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

Palmerita Ranch Allotment No. 00094 Permit Issuance

Environmental Assessment

DOI-BLM-AZ-C010-2023-0023-EA

U.S. Department of the Interior
Bureau of Land Management
Colorado River District
Kingman Field Office
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CHAPTER 1 INTRODUCTION

1.1 Identifying Information

1.1.1 Title, EA Number, and type of Project:

Palmerita Ranch Allotment No. 00094 Permit Issuance Environmental Assessment; DOI-BLM-AZ-C010-2023-0023-EA; Livestock Grazing Management

1.1.2 Location of Proposed Action:

The Palmerita allotment is located at the southern end of the Kingman Field Office boundary, just east of Alamo Lake State Park and 15 miles west of US Hwy 93 (Figure 1, Appendix C).

1.1.3 Name and Location of Preparing Office:

Colorado River District, Kingman Field Office

1.1.4 Applicant Name:

Tim Peterson

1.2 Background

The Palmerita Ranch Allotment (No. 00094) is located in La Paz and Mohave counties, Arizona. It is approximately 20 miles northwest of the town of Aguila and 7 miles east of Alamo Lake State Park. The Bureau of Land Management (BLM) administered grazing allotments that border the Palmerita Ranch Allotment include Chino Spring, Harcuvar, Wagner and Santa Maria Community (Figure 2, Appendix C). The Palmerita Ranch Allotment is comprised of 31,792 BLM-administered acres, 7,863 other federal lands, 1,886 private land acres, and 11,357 State Trust land acres, totaling to 52,898 acres.

The elevation of the allotment is approximately 1,700 feet though the allotment ranges from 1,200 feet along the Santa Maria River up to 2,200 feet in the Arrastra Mountain Wilderness in the north of the allotment. The Santa Maria River, which usually only has water after moderate rain events, runs through the northern third of the allotment. Wickenberg Road is a county maintained unpaved road that runs the center of the allotment from southeast to northwest. The Wayside Oasis RV Park sits along Wickenberg Road at the center of the allotment. Range improvements include many livestock grazing facilities such as fences dividing the allotment into pastures, cattleguards, gates, wells, pipelines, water storage and troughs, dirt tanks, corrals, and other improvements (Figure 3, Appendix C).

Livestock grazing is not currently authorized on the Palmerita Ranch Allotment. The allotment is allocated as available for livestock grazing through the Kingman Resource Management Plan (RMP), which incorporated the Lower Gila North (LGN) Management Framework Plan (MFP). Past grazing permits incorporated use on all unfenced land ownerships controlled by the former permittee and were billed for use on BLM-administered land on the basis of percent public land (PL). The PL identifies the percentage of forage available on BLM-administered land, not acreage.

The allotment has been used for livestock grazing since around 1900. The number of livestock on the allotment has varied over the years depending on rancher finances, livestock markets, and climatic conditions.

During the period of 1940 into the 1960's, the District Grazing Advisory Board, with the District Ranger, approved stocking rates and yearly grazing applications based on historical levels of use. The allotment's current stocking rate was established by the Lower Gila Resource Area Manager on March 28, 1973.

During years of above normal rainfall and following the Special Ephemeral Rule, the permittee may submit an application to run additional livestock on the allotment. The application, for ephemeral use, may be approved based on additional forage produced and available by the presence of annual grasses and forbs.

Allotment boundary fences were constructed in 1951, 1960, and 1965. An interior pasture fence was constructed on the south side of the river in 1965 and another in 1994. Permanent water can be found at Upper Date Creek Well, Middle Date Creek Well, Fuller Well, the Ranch Headquarters Well, and the Santa Maria River.

Grazing management direction for the allotment comes from the LGN Grazing Environmental Impact Statement (EIS) (March 1982), the LGN Rangeland Monitoring Plan (1982), the LGN MFP (March 1983), the Rangeland Reform Final EIS (1994), and the Arizona Standards for Rangeland Health and Guidelines for Grazing Administration (1997).

