57	11.40	52.78
Olneya tesota	0	0	5	4	0	0	0	0	0	0	9	1.80	8.33
Parkinsonia microphylla	0	7	2	0	3	0	0	4	10	6	32	6.40	29.63

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Hazen > AIM

Site ID: H-GU-2 **Date:** 1/19/2017

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea	2.00	2.00		1.00		1.00				2.00	8	53.12
Ambrosia dumosa										1.00	1	6.64
Celtis pallida										1.00	1	6.64
Cylindropuntia acanthocarpa var. major	2.00										2	13.28
Encelia farinosa	1.00	1.00		1.00	3.00			2.00	8.00		16	106.24
Krameria grayi			2.00	2.00		1.00	1.00				6	39.84
Larrea tridentata	5.00	5.00	1.00	2.00	1.00	4.00	3.00	2.00	3.00	4.00	30	199.21
Olneya tesota				1.00							1	6.64
Parkinsonia microphylla								1.00	1.00		2	13.28
Unknown 9-Packrat Midden				1.00							1	6.64

* Number of decimal places does not imply level of precision

Notes:

H-GU-3

Soil Stability Rank: 4.4

Cover - Top Layer

Site Class: Phoenix District || Sonoran Desert NM || Hazen || AIM

Site ID: H-GU-3 **Date:** 1/13/2017

Examiner(s):

Cover

Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	13	12	12	10	9	5	7	4	4	4	80	16.00
Bedrock	0	0	0	1	0	3	0	0	1	10	15	3.00
Cryptogam	0	3	4	2	1	8	4	3	9	1	35	7.00
Gravel (<3")	31	26	25	34	35	22	27	38	34	25	297	59.40
Gravel (>3")	1	1	2	0	0	0	0	1	0	1	6	1.20
Ambrosia deltoidea	0	4	1	0	0	1	2	0	0	0	8	1.60
Carnegiea gigantea	0	0	0	0	1	0	0	0	0	2	3	0.60
Encelia farinosa	0	0	0	0	0	0	0	0	0	3	3	0.60
Larrea tridentata	5	4	6	3	4	5	10	4	1	4	46	9.20
Lycium	0	0	0	0	0	0	0	0	1	0	1	0.20
Olneya tesota	0	0	0	0	0	6	0	0	0	0	6	1.20

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District || Sonoran Desert NM || Hazen || AIM

Site ID: H-GU-3 **Date:** 1/13/2017

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	16	18	15	10	11	12	13	7	4	4	110	22.00	22.00
Basal Vegetation	0	0	0	0	0	1	1	0	0	1	3	0.60	0.60
Bedrock	0	0	0	1	0	3	0	0	1	13	18	3.60	3.60
Boulders (>25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Cryptogam	0	4	4	3	2	9	4	3	9	1	39	7.80	7.80
Gravel (<3")	33	27	29	36	37	25	32	39	36	30	324	64.80	64.80
Gravel (>3")	1	1	2	0	0	0	0	1	0	1	6	1.20	1.20
HL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Litter (<0.25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Litter (>0.25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Scat - Livestock	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Stones (>10" - 25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
WL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea	0	4	1	0	0	1	2	0	0	0	8	1.60	11.76
Carnegiea gigantea	0	0	0	0	1	0	0	0	0	2	3	0.60	4.41
Encelia farinosa	0	0	0	0	0	0	0	0	0	3	3	0.60	4.41
Larrea tridentata	5	4	6	3	4	5	10	4	1	4	46	9.20	67.65
Lycium	0	0	0	0	0	1	0	0	1	0	2	0.40	2.94
Olneya tesota	0	0	0	0	0	6	0	0	0	0	6	1.20	8.82

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Hazen > AIM

Site ID: H-GU-3 **Date:** 1/13/2017

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea		4.00	5.00			1.00	4.00			2.00	16	106.24
Carnegiea gigantea					1.00					1.00	2	13.28
Echinocereus engelmannii										1.00	1	6.64
Encelia farinosa										8.00	8	53.12
Krameria grayi										1.00	1	6.64
Larrea tridentata	4.00	2.00	6.00	2.00	3.00	7.00	5.00	4.00	3.00	2.00	38	252.33

* Number of decimal places does not imply level of precision

Notes:

H-GU-4

Soil Stability Rank: 3.1

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Hazen > AIM

Site ID: H-GU-4 **Date:** 2/7/2018

Examiner(s):

Cover												
Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	19	9	18	13	14	3	5	9	10	13	113	22.60
Bedrock	5	2	2		1	1	3				14	2.80
Cryptogam			4	1	3		1		1	4	14	2.80
Gravel (<3")	24	24	23	27	26	29	23	38	38	28	280	56.00
Gravel (>3")		1									1	0.20
Ambrosia deltoidea							1	1			2	0.40
Carnegiea gigantea		1					1				2	0.40
Encelia farinosa		3									3	0.60
Krameria grayi		2		1			3				6	1.20
Larrea tridentata	2	8	3	8	3	3	3	2	1	5	38	7.60
Olneya tesota					3	8	2				13	2.60
Parkinsonia microphylla						6	8				14	2.80

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Hazen > AIM

Site ID: H-GU-4 **Date:** 2/7/2018

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	20	18	19	17	15	8	17	10	11	14	149	29.80	29.80
Bedrock	5	2	2		1	1	3				14	2.80	2.80
Boulders (>25")											0	0.00	0.00
Cryptogam			4	1	6	2	1		1	4	19	3.80	3.80
Gravel (<3")	25	29	25	32	28	38	29	40	38	32	316	63.20	63.20
Gravel (>3")		1				1					2	0.40	0.40
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea							2	1			3	0.60	3.57
Carnegiea gigantea		1					1				2	0.40	2.38
Encelia farinosa		3					2				5	1.00	5.95
Krameria grayi		3		1			4				8	1.60	9.52
Larrea tridentata	2	8	3	8	3	3	3	2	1	5	38	7.60	45.24
Olneya tesota					3	8	2				13	2.60	15.48
Parkinsonia microphylla						6	9				15	3.00	17.86

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Hazen > AIM

Site ID: H-GU-4 **Date:** 2/7/2018

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea						3.00	2.00	1.00			6	39.84
Carnegiea gigantea		1.00	1.00				1.00				3	19.92
Cylindropuntia acanthocarpa var. major	1.00										1	6.64
Encelia farinosa	3.00	5.00	1.00			2.00	1.00				12	79.68
Krameria grayi		3.00	1.00	1.00	1.00	2.00	5.00	1.00			14	92.96
Larrea tridentata	3.00	6.00	3.00	6.00	3.00	3.00	2.00	2.00	3.00	5.00	36	239.05
Lycium								1.00			1	6.64

* Number of decimal places does not imply level of precision

Notes:

Limy Fan

H-LF-1

Soil Stability Rank: 5.6

Cover - Top Layer

Site Class: Phoenix District || Sonoran Desert NM || Hazen || AIM

Site ID: H-LF-1 **Date:** 1/26/2017

Examiner(s):

Cover												
Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	11	6	4	2	3	1	0	2	14	11	54	10.80
Cryptogam	6	13	10	22	23	15	27	20	9	5	150	30.00
Gravel (<3")	28	24	30	26	21	30	23	26	26	30	264	52.80
Gravel (>3")	0	0	0	0	1	0	0	0	0	0	1	0.20
Ambrosia deltoidea	0	2	0	0	0	0	0	0	0	0	2	0.40
Larrea tridentata	5	5	6	0	2	4	0	2	1	4	29	5.80

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District || Sonoran Desert NM || Hazen || AIM

Site ID: H-LF-1 **Date:** 1/26/2017

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	12	9	5	2	3	1	0	2	14	12	60	12.00	12.00
Basal Vegetation	0	0	1	0	0	0	0	0	0	0	1	0.20	0.20
Bedrock	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Boulders (>25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Cryptogam	6	14	10	22	23	15	27	20	9	6	152	30.40	30.40
Gravel (<3")	32	27	34	26	23	34	23	28	27	32	286	57.20	57.20
Gravel (>3")	0	0	0	0	1	0	0	0	0	0	1	0.20	0.20
HL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Litter (<0.25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Litter (>0.25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Scat - Livestock	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Stones (>10" - 25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
WL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea	0	2	0	0	0	0	0	0	0	0	2	0.40	6.45
Larrea tridentata	5	5	6	0	2	4	0	2	1	4	29	5.80	93.55

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Hazen > AIM

Site ID: H-LF-1 **Date:** 1/26/2017

Examiner(s):

Density

Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea	1.00	1.00	1.00							1.00	4	26.56
Encelia farinosa							1.00				1	6.64
Larrea tridentata	5.00	5.00	4.00	3.00	1.00	5.00	2.00	4.00	2.00	4.00	35	232.41

* Number of decimal places does not imply level of precision

Notes:

H-LF-2

Soil Stability Rank: 5.6

Cover - Top Layer

Site Class: Phoenix District || Sonoran Desert NM || Hazen || AIM

Site ID: H-LF-2 **Date:** 2/8/2017

Examiner(s):

Cover

Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	12	12	10	15	11	9	1	3	1	1	75	15.00
Cryptogam	12	12	13	7	3	9	8	4	11	10	89	17.80
Gravel (<3")	26	25	20	19	24	17	31	35	36	33	266	53.20
Ambrosia deltoidea	0	0	0	0	0	2	2	1	0	1	6	1.20
Encelia farinosa	0	0	0	0	0	0	1	0	0	0	1	0.20
Larrea tridentata	0	1	7	9	12	13	7	7	2	5	63	12.60

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District || Sonoran Desert NM || Hazen || AIM

Site ID: H-LF-2 **Date:** 2/8/2017

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	12	12	12	18	14	17	3	3	1	2	94	18.80	18.80
Bedrock	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Boulders (>25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Cryptogam	12	12	13	8	4	9	8	5	11	10	92	18.40	18.40
Gravel (<3")	26	26	25	24	32	24	39	42	38	38	314	62.80	62.80
Gravel (>3")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
HL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Litter (<0.25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Litter (>0.25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Scat - Livestock	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Stones (>10" - 25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
WL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover													
Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea	0	0	0	0	0	2	2	1	0	2	7	1.40	9.86
Encelia farinosa	0	0	0	0	0	0	1	0	0	0	1	0.20	1.41
Larrea tridentata	0	1	7	9	12	13	7	7	2	5	63	12.60	88.73

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Hazen > AIM

Site ID: H-LF-2 **Date:** 2/8/2017

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea					1.00	3.00	3.00	3.00		2.00	12	79.68
Ambrosia dumosa			3.00								3	19.92
Larrea tridentata	1.00	5.00	8.00	6.00	9.00	7.00	8.00	5.00	5.00	6.00	60	398.41

* Number of decimal places does not imply level of precision

Notes:

H-LF-3

Soil Stability Rank: 4.0

Cover - Top Layer

Site Class: Phoenix District || Sonoran Desert NM || Hazen || AIM

Site ID: H-LF-3 **Date:** 1/13/2017

Examiner(s):

Cover												
Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	14	13	11	5	14	14	13	9	10	17	120	24.00
Cryptogam	3	4	2	1	0	7	1	3	5	4	30	6.00
Gravel (<3")	24	21	34	30	26	29	25	31	30	26	276	55.20
Ambrosia deltoidea	0	0	0	0	4	0	0	0	0	0	4	0.80
Larrea tridentata	9	12	3	11	6	0	11	7	5	3	67	13.40
Lycium	0	0	0	3	0	0	0	0	0	0	3	0.60

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District || Sonoran Desert NM || Hazen || AIM

Site ID: H-LF-3 **Date:** 1/13/2017

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	17	18	11	12	24	14	17	12	11	17	153	30.60	30.60
Basal Vegetation	1	0	0	0	0	0	0	1	0	0	2	0.40	0.40
Bedrock	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Boulders (>25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Cryptogam	3	5	2	2	0	7	1	3	5	4	32	6.40	6.40
Gravel (<3")	29	27	37	36	26	29	32	34	34	29	313	62.60	62.60
Gravel (>3")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
HL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Litter (<0.25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Litter (>0.25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Scat - Livestock	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Stones (>10" - 25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
WL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea	0	0	0	0	4	0	0	0	0	0	4	0.80	5.33
Larrea tridentata	9	12	3	11	6	0	11	7	5	3	67	13.40	89.33
Lycium	0	0	0	3	1	0	0	0	0	0	4	0.80	5.33

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Hazen > AIM

Site ID: H-LF-3 **Date:** 1/13/2017

Examiner(s):

Density

Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea				3.00	3.00						6	39.84
Larrea tridentata	9.00	6.00	3.00	5.00	7.00	2.00	4.00	7.00	2.00	6.00	51	338.65
Lycium				1.00	1.00						2	13.28

