U.S. Department of the Interior
Bureau of Land Management

Environmental Assessment

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September 2014

Turner Allotment Ephemeral Grazing Permit Non-reissuance

Permit Number: 03084

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TABLE OF CONTENTS

1. INTRODUCTION

1.1 Background Information

The Bureau of Land Management (BLM) is proposing to not re-issue a 10-year ephemeral grazing permit on the Turner allotment (Permit No. 03084), for a period of 10 years. The Turner Allotment is an ephemeral only grazing allotment administered by the Bureau of Land Management, Hassayampa Field Office (HFO) and is located within the boundaries of the Lower Sonoran Field Office (LSFO). It is located approximately 1.2 miles to the East of Tonopah, Arizona in Maricopa County, see Map 2 in Appendix B. The allotment is split by Interstate 10 at mile marker 101 to mile marker 95 and the allotment encompasses an area of approximately 59,800 acres. Approximately 8,080 (13.5%) of these acres are administered by the BLM with the vast majority of federal public lands located on the west side of the allotment, including and surrounding the Palo Verde Hills due south of Tonopah and the Salome Highway. In addition to the 8,080 acres of federal public lands, there are a total of 6,290 acres of state lands and 45,430 acres of private lands.

This Environmental Assessment has been prepared to analyze and disclose the potential environmental consequences associated with the Proposed Action and alternatives for livestock management on the Turner Allotment. A Rangeland Health Evaluation (hereafter the RHE) for the Turner allotment was prepared in 2014 and conducted in accordance with the direction set forth in the Washington Office Memorandum No. 98-91 for implementation of *Standards of Rangeland Health and Guidelines for Grazing Administration* (1997). The purpose of the evaluation was to determine if the current resource conditions are meeting, making significant progress towards meeting, or not meeting the standards for rangeland health and other land use plan objectives. If standards or land use plan objectives are not being achieved, the resource uses that are preventing attainment are identified. Technical recommendations developed by an interdisciplinary team to improve resource conditions were presented in the evaluation, and brought forward for environmental analysis in this document.

Findings of Rangeland Health Evaluation

The Turner Rangeland Health Evaluation was issued as a draft for comment on June 24, 2014. The recommendation to not re-issue the 10 year ephemeral grazing permit is to Standard 3, Desired Future Condition, not being met or making progress towards meeting the standard. The final RHE will be released as Appendix A and the data for the Turner Allotment will be released as Appendix B in this EA.

It was determined by the Interdisciplinary Team during the evaluation and assessment process that some resource conditions on the Turner Allotment are not achieving all of the applicable Standards for Rangeland Health.

The RHE describes the data and methods used to determine whether the relevant Rangeland Health Standards are being achieved on the allotment.

According to the RHE, Key Areas one, two and three are meeting Standard 1 (Upland Sites), Standard 2 does not apply and all three Key Areas are not meeting Standard 3 (Desired Resource Conditions). Causal factors for the non-attainment of Standard 3 are:

- Drought/regional climate;
- Shift in vegetative stage due to historic livestock grazing.

1.2 Purpose and Need for Action

The purpose of this action is to provide for ephemeral livestock grazing opportunities on public lands where authorized ephemeral grazing is consistent with meeting management objectives, including the Arizona Standards for Rangeland Health and Guidelines for Livestock Grazing Management.

The need for this action is established by the Taylor Grazing Act (TGA), the Federal Land Policy and Management Act (FLPMA), and the Bradshaw Harquahala Management Plan (RMP) (USDI BLM, 2010), which require that the BLM respond to applications to fully process and renew permits to graze livestock on public land. In detail, the analysis of the actions identified in the applications for grazing permit renewals and the alternative actions is needed because:

- BLM Arizona adopted the Arizona Standards for Rangeland Health (Land Health Standards) and Guidelines for Livestock Grazing Management in all Land Use Plans (Arizona S&Gs) in 1997. Land Health Standards and Guidelines for Grazing Administration were also incorporated into the RMP (2010). Land Health Standards for Rangelands should be achieving or making significant progress towards achieving the standards and to provide for proper nutrient cycling, hydrologic cycling, and energy flow. Guidelines direct the selection of grazing management practices and, where appropriate, livestock facilities to promote significant progress toward, or the attainment and maintenance of, the standards. Rangeland health assessments and evaluation reports completed for the Turner Allotment identified standard 3 as not being fully achieved on public lands.

- The RMP identifies resource management objectives and management actions that establish guidance for managing a broad spectrum of land uses and allocations for public lands in the HFO. The RMP allocated public lands within the Turner Allotment, as available for ephemeral domestic livestock grazing. Where consistent with the goals and objectives of the RMP and Land Health Standards, allocation of forage for livestock use and the issuance of ephemeral grazing permits to qualified applicants are provided for by the Taylor Grazing Act (TGA) and the Federal Land Policy and Management Act (FLPMA).

1.3 Decision to be Made

The Hassayampa Field Manager is the authorized officer responsible for the decisions regarding management of public lands within this allotment. Based on the results of this analysis, the authorized officer will issue a determination of the significance of the environmental effects and whether an environmental impact statement (EIS) would be required. If the authorized officer determines that it is not necessary to prepare an EIS, the EA will provide information for the authorized officer to make an informed decision whether to renew, renew with modifications, or not renew the permit, and if renewed, which management actions, mitigation measures, and

monitoring requirements will be prescribed for the Turner Allotment to ensure future conditions on the allotment will meet management objectives and Arizona Standards for Rangeland Health.

1.4 Land Use Plan Conformance

On April 22, 2010, the RMP and Record of Decision were approved by the Arizona State Director for the BLM. This RMP guides the overall management of activities, as well as the use and protection of BLM-administered resources within the HFO planning area. It outlines provisions for the BLM, HFO to administer ephemeral grazing authorizations within ephemeral allotment boundaries and provide management actions applicable to livestock use on public lands. Public lands on Turner Allotment are located within the boundaries of the Lower Sonoran Field Office (LSFO); the HFO has been given management responsibilities for grazing administration. All other resources are managed under the 2012 Lower Sonoran Resource Management Plan.

The RMP classified the Turner Allotment under its previous ephemeral use designation. An ephemeral designation institutes a grazing system in accordance with the Special Ephemeral Rule (Federal Register, Vol. 33, No. 238, December 7, 1968).

This action is in conformance with the following goals, objectives, and management actions in the RMP:

Desired Future Conditions:
Desired future conditions included below are from the Grazing Management Section (GM) of the RMP.

GM-1 Rangeland conditions conform to the Land Health Standards described in *Arizona Standards for Rangeland Health and Guidelines for Grazing Administration*, which describe the desired conditions needed to encourage proper functioning of ecological processes. These standards are described in greater detail in the above section on Land Health Standards.

GM-2 Watersheds are in properly functioning condition, including their upland, riparian, and aquatic components. Soil and plant conditions support infiltration, storage, and release of water that are in balance with climate and landform.

GM-3 Ecological processes are maintained to support healthy biotic populations and communities

Land Use Allocation

GM-4 Administer 93 grazing authorizations within the grazing allotment boundaries shown on Map 13.

GM-5 Public lands without a grazing permit or lease authorization will remain unauthorized for livestock grazing.

Management Actions

GM-8 Inventory and/or monitoring studies are used to determine if adjustments to permitted use levels, terms and conditions, and management practices are necessary in order to meet

and/or make significant progress towards meeting the Arizona Standards for Rangeland Health and other management objectives.

GM-14 Management practices to achieve Desired Plant Community (DPCs) will consider protecting and conserving known cultural resources, including historical sites, prehistoric sites, and plants of significance to Native American people.