Past permittees have run a cow-calf operation as well as a seasonal steer operation. Livestock were allowed to move throughout the allotment selecting use areas with water and usable forage. In 1994, the permittee and BLM agreed to the following seasons of use on the Santa Maria River and Big Sandy River areas of the allotment:

March 1 - October 31	Rest (no use by domestic livestock)
November 1 - February 28	Graze (use by domestic livestock)

The allotment has not been utilized since 1996 despite the authorization not expiring until 2001. The carrying capacity of the most recent permit was 99 cattle or 927 animal unit months (AUMs) with yearlong grazing use and seasonal rest for river areas.

1.3 Land Health Evaluation

The Kingman Field Office (KFO) completed a Land Health Evaluation (LHE) to determine whether the Palmerita Ranch Allotment is meeting the standards for rangeland health as described in the Arizona Standards for Rangeland Health and Guidelines for Grazing Management (USDI BLM, 1997) ("Arizona Standards and Guidelines"). This LHE report concludes:

> The Palmerita Ranch Allotment is currently achieving Standard 1 and failing to achieve Standards 2 and 3 of the Arizona Standards for Rangeland Health. Livestock have not been authorized to graze the allotment since 2001 but have not utilized the allotment since 1996 (see Section 1.2 above). Because of this period of rest on the allotment, current land health and vegetative conditions represent what the allotment is currently capable of achieving.

Due to the vacancy of the allotment, current livestock grazing is not considered the causal factor for the non-achievement of Standards. Lands not meeting standards are a result of several factors including but

not limited to historic overgrazing and soil loss that resulted from that use, extended drought, off-highway vehicle (OHV) use and wild burros straying east from the Alamo herd management area (HMA).

Recommended management actions outlined in the LHE include:

- Livestock grazing should be analyzed through proper National Environmental Policy Act (NEPA) protocol for proposed permit issuance. Before livestock grazing is re-authorized on the Palmerita and a 10-year grazing permit is issued, changes in the mandatory terms and conditions are needed to reflect environmental conditions stressed by extended years of drought. These changes should pay particular attention to the decline in frequency of Big Galleta grass (*Hilaria rigida*) and the low or declining frequencies of other perennial grass species. As the dominant perennial grass in the allotment, Big Galleta is considered a key forage species utilized by livestock on the Allotment. Consideration should be given to managing added stresses livestock could add to an already drought-stressed desirable forage species.
- Consideration should also be given to deferment of livestock from sensitive riparian areas and critical threatened and endangered (T&E) species habitat during critical growing periods to assist with production and maintenance of riparian-wetland plant communities. Terms and conditions pertaining to grazing management along the Santa Maria River should adhere to the recommendations for T&E species and their critical habitat provided in a biological opinion by the US Fish and Wildlife Service. Such recommendations include but are not limited to preventing livestock grazing in critical habitat and sensitive riparian areas during the active growing season or during months of critical use by T&E species. Livestock should also be excluded from sensitive riparian areas and critical habitat once a utilization threshold of 40% use on forage has been reached.
- Other issues identified through internal and public scoping should be addressed and solutions incorporated into the permit to ensure that rangeland health standards continue to be met in areas where standards are currently being met and that livestock grazing is not a contributing factor to not meeting standards. Other management actions for the areas not achieving either Standard 2 or Standard 3 are recommended to be implemented prior to the permits being issued.

1.4 Purpose and Need for Action

The purpose of the action is to respond to the application submitted to the KFO for a livestock grazing permit on the Palmerita Ranch Allotment. The need for this action is established by the BLMs responsibility under the Taylor Grazing Act, the Federal Land Policy and Management Act (FLPMA) and the Fundamentals of Range Health (43 Code of Federal Regulations [CFR] 4180) to respond to an application for a livestock grazing permit on public land on the Palmerita Ranch Allotment.

1.5 Decision to be Made

The decision to be made is to either not issue or issue the term grazing permit; and if issued, determine the terms and conditions necessary for permit issuance to comply with the BLM's statutory obligations. Under the NEPA, the BLM must determine if there are any significant environmental impacts associated with the Proposed Action warranting further analysis in an EIS. The KFO Manager is the Authorized Officer responsible for the decisions regarding management of public lands within these allotments. This analysis will help to inform the decision on whether to issue grazing permits for the Palmerita Ranch allotment, and if so what terms and conditions would apply.