* Number of decimal places does not imply level of precision

Notes:

H-LF-4

Soil Stability Rank: 3.4

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Hazen > AIM

Site ID: H-LF-4 **Date:** 2/5/2018

Examiner(s):

Cover

Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	9	9	15	9	11	9	12	8	11	6	99	19.80
Cryptogam	10	7	6	5	4	8	5	7	7	10	69	13.80
Gravel (<3")	22	27	28	32	31	30	26	29	20	33	278	55.60
Ambrosia deltoidea	4									1	5	1.00
Krameria grayi			1						2		3	0.60
Larrea tridentata	5	7		4	4	3	7	6	10		46	9.20

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Hazen > AIM

Site ID: H-LF-4 **Date:** 2/5/2018

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	11	11	15	10	13	10	12	8	15	7	112	22.40	22.40
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam	12	7	6	5	4	9	6	10	9	10	78	15.60	15.60
Gravel (<3")	27	32	29	35	33	31	32	32	26	33	310	62.00	62.00
Gravel (>3")											0	0.00	0.00
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea	4									1	5	1.00	9.26
Krameria grayi			1						2		3	0.60	5.56
Larrea tridentata	5	7		4	4	3	7	6	10		46	9.20	85.19

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Hazen > AIM

Site ID: H-LF-4 **Date:** 2/5/2018

Examiner(s):

Density

Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea							1.00	1.00		3.00	5	33.20
Krameria grayi			1.00						2.00	1.00	4	26.56
Larrea tridentata	4.00	6.00	1.00	5.00	4.00	4.00	6.00	7.00	5.00	5.00	47	312.09

* Number of decimal places does not imply level of precision

Notes:

Limy Upland

H-LU-1

Soil Stability Rank: 4.2

Cover - Top Layer

Site Class: Phoenix District || Sonoran Desert NM || Hazen || AIM

Site ID: H-LU-1 **Date:** 2/23/2017

Examiner(s):

Cover

Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	0	0	0	0	1	1	1	2	1	1	7	1.40
Cryptogam	8	16	13	14	1	2	4	9	2	9	78	15.60
Gravel (<3")	38	30	27	22	39	35	36	29	38	34	328	65.60
Gravel (>3")	1	3	2	7	3	8	6	4	2	4	40	8.00
Stones (>10" - 25")	0	0	0	0	1	0	0	0	0	0	1	0.20
Ambrosia deltoidea	0	0	4	0	0	0	0	0	0	0	4	0.80
Larrea tridentata	3	1	4	7	5	4	3	6	7	2	42	8.40

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District || Sonoran Desert NM || Hazen || AIM

Site ID: H-LU-1 **Date:** 2/23/2017

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	0	0	0	0	1	1	1	3	1	1	8	1.60	1.60
Bedrock	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Boulders (>25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Cryptogam	8	16	14	16	1	2	5	9	3	9	83	16.60	16.60
Gravel (<3")	41	31	34	27	44	39	38	34	44	36	368	73.60	73.60
Gravel (>3")	1	3	2	7	3	8	6	4	2	4	40	8.00	8.00
HL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Litter (<0.25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Litter (>0.25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Scat - Livestock	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Stones (>10" - 25")	0	0	0	0	1	0	0	0	0	0	1	0.20	0.20
WL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover													
Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea	0	0	4	0	0	0	0	0	0	0	4	0.80	8.70
Larrea tridentata	3	1	4	7	5	4	3	6	7	2	42	8.40	91.30

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Hazen > AIM

Site ID: H-LU-1 **Date:** 2/23/2017

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea			3.00								3	19.92
Carnegiea gigantea			1.00								1	6.64
Cylindropuntia acanthocarpa var. major									2.00		2	13.28
Krameria grayi			1.00								1	6.64
Larrea tridentata	6.00	8.00	8.00	4.00	7.00	4.00	5.00	6.00	5.00	5.00	58	385.13

* Number of decimal places does not imply level of precision

Notes:

H-LU-2

Soil Stability Rank: 4.9

Cover - Top Layer

Site Class: Phoenix District || Sonoran Desert NM || Hazen || AIM

Site ID: H-LU-2 **Date:** 3/22/2017

Examiner(s):

Cover

Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	7	7	12	10	13	3	5	10	10	4	81	16.20
Cryptogam	3	3	3	5	3	5	2	9	2	4	39	7.80
Gravel (<3")	37	36	32	30	25	35	37	24	20	34	310	62.00
Gravel (>3")	1	1	0	5	3	2	2	0	3	1	18	3.60
Ambrosia deltoidea	0	0	0	0	0	0	0	0	0	1	1	0.20
Krameria grayi	0	0	0	0	1	0	0	0	2	1	4	0.80
Larrea tridentata	2	3	3	0	5	5	4	7	13	1	43	8.60
Parkinsonia microphylla	0	0	0	0	0	0	0	0	0	4	4	0.80

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District || Sonoran Desert NM || Hazen || AIM

Site ID: H-LU-2 **Date:** 3/22/2017

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	7	7	12	10	15	3	6	13	16	5	94	18.80	18.80
Basal Vegetation	0	0	0	0	1	0	0	0	1	0	2	0.40	0.40
Bedrock	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Boulders (>25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Cryptogam	3	4	4	5	4	7	2	9	2	5	45	9.00	9.00
Gravel (<3")	39	38	34	30	27	38	40	28	28	39	341	68.20	68.20
Gravel (>3")	1	1	0	5	3	2	2	0	3	1	18	3.60	3.60
HL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Litter (<0.25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Litter (>0.25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Scat - Livestock	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Stones (>10" - 25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
WL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover													
Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea	0	0	0	0	0	0	0	0	0	1	1	0.20	1.92
Krameria grayi	0	0	0	0	1	0	0	0	2	1	4	0.80	7.69
Larrea tridentata	2	3	3	0	5	5	4	7	13	1	43	8.60	82.69
Parkinsonia microphylla	0	0	0	0	0	0	0	0	0	4	4	0.80	7.69

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Hazen > AIM

Site ID: H-LU-2 **Date:** 3/22/2017

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea										7.00	7	46.48
Ambrosia dumosa										2.00	2	13.28
Krameria grayi					1.00				1.00	2.00	4	26.56
Larrea tridentata	5.00	8.00	6.00	5.00	6.00	11.00	5.00	9.00	4.00	2.00	61	405.05

* Number of decimal places does not imply level of precision

Notes:

H-LU-3

Soil Stability Rank: 3.8

Cover - Top Layer

Site Class: Phoenix District || Sonoran Desert NM || Hazen || AIM

Site ID: H-LU-3 **Date:** 2/22/2017

Examiner(s):

Cover

Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	3	3	2	5	4	6	2	1	1	4	31	6.20
Cryptogam	7	5	10	2	4	2	5	2	3	8	48	9.60
Gravel (<3")	34	28	32	37	37	36	40	44	44	25	357	71.40
Gravel (>3")	4	3	5	1	3	0	2	2	2	3	25	5.00
Ambrosia deltoidea	0	1	0	0	0	0	0	0	0	0	1	0.20
Aristida purpurea var. purpurea	0	2	0	1	0	0	0	0	0	0	3	0.60
Cylindropuntia acanthocarpa var. major	0	0	0	0	0	0	0	0	0	1	1	0.20
Krameria grayi	1	0	0	1	0	0	0	0	0	0	2	0.40
Larrea tridentata	1	2	1	3	2	0	1	1	0	1	12	2.40
Olneya tesota	0	6	0	0	0	6	0	0	0	0	12	2.40
Parkinsonia microphylla	0	0	0	0	0	0	0	0	0	8	8	1.60

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District || Sonoran Desert NM || Hazen || AIM

Site ID: H-LU-3 **Date:** 2/22/2017

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	4	7	3	6	5	11	3	1	1	7	48	9.60	9.60
Basal Vegetation	0	0	0	0	1	0	0	0	0	0	1	0.20	0.20
Bedrock	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Boulders (>25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Cryptogam	8	5	10	2	4	2	5	2	3	9	50	10.00	10.00
Gravel (<3")	34	35	32	41	37	37	40	45	44	31	376	75.20	75.20
Gravel (>3")	4	3	5	1	3	0	2	2	2	3	25	5.00	5.00
HL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Litter (<0.25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Litter (>0.25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Scat - Livestock	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Stones (>10" - 25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
WL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea	0	1	0	0	0	0	0	0	0	0	1	0.20	2.44
Aristida purpurea var. purpurea	0	2	0	1	0	0	0	0	0	0	3	0.60	7.32
Celtis pallida	0	0	0	0	0	0	0	0	0	2	2	0.40	4.88
Cylindropuntia acanthocarpa var. major	0	0	0	0	0	0	0	0	0	1	1	0.20	2.44
Krameria grayi	1	0	0	1	0	0	0	0	0	0	2	0.40	4.88
Larrea tridentata	1	2	1	3	2	0	1	1	0	1	12	2.40	29.27
Olneya tesota	0	6	0	0	0	6	0	0	0	0	12	2.40	29.27
Parkinsonia microphylla	0	0	0	0	0	0	0	0	0	8	8	1.60	19.51

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Hazen > AIM

Site ID: H-LU-3 **Date:** 2/22/2017

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea	3.00										3	19.92
Ambrosia dumosa		5.00	1.00								6	39.84
Aristida purpurea	13.00	15.00	1.00	1.00					1.00	2.00	33	219.13
Cylindropuntia acanthocarpa var. major	1.00									1.00	2	13.28
Echinocereus engelmannii								1.00			1	6.64
Krameria grayi	2.00	1.00	1.00	1.00	1.00		1.00		1.00	1.00	9	59.76
Larrea tridentata	3.00	3.00	8.00	5.00	10.00	6.00	4.00	5.00	8.00	5.00	57	378.49

* Number of decimal places does not imply level of precision

Notes:

H-LU-4

Soil Stability Rank: 4.5

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Hazen > AIM

Site ID: H-LU-4 **Date:** 2/16/2018

Examiner(s):

Cover												
Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	17	17	9	14	15	13	8	8	11	16	128	25.60
Cryptogam	5	2	6	6	4		6	1		2	32	6.40
Gravel (<3")	24	27	30	27	18	35	34	36	37	30	298	59.60
Gravel (>3")				2	1		1	3	1		8	1.60
Ambrosia deltoidea			1								1	0.20
Larrea tridentata	4	4	4	1	8	2	1	2	1	2	29	5.80
Olneya tesota					4						4	0.80

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Hazen > AIM

Site ID: H-LU-4 **Date:** 2/16/2018

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	18	18	11	14	19	15	9	9	11	17	141	28.20	28.20
Basal Vegetation		1									1	0.20	0.20
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam	7	4	7	7	10		6	1		2	44	8.80	8.80
Gravel (<3")	25	27	32	27	20	35	34	37	38	31	306	61.20	61.20
Gravel (>3")				2	1		1	3	1		8	1.60	1.60
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea			1								1	0.20	2.94
Larrea tridentata	4	4	4	1	8	2	1	2	1	2	29	5.80	85.29
Olneya tesota					4						4	0.80	11.76

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Hazen > AIM

Site ID: H-LU-4 **Date:** 2/16/2018

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea		1.00	4.00	1.00	3.00						9	59.76
Larrea tridentata	7.00	7.00	5.00	7.00	8.00	5.00	4.00	5.00	7.00	8.00	63	418.34
Olneya tesota					1.00						1	6.64

* Number of decimal places does not imply level of precision

Notes:

Limy Upland Deep

H-LUD-1

Soil Stability Rank: 5.3

Cover - Top Layer

Site Class: Phoenix District || Sonoran Desert NM || Hazen || AIM

Site ID: H-LUD-1 **Date:** 2/22/2017

Examiner(s):

Cover												
Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	0	0	1	1	1	0	0	0	1	0	4	0.80
Cryptogam	3	5	5	1	4	2	0	2	0	1	23	4.60
Gravel (<3")	33	27	36	38	37	33	35	31	25	45	340	68.00
Gravel (>3")	4	9	3	1	4	6	3	8	9	1	48	9.60
Stones (>10" - 25")	0	2	0	0	0	0	0	0	0	0	2	0.40
Ambrosia deltoidea	0	3	0	0	0	0	0	0	0	0	3	0.60
Aristida purpurea	3	0	1	1	0	0	0	2	3	0	10	2.00
Cylindropuntia acanthocarpa var. major	0	0	0	0	1	0	1	0	1	0	3	0.60
Dasyochloa pulchella	0	0	0	0	0	0	0	0	2	0	2	0.40
Krameria grayi	5	4	1	0	0	0	0	4	2	0	16	3.20
Larrea tridentata	2	0	3	8	3	9	11	3	7	3	49	9.80

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District || Sonoran Desert NM || Hazen || AIM