GM-15 Apply management actions outlined in the Arizona Standards for Rangeland Health and Guidelines for Grazing Administration to recognize and correct potential erosion problems that could degrade other resources, with prioritized emphasis on sites that might directly affect species that have been listed as threatened, endangered, or candidate by the FWS.

GM-16 Implement ephemeral range designation, where suitable, for managing vegetation and ecological processes as determined through the Arizona Land Health Standards (Land Health Standards) allotment evaluation process.

BLM may designate those areas for ephemeral grazing by applying criteria established in the Special Ephemeral Rule. In applying the rule, all the following criteria must be met at the same time:

- The area is within the hot desert biome.
- Annual precipitation is less than 8 inches.
- The land produces less than 25 pounds/acres of desirable perennial forage.
- The land contains less than five percent composition of desirable perennial forage plants.
- The area is below 3,500 feet in elevation.
- Total forage production is highly unpredictable, and forage is usually available only for a short time.
- The growth depends upon abundant moisture and other favorable climatic conditions.
- The area lacks potential to improve the current ecological conditions and produce a dependable supply of forage by applying intensive rangeland management.

GM-25 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; as well as sufficient surface and subsurface soil moisture exists for continued plant growth.
- Serviceable waters can provide for proper grazing distribution.
- Sufficient annual vegetation will remain on site to satisfy other resource concerns (e.g. watershed, wildlife, wild horses, and burros).
- Monitoring is conducted during grazing to determine if objectives are being met

Guidelines for Standard One

GM-17 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. The ground cover should maintain soil organisms, 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.

Guidelines for Standard Three

GM-27DPC objectives will be quantified for each allotment through the rangeland monitoring and evaluation process. Ecological site descriptions available through the Natural Resources Conservation Service and other data will be used as a guide for addressing site capabilities and potentials for change over time. These DPC objectives are vegetation values that BLM is managing over the long term. Once established, DPC objectives will be updated and monitored by the use of indicators for Land Health Standard Three.

1.5 Relationship to Statutes, Regulations, or other Plans

The BLM's objectives for rangeland management are to carry out the intent of the Taylor Grazing Act of 1934, as amended and supplemented, FLPMA of 1976, and the Public Rangelands Improvement Act of 1978. The Taylor Grazing Act and FLPMA recognize grazing as a valid use of the public lands and require BLM to manage livestock grazing in the context of multiple use. Additionally, Title 43 CFR Part 4100 regulations govern grazing administration for public rangelands. Among other things, the regulations require the implementation of the Fundamentals of Rangeland Health (43 CFR 4180), and that allotments must be in accordance with the Guidelines for Grazing Administration while continuing to achieve Arizona Standards for Rangeland Health (1997).

The proposed action complies with 43 CFR 4100.0-8 which states, in part, "The authorized officer shall manage livestock grazing on public lands under the principle of multiple use and sustained yield, and in accordance with applicable land use plans." The proposed action also complies with 43 CFR 4130.2(a) which states, in part, "Grazing permits or leases shall be issued to qualified applicants to authorize use on the public lands and other lands under the administration of the Bureau of Land Management that are designated as available for livestock grazing through land use plans."

The following document also provides program constraints, general management practices, and land use objectives to achieve desired resource conditions and provide direction for public lands within the Turner Allotment.

- ***Strategy for Desert Tortoise Habitat Management on Public Lands in Arizona, 1990***.

Additionally, the proposed action would comply with the following pertinent laws, among others:

- ***National Environmental Policy Act (NEPA) of 1969;***
- ***Endangered Species Act (ESA) of 1973, as amended;***
- ***Section 106 of the National Historic Preservation Act of 1966, as amended; and***
- ***Native American Graves Protection and Repatriation Act of 1990 (25 United States Code [USC] 3001-3013; 104 Stat. 3048-3058).***
- ***Taylor Grazing Act of 1934***

- ***Federal Land Policy and Management Act of 1976 (43 U.S.C. 1701 et seq.)***
- ***Public Rangelands Improvement Act of 1978***
- ***43 CFR 4100 Grazing Administration - Exclusive of Alaska***
- ***Arizona Water Quality Standards, Revised Statute Title 49, Chapter II***
- ***Clean Water Act of 1972, as amended***
- ***Clean Air Act of 1970, as amended***
- ***Migratory Bird Treaty Act of 1917, and Executive Order 13186 – Responsibilities of Federal Agencies to Protect Migratory Birds***

1.6 Scoping & Public Participation

Scoping is a process to identify the resources that may be affected by a proposal, and to explore possible alternatives for achieving the purpose and need. The BLM, HFO conducted both internal scoping with appropriate BLM staff and external scoping with the public and interested/affected groups and agencies in order to identify issues for this analysis (see Table 2 for a list of the comments received).

1.7 Issues identified during scoping

Table 2. Issue identified during scoping

What is the Issue Identified?	Who Identified this Issue?	How has this Issue been Addressed?
Consider Sonoran desert tortoise (SDT) guidelines with any alternatives that would cause disturbance in SDT habitat	U.S. Fish and Wildlife Service	The effects of an alternative including the SDT guidelines would have substantially similar effects as the No Action alternative since very few encounters occur due to the limited frequency and duration of livestock authorized for ephemeral use.
Include minimization measures for invasive species	U.S. Fish and Wildlife Service	The effects of including minimization measures for invasive species with the reissuance of a permit would have substantially similar effects as the proposed action. Invasive species would not be introduced from authorized ephemeral use as it would not be permitted for ten years.

2. ALTERNATIVES

2.1 Alternative 1 - Proposed Action/No Grazing

The BLM would follow the recommendation set forth in the Turner Allotment RHE to not re-issue the 10-year ephemeral grazing permit and to re-assess conditions for potential permit issuance in 10 years' time. The current permittee would not be able to apply for ephemeral use for 10 years, the area would be ~~placed into a conservation status~~rested from livestock grazing and the allotment will be reevaluated for Standards of Rangeland Health.

2.2 Alternative 2 - No Action

Re-issue the 10-year ephemeral grazing permit for the Turner Allotment with current terms and conditions as stated below:

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

3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.1 Analysis of Resources

Table 3. **Resources and rationale for detailed analysis**

Resource	Not Present	Present, Not Affected	Present, May Be Affected	Rationale
Air Quality		X		Neither of the alternatives would have a measurable impact on air quality.
Areas of Critical Environmental Concern	X			Not present
Cultural Resources		X		The BLM manages livestock grazing to be in compliance with Section 106 (36 CFR 800.3). Livestock grazing has continued as an historic use of the land, and has "no effect" on National Register properties for the purpose of Section 106 compliance.
Environmental Justice	X			None of the alternatives would disproportionately impact any low income of minority populations as described in Executive Order 12898.
Farmlands (Prime and Unique)	X			Not Present
Floodplains	X			Not present
Native American Religious	X			No areas of Native American Religious Concern /TCP are known to exist within the

Resource	Not Present	Present, Not Affected	Present, May Be Affected	Rationale
Concerns				allotment area.
Soils			X	See section 3.3.1 below.
Vegetation (including Non-native Invasive and Noxious Species)			X	See section 3.3.2 below.
Wastes (Hazardous and Solid)	X			Not present
Water Quality (Surface and Ground)	X			Not Present
Wetlands and Riparian Zones	X			Not present
Wild and Scenic Rivers	X			Not present
Wilderness	X			Not present
Wildlife and Fish, including Threatened and Endangered Species, Special Status Species, and Migratory Birds			X	See section 3.3.3 below.