1.6 Land Use Plan Conformance

Name of Plan: Kingman Resource Area Proposed RMP and Final EIS and Record of Decision for the Approval of the Kingman Resource Area RMP

Approved: March 1995

The action is in conformance with the Rangeland Management Decisions described on pages 71-72 of the RMP EIS (1995) and includes guidance for the management of rangeland resources in accordance with the Lower Gila North MFP (1978).

1.7 Relationship to Statutes, Regulations, Other NEPA Documents

This environmental assessment (EA) was prepared in accordance with the NEPA, as amended, and is in compliance with all applicable laws and regulations subsequently passed, including the Council on Environmental Quality (CEQ) regulations (40 CFR, Parts 1500-1508) and guidelines; U.S. Department of Interior (USDI) Regulations for Implementation of NEPA (43 CFR Part 46); USDI BLM NEPA Handbook, H-1790-1 (BLM 2008b); and the Department Manual (DM) Part 516. The Proposed Action is in conformance with applicable statutes, regulations, policies, and local area planning documents germane to the analysis area.

The Proposed Action and alternatives are also consistent with multiple statues, and regulations, including but not limited to the following:

- FLPMA of 1976, as amended (43 United States Code (U.S.C.) 1701 et seq.);
- The Taylor Grazing Act of 1934;
- Title 43 of the CFR subpart §4100;
- The Endangered Species Act (ESA) of 1973, as amended;
- Migratory Bird Treaty Act of 1918, as amended;
- Native American Graves Protection and Repatriation Act of 1990 (25 U.S.C. 3001-3013; 104 Stat. 3048-3058);
- American Indian Religious Freedom Act of 1979;
- Section 106 of the National Historic Preservation Act of 1966, as amended;
- Archaeological Resources Protection Act of 1979, as amended;
- The NEPA of 1969;
- Public Rangelands Improvement Act of 1978;
- Bald and Golden Eagle Protection Act of 1940, as amended;
- Arizona Revised Statute 17-236; and
- Arizona Desert Wilderness Act of 1990 (Public Law 101-628)

CHAPTER 2 PROPOSED ACTION AND ALTERNATIVES

2.1 Proposed Action—Issue Grazing Permit with Adaptive Management

Under the Proposed Actions, the BLM would issue a grazing permit for a period of 10 years for the Palmerita Ranch allotment, incorporating Mandatory Terms and Conditions (Table 1) and Other Terms and Conditions as listed below, which would become effective upon acceptance of the permit.

Table 1: Proposed Action Grazing Permit Mandatory Terms and Conditions

Allotment	Pasture	Livestock Number/Kind	Period		% Public Land	Type Use	AUMs
			Begin	End			
AZ00094 Palmerita Ranch	Uplands	99 Cattle	3/1	2/28	78	Adaptive	622
AZ00094 Palmerita Ranch	River Pasture	99 Cattle	11/1	2/28	78	Active	305

Other Terms and Conditions

Standard terms and conditions are found on Grazing Permit/Lease Form 4130-2a. In addition to the mandatory terms and conditions above, the following terms and conditions would also apply to this allotment under the Proposed Action and as identified within the Biological Opinion from the U.S. Fish and Wildlife Service (USFWS) (Appendix D) and described below:

- Livestock may not be turned out until the riparian pasture fence is completed.
- On the uplands, if utilization of perennial forage species exceeds 40%, livestock will be moved to a new water or pasture in the uplands.
- The permittee will remove and exclude livestock from the River Pasture at such time that one or more of the following utilization thresholds are reached:
    - If the use of palatable perennial grasses and grass-like plants exceeds 35%
    - If utilization of woody plants exceeds an average of 40% of current year's growth
    - If apical stem use exceeds 25% for cottonwoods (*Populus spp.*) and willows (*Salix spp.*)
    - If the extent of alterable stream banks damage from livestock use exceeds 10%
- Permittee will inspect and maintain riparian fences at least twice annually and after heavy rainfall events.
- In the River Pasture, construction of range improvements will be done outside of the migratory bird breeding season (02/14-10/1).
- In the River Pasture, any maintenance or reconstruction of range improvements requiring mechanized equipment will be performed outside of the migratory bird breeding season (02/14-10/1) unless otherwise authorized by the BLM.
- Reconstruction and maintenance of stock tanks will occur only when they are dry.
- During years when grazing is authorized, the permittee/lessee must properly complete, sign and dates an Actual Grazing Use Report Form (BLM Form 4130-5). The completed form(s) must be submitted to the BLM, KFO within 15 days from the last day of authorized grazing use (43 CFR 4130.3-2(d)).