Site ID: H-LUD-1 **Date:** 2/22/2017

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	1	0	2	1	2	1	0	1	5	0	13	2.60	2.60
Bedrock	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Boulders (>25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Cryptogam	4	5	5	1	4	3	2	2	1	1	28	5.60	5.60
Gravel (<3")	40	33	40	47	40	40	45	39	35	48	407	81.40	81.40
Gravel (>3")	5	10	3	1	4	6	3	8	9	1	50	10.00	10.00
HL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Litter (<0.25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Litter (>0.25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Scat - Livestock	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Stones (>10" - 25")	0	2	0	0	0	0	0	0	0	0	2	0.40	0.40
WL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea	0	3	0	0	0	0	0	0	0	0	3	0.60	3.45
Ambrosia dumosa	0	0	0	0	0	0	0	0	1	0	1	0.20	1.15
Aristida purpurea	4	1	1	2	0	0	0	2	3	0	13	2.60	14.94
Cylindropuntia acanthocarpa var. major	0	0	0	0	1	0	1	0	1	0	3	0.60	3.45
Dasyochloa pulchella	0	0	0	0	0	0	0	0	2	0	2	0.40	2.30
Krameria grayi	5	4	1	0	0	0	0	4	2	0	16	3.20	18.39
Larrea tridentata	2	0	3	8	3	9	11	3	7	3	49	9.80	56.32

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Hazen > AIM

Site ID: H-LUD-1 **Date:** 2/22/2017

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea	1.00	3.00						1.00	1.00		6	39.84
Ambrosia dumosa									2.00		2	13.28
Aristida purpurea	53.00	33.00	30.00	30.00	9.00	6.00	9.00	45.00	25.00	10.00	250	1660.06
Cylindropuntia acanthocarpa var. major	1.00			1.00	1.00		2.00	1.00	1.00		7	46.48
Dasyochloa pulchella								13.00	15.00		28	185.93
Krameria grayi	4.00	5.00	1.00					8.00	6.00	1.00	25	166.01
Larrea tridentata	8.00	4.00	6.00	7.00	4.00	5.00	11.00	8.00	3.00	2.00	58	385.13

* Number of decimal places does not imply level of precision

Notes:

H-LUD-1W

Soil Stability Rank: 5.0

Cover - Top Layer

Site Class: Phoenix District || Sonoran Desert NM || Hazen || AIM

Site ID: H-LUD-1W **Date:** 3/30/2017

Examiner(s):

Cover												
Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	8	1	9	7	3	9	7	7	2	5	58	11.60
Bedrock	0	2	1	0	2	0	0	0	0	0	5	1.00
Cryptogam	2	2	4	2	5	7	6	7	6	5	46	9.20
Gravel (<3")	21	37	27	34	35	25	27	32	32	34	304	60.80
Gravel (>3")	4	4	3	2	1	4	2	3	4	1	28	5.60
Stones (>10" - 25")	1	0	0	0	0	0	0	0	0	0	1	0.20
Ambrosia dumosa	0	0	0	0	0	1	0	0	1	0	2	0.40
Encelia farinosa	0	0	0	0	0	0	1	0	0	0	1	0.20
Krameria grayi	0	0	0	0	1	0	1	0	1	0	3	0.60
Larrea tridentata	2	1	6	5	3	4	6	1	4	5	37	7.40
Olneya tesota	8	3	0	0	0	0	0	0	0	0	11	2.20
Parkinsonia microphylla	4	0	0	0	0	0	0	0	0	0	4	0.80

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District || Sonoran Desert NM || Hazen || AIM

Site ID: H-LUD-1W **Date:** 3/30/2017

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	15	1	13	7	4	11	8	7	2	7	75	15.00	15.00
Bedrock	0	2	1	0	2	0	0	0	0	0	5	1.00	1.00
Boulders (>25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Cryptogam	2	2	5	2	5	7	6	7	6	6	48	9.60	9.60
Gravel (<3")	27	41	28	39	38	28	34	33	37	36	341	68.20	68.20
Gravel (>3")	4	4	3	2	1	4	2	3	5	1	29	5.80	5.80
HL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Litter (<0.25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Litter (>0.25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Scat - Livestock	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Stones (>10" - 25")	2	0	0	0	0	0	0	0	0	0	2	0.40	0.40
WL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia dumosa	1	0	0	0	0	1	0	0	1	0	3	0.60	5.08
Encelia farinosa	0	0	0	0	0	0	1	0	0	0	1	0.20	1.69
Krameria grayi	0	0	0	0	1	0	1	0	1	0	3	0.60	5.08
Larrea tridentata	2	1	6	5	3	4	6	1	4	5	37	7.40	62.71
Olneya tesota	8	3	0	0	0	0	0	0	0	0	11	2.20	18.64
Parkinsonia microphylla	4	0	0	0	0	0	0	0	0	0	4	0.80	6.78

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Hazen > AIM

Site ID: H-LUD-1W **Date:** 3/30/2017

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia dumosa	1.00			1.00		1.00		3.00	3.00		9	59.76
Encelia farinosa	4.00	6.00									10	66.40
Fagonia laevis	20.00										20	132.80
Fouquieria splendens			1.00								1	6.64
Krameria grayi				2.00	3.00	1.00	1.00	2.00	2.00		11	73.04
Larrea tridentata	5.00	3.00	4.00	5.00	6.00	7.00	4.00	3.00	6.00	7.00	50	332.01
Mammillaria							2.00				2	13.28
Olneya tesota	1.00										1	6.64
Parkinsonia microphylla	1.00										1	6.64

* Number of decimal places does not imply level of precision

Notes:

H-LUD-2

Soil Stability Rank: 4.7

Cover - Top Layer

Site Class: Phoenix District || Sonoran Desert NM || Hazen || AIM

Site ID: H-LUD-2 **Date:** 1/26/2017

Examiner(s):

Cover												
Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	8	6	4	6	4	1	2	0	0	4	35	7.00
Cryptogam	13	11	6	11	9	7	5	8	10	4	84	16.80
Gravel (<3")	23	27	34	24	31	40	42	40	38	29	328	65.60
Gravel (>3")	0	0	1	0	0	0	0	0	0	0	1	0.20
Litter (<0.25")	0	0	0	0	0	1	0	0	0	0	1	0.20
Ambrosia dumosa	0	0	0	0	0	0	0	0	0	4	4	0.80
Krameria grayi	0	1	0	2	0	0	0	0	0	5	8	1.60
Larrea tridentata	6	5	5	7	6	1	1	2	0	4	37	7.40
Parkinsonia microphylla	0	0	0	0	0	0	0	0	2	0	2	0.40

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District || Sonoran Desert NM || Hazen || AIM

Site ID: H-LUD-2 **Date:** 1/26/2017

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	12	6	4	10	5	1	2	1	0	8	49	9.80	9.80
Basal Vegetation	0	0	0	0	1	0	0	0	1	0	2	0.40	0.40
Bedrock	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Boulders (>25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Cryptogam	13	13	6	11	9	7	5	8	10	6	88	17.60	17.60
Gravel (<3")	25	31	39	29	35	41	43	41	39	36	359	71.80	71.80
Gravel (>3")	0	0	1	0	0	0	0	0	0	0	1	0.20	0.20
HL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Litter (<0.25")	0	0	0	0	0	1	0	0	0	0	1	0.20	0.20
Litter (>0.25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Scat - Livestock	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Stones (>10" - 25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
WL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia dumosa	0	0	0	0	0	0	0	0	0	5	5	1.00	9.62
Krameria grayi	0	1	0	2	0	0	0	0	0	5	8	1.60	15.38
Larrea tridentata	6	5	5	7	6	1	1	2	0	4	37	7.40	71.15
Parkinsonia microphylla	0	0	0	0	0	0	0	0	2	0	2	0.40	3.85

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Hazen > AIM

Site ID: H-LUD-2 **Date:** 1/26/2017

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea	1.00										1	6.64
Ambrosia dumosa					1.00			2.00	3.00	11.00	17	112.88
Krameria grayi	2.00			4.00	4.00		5.00	1.00	1.00	4.00	21	139.45
Larrea tridentata	8.00	4.00	5.00	4.00	4.00	2.00	3.00	1.00	4.00	5.00	40	265.61

* Number of decimal places does not imply level of precision

Notes:

H-LUD-2W

Soil Stability Rank: 4.3

Cover - Top Layer

Site Class: Phoenix District || Sonoran Desert NM || Hazen || AIM

Site ID: H-LUD-2W **Date:** 3/30/2017

Examiner(s):

Cover												
Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	9	11	13	12	12	10	9	9	11	12	108	21.60
Cryptogam	3	9	5	2	3	3	3	7	9	3	47	9.40
Gravel (<3")	34	23	26	31	27	32	36	31	27	35	302	60.40
Gravel (>3")	3	2	0	0	0	2	0	0	0	0	7	1.40
Ambrosia dumosa	0	0	0	0	0	1	0	0	0	0	1	0.20
Krameria grayi	0	1	2	0	0	1	1	2	0	0	7	1.40
Larrea tridentata	1	4	4	5	8	1	1	1	3	0	28	5.60

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District || Sonoran Desert NM || Hazen || AIM

Site ID: H-LUD-2W **Date:** 3/30/2017

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	10	14	16	15	15	11	11	11	13	12	128	25.60	25.60
Basal Vegetation	0	0	0	0	1	0	0	0	0	0	1	0.20	0.20
Bedrock	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Boulders (>25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Cryptogam	3	9	6	2	4	3	3	7	9	3	49	9.80	9.80
Gravel (<3")	34	25	28	33	30	34	36	32	28	35	315	63.00	63.00
Gravel (>3")	3	2	0	0	0	2	0	0	0	0	7	1.40	1.40
HL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Litter (<0.25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Litter (>0.25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Scat - Livestock	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Stones (>10" - 25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
WL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia dumosa	0	0	0	0	0	1	0	0	0	0	1	0.20	2.70
Krameria grayi	0	1	3	0	0	1	1	2	0	0	8	1.60	21.62
Larrea tridentata	1	4	4	5	8	1	1	1	3	0	28	5.60	75.68

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Hazen > AIM

Site ID: H-LUD-2W **Date:** 3/30/2017

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia dumosa		2.00			2.00	1.00		1.00			6	39.84
Fagonia laevis			1.00	8.00				1.00			10	66.40
Ferocactus wislizeni								1.00			1	6.64
Krameria grayi			1.00	3.00	2.00			1.00			7	46.48
Larrea tridentata	4.00	6.00	4.00	6.00	6.00	4.00	5.00	4.00	6.00	4.00	49	325.37

* Number of decimal places does not imply level of precision

Notes:

H-LUD-3

Soil Stability Rank: 5.2

Cover - Top Layer

Site Class: Phoenix District || Sonoran Desert NM || Hazen || AIM

Site ID: H-LUD-3 **Date:** 2/23/2017

Examiner(s):

Cover												
Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	2	3	7	7	6	1	2	5	3	2	38	7.60
Cryptogam	5	7	7	4	7	3	10	12	6	5	66	13.20
Gravel (<3")	39	38	33	35	24	36	35	25	37	40	342	68.40
Gravel (>3")	1	0	0	0	1	4	3	2	4	3	18	3.60
Litter (<0.25")	0	0	0	0	0	0	0	1	0	0	1	0.20
Ambrosia deltoidea	0	0	0	0	0	0	0	2	0	0	2	0.40
Larrea tridentata	3	2	3	4	12	6	0	3	0	0	33	6.60

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District || Sonoran Desert NM || Hazen || AIM

Site ID: H-LUD-3 **Date:** 2/23/2017

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	3	4	9	7	15	4	2	7	3	2	56	11.20	11.20
Basal Vegetation	0	0	0	0	2	0	0	0	0	0	2	0.40	0.40
Bedrock	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Boulders (>25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Cryptogam	5	7	8	6	8	4	10	14	6	5	73	14.60	14.60
Gravel (<3")	41	39	33	37	24	38	35	26	37	40	350	70.00	70.00
Gravel (>3")	1	0	0	0	1	4	3	2	4	3	18	3.60	3.60
HL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Litter (<0.25")	0	0	0	0	0	0	0	1	0	0	1	0.20	0.20
Litter (>0.25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Scat - Livestock	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Stones (>10" - 25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
WL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea	0	0	0	0	1	0	0	2	0	0	3	0.60	8.33
Larrea tridentata	3	2	3	4	12	6	0	3	0	0	33	6.60	91.67

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Hazen > AIM

Site ID: H-LUD-3 **Date:** 2/23/2017

Examiner(s):

Density

Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea				1.00	1.00		1.00				3	19.92
Krameria grayi							1.00	1.00			2	13.28
Larrea tridentata	3.00	4.00	3.00	3.00	4.00	8.00	4.00	4.00	4.00	3.00	40	265.61