3.2 Affected Environment and Environmental Consequences

3.2.1 ***Soils***

The federal public land portion of the Turner grazing allotment contains five "General Soil Map Units". These soil types are typical of low precipitation zones and desert soils. The soil characteristics of these sites are described in the Turner RHE (see Appendix A). Currently the soils on the Turner allotment are as expected according to the RHE with slight and slight to moderate deviations in localized areas. These departures could be attributed to recreation

activities with the proliferation of unauthorized routes, prolonged drought conditions and past grazing practices. This could lead to top soil loss, from wind and rain, and ultimately soil loss that is irreversible. Prolonged drought affects soils with lack of soil moisture. Soil moisture is needed for vegetation to survive.

Alternative 1 (Proposed Action)

By not re-issuing the ephemeral permit for the Turner allotment, under the proposed action, it is expected that the soils would be maintained, and with years of average precipitation could be improved. Since the soils on the Turner allotment are as expected according to the RHE with slight and slight to moderate deviations in localized areas, with ten years of non-use soils would be expected to remain intact. Under the proposed action it is expected that soils would not be subject to localized compaction around water sources as ephemeral grazing would not occur for a period of 10 years. Over the course of 10 years, with average precipitation, it is ~~would be~~ expected that soils would be maintained and potentially improve as the perennial grass and ephemeral blooms increase cover over the majority of the allotment.

Alternative 2 (No Action)

By re-issuing the ephemeral permit for the Turner allotment, under Alternative 2, it is expected that the soils would stay the same, however, ~~and~~ would be subject to localized trampling and trailing to and from water sources while cattle are present. Over the course of ten years it is expected that soils would be subject to minor erosion with potential use of ephemeral vegetation in localized areas. Over the course of 10 years with average precipitation and authorized ephemeral grazing it would be expected that soils conditions ~~would not be maintained and potentially~~ would not improve as the ~~perennial grass and ephemeral composition~~ vegetation cover is not expected to increase over the majority of the allotment. Under Alternative 2 it is expected that soils would be subject to localized compaction around water sources as ephemeral grazing would potentially occur.

3.2.2 Vegetation

Desired Plant Community (DPC) Objectives

Three Key Areas were established on the Turner allotment. DPC objectives are provided for each key area within the allotment. DPC objectives address the desired resource conditions based on vegetation attributes, such as composition, structure, and cover that are desired within the allotment. The Key Areas are monitored and analyzed based on DPC objectives to determine whether indicators of ecological processes conform to the Rangeland Health Standards.

The health of upland vegetation is measured by achieving or progressing toward the relevant Land Health and DPC objectives that are derived from the NRCS Ecological Site Descriptions (ESDs).

Vegetation on this allotment lies within MLRA 40- Sonoran Desert Basin and Range, 3-7" precipitation zone. Expected plant communities within the allotment are Parkinsonia microphylla / Encelia farinosa- Ambrosia dumosa / Muhlenbergia porteri – Tridens muticus and Parkinsonia microphylla / Ambrosia dumosa – Larrea tridentata / Muhlenbergia porter – Pleuraphis rigida for Hills and Upland sites, respectively, as per USDA NRCS Ecological Site Descriptions. The high percentage of creosotebush (Larrea tridentata) on this site compared to historical natural community indicates a state conversion to a creosote dominated plant community. Ambrosia and

Encelia species that are present on the site are severely drought affected, displaying high mortality throughout the ecological site. Annual species production was also low, indicating a lack of sufficient rainfall to support new plant growth. For current vegetation community and precipitation data refer to the RHE in Appendix A.

Sahara Mustard was the only non-native invasive species that was observed within the allotment boundaries on federal public lands. Interstate 10 is a known corridor for non-native invasive species locations.

Alternative 1 (Proposed Action)

Not re-issuing the ten year ephemeral grazing permit for the Turner allotment would allow for the current vegetation composition and cover to be maintained as long as there is adequate precipitation and seedbed available. The rainfall regime in this area does not support the full recovery of native perennial palatable shrubs and subshrubs as related to the ESD and stated in the RHE. The high percentage of creosotebush (Larrea tridentata) on this site compared to historical natural community indicates a state conversion to a creosote dominated plant community. However; the perennial Ambrosia and Encilia species that are present have the potential to increase with adequate precipitation. With the potential increase of perennial cover from grasses it would be expected that soils could benefit by improving infiltration and water holding capabilities from basil cover and root systems. It would be expected that long water flow patterns would be decreased and small pedestaling would become less evident and would heal over the course of 10 years without authorized ephemeral grazing. Non-native invasive species would not be dispersed by authorized livestock.

Alternative 2 (No Action)

Re-issuing the ten year ephemeral grazing permit for the Turner allotment would not allow for vegetation to recover to its potential. Due to overutilization from past management practices, continued drought conditions and a state conversion to a creosote dominated plant community; it is expected that vegetation within the allotment would continue to not meet Standard 3 (see RHE Appendix A). It is expected that vegetation characteristics would remain the same and would not reflect the DPCs established in the RHE. Species that are lacking on the allotment, both annual and perennial, would be expected to not increase and would not assist in soil stability, sand wash stability and upland vegetation recovery. Non-native invasive species could be dispersed by authorized livestock as they travel from one area to another. Seeds could be dispersed either by incidental consumption and defecation or they could attach to the hide of the animal and be dispersed.

3.2.3 Wildlife Resources, including special status species and migratory birds

Wildlife species that occur within the Turner allotment are typical of the creosote-bursage habitat present in the area. Species present include, but are not limited to, mule deer, coyote, javelina, bobcat, kit fox, desert cottontail, black-tailed jackrabbit, Gambel's quail, and various reptiles, small mammals and migratory birds.

No threatened or endangered species have been recorded on, or within 5 miles of, the allotment. Sonoran desert tortoise, a BLM sensitive species, has been recorded within 5 miles of the

allotment. Approximately 7,480 acres of the Turner allotment has been identified as category II desert tortoise habitat. The allotment is located within a portion of the Saddle Mountain Category II habitat area. Category II desert tortoise habitat was identified by the BLM as habitat 1) that may be essential to the maintenance of viable populations 2) that has medium to high density populations or low density contiguous with medium or high density populations 3) where most conflicts are resolvable 4) and that has stable or decreasing populations. Sonoran desert tortoises tend to occupy hillsides and ridges with outcrops of large boulders as well as areas with incised washes and caliche caves, but may be found in lower densities throughout much of the Sonoran Desert. Sonoran desert tortoises generally use natural and excavated cover sites between or under boulders and in caliche caves along washes wherever they occur. Their diet typically consists of annual forbs (30.1%), perennial forbs (18.3%), grasses (27.4%), woody plants (23.2%) and prickly pear fruit (1.1%) (Van Devender et. al. 2002).

Alternative 1 (Proposed Action)

Not re-issuing the ten year ephemeral grazing permit for the Turner allotment would eliminate competition for resources between wildlife and livestock during ephemeral blooms. Wildlife in the area would be expected to remain at the current population levels with the potential for population increases as habitat values improve over the course of the ten year ephemeral grazing moratorium within the allotment. For Sonoran desert tortoise it is expected that population levels would remain the same with the potential of increased population numbers as 7,480 acres of Category II habitat would not be grazed for 10 years and the habitat in the area could improves. Not re-issuing the ephemeral grazing permit would be expected to have beneficial effects to wildlife species that inhabit the area through reduced competition for resources and the potential for increased vegetative cover.

Alternative 2 (No Action)

Re-issuing the ephemeral grazing permit, during times of ephemeral forage blooms, would continue to directly compete with wildlife for ephemeral forage. The competition for ephemeral forage would be short in duration based on the pounds per acre available for authorized ephemeral grazing use. Wildlife needs would be taken into consideration in the event that an ephemeral grazing permit was issued. Approximately 7,480 acres of category II desert tortoise habitat would continue to be grazed under ephemeral grazing authorizations within the allotment. Wildlife populations, including Sonoran desert tortoise, would be expected to remain at or near current levels under this alternative.