* Number of decimal places does not imply level of precision

Notes:

H-LUD-3W

Soil Stability Rank: 5.7

Cover - Top Layer

Site Class: Phoenix District || Sonoran Desert NM || Hazen || AIM

Site ID: H-LUD-3W **Date:** 3/30/2017

Examiner(s):

Cover

Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	5	4	7	5	1	4	4	8	13	4	55	11.00
Cryptogam	8	10	5	3	1	1	3	5	2	7	45	9.00
Gravel (<3")	30	34	33	42	41	30	21	32	22	34	319	63.80
Gravel (>3")	1	0	1	0	6	4	4	5	2	4	27	5.40
Krameria grayi	0	0	0	0	0	0	0	0	1	0	1	0.20
Larrea tridentata	6	2	4	0	1	8	6	0	5	1	33	6.60
Olneya tesota	0	0	0	0	0	0	4	0	0	0	4	0.80
Parkinsonia microphylla	0	0	0	0	0	3	8	0	5	0	16	3.20

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District || Sonoran Desert NM || Hazen || AIM

Site ID: H-LUD-3W **Date:** 3/30/2017

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	6	4	8	5	2	7	11	8	17	4	72	14.40	14.40
Basal Vegetation	0	0	0	0	0	1	0	0	0	0	1	0.20	0.20
Bedrock	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Boulders (>25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Cryptogam	8	11	5	3	1	1	3	5	3	7	47	9.40	9.40
Gravel (<3")	35	35	36	42	41	36	30	32	27	34	348	69.60	69.60
Gravel (>3")	1	0	1	0	6	5	6	5	3	4	31	6.20	6.20
HL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Litter (<0.25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Litter (>0.25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Scat - Livestock	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Stones (>10" - 25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
WL Attached	0	0	0	0	0	0	0	0	0	1	1	0.20	0.20

* Number of decimal places does not imply level of precision

Foliar Cover													
Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Krameria grayi	0	0	0	0	0	1	0	0	1	0	2	0.40	3.64
Larrea tridentata	6	2	4	0	1	8	6	0	5	1	33	6.60	60.00
Olneya tesota	0	0	0	0	0	0	4	0	0	0	4	0.80	7.27
Parkinsonia microphylla	0	0	0	0	0	3	8	0	5	0	16	3.20	29.09

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Hazen > AIM

Site ID: H-LUD-3W **Date:** 3/30/2017

Examiner(s):

Density											
Species	Transect (Count)										Density* / ac
	1	2	3	5	6	7	8	9	10	Total	
Ambrosia dumosa					5.00		1.00		1.00	7	51.65
Encelia farinosa						7.00	1.00	2.00	1.00	11	81.16
Fagonia laevis					3.00		7.00			10	73.78
Krameria grayi					2.00	1.00		2.00	5.00	10	73.78
Larrea tridentata	6.00	7.00	2.00	2.00	6.00	4.00	4.00	3.00	3.00	37	272.99
Olneya tesota						1.00				1	7.38
Parkinsonia microphylla								1.00		1	7.38

* Number of decimal places does not imply level of precision

Notes:

Sandy Bottom

H-SB-1

Soil Stability Rank: 4.1

Cover - Top Layer

Site Class: Phoenix District || Sonoran Desert NM || Hazen || AIM

Site ID: H-SB-1 **Date:** 12/27/2016

Examiner(s):

Cover

Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	5	13	7	11	6	7	13	4	14	7	87	17.40
Cryptogam	6	4	5	11	14	5	4	0	0	0	49	9.80
Gravel (<3")	29	25	26	23	20	27	33	20	26	26	255	51.00
Gravel (>3")	0	1	1	1	0	0	0	0	0	0	3	0.60
Carnegiea gigantea	1	0	0	0	0	0	0	0	0	0	1	0.20
Hymenoclea salsola	0	0	0	0	0	0	0	1	2	0	3	0.60
Larrea tridentata	3	7	1	4	6	8	0	0	0	0	29	5.80
Lycium	0	0	4	0	4	3	0	4	2	1	18	3.60
Olneya tesota	0	0	0	0	0	0	0	21	3	16	40	8.00
Parkinsonia microphylla	6	0	6	0	0	0	0	0	3	0	15	3.00

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District || Sonoran Desert NM || Hazen || AIM

Site ID: H-SB-1 **Date:** 12/27/2016

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	10	16	14	12	9	14	13	21	19	19	147	29.40	29.40
Basal Vegetation	0	0	1	0	0	0	0	0	0	0	1	0.20	0.20
Bedrock	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Boulders (>25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Cryptogam	7	4	6	11	16	6	4	0	0	0	54	10.80	10.80
Gravel (<3")	33	29	28	26	25	30	33	29	31	31	295	59.00	59.00
Gravel (>3")	0	1	1	1	0	0	0	0	0	0	3	0.60	0.60
HL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Litter (<0.25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Litter (>0.25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Scat - Livestock	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Stones (>10" - 25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
WL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea	1	0	0	0	0	0	0	0	0	0	1	0.20	0.78
Carnegiea gigantea	1	0	0	0	0	0	0	0	0	0	1	0.20	0.78
Hymenoclea salsola	0	0	0	0	0	0	0	2	5	0	7	1.40	5.47
Larrea tridentata	3	7	1	4	7	9	0	1	0	0	32	6.40	25.00
Lycium	0	0	9	0	4	4	0	7	2	5	31	6.20	24.22
Olneya tesota	0	0	0	0	0	0	0	21	3	16	40	8.00	31.25
Parkinsonia microphylla	6	0	7	0	0	0	0	0	3	0	16	3.20	12.50

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Hazen > AIM

Site ID: H-SB-1 **Date:** 1/10/2017

Examiner(s):

Density											
Species	Transect (Count)										Density* / ac
	1	2	3	4	5	6	8	9	10	Total	
Ambrosia deltoidea	1.00		3.00	1.00						5	36.89
Carnegiea gigantea	1.00									1	7.38
Encelia farinosa					2.00	1.00				3	22.13
Hymenoclea salsola							1.00	1.00		2	14.76
Larrea tridentata	1.00	2.00	2.00	3.00	1.00	2.00				11	81.16
Lycium			2.00			2.00	3.00	1.00	2.00	10	73.78
Olneya tesota							1.00		2.00	3	22.13
Parkinsonia microphylla								1.00		1	7.38
Unknown 9-Packrat Midden							1.00			1	7.38

* Number of decimal places does not imply level of precision

Notes:

H-SB-2

Soil Stability Rank: 3.7

Cover - Top Layer

Site Class: Phoenix District || Sonoran Desert NM || Hazen || AIM

Site ID: H-SB-2 **Date:** 12/21/2016

Examiner(s):

Cover												
Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	19	13	11	11	11	14	18	5	6	14	122	24.40
Cryptogam	1	1	1	0	1	1	1	1	0	1	8	1.60
Gravel (<3")	16	16	13	37	22	15	15	27	21	29	211	42.20
Gravel (>3")	0	0	1	1	0	2	0	1	0	0	5	1.00
Hymenoclea salsola	0	0	0	1	0	0	8	0	1	1	11	2.20
Larrea tridentata	14	8	3	0	0	5	5	3	5	5	48	9.60
Lycium	0	4	3	0	5	2	0	2	3	0	19	3.80
Olneya tesota	0	0	0	0	11	0	0	3	12	0	26	5.20
Parkinsonia florida	0	8	18	0	0	11	3	8	2	0	50	10.00

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District || Sonoran Desert NM || Hazen || AIM

Site ID: H-SB-2 **Date:** 12/21/2016

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	31	24	21	11	22	28	31	18	14	17	217	43.40	43.40
Basal Vegetation	0	1	0	0	0	0	0	0	0	0	1	0.20	0.20
Bedrock	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Boulders (>25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Cryptogam	1	3	1	0	3	3	1	1	0	1	14	2.80	2.80
Gravel (<3")	18	22	26	38	25	17	18	30	35	32	261	52.20	52.20
Gravel (>3")	0	0	2	1	0	2	0	1	0	0	6	1.20	1.20
HL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Litter (<0.25")	0	0	0	0	0	0	0	0	1	0	1	0.20	0.20
Litter (>0.25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Scat - Livestock	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Stones (>10" - 25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
WL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Hymenoclea salsola	0	0	0	1	0	0	8	0	3	1	13	2.60	7.51
Larrea tridentata	14	11	3	0	0	5	5	3	6	5	52	10.40	30.06
Lycium	0	7	3	0	5	2	0	6	8	0	31	6.20	17.92
Olneya tesota	0	0	0	0	11	0	0	3	12	0	26	5.20	15.03
Parkinsonia florida	0	8	18	0	0	11	3	8	2	0	50	10.00	28.90
Ziziphus obtusifolia	0	0	0	0	0	0	1	0	0	0	1	0.20	0.58

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Hazen > AIM

Site ID: H-SB-2 **Date:** 12/21/2016

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ditaxis neomexicana					1.00						1	6.64
Funastrum cynanchoides-Milkweed							1.00				1	6.64
Hymenoclea salsola			1.00	2.00	1.00	2.00	4.00		1.00	1.00	12	79.68
Larrea tridentata	4.00	2.00		1.00		1.00		1.00	2.00		11	73.04
Lycium	1.00	5.00	2.00		7.00	1.00	1.00	2.00	2.00	2.00	23	152.73
Mammillaria										1.00	1	6.64
Nicotiana obtusifolia						1.00					1	6.64
Parkinsonia florida		1.00									1	6.64
Prosopis velutina					1.00						1	6.64
Sphaeralcea					1.00						1	6.64
Unknown 9-Packrat Midden							1.00	1.00			2	13.28

* Number of decimal places does not imply level of precision

Notes:

H-SB-3

Soil Stability Rank: 2.4

Cover - Top Layer

Site Class: Phoenix District || Sonoran Desert NM || Hazen || AIM

Site ID: H-SB-3 **Date:** 12/21/2016

Examiner(s):

Cover

Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	13	17	16	21	7	20	19	28	14	17	172	34.40
Cryptogam	0	2	1	2	0	1	0	2	0	0	8	1.60
Gravel (<3")	12	20	16	18	26	23	23	17	10	10	175	35.00
Gravel (>3")	0	0	3	0	0	2	6	1	5	0	17	3.40
WL Attached	0	1	0	0	0	0	0	0	0	0	1	0.20
Acacia greggii	0	0	0	0	4	0	0	0	0	0	4	0.80
Hymenoclea salsola	0	4	3	0	1	4	2	2	0	8	24	4.80
Larrea tridentata	0	2	6	1	0	0	0	0	0	0	9	1.80
Lycium	11	4	5	8	0	0	0	0	0	0	28	5.60
Olneya tesota	14	0	0	0	0	0	0	0	13	15	42	8.40
Parkinsonia florida	0	0	0	0	12	0	0	0	0	0	12	2.40
Parkinsonia microphylla	0	0	0	0	0	0	0	0	8	0	8	1.60

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District || Sonoran Desert NM || Hazen || AIM

Site ID: H-SB-3 **Date:** 12/21/2016

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	35	24	25	28	22	22	21	30	33	35	275	55.00	55.00
Basal Vegetation	1	0	0	0	0	0	0	0	0	1	2	0.40	0.40
Bedrock	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Boulders (>25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Cryptogam	1	2	3	4	0	1	0	2	1	0	14	2.80	2.80
Gravel (<3")	13	23	19	18	27	24	23	17	10	14	188	37.60	37.60
Gravel (>3")	0	0	3	0	1	3	6	1	6	0	20	4.00	4.00
HL Attached	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Litter (<0.25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Litter (>0.25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Scat - Livestock	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Stones (>10" - 25")	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
WL Attached	0	1	0	0	0	0	0	0	0	0	1	0.20	0.20

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Acacia greggii	0	0	0	0	6	0	0	0	0	0	6	1.20	4.32
Ambrosia deltoidea	0	2	0	0	0	0	0	0	0	0	2	0.40	1.44
Hymenoclea salsola	0	4	3	0	1	4	2	2	3	8	27	5.40	19.42
Larrea tridentata	0	2	6	1	0	0	0	0	0	0	9	1.80	6.47
Lycium	12	4	5	8	3	0	0	0	1	0	33	6.60	23.74
Olneya tesota	14	0	0	0	0	0	0	0	13	15	42	8.40	30.22
Parkinsonia florida	0	0	0	0	12	0	0	0	0	0	12	2.40	8.63
Parkinsonia microphylla	0	0	0	0	0	0	0	0	8	0	8	1.60	5.76

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Hazen > AIM

Site ID: H-SB-3 **Date:** 12/21/2016

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Acacia greggii						1.00					1	6.64
Ambrosia deltoidea		1.00									1	6.64
Bebbia juncea									3.00		3	19.92
Encelia farinosa									1.00		1	6.64
Hymenoclea salsola		1.00	2.00		1.00	5.00	2.00	2.00		2.00	15	99.60
Larrea tridentata	1.00	2.00		1.00		1.00					5	33.20
Lycium	3.00	2.00		3.00					2.00		10	66.40
Olneya tesota									1.00	1.00	2	13.28
Parkinsonia florida					1.00						1	6.64
Unknown 9-Packrat Midden									1.00	1.00	2	13.28

* Number of decimal places does not imply level of precision

Notes:

H-SB-4

Soil Stability Rank: 3.8

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Hazen > AIM

Site ID: H-SB-4 **Date:** 2/7/2018

Examiner(s):

Cover												
Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	16	16	19	8	22	11	10	8	13	16	139	27.63
Cryptogam	5	5			2	8	9	11	11	9	60	11.93
Gravel (<3")	11	22	23	24	23	28	27	25	25	19	227	45.13
Larrea tridentata	7	7	8	14	3	3	4	6	1	6	59	11.73
Lycium				4							4	0.80
Olneya tesota	1										1	0.20
Parkinsonia microphylla	10										10	1.99

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Hazen > AIM

Site ID: H-SB-4 **Date:** 2/7/2018

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	30	20	23	20	24	11	11	9	13	16	177	35.19	35.40
Basal Vegetation		1									1	0.20	0.20
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam	5	5	1		2	8	10	11	12	11	65	12.92	13.00
Gravel (<3")	15	24	26	30	24	31	29	30	25	23	257	51.09	51.40
Gravel (>3")											0	0.00	0.00
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Larrea tridentata	7	7	8	14	3	3	4	6	1	6	59	11.73	77.63
Lycium				5							5	0.99	6.58
Olneya tesota	1										1	0.20	1.32
Parkinsonia microphylla	11										11	2.19	14.47

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Hazen > AIM

Site ID: H-SB-4 **Date:** 2/7/2018

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ditaxis neomexicana	8.00				6.00						14	92.96
Encelia farinosa			1.00								1	6.64
Krameria grayi		1.00	1.00								2	13.28
Larrea tridentata	4.00	4.00	4.00	7.00	3.00	3.00	6.00	3.00	1.00	3.00	38	252.33
Lycium				1.00							1	6.64
Olneya tesota	1.00										1	6.64

* Number of decimal places does not imply level of precision

Notes:

H-SB-5

Soil Stability Rank: 3.8

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Hazen > AIM

Site ID: H-SB-5 **Date:** 2/5/2018

Examiner(s):

Cover												
Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	16	18	25	25	22	21	18	16	31	20	212	42.40
Cryptogam	3	2	5	4	4	2	3		1	3	27	5.40
Gravel (<3")	23	17	10	4	8	19	20	19	7	22	149	29.80
Gravel (>3")			1		1				1		3	0.60
Larrea tridentata	2	4	6	7	4	7	1	4	5	5	45	9.00
Lycium	6	1	3			1					11	2.20
Olneya tesota									5		5	1.00
Parkinsonia microphylla		8		10	11		8	11			48	9.60

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Hazen > AIM

Site ID: H-SB-5 **Date:** 2/5/2018

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	22	30	34	36	32	28	25	24	39	24	294	58.80	58.80
Basal Vegetation					1						1	0.20	0.20
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam	3	2	5	5	5	2	3		2	3	30	6.00	6.00
Gravel (<3")	25	18	10	9	11	20	22	24	8	23	170	34.00	34.00
Gravel (>3")			1		1			2	1		5	1.00	1.00
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Larrea tridentata	2	4	6	7	5	8	1	4	5	5	47	9.40	41.96
Lycium	6	2	3			1					12	2.40	10.71
Olneya tesota									5		5	1.00	4.46
Parkinsonia microphylla		8		10	11		8	11			48	9.60	42.86

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Hazen > AIM

Site ID: H-SB-5 **Date:** 2/5/2018

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Hymenoclea salsola									1.00		1	6.64
Larrea tridentata	2.00	1.00	3.00	1.00	6.00	4.00	1.00	3.00	2.00	6.00	29	192.57
Lycium	3.00	1.00				1.00					5	33.20
Parkinsonia microphylla		1.00		1.00							2	13.28

* Number of decimal places does not imply level of precision

Notes:

Lower Vekol Allotment

Limy Fan

LV-LF-1

Soil Stability Rank: 3.9

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Lower Vekol > AIM

Site ID: LV-LF-1 **Date:** 8/8/2017

Examiner(s):

Cover												
Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	18	17	10	12	9	10	10	14	13	8	121	24.20
Cryptogam	4	3	4	7	1		4	2	1	6	32	6.40
Gravel (<3")	8	14	35	28	40	40	33	32	36	34	300	60.00
Acacia greggii	2										2	0.40
Ambrosia deltoidea	2										2	0.40
Larrea tridentata	5	15	1	3			3	2		2	31	6.20
Lycium		1									1	0.20
Parkinsonia florida	11										11	2.20

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Lower Vekol > AIM

Site ID: LV-LF-1 **Date:** 8/8/2017

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	32	24	10	12	9	10	10	14	13	8	142	28.40	28.40
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam	6	7	4	7	1		4	2	1	7	39	7.80	7.80
Gravel (<3")	12	19	36	31	40	40	36	34	36	35	319	63.80	63.80
Gravel (>3")											0	0.00	0.00
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Acacia greggii	2										2	0.40	3.92
Ambrosia deltoidea	2										2	0.40	3.92
Larrea tridentata	5	15	1	3			3	2		2	31	6.20	60.78
Lycium	3	2									5	1.00	9.80
Parkinsonia florida	11										11	2.20	21.57

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Lower Vekol > AIM

Site ID: LV-LF-1 **Date:** 8/8/2017

Examiner(s):

Density

Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Acacia greggii	2.00										2	13.28
Ambrosia deltoidea	5.00		1.00								6	39.84
Cylindropuntia leptocaulis	1.00										1	6.64
Larrea tridentata	5.00	6.00	7.00	1.00	3.00	4.00	3.00	4.00	4.00	4.00	41	272.25
Lycium	2.00										2	13.28
Muhlenbergia porteri	3.00										3	19.92
Parkinsonia florida	1.00										1	6.64

* Number of decimal places does not imply level of precision

Notes:

LV-LF-2

Soil Stability Rank: 3.7

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Lower Vekol > AIM

Site ID: LV-LF-2 **Date:** 8/8/2017

Examiner(s):

Cover

Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	25	25	23	24	34	22	23	14	28	21	239	47.80
Cryptogam	16	17	18	20	12	10	4	4	4	10	115	23.00
Gravel (<3")	9	8	8	6	4	17	21	30	17	17	137	27.40
Larrea tridentata			1			1	2	2	1	2	9	1.80

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Lower Vekol > AIM

Site ID: LV-LF-2 **Date:** 8/8/2017

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	25	25	23	24	34	23	25	15	28	22	244	48.80	48.80
Basal Vegetation										1	1	0.20	0.20
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam	16	17	18	20	12	10	4	4	4	10	115	23.00	23.00
Gravel (<3")	9	8	9	6	4	17	21	31	18	17	140	28.00	28.00
Gravel (>3")											0	0.00	0.00
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Larrea tridentata			1			1	2	2	1	2	9	1.80	100.00

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Lower Vekol > AIM

Site ID: LV-LF-2 **Date:** 8/8/2017

Examiner(s):

Density

Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Larrea tridentata		1.00	4.00	1.00	2.00	2.00	2.00	4.00	2.00	2.00	20	132.80

* Number of decimal places does not imply level of precision

Notes:

LV-LF-3

Soil Stability Rank: 4.1

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Lower Vekol > AIM

Site ID: LV-LF-3 **Date:** 8/15/2017

Examiner(s):

Cover					
Species	Transect (#Hits)				% Cover*
	8	9	10	Total	
Bare Ground	39	39	21	99	66.00
Cryptogam	6	7	23	36	24.00
Gravel (<3")	4	2	6	12	8.00
Castela emoryi		2		2	1.33
Larrea tridentata	1			1	0.67

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Lower Vekol > AIM

Site ID: LV-LF-3 **Date:** 8/15/2017

Examiner(s):

Surface Cover						
Species	Transect (#Hits)				% Cover*	% Comp.*
	8	9	10	Total		
Bare Ground	40	41	21	102	68.00	68.00
Bedrock				0	0.00	0.00
Boulders (>25")				0	0.00	0.00
Cryptogam	6	7	23	36	24.00	24.00
Gravel (<3")	4	2	6	12	8.00	8.00
Gravel (>3")				0	0.00	0.00
HL Attached				0	0.00	0.00
Litter (<0.25")				0	0.00	0.00
Litter (>0.25")				0	0.00	0.00
Scat - Livestock				0	0.00	0.00
Stones (>10" - 25")				0	0.00	0.00
WL Attached				0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover						
Species	Transect (#Hits)				% Cover*	% Comp.*
	8	9	10	Total		
Castela emoryi		2		2	1.33	66.67
Larrea tridentata	1			1	0.67	33.33

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Lower Vekol > AIM

Site ID: LV-LF-3 **Date:** 8/15/2017

Examiner(s):

Density					
Species	Transect (Count)				Density* / ac
	8	9	10	Total	
Larrea tridentata	2.00	6.00	2.00	10	221.34

* Number of decimal places does not imply level of precision

Notes:

LV-LF-4

Soil Stability Rank: 2.4

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Lower Vekol > AIM

Site ID: LV-LF-4 **Date:** 1/23/2018

Examiner(s):

Cover												
Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	34	30	26	36	31	31	28	24	22	27	289	57.80
Cryptogam	6	7	13	5	5	6	7	4	3	16	72	14.40
Gravel (<3")	7	6	7	8	9	9	8	20	21	7	102	20.40
Larrea tridentata	3	7	4	1	5	4	7	2	4		37	7.40

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Lower Vekol > AIM

Site ID: LV-LF-4 **Date:** 1/23/2018

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	37	37	29	36	34	33	30	25	23	27	311	62.20	62.20
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam	6	7	14	5	6	7	8	4	3	16	76	15.20	15.20
Gravel (<3")	7	6	7	9	10	10	12	21	24	7	113	22.60	22.60
Gravel (>3")											0	0.00	0.00
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Larrea tridentata	3	7	4	1	5	4	7	2	4		37	7.40	100.00

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Lower Vekol > AIM

Site ID: LV-LF-4 **Date:** 1/23/2018

Examiner(s):

Density

Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Larrea tridentata	10.00	11.00	8.00	3.00	7.00	5.00	14.00	4.00	6.00	5.00	73	484.74

* Number of decimal places does not imply level of precision

Notes:

Limy Uplands

LV-LU-1

Soil Stability Rank: 4.2

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Lower Vekol > AIM

Site ID: LV-LU-1 **Date:** 8/27/2017

Examiner(s):

Cover												
Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	9	22	14	16	10	14	22	13	15	26	161	32.20
Cryptogam			1		1	4	9	4	7	12	38	7.60
Gravel (<3")	36	23	33	30	36	31	14	25	17	5	250	50.00
Ambrosia deltoidea						1		2		2	5	1.00
Larrea tridentata	5	5	2	4	3		5	6	11	5	46	9.20

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Lower Vekol > AIM

Site ID: LV-LU-1 **Date:** 8/27/2017

Examiner(s):

Surface Cover													
Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	11	25	16	17	11	14	23	16	24	31	188	37.60	37.60
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam			1		1	4	10	6	7	12	41	8.20	8.20
Gravel (<3")	39	25	33	33	38	32	17	28	19	7	271	54.20	54.20
Gravel (>3")											0	0.00	0.00
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover													
Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea						1		2		2	5	1.00	9.80
Larrea tridentata	5	5	2	4	3		5	6	11	5	46	9.20	90.20

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Lower Vekol > AIM

Site ID: LV-LU-1 **Date:** 8/27/2017

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea						2.00	3.00	2.00	1.00	6.00	14	92.96
Larrea tridentata	6.00	7.00	7.00	6.00	4.00	4.00	3.00	3.00	8.00	3.00	51	338.65

* Number of decimal places does not imply level of precision

Notes:

LV-LU-2

Soil Stability Rank: 2.8

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Lower Vekol > AIM

Site ID: LV-LU-2 **Date:** 8/22/2017

Examiner(s):

Cover												
Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	14	22	19	25	23	25	27	21	22	20	218	43.60
Cryptogam				1		1	4	2	5	2	15	3.00
Gravel (<3")	27	25	25	21	23	19	15	24	17	24	220	44.00
Gravel (>3")	2		1			1					4	0.80
Stones (>10" - 25")							1				1	0.20
Ambrosia deltoidea								1			1	0.20
Ambrosia dumosa	1			1						1	3	0.60
Fouquieria splendens			2							1	3	0.60
Krameria grayi	2	1		1		1			1	1	7	1.40
Larrea tridentata	4	2	3	1	4	3	3	2	5	1	28	5.60