4. CUMULATIVE EFFECTS

4.1 Cumulative Effects Study Area

The cumulative effects study area is the allotment boundary shown on Map 1, see Appendix A of the RHE. The Turner Allotment lies west of Phoenix, south-southeast of Tonopah, AZ. The majority of public lands in this allotment are along the western side of the allotment, including and surrounding the Palo Verde Hills due south of Tonopah and the Salome Highway. All federal public lands within this allotment lie south of Interstate 10. This allotment encompasses approximately 59,800 acres of land. Federal public lands represent slightly more than 13.5% of

the acreage of this allotment. Land uses within the boundary of the allotment include agricultural use and recreational activities.

Cumulatively Connected Actions

4.1.1 Past and Present Actions

Agricultural uses include farming of alfalfa fields. The fields are fenced off and the crop occurs on private lands. Recreational activities include off highway vehicles, all-terrain vehicles, motorcycles and hunting. Typically these uses are on roads and trails within the allotment boundary on all land ownerships, however there has been an increase in unauthorized roads over the past decade. The Palo Verde Nuclear plant is located centrally within the allotment and is an established site that is located on private lands. The nuclear plant is built to full capacity and is not expected to encompass any more land for its operations.

Even though ephemeral grazing has not occurred on the Turner Allotment for a period of 27 years, it is evident that past grazing practices and continued drought have had a detrimental effect on the landscape. There are three water sources on the federal public lands and one pipeline from a well on state lands to public lands associated with the Turner allotment. All three water sources, the well and the pipeline are in ill repair and are currently non-functioning.

4.1.2 Reasonably Foreseeable Future Actions

Existing uses, including recreation, agricultural uses on private land, and developments such as the Palo Verde Nuclear Plant are expected to continue. No additional developments are known at this time.

4.2 Soils

4.2.1 Proposed Action

There would be no cumulative effects to soils as a result of the proposed action because authorized ephemeral grazing would no longer be a contributor to erosion.

4.2.2 No Action Alternative

Authorizing ephemeral grazing could lend itself to soil erosion as related to soil stability, in addition to the disturbance that is associated with recreational off-highway vehicle usage.

4.3 Vegetation Management

4.3.1 Proposed Action

Cumulative effects on vegetation management from the proposed action are not expected because authorized ephemeral grazing would no longer be present on the allotment.

4.3.2 No Action Alternative

Authorization of ephemeral grazing could result in the potential loss of native vegetation that is currently in low densities. Vegetation could also be damaged by recreational off-highway vehicle usage

4.4 Wildlife Resources including special status species and migratory birds

4.4.1 Proposed Action

There would be no cumulative effects to wildlife as a result of the proposed action because authorized ephemeral grazing would no longer be present on the allotment.

4.4.2 No Action Alternative

Authorized ephemeral grazing could result in impacts to Sonoran desert tortoise and other wildlife species due to competition for forage during ephemeral blooms. Sonoran desert tortoise could be cumulatively impacted from recreational activities such as: noise, individual disturbance and vegetation damage due to off road travel.

5. PARTIES CONSULTED

Colorado River Farms

Arizona Game and Fish Department - Region 6

Arizona Game and Fish Department - Region 4

Arizona Cattlemen's Association

United States Fish & Wildlife Service

Western Watersheds Project

Arizona State Land Department

Center for Biological Diversity

The Wilderness Society

6. LIST OF PREPARERS

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Gloria Tibbetts	Planning and Environmental Coordinator

7. REFERENCES

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Van Devender, T. R.,et al. 2002. Grasses, Mallows, Desert Vine, and More: Diet of the Desert Tortoise in Arizona and Sonora. Pp.159-193 in T. R. Van Devender. ed. The Sonoran Desert Tortoise: Natural History, Biology, and Conservation. University of Arizona Press and The Arizona-Sonora Desert Museum, Tucson.

APPENDIX A

Turner Allotment Final Rangeland Health Evaluation

United States Department of the Interior

Bureau of Land Management

Hassayampa Field Office

Date: September 2014

Final
Rangeland Health Evaluation

Turner Allotment #03084

CONTENTS

ABSTRACT

This Land Health Evaluation evaluates compliance with the 1997 Arizona Standards for Rangeland Health on the Turner allotment.

Standard One is met on this allotment.
Standard Two is not applicable to this allotment.
Standard Three is not met on this allotment.

1.0 INTRODUCTION

The purpose of this draft Land Health Evaluation is to gauge whether the Arizona Standards of Rangeland Health (Standards) are being achieved on the Turner grazing allotment and to determine if livestock are the causal factor for not achieving, or making significant progress towards achieving land health standards. An evaluation is not a decision document, but a standalone report that clearly records the analysis and interpretation of the available inventory and monitoring data. As part of the land health assessment process Desired Plant Community (DPC) objectives were established for the Biological Resources (biological objects within the boundaries of the allotment). The DPC objectives will assure that soil condition and ecosystem function described in Standards 1 and 3 are met.

The Secretary of the Interior approved Arizona's Standards for Rangeland Health 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 Guides in Arizona BLM Land Use Plans.

Land Health Standards are measurable and attainable goals for the desired condition of the biological resources and physical components/characteristics of the desert ecosystems found within the boundaries of this grazing allotment.

This evaluation seeks to ascertain: 1) if standards are being achieved, not achieved, and, in cases of not achieved, if significant progress is being made towards achievement of land health. 2) Where it is ascertained that land health standards are not being achieved, determine whether livestock grazing is a significant factor causing that non-achievement.

2.0 ALLOTMENT PROFILE

2.1 Allotment Description

The Turner Allotment lies west of Phoenix, south-southeast of Tonopah, AZ, with the town of Wintersburg contained centrally within the allotment. The majority of public lands in this allotment are along the western side of the allotment, including and surrounding the Palo Verde

Hills due south of Tonopah and the Salome Highway. All public lands within this allotment lie south of Interstate 10. Refer to Appendix B, Map 1, Turner Allotment.

2.2 Physical Description

*2.2.1 **Allotment Acreages***

This allotment encompasses approximately 59,800 acres of land. Public lands represent slightly more than 13.5% of the acreage of this allotment.

Allotment	Public Acres	State Acres	Private Acres
Turner	8,080	6,290	45,430

*2.2.2 **Climate***

Precipitation

Precipitation data for the Turner allotment is taken from the Maricopa County Flood Control District (MCFCD). MCFCD maintains a network of rain, streamflow, and weather stations within the watersheds in and surrounding Maricopa County, with publicly available historic station data. Based on the data from these stations, the Turner allotment lies within the 3-7" precipitation zone. The stations below were used in the calculation of precipitation on the allotment:

Station Name	Station Number	Latitude	Longitude	Years of Record	Mean Annual Rainfall
Centennial Railroad	5100	33.3010	112.8827	23	5.63
Delaney Wash	5105	33.4698	112.9771	14	6.16
Winters Wash	5115	33.50875	112.9112	13	6.12
I-10 at 355 Ave	5070	33.4708	112.8162	12	6.05

Temperature

Average annual air temperature for the Buckeye NOAA weather station is 71.7°F. Summers are hot, with many days in June and July exceeding 100°F. Frost-free days are from 250 to 300.

*2.2.3 **Soils***

Soil data for this area comes from the USDA Natural Resource Conservation Service (NRCS) Soil Survey of Maricopa County, Central Part, 2008. There are several "General Soil Map Units" that occur within this grazing allotment.

The Gilman-Estrella-Avondale association map unit occurs on recent alluvium forming valley plains and low stream terraces. The soils are nearly level loams to clay loams, well drained with moderate permeability. Ecological sites associated with these soils include the Sandy Wash 3-7pz and Limy Fan 3-7pz.