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Lower Vekol > AIM

Site ID: LV-LU-2 **Date:** 8/22/2017

Examiner(s):

Surface Cover													
Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	17	23	22	27	23	26	29	22	26	23	238	47.60	47.60
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam	1			1		1	4	2	5	2	16	3.20	3.20
Gravel (<3")	30	27	27	22	27	22	16	26	19	25	241	48.20	48.20
Gravel (>3")	2		1			1					4	0.80	0.80
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")							1				1	0.20	0.20
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Lower Vekol > AIM

Site ID: LV-LU-2 **Date:** 8/22/2017

Examiner(s):

Density

Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea	2.00	1.00					1.00	1.00			5	33.20
Ambrosia dumosa		1.00	1.00	3.00	3.00			1.00			9	59.76
Fouquieria splendens										1.00	1	6.64
Krameria grayi	2.00	3.00	2.00			3.00		1.00	2.00		13	86.32
Larrea tridentata	6.00	6.00	5.00	4.00	3.00		6.00	4.00	5.00	3.00	42	278.89

* Number of decimal places does not imply level of precision

Notes:

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea								1			1	0.20	2.33
Ambrosia dumosa	1			1						1	3	0.60	6.98
Fouquieria splendens			2							1	3	0.60	6.98
Krameria grayi	2	1		1		2			1	1	8	1.60	18.60
Larrea tridentata	4	2	3	1	4	3	3	2	5	1	28	5.60	65.12

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

LV-LU-3

Soil Stability Rank: 4.8

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Lower Vekol > AIM

Site ID: LV-LU-3 **Date:** 8/28/2017

Examiner(s):

Cover

Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	11	11	13	8	17	15	15	9	11	9	119	23.80
Bedrock							1				1	0.20
Cryptogam	3	5	6	3	4	5	9	11	2	9	57	11.40
Gravel (<3")	21	28	26	27	25	23	19	20	29	21	239	47.80
Gravel (>3")										1	1	0.20
Ambrosia deltoidea		1	1	1	2		1	2		2	10	2.00
Ambrosia dumosa	1					1					2	0.40
Fouquieria splendens										5	5	1.00
Krameria grayi		1		3		1	3	4	5	2	19	3.80
Larrea tridentata	1	4	4	8	2	5	2	4	3	1	34	6.80
Olneya tesota	13										13	2.60

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Lower Vekol > AIM

Site ID: LV-LU-3 **Date:** 8/28/2017

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	22	12	15	11	18	18	18	10	15	13	152	30.40	30.40
Bedrock							1				1	0.20	0.20
Boulders (>25")											0	0.00	0.00
Cryptogam	4	5	8	7	5	6	9	11	4	9	68	13.60	13.60
Gravel (<3")	24	33	27	32	27	26	22	29	31	27	278	55.60	55.60
Gravel (>3")										1	1	0.20	0.20
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea		1	1	1	2		1	2		2	10	2.00	11.90
Ambrosia dumosa	1					1					2	0.40	2.38
Fouquieria splendens										5	5	1.00	5.95
Krameria grayi		1		3		1	3	4	5	3	20	4.00	23.81
Larrea tridentata	1	4	4	8	2	5	2	4	3	1	34	6.80	40.48
Olneya tesota	13										13	2.60	15.48

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Lower Vekol > AIM

Site ID: LV-LU-3 **Date:** 8/28/2017

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea		3.00	2.00	8.00	3.00	1.00	5.00	5.00	7.00	9.00	43	285.53
Ambrosia dumosa	1.00	1.00	2.00	1.00		1.00		1.00		1.00	8	53.12
Cylindropuntia leptocaulis								1.00			1	6.64
Ferocactus wislizeni						1.00		1.00			2	13.28
Fouquieria splendens		1.00									1	6.64
Krameria grayi	3.00	2.00	2.00	2.00	3.00	4.00	6.00	3.00	4.00	8.00	37	245.69
Larrea tridentata	2.00	3.00	4.00	7.00	4.00	8.00	5.00	8.00	6.00	5.00	52	345.29
Muhlenbergia porteri				3.00				1.00	13.00		17	112.88
Olneya tesota	1.00										1	6.64

* Number of decimal places does not imply level of precision

Notes:

LV-LU-4

Soil Stability Rank: 3.1

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Lower Vekol > AIM

Site ID: LV-LU-4 **Date:** 1/31/2018

Examiner(s):

Cover												
Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	30	34	38	39	33	39	39	42	41	35	370	74.00
Cryptogam	9	4	8	1	8	2	2	4		1	39	7.80
Gravel (<3")	11	8	2	7	6	6	9	4	7	13	73	14.60
Ambrosia deltoidea				1	1						2	0.40
Larrea tridentata		4	2	2	2	3			2	1	16	3.20

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Lower Vekol > AIM

Site ID: LV-LU-4 **Date:** 1/31/2018

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	30	37	40	42	36	42	39	42	43	36	387	77.40	77.40
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam	9	4	8	1	8	2	2	4		1	39	7.80	7.80
Gravel (<3")	11	9	2	7	6	6	9	4	7	13	74	14.80	14.80
Gravel (>3")											0	0.00	0.00
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea				1	1						2	0.40	11.11
Larrea tridentata		4	2	2	2	3			2	1	16	3.20	88.89

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Lower Vekol > AIM

Site ID: LV-LU-4 **Date:** 1/31/2018

Examiner(s):

Density

Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea			1.00	4.00			3.00				8	53.12
Larrea tridentata	4.00	4.00	5.00	2.00	8.00	7.00	3.00	1.00	1.00	4.00	39	258.97

* Number of decimal places does not imply level of precision

Notes:

Limy Upland Deep

LV-LUD-1

Soil Stability Rank: 3.7

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Lower Vekol > AIM

Site ID: LV-LUD-1 **Date:** 8/16/2017

Examiner(s):

Cover

Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	18	17	27	16	20	15	25	25	21	26	210	42.00
Cryptogam	1	4	1		1		1		2	2	12	2.40
Gravel (<3")	29	20	14	28	18	30	23	19	25	15	221	44.20
Gravel (>3")	1	1			1	2		1	2	1	9	1.80
Stones (>10" - 25")					1						1	0.20
Ambrosia dumosa		1									1	0.20
Krameria grayi		1									1	0.20
Larrea tridentata	1	6	8	6	6	3	1	5		6	42	8.40
Parkinsonia microphylla					3						3	0.60

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Lower Vekol > AIM

Site ID: LV-LUD-1 **Date:** 8/16/2017

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	19	18	31	17	25	17	25	25	21	30	228	45.60	45.60
Basal Vegetation				1							1	0.20	0.20
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam	1	7	3	2	2		1	1	2	3	22	4.40	4.40
Gravel (<3")	29	24	16	30	21	31	23	23	25	16	238	47.60	47.60
Gravel (>3")	1	1			1	2	1	1	2	1	10	2.00	2.00
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")					1						1	0.20	0.20
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia dumosa		2									2	0.40	4.08
Krameria grayi		1	1								2	0.40	4.08
Larrea tridentata	1	6	8	6	6	3	1	5		6	42	8.40	85.71
Parkinsonia microphylla					3						3	0.60	6.12

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Lower Vekol > AIM

Site ID: LV-LUD-1 **Date:** 8/16/2017

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia dumosa	2.00	3.00	2.00		3.00						10	66.40
Ferocactus wislizeni					1.00						1	6.64
Krameria grayi		1.00	1.00	1.00				1.00			4	26.56
Larrea tridentata	3.00	4.00	7.00	5.00	3.00	3.00	2.00	6.00	4.00	6.00	43	285.53
Parkinsonia microphylla					1.00						1	6.64
Unknown 1	1.00										1	6.64

* Number of decimal places does not imply level of precision

Notes:

LV-LUD-2

Soil Stability Rank: 4.6

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Lower Vekol > AIM

Site ID: LV-LUD-2 **Date:** 8/23/2017

Examiner(s):

Cover												
Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	4	5	3	2	2	4	6	5	3	2	36	7.20
Bedrock							1				1	0.20
Cryptogam	1	2	3	3	3	5	1	1	4	2	25	5.00
Gravel (<3")	41	39	42	44	40	37	40	39	35	46	403	80.60
Gravel (>3")					1				1		2	0.40
Larrea tridentata	4	4	2	1	4	4	2	5	7		33	6.60

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Lower Vekol > AIM

Site ID: LV-LUD-2 **Date:** 8/23/2017

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	4	5	4	2	2	6	7	5	5	2	42	8.40	8.40
Bedrock							1				1	0.20	0.20
Boulders (>25")											0	0.00	0.00
Cryptogam	1	2	3	3	3	6	1	2	5	2	28	5.60	5.60
Gravel (<3")	45	43	43	45	44	38	41	43	39	46	427	85.40	85.40
Gravel (>3")					1				1		2	0.40	0.40
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Larrea tridentata	4	4	2	1	4	4	2	5	7		33	6.60	100.00

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Lower Vekol > AIM

Site ID: LV-LUD-2 **Date:** 8/23/2017

Examiner(s):

Density

Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Encelia farinosa		5.00					7.00				12	79.68
Krameria grayi										2.00	2	13.28
Larrea tridentata	6.00		6.00	2.00	8.00	10.00		7.00	8.00	5.00	52	345.29

* Number of decimal places does not imply level of precision

Notes:

LV-LUD-3

Soil Stability Rank: 4.4

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Lower Vekol > AIM

Site ID: LV-LUD-3 **Date:** 8/22/2017

Examiner(s):

Cover												
Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	4	3		4	7	10	1	1	1	4	35	7.00
Cryptogam	1	1	3		4	2	6		2	2	21	4.20
Gravel (<3")	33	42	44	43	24	29	32	43	44	41	375	75.00
Gravel (>3")	5	1	2	2	7	1	4	5	3	3	33	6.60
Litter (<0.25")					1						1	0.20
Ambrosia deltoidea	2					4	1				7	1.40
Krameria grayi						2					2	0.40
Larrea tridentata	5	3	1	1	7	2	6	1			26	5.20

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Lower Vekol > AIM

Site ID: LV-LUD-3 **Date:** 8/22/2017

Examiner(s):

Surface Cover													
Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	9	6		4	10	17	5	1	1	4	57	11.40	11.40
Basal Vegetation								1			1	0.20	0.20
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam	1	1	3		4	3	6		2	2	22	4.40	4.40
Gravel (<3")	34	42	45	44	27	29	35	43	44	41	384	76.80	76.80
Gravel (>3")	6	1	2	2	7	1	4	5	3	3	34	6.80	6.80
HL Attached					1						1	0.20	0.20
Litter (<0.25")					1						1	0.20	0.20
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover													
Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea	2	2				4	1				9	1.80	24.32
Krameria grayi						2					2	0.40	5.41
Larrea tridentata	5	3	1	1	7	2	6	1			26	5.20	70.27

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Lower Vekol > AIM

Site ID: LV-LUD-3 **Date:** 8/22/2017

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea	8.00				4.00	2.00					14	92.96
Cylindropuntia fulgida	1.00									1.00	2	13.28
Ferocactus						1.00					1	6.64
Krameria grayi		1.00				1.00					2	13.28
Larrea tridentata	9.00	9.00	1.00	2.00	5.00		5.00	3.00	4.00	1.00	39	258.97
Lycium						1.00					1	6.64

* Number of decimal places does not imply level of precision

Notes:

Sandy Bottom

LV-SB-1

Soil Stability Rank: 2.3

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Lower Vekol > AIM

Site ID: LV-SB-1 **Date:** 8/16/2017

Examiner(s):

Cover

Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	29	34	19	32	17	36	37	24	25	27	280	56.00
Cryptogam	1	6	5	1			1	3	1		18	3.60
Gravel (<3")	5	3	5	1	9	5	6	4	5	2	45	9.00
Ambrosia	1										1	0.20
Hymenoclea salsola						1				2	3	0.60
Larrea tridentata	1		11	8	4	2	5	2	1	3	37	7.40
Lycium	2	4	6	4	5	1	1	4	2	7	36	7.20
Olneya tesota				2							2	0.40
Parkinsonia florida										6	6	1.20
Prosopis velutina	11		3	2	15			9	16	3	59	11.80
Ziziphus obtusifolia		3	1			5		4			13	2.60