The Antho-Valencia association map unit occurs on recent alluvium forming alluvial fans and flood plains. The soils are nearly level sandy loams, well to somewhat excessively drained with moderately rapid permeability. Ecological sites associated with these soils include the Limy Fan 3-7pz.

The Rillito-Gunsight-Perryville association map unit occurs on old alluvium forming alluvial fans and flood plains. The soils are nearly level to moderately steep gravelly loams, well to somewhat excessively drained with moderate to moderately rapid permeability. Ecological sites associated with these soils include the Limy Upland 3-7pz deep, and Limy Upland 3-7pz.

The Laveen-Coolidge association map unit occurs on old alluvium forming alluvial fans and flood plains. These soils are level sandy loams, loams, and clay loams, well drained, with moderate to moderately rapid permeability. Ecological sites associated with the soils include Limy Fan 3-7pz, Limy Upland 3-7pz deep, and Limy Upland 3-7pz.

The Cherioni-Rock outcrop association map unit occurs on mountains, buttes and low hills. These soils are gently sloping to very steep gravelly loams and rock outcroppings, somewhat excessively drained with moderate permeability. Ecological sites associated with these soils include Basalt Hills 3-7pz and Limy Upland 3-7pz.

2.3 Biological Resources

2.3.1 ***Ecological Sites***

The public land portion of the Turner grazing allotment contains 2 major ecological sites by soil type and one minor ecological site by relative importance to vegetative production. Reference Appendix B, Map 2, "Turner Ecological Sites". These sites are: Basalt Hills 3-7pz (40%), Limy Upland 3-7pz (35%), and Sandy Wash 3-7pz (0.1%), respectively. The soil characteristics of these sites are described below:

Basalt Hills 3-7pz:
Soils are shallow to bedrock and plant rooting zone is restricted. The surface soil is 6-8 inches deep and ranges in texture from and extremely cobbly loam to very gravelly loam. Underlying layers and subsoil can absorb and hold most of the moisture the climate supplies. With good vegetation cover, infiltration rates are moderate. Stability against erosion processes is good. Coarse fragments may be found throughout the soil and are more than 35% of the total soil volume. Slopes range from 25-70% with elevations from 400'-1600' above sea level. (USDA NRCS Basalt Hills 3-7"pz R040XC301AZ)

Limy Upland 3-7"pz:

Soils that are grouped together in this ecological site are shallow to plant root restricting layers. Surface soil texture has a depth of 2-5 inches and ranging in texture from sand, gravelly loam to clay. Underlying layers have moderately slow to rapid permeability rates, but can absorb and hold all the moisture the climate supplies. With good vegetation cover, infiltration rates are high to moderate. Stability against erosion processes is good. Coarse fragments may occur throughout the soil. Slope ranges from 0-6% with elevations from 400'-1000' above sea level. (USDA NRCS Limy Upland 3-7"pz R040XC310AZ)

Sandy Wash 3-7"pz:
Soils that are grouped together in this range site are deep to bedrock or other plant root restricting layers. The surface soil depth ranges from 6-8 inches with textures ranging from very gravelly loamy sand, loamy sand to silt loam. The underlying layers have a rapid permeability and hold all moisture the climate supplies. With good vegetative cover, infiltration rates are high. Stability against erosion processes is poor. Course fragments may be found throughout the soil. Slope ranges from 0-5% with elevations from 75' to 1000' above sea level. (USDA NRCS Sandy Wash 3-7"pz R040XC318AZ)

2.3.2 ***General Wildlife Resources***
Wildlife species that occur within the Turner allotment are typical of the creosote-bursage habitat present in the area. Species present include, but are not limited to, mule deer, coyote, javelina, bobcat, kit fox, desert cottontail, black-tailed jackrabbit, Gambel's quail, and various reptiles, small mammals and migratory birds.

No threatened or endangered species have been recorded on, or within 5 miles of, the allotment. Desert tortoise, a candidate species for the Endangered Species List, has been recorded within 5 miles of the allotment. Approximately 7,480 acres of the Turner allotment has been identified as category II desert tortoise habitat. The allotment is located within a portion of the Saddle Mountain Category II habitat area. Category II desert tortoise habitat was identified by the BLM as habitat: that may be essential to the maintenance of viable populations; that has medium to high density populations or low density contiguous with medium or high density populations; where most conflicts are resolvable; and that has stable or decreasing populations. Desert tortoises tend to occupy hillsides and ridges with outcrops of large boulders as well as areas with incised washes and caliche caves, but may be found in lower densities throughout much of the Sonoran Desert. Desert tortoises generally use natural and excavated cover sites between or under boulders and in caliche caves along washes wherever they occur. Their diet typically consists of annual forbs (30.1%), perennial forbs (18.3%), grasses (27.4%), woody plants (23.2%) and prickly pear fruit (1.1%) (Van Devender et. al. 2002).

2.4 Recreational Resources

Travel Management for public use is limited to designated routes, however the caveat until such designations occur is that vehicles are limited to the inventoried existing roads and trails. This includes 7.5 miles of existing primitive roads within the allotment which are open to all modes of travel.

3.0 GRAZING MANAGEMENT

3.1 Grazing History

Beginning in 1974, the Turner allotment has been classified as an ephemeral-only allotment. Grazing records indicate that this allotment has been utilized infrequently since this designation. Ephemeral use on this allotment was approved in 1973, 1977, 1985, ’86, and ’87. There have been no applications for ephemeral use on this allotment since 1987. Approved ephemeral use in 1986 was for sheep livestock class, all other years approved use has been cattle. Ephemeral stocking rates during approved years are moderate, generally between 200 and 400 head of cattle, with the exception of 1986, when 900 sheep were run, and 1987, when 32 head of cattle were run.

3.2 Current Management

The current permittee has not applied for ephemeral use on this allotment since acquiring it in 1997. The permittee has indicated that they will not be applying for use on this allotment in the foreseeable future.

4.0 OBJECTIVES

4.1 Relevant Planning and Environmental Documents

The Taylor Grazing Act of 1934 provides for two types of authorized use: (1) A *grazing permit*, which is a document authorizing use of the public lands within an established grazing district, and are administered in accordance with Section 3 of the Taylor Grazing Act; and (2) a *grazing lease*, which is a document authorizing use of the public lands outside an established grazing district, and are administered in accordance with Section 15 of the Taylor Grazing Act. The Turner allotment is a Section 3 grazing permit.

The BLM is responsible for establishing the appropriate levels and management strategies for livestock grazing in this allotment. Grazing permits issued must be in compliance with the multiple use and sustained yield concepts of FLPMA and the Fundamentals of Rangeland Health (43 CFR 4180), and be in accordance with the Guidelines for Grazing Administration while continuing to achieve Arizona Standards for Rangeland Health.

Land Health Standards:
On April 28, 1997, the Secretary of Interior approved the implementation of the *Arizona Standards for Rangeland Health and Guidelines for Grazing Administration* for all Land Use Plans in Arizona. The purpose of the Standards and Guidelines is to maintain or improve the health of the public rangelands. Standards and guidelines are intended to help the Bureau, rangeland users and others focus on a common understanding of acceptable resource conditions and work together to achieve that vision. Standards and Guidelines were incorporated into Phoenix District land use plans in 1997, into the *Bradshaw-Harquahala RMP* in 2010, and the *Lower Sonoran RMP* in 2012.

As defined by the Arizona Resource Advisory Council, “Standards” are goals for the desired condition of the biological and physical components and characteristics of rangelands. “Guidelines” are management approaches, methods, and practices that are intended to achieve a standard. Guidelines are developed and applied consistent with the desired condition and within

the site's capability and specific public land uses, and may be adjusted over time. Arizona S&Gs are defined as the following:

Standard 1 - Upland Sites

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

Standard 2 - Riparian - Wetland Site

Riparian-wetland areas are in proper functioning condition.

Standard 3 - Desired Resource Conditions

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

The Turner grazing allotment is administered by the Hassayampa Field office. Grazing decisions applicable to the allotment come from the Bradshaw-Harquahala RMP (2010). The public lands within the allotment are within the Lower Sonoran Field office, and all other applicable land use planning decisions on the allotment come from the Lower Sonoran RMP. The Lower Sonoran Resource Management Plan (2012) contains additional desired future condition objectives for wildlife special status species. Specifically, the LSFO RMP decision WL-6.1 states: "Maintain or restore a diverse mixture of forage species and adequate cover of vegetation for desert tortoise habitat, as recommended by the 1988 Rangewide Plan". Desired Resource Condition Objectives were developed to provide for Sonoran desert tortoise habitat requirements.

4.2 Key Area Objectives

Key Area objectives step down from the Desired Future Condition objectives found in the Bradshaw-Harquahala RMP. Standard 2 does not apply to the Turner allotment because it contains no designated riparian areas.

4.2.1 ***Standard 1- Upland Sites, applies to all key areas.***

Objective: Upland soils exhibit infiltration, permeability, and erosion rates that are appropriate to soil type, climate, and landform (ecological site). (Bradshaw-Harquhala RMP decision LH-1)

Soil erosion on the key area is appropriate to the ecological site on which it is located. Factors indicating conformance to Standard 1 include ground cover, litter, vegetative foliar cover, flow patterns, rills, and plant pedestalling in accordance to developed NRCS Ecological Site Guides and/or Reference Sheets. Deviations that are "slight" or "slight to moderate" from the appropriate site guide or reference are considered meeting the Standard. Departures of Moderate or greater will not meet the Standard except in cases where the departure is documented as showing an improvement of land health over what is expected on a reference site.

4.2.2 ***Standard 3- Desired Resource Condition Objectives***

Objective: Productive, diverse upland and riparian-wetland plant communities exist and are maintained.

DPC objectives 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. Because DPC objectives are site-specific, Key Areas located on similar stratum may have difference DPC objectives. This is due to differences in slope, elevation, aspect and rainfall factors, as well as other site potential limiting factors such as prior disturbance, rock outcroppings, or heavy gravel cover. The recommended palatable shrub and grass compositions will provide for adequate wildlife forage on the site for species such as Sonoran desert tortoise, mule deer, quail, and other non-game wildlife species. The foliar cover and bare ground cover class objectives will provide thermal and hiding cover for wildlife species and will prevent accelerated erosion on the sites.

The DPC objectives for each key area are consistent with the Sonoran desert tortoise forage requirements (Van Devender, et al. 2002) (Oftedal 2002) based on the potential for the site.

Key Area 1, Limy upland ecological site:

- Maintain composition of perennial grass at a minimum of ≥5%
- Maintain composition of palatable browse at ≥5%
- Maintain a forb and subshrub group at ≥15% of composition
- Maintain total vegetative canopy cover at ≥10%.

Rationale:
Maintaining palatable browse will ensure perennial forage for wildlife. This community provides habitat for desert tortoise, mule deer, quail, mourning dove, curve-billed thrasher, cactus wren, and other bird and wildlife species. An appropriate forb and subshrub group ensures maintenance of Sonoran Desert tortoise habitat. Appropriate vegetative cover levels will prevent accelerated erosion of ecological sites (NRCS Ecological reference worksheets) and provide for wildlife habitat.

Key Area 2, Sandy Wash ecological sites:

- Maintain composition of perennial grasses at ≥5%
- Maintain composition of palatable browse species at ≥10%.
- Maintain vegetative canopy cover at ≥30%

Rationale:
Based on the site potential as described in the NRCS reference sheet for this ecological site, canopy cover at 30% will provide sufficient cover to support wildlife and bird species (mule deer, Gambel's quail, white-winged dove, Crissal thrasher, Costa's hummingbird, et al.) and prevent accelerated erosion of the site. Maintaining composition of palatable species at 10% and perennial grass composition at 5% will provide adequate habitat and forage for wildlife.

Key Area 3, Basalt Hills ecological site:

- Maintain composition of perennial grass species at ≥5%
- Maintain composition of Ambrosia and Encelia species at ≥30%
- Maintain total vegetative canopy cover at ≥25%

Rationale:

Maintaining a perennial grass and shrub cover component provides habitat and forage for wildlife species including but not limited to: mule deer, javelina, desert tortoise, desert cottontail, black-tailed jackrabbit, Gambel's quail, and various reptiles, small mammals and migratory birds. Appropriate vegetative cover levels will prevent excess erosion across the ecological site and provide cover for the aforementioned wildlife species.

5.0 INVENTORY AND MONITORING METHODOLOGY

5.1 Rangeland Survey

A Rangeland soil and vegetation survey was completed for this grazing allotment in 1980 as part of the planning effort for the Lower Gila South RMP/EIS. Data were collected for this survey in May of 1980. The BLM's rangeland inventory method and the Soil conservation service's (NRCS) methods were used for determining range condition and apparent trend.

5.2 Key Areas

Key areas were established on this allotment in 2010. A key area is a relatively small portion of an allotment selected for study because of its proximity to water sources, livestock and habitat values, ecological site, and as a long-term monitoring point. They are located in each major pasture and are selected in locations that represent where livestock grazing pressure is occurring across the management area. Each key area is selected to be representative of a single major ecological site that occurs in multiple areas across the grazing allotment.

Monitoring data was collected using a 40x40 square cm frame with a point centered along the rear of the frame. The frame was used to collect 200 quadrats of data for each vegetative attribute at both upland key areas, and 100 quadrats at wash sites. The dry-weight-rank method was used to collect relative production and composition data. Cover data were collected using the frame center point. Species composition was calculated using the relative production data. These monitoring methods are described in Technical Reference 1734-4, Sampling Vegetation Attributes (1996).

Rangeland Health

The upland health of each key area and other areas of interest were evaluated using the Interpreting Indicators of Rangeland Health Evaluation Sheet documentation worksheet. This assessment is a qualitative and quantitative approach to look at how the ecological processes on a site are functioning. The product of the qualitative assessment is not a single rating of land health, but an assessment of three components called attributes. These attributes are:

1. Soil/Site Stability 2. Hydrologic Function 3. Biotic Integrity

These observed attributes are placed into one of five categories dependent upon the degree of departure from the ecological site description, reference sheet, or reference area. Consideration of all of the attributes, and the categories of their representative indicators, leads to a final upland health determination. These five categories are:

1. Extreme 2.Moderate to Extreme 3.Moderate 4.Slight to Moderate 5.None to Slight

Soil/Site stability refers to the capacity of an area to limit redistribution and loss of soil resources (including nutrients and organic matter) by wind and water. Hydrologic Function refers to the capacity of an area to capture, store, and safely release water from rainfall, run-on, and snowmelt (where relevant), to resist a reduction in the capacity, and to recover this capacity when a reduction does occur. Biotic Integrity refers to the capacity of the biotic community to support ecological processes within the normal range of variability expected for the site, to resist a loss in the capacity to support the processes, and to recover this capacity when losses do occur. The biotic community includes plants, animals, and microorganisms occur both above and below ground. Methods for the land health evaluation are described in "Interpreting Indicators of Rangeland Health – Technical Reference 1734-6, Version 4, 2005".

6.0 CONCLUSIONS

Conclusions are supported by the analysis of key area data and information provided within the evaluation to show if land health standards are being achieved or not achieved and if significant progress towards achieving these standards is being made. Conclusions are presented for Arizona Land Health Standards 1 and 3 as the Turner allotment does not contain either riparian areas or riparian obligate vegetation. The Standards are summarized by ecological site. Refer to Section 5.3 for the management objectives specific to each ecological site. Referring to the monitoring and 1980 inventory data provided in Appendix B will facilitate interpretation and verification of the conclusions presented.