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Lower Vekol > AIM

Site ID: LV-SB-1 **Date:** 8/16/2017

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	43	40	38	48	41	44	43	43	42	47	429	85.80	85.80
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam	1	7	6	1			1	3	1		20	4.00	4.00
Gravel (<3")	6	3	5	1	9	6	6	4	7	3	50	10.00	10.00
Gravel (>3")											0	0.00	0.00
HL Attached											0	0.00	0.00
Litter (<0.25")			1								1	0.20	0.20
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia	1										1	0.20	0.57
Hymenoclea salsola						1				2	3	0.60	1.70
Larrea tridentata	1		13	10	4	2	5	2	1	3	41	8.20	23.30
Lycium	3	4	8	4	10	3	1	4	3	7	47	9.40	26.70
Olneya tesota				2							2	0.40	1.14
Parkinsonia florida										6	6	1.20	3.41
Prosopis velutina	11		3	2	16			9	16	3	60	12.00	34.09
Ziziphus obtusifolia	2	3	1			6		4			16	3.20	9.09

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Lower Vekol > AIM

Site ID: LV-SB-1 **Date:** 8/16/2017

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia ambrosioides										1.00	1	6.64
Ambrosia deltoidea									1.00		1	6.64
Ambrosia dumosa				1.00							1	6.64
Larrea tridentata	2.00		3.00	3.00	3.00	1.00	3.00		3.00	1.00	19	126.16
Lycium	8.00	3.00	2.00	1.00	5.00	1.00	1.00	4.00	1.00	2.00	28	185.93
Prosopis velutina					2.00			2.00	2.00		6	39.84
Unknown 1									1.00		1	6.64
Ziziphus obtusifolia	1.00	1.00						3.00			5	33.20

* Number of decimal places does not imply level of precision

Notes:

LV-SB-2

Soil Stability Rank: 3.2

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Lower Vekol > AIM

Site ID: LV-SB-2 **Date:** 8/15/2017

Examiner(s):

Cover												
Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	5		3	9	11	6	10	6	7	16	73	14.60
Cryptogam		1		1	1	2	3	3	1	1	13	2.60
Gravel (<3")	22	15	23	20	22	10	18	20	23	14	187	37.40
Acacia greggii				3							3	0.60
Ambrosia ambrosioides				1				1			2	0.40
Baccharis sarothroides	1	7				1	1	4		1	15	3.00
Chilopsis linearis	9	21	12	4	6	7	2	16	4	18	99	19.80
Larrea tridentata	1			2		6					9	1.80
Lycium			3								3	0.60
Parkinsonia florida	12	6	9	10	7	6	9		15		74	14.80
Prosopis velutina					3	12	7				22	4.40

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Lower Vekol > AIM

Site ID: LV-SB-2 **Date:** 8/15/2017

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	24	16	16	22	19	19	14	19	18	18	185	37.00	37.00
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam	1	7	4	5	1	7	11	10	7	8	61	12.20	12.20
Gravel (<3")	25	27	30	23	30	24	25	21	25	24	254	50.80	50.80
Gravel (>3")											0	0.00	0.00
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Acacia greggii			2	4							6	1.20	2.01
Ambrosia ambrosioides		5		1				3	2		11	2.20	3.68
Baccharis sarothroides	5	10	3	2	1	8	7	7	1	5	49	9.80	16.39
Chilopsis linearis	14	21	17	6	6	8	3	16	5	18	114	22.80	38.13
Larrea tridentata	1	1		4		6					12	2.40	4.01
Lycium			3								3	0.60	1.00
Parkinsonia florida	12	6	9	10	7	6	12		17	1	80	16.00	26.76
Prosopis velutina					3	12	7		2		24	4.80	8.03

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Lower Vekol > AIM

Site ID: LV-SB-2 **Date:** 8/15/2017

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Acacia greggii			1.00	2.00							3	19.92
Ambrosia ambrosioides	1.00	4.00	6.00	4.00		2.00	2.00	2.00	3.00		24	159.37
Ambrosia ambrosioides-seedling	7.00	4.00	4.00	1.00		2.00		1.00	2.00	4.00	25	166.01
Baccharis sarothroides	6.00	5.00	4.00	3.00	4.00	6.00	3.00	7.00		2.00	40	265.61
Chilopsis linearis	7.00	4.00	3.00	3.00	1.00	5.00	5.00	5.00		6.00	39	258.97
Chilopsis linearis-seedling		2.00						8.00			10	66.40
Funastrum cynanchoides-Milkweed						1.00			1.00	1.00	3	19.92
Larrea tridentata					1.00	1.00		1.00			3	19.92
Parkinsonia florida	1.00	2.00		2.00	1.00	1.00	4.00	1.00	4.00	2.00	18	119.52
Parkinsonia florida-seedling	10.00	16.00	10.00	11.00	8.00	15.00	3.00	2.00	10.00	14.00	99	657.38
Prosopis velutina					1.00	1.00					2	13.28

* Number of decimal places does not imply level of precision

Notes: angle iron @290ft and 2 paces sw .

LV-SB-3

Soil Stability Rank: 2.3

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Lower Vekol > AIM

Site ID: LV-SB-3 **Date:** 8/23/2017

Examiner(s):

Cover

Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	11	9	1	2		6	5	2	2	11	49	9.80
Cryptogam		1									1	0.20
Gravel (<3")	21	20	40	29	25	32	25	25	18	16	251	50.20
Gravel (>3")			2					1			3	0.60
Acacia greggii		13	1		2						16	3.20
Ambrosia ambrosioides			4								4	0.80
Baccharis sarothroides				3	6				4		13	2.60
Chilopsis linearis			1	9	4	4	20	12	14	12	76	15.20
Hymenoclea salsola	4										4	0.80
Larrea tridentata	1										1	0.20
Parkinsonia florida			1	7	12	8		10	8	11	57	11.40
Prosopis velutina	11	7							4		22	4.40
Stephanomeria pauciflora	2				1						3	0.60

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Lower Vekol > AIM

Site ID: LV-SB-3 **Date:** 8/23/2017

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	23	19	6	7	3	16	17	22	20	22	155	31.00	31.00
Basal Vegetation		1					1				2	0.40	0.40
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam		1									1	0.20	0.20
Gravel (<3")	26	29	42	43	46	34	32	27	30	28	337	67.40	67.40
Gravel (>3")	1		2		1			1			5	1.00	1.00
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Acacia greggii	1	13	1		2						17	3.40	7.33
Ambrosia ambrosioides			5	2		3		4			14	2.80	6.03
Baccharis sarothroides		2		3	6		6		8		25	5.00	10.78
Chilopsis linearis			1	9	4	7	20	12	14	14	81	16.20	34.91
Hymenoclea salsola	4										4	0.80	1.72
Larrea tridentata	1										1	0.20	0.43
Parkinsonia florida			1	7	12	9	1	10	8	16	64	12.80	27.59
Parkinsonia microphylla					1						1	0.20	0.43
Prosopis velutina	11	7							4		22	4.40	9.48
Stephanomeria pauciflora	2				1						3	0.60	1.29

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Lower Vekol > AIM

Site ID: LV-SB-3 **Date:** 8/23/2017

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Acacia greggii	1.00	1.00									2	13.28
Ambrosia ambrosioides			1.00	1.00		3.00					5	33.20
Baccharis sarothroides	1.00	1.00					1.00	1.00			4	26.56
Chilopsis linearis			2.00	1.00	1.00	2.00	5.00	2.00	2.00	1.00	16	106.24
Euphorbia			5.00			1.00					6	39.84
Hymenoclea salsola	1.00		1.00	1.00	3.00						6	39.84
Larrea tridentata	1.00										1	6.64
Parkinsonia florida								1.00	2.00	1.00	4	26.56
Parkinsonia florida-SEEDLING							6.00	11.00	1.00	4.00	22	146.09
Pennisetum ciliare-GRASS		1.00									1	6.64
Stephanomeria pauciflora	1.00		2.00								3	19.92
Unknown 4-Hairy forb							1.00				1	6.64

* Number of decimal places does not imply level of precision

Notes:

LV-SB-4

Soil Stability Rank: 2.7

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Lower Vekol > AIM

Site ID: LV-SB-4 **Date:** 1/23/2018

Examiner(s):

Cover

Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	22	15	15	25	21	14	16	12	14	10	164	32.80
Cryptogam			2			1		2		1	6	1.20
Gravel (<3")	18	16	20	20	14	19	12	18	17	29	183	36.60
Ambrosia deltoidea	2		4								6	1.20
Carnegiea gigantea									3		3	0.60
Hymenoclea salsola	4	3	1		2		1	4	5	2	22	4.40
Larrea tridentata	2		1	5	13	8	11	5	3	8	56	11.20
Olneya tesota	2	16	7				7	6	5		43	8.60
Parkinsonia microphylla						8	3	3	3		17	3.40

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Lower Vekol > AIM

Site ID: LV-SB-4 **Date:** 1/23/2018

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	24	27	23	27	29	19	30	18	24	15	236	47.20	47.20
Basal Vegetation		1	1						1		3	0.60	0.60
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam			2			1	1	2		1	7	1.40	1.40
Gravel (<3")	26	22	24	23	21	30	19	30	25	34	254	50.80	50.80
Gravel (>3")											0	0.00	0.00
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea	2	1	4								7	1.40	4.29
Carnegiea gigantea									3		3	0.60	1.84
Encelia farinosa		2									2	0.40	1.23
Hymenoclea salsola	4	5	1		2		1	8	9	2	32	6.40	19.63
Larrea tridentata	4		1	5	13	8	12	5	3	8	59	11.80	36.20
Olneya tesota	2	16	7				7	6	5		43	8.60	26.38
Parkinsonia microphylla						8	3	3	3		17	3.40	10.43

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Lower Vekol > AIM

Site ID: LV-SB-4 **Date:** 1/23/2018

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea	4.00	6.00	7.00				1.00		1.00		19	126.16
Carnegiea gigantea									1.00		1	6.64
Encelia farinosa		2.00					1.00				3	19.92
Hymenoclea salsola	5.00	8.00	11.00	2.00	1.00		4.00	8.00	13.00	2.00	54	358.57
Larrea tridentata	2.00	1.00	1.00	2.00	8.00	4.00	2.00	2.00	2.00	7.00	31	205.85
Olneya tesota		1.00					2.00		1.00		4	26.56
Parkinsonia microphylla						1.00					1	6.64

* Number of decimal places does not imply level of precision

Notes:

Sandy Loam Deep

LV-SLD-1

Soil Stability Rank: 2.9

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Lower Vekol > AIM

Site ID: LV-SLD-1 **Date:** 1/30/2018

Examiner(s):

Cover												
Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	40	40	41	36	41	39	31	30	37	32	367	73.40
Cryptogam					3	3	6	5	4	8	29	5.80
Gravel (<3")	7	10	6	10	6	7	12	12	5	8	83	16.60
Encelia farinosa								1			1	0.20
Ferocactus wislizeni							1				1	0.20
Larrea tridentata	3		3	4		1		2	4	2	19	3.80

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Lower Vekol > AIM

Site ID: LV-SLD-1 **Date:** 1/30/2018

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	43	40	43	40	41	40	32	30	40	34	383	76.60	76.60
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam					3	3	6	5	4	8	29	5.80	5.80
Gravel (<3")	7	10	7	10	6	7	12	15	6	8	88	17.60	17.60
Gravel (>3")											0	0.00	0.00
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Encelia farinosa								1			1	0.20	4.76
Ferocactus wislizeni							1				1	0.20	4.76
Larrea tridentata	3		3	4		1		2	4	2	19	3.80	90.48

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Lower Vekol > AIM

Site ID: LV-SLD-1 **Date:** 1/30/2018

Examiner(s):

Density

Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Larrea tridentata	4.00	4.00	2.00	1.00		2.00	2.00	4.00	4.00	3.00	26	172.65

* Number of decimal places does not imply level of precision

Notes:

LV-SLD-2

Soil Stability Rank: 2.4

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Lower Vekol > AIM

Site ID: LV-SLD-2 **Date:** 1/30/2018

Examiner(s):

Cover

Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	41	38	40	37	45	42	34	41	36	40	394	78.80
Cryptogam	7	9	6	9	4	8	12	9		1	65	13.00
Gravel (<3")	2	2		1			2				7	1.40
Ambrosia deltoidea									5	3	8	1.60
Larrea tridentata		1	4	3	1		2		9	6	26	5.20

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Lower Vekol > AIM

Site ID: LV-SLD-2 **Date:** 1/30/2018

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	41	39	44	39	46	42	36	41	50	48	426	85.20	85.20
Basal Vegetation										1	1	0.20	0.20
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam	7	9	6	10	4	8	12	9		1	66	13.20	13.20
Gravel (<3")	2	2		1			2				7	1.40	1.40
Gravel (>3")											0	0.00	0.00
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover													
Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea									5	4	9	1.80	25.71
Larrea tridentata		1	4	3	1		2		9	6	26	5.20	74.29