Key Area 1: Limy Upland Ecological Site
Standard 1- Upland Sites
Limy Upland Sites within the allotment are meeting Standard One.

The findings are based on the preponderance of evidence of the indicators used to determine attainment of Standard 1. Accelerated erosion is not present across the majority of the ecological site. Large areas within the ecological site indicate that erosion rates of the soil are less than expected compared to the reference due to high rock and gravel cover in the valleys between the Palo Verde Hills. Public lands west of the Palo Verde Hills exhibit erosion rates consistent or slightly higher than expected per the reference worksheet, based on plant pedestaling and moderate wind movement of loose soils. Vegetative and litter cover are appropriate across the allotment ecological site when compared to the reference worksheet. Infiltration and permeability of soils is consistent with expected potential based on soil type. Old gullies are present along few limited transition zones between ecological sites, however, they are inactive, without headcutting, and are revegetating along banks.

Standard 3- Desired Resource Conditions
Based upon the preponderance of evidence, the Limy Upland site is not achieving Standard 3. Canopy objectives are being met on the site; however, composition requirements are not being achieved.

- Maintain composition of perennial grass at a minimum of ≥5% NOT ACHIEVED
- Maintain composition of palatable browse at ≥5% NOT ACHIEVED
- Maintain a forb and subshrub group at ≥15% of composition NOT ACHIEVED
- Maintain total vegetative canopy cover at ≥10%. ACHIEVED

Discussion:
The vegetative community is dominated by creosote bush (*Larrea tridentata*) with limited cacti species present (*Cylindropuntia* sp. and *Carnegia gigantea*). Subshrubs and palatable browse are limited to drainage areas that gather additional moisture during the wet seasons and are not present on the upland sections. The rainfall regime in this area does not support the recovery of native perennial palatable shrubs and subshrubs in the upland areas as evidenced by the lack of recruitment into the uplands from surrounding seed banks in addition to several abnormally high rainfall years since the last approved grazing use of this land. Although vegetative cover is sparse, three of the four species present at the site are known to be palatable to Sonoran desert tortoise (Van Devender, et al. 2002).

Key Area 2: Sandy Wash Ecological Site
Standard 1- Upland Sites
Sandy Wash Sites within the allotment are meeting Standard One.

The findings are based on the preponderance of evidence of the indicators used to determine attainment of Standard 1. Wash banks exhibit little erosion due to high litter and vegetative cover across the majority of the site. Rilling and gullying are not evident along the stream channel banks or the surrounding uplands. The percentage of bare ground along the channel banks is less than what is expected per the reference sheet based on litter amount and a high percentage of canopy and basal cover.

Standard 3- Desired Resource Conditions
Based upon the preponderance of evidence, the Sandy Wash ecological site is not achieving Standard 3. Vegetative canopy cover objectives are being met on the site, as well as palatability requirements for the ecological site. However, perennial grasses were absent from this site.

- Maintain composition of perennial grasses at ≥5% NOT ACHIEVED
- Maintain composition of palatable browse species at ≥10%. ACHIEVED
- Maintain vegetative canopy cover at ≥30% ACHIEVED

Discussion:
Sandy Wash sites within the allotment are compositionally varied based on distance to established livestock waters, indicating prior use has shifted the vegetative composition within approximately a mile of water sources to a large shrub and tree dominated state. Palatable perennial browse composition on the site is met for Sonoran desert tortoise with a palatable browse (Van Devender, et al. 2002) composition of slightly less than 95% of the plant community. However, perennial grass, an important component of the Sonoran desert tortoise's diet (Van Devender, et al. 2002) (Oftedal 2002), is absent from this site. Palatable browse composition is met for mule deer (Heffelfinger, et al. 2006) with a palatable browse of slightly more than 45% of the plant community.

Key Area 3: Basalt Hills Ecological Site
Standard 1- Upland Sites
Basalt Hills sites within the allotment are meeting Standard 1.

The findings are based on the preponderance of evidence of the indicators used to determine attainment of Standard 1. Soils on the ecological site are extremely well armored against erosional forces. Soils, where exposed, do not exhibit erosion rates in excess of expected rates per the Ecological site reference sheet.

Standard 3- Desired Resource Conditions
Based on the preponderance of evidence, the Basalt Hills ecological site is not achieving Standard 3. Perennial grass species are not present on this site. Vegetative composition and cover do not meet the DPC objectives.

- Maintain composition of perennial grass species at ≥5% NOT ACHIEVED
- Maintain composition of Ambrosia and Encelia species at ≥30% NOT ACHIEVED
- Maintain total vegetative canopy cover at ≥25% NOT ACHIEVED

Discussion:
Perennial grass is absent from the Basalt Hills ecological site within this grazing allotment primarily due to prolonged drought and a low annual rainfall regime.. The high percentage of creosotebush (Larrea tridentata) on this site compared to historical natural community indicates a state conversion to a creosote dominated plant community. High stocking rates of sheep in the late 1980s are a likely causal factor for this state change, combined with low annual rainfall and species recruitment. Reversing this state change in a 3-7" average annual precipitation zone is unlikely through natural processes in the current drought situation. Ambrosia and Encelia species that are present on the site are severely drought affected, displaying high mortality throughout the ecological site. Annual species production was also low, indicating a lack of sufficient rainfall to support new plant growth. Although annual production was low, five of the seven species present at the site are known to be palatable to Sonoran desert tortoise (Van Devender, et al. 2002). The lack of perennial grasses reduces the habitat quality for desert tortoises (Van Devender, et al. 2002) (Oftedal 2002). Less than 2% of the plant composition at this site is known to be palatable to mule deer (Heffelfinger, et al. 2006).

7.0 TECHNICAL RECOMMENDATIONS:

Technical recommendations for authorizing a new, 10 year ephemeral permit on this allotment are based on compliance with the Standards for Rangeland Health and current, on-the-ground conditions of the livestock facilities located on the public land portion of the grazing allotment. The dirt tanks on the allotment no longer hold water, other water sources are non-functional, and there is a failure to meet standard three on the majority of the allotment in the Limy Upland and Basalt Hills ecological site. The existing vegetation community, as shown in the data contained

in Appendix A, is marginally adequate as wildlife habitat, and there is no evidence for improvement of the vegetative community after many years of lack of permitted grazing use. It is the recommendation of the interdisciplinary team to not re-issue a 10 year permit on this allotment, and to re-assess conditions for potential permit issuance in 10 years' time.

8.0 LIST OF PREPARERS

Name	Title
James Holden	Rangeland Management Specialist
Codey Carter	Wildlife Biologist
Steve Bird	Wild Horse and Burro Specialist
Mary Skordinsky	Recreation Specialist
Tom Bickauskas	Travel Management Specialist

9.0 REFERENCES

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APPENDIX B

Turner Allotment Data

Turner Key Area 1
Ecological Site: Limy Upland
Precipitation Zone: 3-7" annual
Location Legal Description: T1N R7W Section 11, NE1/4 NE1/4
GPS: 319878E 3701997N NAD83
Reference Sheet Used: R040XC310AZ

Dry Weight Rank Data

Common Name	NRCS ID Symbol	Composition (%)
Trees/Shrubs		
Creosotebush	LATR2	87.6
Saguaro	CAGI10	2.2
Teddybear cholla	CYBI9	2.9
Staghorn cholla	CYVE3	7.3

Cover Data

Bare Ground	Gravel/stone	Litter	Veg Canopy	Cryptograms
6%	13%	48%	10%	23%

Interpreting Indicators of Rangeland Health (17 Indicators) Data:

Attribute Rating:	Rationale:
Soil and Site Stability (S): S-M	Soils intact, little erosion evidenced by smaller pedestaling than reference
Hydrologic Function (H): S-M	Longer water-flow patterns than expected, possibly due to perennial cover levels
Biotic Integrity (B): M	Creosote dominated state, indicates state change of plant community

Codes:
N-S (None to Slight) M (Moderate) E-T (Extreme to Total)
S-M (Slight to Moderate) M-E (Moderate to Extreme)

Site Photos

Transect center point, looking along transect.