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Lower Vekol > AIM

Site ID: LV-SLD-2 **Date:** 1/30/2018

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea									5.00	7.00	12	79.68
Larrea tridentata	1.00		3.00	5.00		3.00	2.00	6.00	4.00	3.00	27	179.29

* Number of decimal places does not imply level of precision

Notes:

LV-SLD-3

Soil Stability Rank: 2.5

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Lower Vekol > AIM

Site ID: LV-SLD-3 **Date:** 1/30/2018

Examiner(s):

Cover												
Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	18	18	11	17	19	11	14	22	23	36	189	37.80
Cryptogam					2		3	3	1		9	1.80
Gravel (<3")	27	24	30	28	28	16	25	19	21	7	225	45.00
Ambrosia deltoidea	2	1	2	2	1	3	3		2		16	3.20
Krameria grayi		1									1	0.20
Larrea tridentata	3	6	7	3		3	1	6	3	7	39	7.80
Parkinsonia microphylla						17	4				21	4.20

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Lower Vekol > AIM

Site ID: LV-SLD-3 **Date:** 1/30/2018

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	23	22	15	22	20	25	19	22	25	41	234	46.80	46.80
Basal Vegetation								1			1	0.20	0.20
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam					2		3	3	1	1	10	2.00	2.00
Gravel (<3")	27	28	35	28	28	25	28	24	24	8	255	51.00	51.00
Gravel (>3")											0	0.00	0.00
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea	2	1	2	2	1	3	3		2		16	3.20	20.78
Krameria grayi		1									1	0.20	1.30
Larrea tridentata	3	6	7	3		3	1	6	3	7	39	7.80	50.65
Parkinsonia microphylla						17	4				21	4.20	27.27

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Lower Vekol > AIM

Site ID: LV-SLD-3 **Date:** 1/30/2018

Examiner(s):

Density												
Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea	8.00	3.00	3.00	6.00	8.00	7.00	17.00	3.00	4.00	5.00	64	424.98
Carnegiea gigantea									1.00		1	6.64
Cylindropuntia leptocaulis										1.00	1	6.64
Krameria grayi		1.00									1	6.64
Larrea tridentata	3.00	7.00	5.00	5.00	8.00	5.00		7.00	9.00	4.00	53	351.93

* Number of decimal places does not imply level of precision

Notes:

LV-SLD-4

Soil Stability Rank: 1.4

Cover - Top Layer

Site Class: Phoenix District > Sonoran Desert NM > Lower Vekol > AIM

Site ID: LV-SLD-4 **Date:** 1/30/2018

Examiner(s):

Cover												
Species	Transect (#Hits)											% Cover*
	1	2	3	4	5	6	7	8	9	10	Total	
Bare Ground	26	25	22	27	26	23	30	22	25	36	262	52.40
Cryptogam			1	1							2	0.40
Gravel (<3")	23	19	21	15	13	19	16	21	24	11	182	36.40
Gravel (>3")	1				1	1		3			6	1.20
Ambrosia deltoidea				3	4	2		1	1		11	2.20
Fouquieria splendens					2						2	0.40
Krameria grayi		1		1			1				3	0.60
Larrea tridentata		5	6	3	4	5	3	3		3	32	6.40

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Cover by Transect (Point-Intercept)

Site Class: Phoenix District > Sonoran Desert NM > Lower Vekol > AIM

Site ID: LV-SLD-4 **Date:** 1/30/2018

Examiner(s):

Surface Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Bare Ground	26	30	26	34	34	30	33	26	26	39	304	60.80	60.80
Bedrock											0	0.00	0.00
Boulders (>25")											0	0.00	0.00
Cryptogam			1	1	1						3	0.60	0.60
Gravel (<3")	23	20	23	15	14	19	17	21	24	11	187	37.40	37.40
Gravel (>3")	1				1	1		3			6	1.20	1.20
HL Attached											0	0.00	0.00
Litter (<0.25")											0	0.00	0.00
Litter (>0.25")											0	0.00	0.00
Scat - Livestock											0	0.00	0.00
Stones (>10" - 25")											0	0.00	0.00
WL Attached											0	0.00	0.00

* Number of decimal places does not imply level of precision

Foliar Cover

Species	Transect (#Hits)											% Cover*	% Comp.*
	1	2	3	4	5	6	7	8	9	10	Total		
Ambrosia deltoidea				3	5	2		1	1	1	13	2.60	26.00
Fouquieria splendens					2						2	0.40	4.00
Krameria grayi		1		1			1				3	0.60	6.00
Larrea tridentata		5	6	3	4	5	3	3		3	32	6.40	64.00

* Number of decimal places does not imply level of precision

Notes: PointsPerSample = 1

Density by Transect

Site Class: Phoenix District > Sonoran Desert NM > Lower Vekol > AIM

Site ID: LV-SLD-4 **Date:** 1/30/2018

Examiner(s):

Density

Species	Transect (Count)											Density* / ac
	1	2	3	4	5	6	7	8	9	10	Total	
Ambrosia deltoidea		1.00	2.00	8.00	12.00	3.00	1.00	2.00	4.00	2.00	35	232.41
Cylindropuntia ramosi.-Diamond								1.00			1	6.64
Fouquieria splendens					1.00						1	6.64
Krameria grayi		2.00		4.00		1.00	2.00		1.00		10	66.40
Larrea tridentata	1.00	4.00	7.00	5.00	4.00	11.00	10.00	3.00	4.00	3.00	52	345.29

* Number of decimal places does not imply level of precision

Notes:

Appendix H- Review of Cattle Impacts as a Function of Distance from Water Source

There are several opinions on how far cattle impacts on vegetation extend beyond water sources. Though little work has been done to determine how far cattle will roam from water sources in the Sonoran Desert, research in other deserts can offer some guidance. Data from 15 papers with research conducted in deserts around the world were reviewed (Table 1) and are summarized here. On average, cattle ranged 1.64 – 1.92 miles from water in a variety of cold and hot desert communities (Table 2).

In the Chihuahuan Desert near Las Cruces, New Mexico, research on the Jornada Experimental Range and at the Chihuahuan Desert Rangeland Research Center showed notable impacts on vegetation end as little as 0.7 miles to as much as (Nash et al. 1999) to 2.33 miles depending on forage quality, (Bailey et al 2010), whether the cattle are naïve or familiar with the habitat (Bailey et al 2010), and breed (Nyamuryekung'e et al. 2022, Russell et al. 2012, Herbel et al. 1967). After 7 years of drought on range pastures in fair condition, cattle moved beyond 2.75 miles only 10.3 % (Herford cattle) and 16.8% (Santa Gertrudis) of the time in the paddock (Herbel et al. 1967). On the rangeland in poor condition, that time increased to 22.9 % (Herford cattle) and 23.3% (Santa Gertrudis) of the time in the paddock. When the longest distances near Las Cruces are averaged, cattle only moved an average of 1.6 miles from water irrespective of breed. The response of perennial grass standing crop to grazing within 1 mile radius around a water source varies based on range health and grass species. In a study Black grama (*Bouteloua eriopoda*) showed no increase in standing crop as sites moved away from water up to 1 mile on rangelands in good condition, but did increase in impaired rangelands, however, standing crop increased with distance from water for Mesa dropseed (*Sporobolus fleruosus*) and threeawn species (*Aristida* sp.) irrespective of range health (Fusco et al. 1995).

One paper included research conducted in the Arizona section of Chihuahuan Desert near Wilcox. There, one ranch was found on predominately sloped and rocky habitat with sparse vegetation and the other on relatively flat terrain. In both habitats, cattle stayed within 2 miles of water 98% of the time or more (Millward et al. 2020). When studying native and nonnative plants near water sources in the Mojave Desert, Brooks et al. (2006) concluded significant effects ended 0.13 miles from the water with no difference in annual or perennial plant composition between 0.13 – 0.5 miles. Ganskopp (2001) manipulated water and salt near Burns, Oregon, the Columbian Plateau region of the Great Basin, cattle stayed within an average distance of 0.72 miles with a mean maximum distance of 1.8 miles.

Outside the United States, there was a similar amount of variation in distance cattle moved from water. In the Gobi Desert, Stumpp et al. (2005) dung density was low at 0.93 miles for yak and cattle. In the semi-arid region of La Rioja Province, Argentina, Blanco et al. (2009) showed cattle impact to vegetation as measured by remote sensing leveled out after 0.93 miles in under continuous grazing and 1.24 miles in a rest-rotation grazing system.

In work done near Alice Springs, Northern Territory, Australia, distance traveled from water depended on the climate and forage conditions at the time data was collected. Pickup and Chewings (1988) found cattle spent 90-95% of their time within 3.73 miles of water using data from previous work that included years of drought and above average rainfall. Nearly a decade later, in a nearby paddock, Pickup and

Bastin (1997) used LandSat MSS imagery to show to show substantial impacts within 1.24 miles of water, with lesser, but notable impacts on vegetation up to 4.97 miles from a water source in both a drought and above average rainfall years. Foran (1980) did not detect differences in rangeland condition scores, score beyond 1.24 miles.

Using dung density as a measure of grazing intensity in a sand dune environment, Fensham et al. (2010) also did not measure significant correlations between grazing intensity and total plant species abundance, richness or diversity. Silt and clay composition in the soil showed much stronger correlations to plant diversity. There was a positive correlation between grazing and perennial forb abundance and perennial plant species richness (Fensham et al. 2010). Cattle dung density was low after 2 km (1.24 miles) and extremely low and patchy after 6 km (3.72 miles) indicating low and inconsistent vegetation impact beyond 3.72 miles (Fensham et al. 2010).

Publication	**Cattle Impacts (miles)**	**Location**	**Precipitation (inches)**
Millward et al. 2020	2*	Chihuahuan Desert, Arizona	NR (12.4W)
Nash et al. 1999	0.7	Chihuahuan Desert, New Mexico	8.86
Nyamuryekung'e et al. 2022	0.95	Chihuahuan Desert, New Mexico	9.72
Fusco et al. 1995	0.994	Chihuahuan Desert, New Mexico	NR (9.2-9.7LC)
Russell et al. 2012	1.056	Chihuahuan Desert, New Mexico	9.2
Bailey et al. 2010	1.25-2.33	Chihuahuan Desert, New Mexico	9.21
Herbel et al. 1967	3.5†	Chihuahuan Desert, New Mexico	NR (9.2-9.7LC)
Stumpp et al. 2005	0.932	Gobi Desert, Mongolia	4-6
Brooks et al. 2006	0.124	Mojave Desert, California	6.61
Ganskopp, D. 2001	0.721	Northern Great Basin, Oregon	11.38
Foran, B.D. 1980	1.864	Northern Territory, Australia	NR (10.23PB)
Pickup & Chewings 1988	3.73**	Northern Territory, Australia	10.83
Pickup & Bastin 1997	4.35-4.97	Northern Territory, Australia	10.23
Blanco et al. 2009	1.243	Semi-arid, La Rioja Province, Argentina	18.46
Fensham et al. 2010	1.25-3.75	Simpson Strzelecki Dunefields, Simpson Desert, Australia	5-6

* - Greater than 98% of all GPS coordinates within 2 miles of water.
†- After prolonged drought.
**- Greater than 90% of all GPS coordinates in all vegetation types and seasons.
NR- Precipitation was not reported.
W- Estimated precipitation from Wilcox AZ, closest apparent major town based on map.
LC- Average precipitation for Las Cruces based on literature cited above.
PB- Precipitation estimated based on work done near by by Pickup and Bastin (1997).

Table 1 Average distance from water cattle traveled using the shortest and longest distance published by each paper.

	Distance (Miles)	
Publication	**Shortest**	**Longest**
Millward et al. 2020	2	2
Nash et al. 1999	0.7	0.7
Nyamuryekung'e et al. 2022	0.95	0.95
Fusco et al. 1995	0.994	0.994
Russell et al. 2012	1.056	1.056
Bailey et al. 2010	1.25	2.33
Herbel et al. 1967	3.5	3.5
Stumpp et al. 2005	0.932	0.932
Brooks et al. 2006	0.124	0.124
Ganskopp, D. 2001	0.721	0.721
Foran, B.D. 1980	1.864	1.864
Pickup & Chewings 1988	3.73	3.73
Pickup & Bastin 1997	4.35	4.97
Blanco et al. 2009	1.243	1.243
Fensham et al. 2010	1.25	3.75
Average	**1.64**	**1.92**

Citations

Bailey et al. (2010). Effect of Previous Experience on Grazing Patterns and Diet Selection of Brangus Cows in the Chihuahuan Desert. *Rangeland Ecology and Management*, 63: 223-232.

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Stumpp et al. (2005). Impact of Grazing Livestock and Distance from Water Source on Soil Fertility in Southern Mongolia. Mountain Research and Development, 25(3): 244-251.