180° from transect

Turner Key Area 2
Ecological Site: Sandy Wash
Precipitation Zone: 3-7" annual
Location Legal Description: T1N R7W Section 2, SW1/4 SW1/4
GPS: 318789E 3703163N NAD83
Reference Sheet Used: R040XC318AZ

Dry Weight Rank Data

Common Name	NRCS ID Symbol	Composition (%)
Tree/Shrubs		
Catclaw acacia	ACGR	32.1
wolfberry	LYAN	23.4
creosote	LATR2	23.2
Coulter's brickelbush	BRCO	1.1
Blue palo verde	PAFL6	4.8
Littleleaf palo verde	PAMI5	1.7
ironwood	OLTE	1.7
Triangleleaf bursage	AMDE4	3.2
Big bursage	AMAM2	0.6
mesquite	PRVE	4.9
brittlebush	ENFA	0.4
Grasses/Forbs		
Desert holly	ACWR5	2.8
Spurge	EUPHO	0.1

Cover Data

Bare Ground	Gravel/stone	Litter	Veg Canopy	Cryptograms
8%	3%	29%	59%	1%

Interpreting Indicators of Rangeland Health (17 Indicators) Data:

Attribute Rating:	Rationale:
Soil and Site Stability (S): N-S	No signs of accelerated bank erosion, infiltration good based on size of annual litter and perennial vigor
Hydrologic Function (H): N-S	Hydrologic function unimpaired regardless of lack of perennial grasses and forbs on-site
Biotic Integrity (B): S-M	Lack of perennial grass indicates departure from potential but vigor of perennials and reproduction are both good

Codes:
N-S (None to Slight) M (Moderate) E-T (Extreme to Total)
S-M (Slight to Moderate) M-E (Moderate to Extreme)

Site Photos

View along transect.

Turner Key Area 3
Ecological Site: Basalt Hills
Precipitation Zone: 3-7" annual
Location Legal Description: T1N R7W Section 22, SW1/4 SW1/4
GPS: 316892E 3698212N NAD83
Reference Sheet Used: R040XC301AZ

Dry Weight Rank Data

Common Name	NRCS ID Symbol	Composition (%)
Trees/Shrubs		
Creosote bush	LATR2	69.8
White ratany	KRGR	0.6
Staghorn cholla	CYVE3	11.1
brittlebush	ENFA	11.1
Littleleaf palo verde	PAMI5	1.8
Teddybear cholla	CYBI9	3.7
Triangleleaf bursage	AMDE4	1.8

Cover Data

Bare Ground	Gravel/Stone	Litter	Veg Canopy	Cryptograms
3%	37%	42%	14%	4%

Interpreting Indicators of Rangeland Health (17 Indicators) Data:

Attribute Rating:	Rationale:
Soil and Site Stability (S): N-S	Soils intact and in place, no excess erosion apparent
Hydrologic Function (H): S-M	Infiltration affected by low basal cover of perennial species
Biotic Integrity (B): M	Lack of perennial grass on site

Codes:

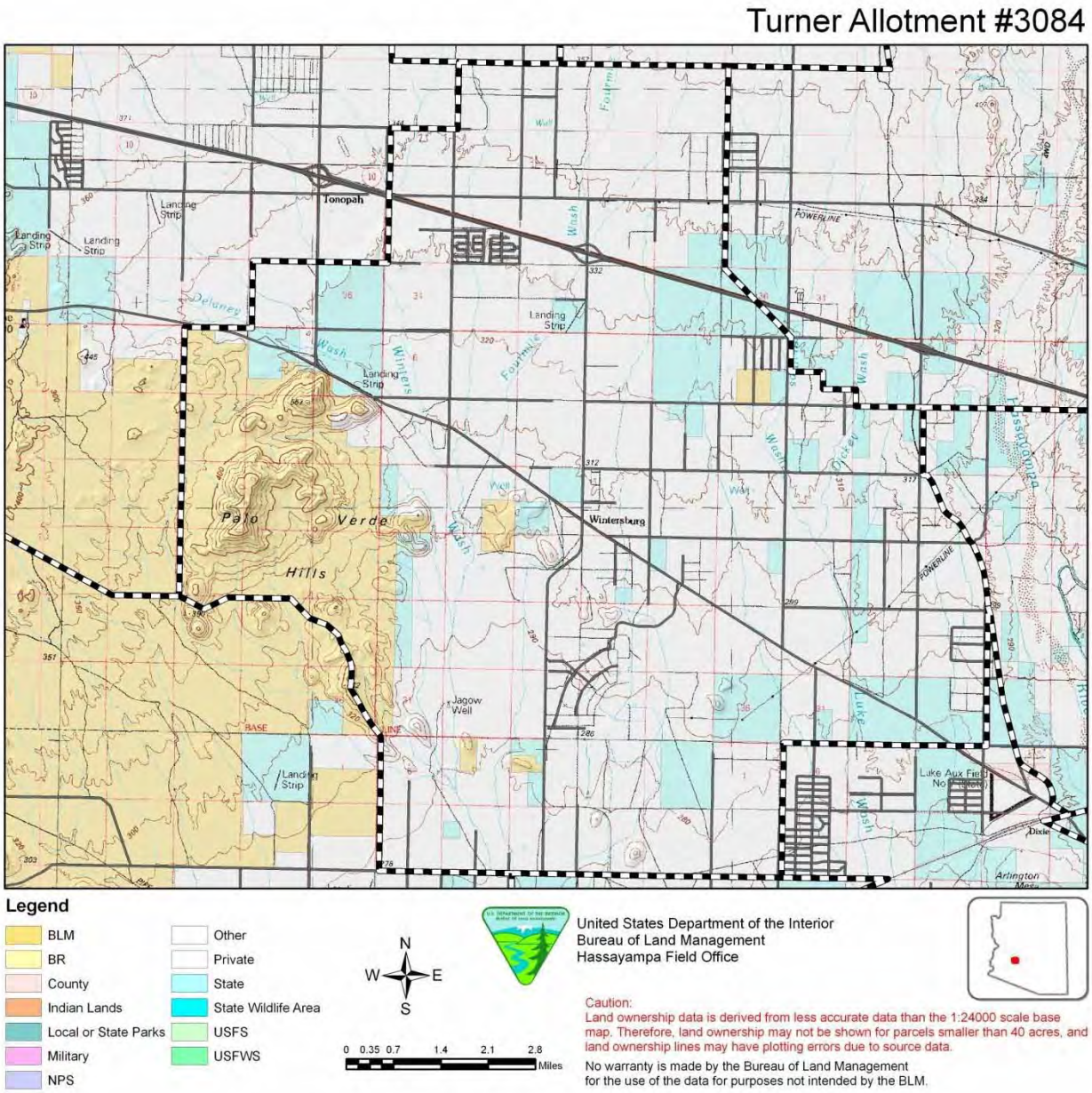
N-S (None to Slight) M (Moderate) E-T (Extreme to Total)
S-M (Slight to Moderate) M-E (Moderate to Extreme)

Site Photos:

Transect runs across hill face

Maps

Map 1, Turner Allotment



Map 2, Ecological Sites on Public Lands