- 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 including:
    - No more than 40 percent of available ephemeral forage may be grazed.
    - Ephemeral grazing may only be authorized when seeds are present on ephemeral forage species.
- When adaptive management triggers are met the livestock number, season of use, and/or AUMs that may be applied for, annually, are outlined below under "Adaptive Management."

Adaptive Management
The terms and conditions for the Palmerita Ranch Allotment permit include the adaptive management framework as described below to meet the quantitative allotment-specific objective of big galleta grass (*Hilaria rigida*) frequency. If the frequency objective is not being met, the AUMs that may be applied for on an annual basis would be as described below.

The frequency objective for big galleta grass is based on the average frequency across all Key Areas on the Palmerita Ranch Allotment from the 2022 Rangeland Health Assessment (RHA) which shows an average frequency of 6.5%.

During the first two years of the permit, the percentage of AUMs would be set at 50% to judge the impacts to perennial grasses with the reintroduction of authorized livestock. BLM would monitor the frequency of big galleta, the most prevalent perennial grass on the allotment, every 2 years. If the frequency of big galleta falls below 6.5% (±1%) at any time during the life of the permit, the percentage of AUMs that may be applied for would drop to 25%. If during the next monitoring cycle, the big galleta frequency remains under 6.5%, then the percent of AUMs that may be applied for would drop to 0%. AUMs that may be applied for would remain at 0% until big galleta frequency has returned to the baseline of 6.5%. This same pattern would apply for increases in frequency of big galleta. At any time during the life of the permit, if monitoring determines that the average frequency of big galleta is greater than 6.5% (±1%), the percent of AUMs that may be applied for would be set at 75%. After two years, if frequency continues to increase, then 100% of the AUMs on the permit would be available for application. Increases or decreases in the percentage of available AUMs would exist on a sliding scale with 6.5% frequency as the baseline for comparisons. Permanent adjustments to this baseline would be determine at the end of this 10-year permit during the next permit renewal.

BLM would also monitor riparian resources on a yearly basis to determine the potential need for management changes within the river pasture in accordance with the biological opinion.

Adaptative management allows for greater flexibility within the terms of the permit to allow livestock use to follow environmental condition. The forage produced in this allotment is highly variable depending on precipitation and other environmental factors, having an adaptive management framework would allow for changes in stocking rate depending on environmental triggers, allowing livestock to take advantage of high forage years and also protect vegetation during drought conditions.

Range Improvements
Since livestock grazing has not been permitted on the Palmerita Ranch allotment for roughly two decades, many existing range improvements have fallen into disrepair. The repair or reconstruction of

these range improvements and the addition of new range improvements would be required to effectively manage grazing on the allotment (Figure 4, Appendix C).

- (Existing) A majority of the fence separating the river from the uplands is in severe disrepair or missing all together. The purpose of this fence would be to protect sensitive riparian and critical T&E habitat and keep livestock from entering the river pasture during the spring and summer growing season. Additions to this fence would be constructed in the locations shown in Figure 5, Appendix C.
- (Existing) Water gaps across the Santa Maria and Big Sandy rivers along the north, east and west boundary fences would be repaired and/or reconstructed.
- (Existing) Repair and/or reconstruction of pipeline and trough system from a shared spring on the neighboring Santa Maria Community allotment.
- (Existing) Stoop Tank would require reconstruction. OHV use is heavy in the area, so this improvement may require more frequent maintenance and/or reconstruction to remain functional.
- (New) New fence would be constructed in 10N 11W sections 03, 10 and 15. A portion of preexisting fence near the Date Creek Well would tie into the bluff on the north of Date Creek. The fence would then continue north along the uplands and tie into the boundary fence. This fence would create a new pasture in the east of the allotment to aid in livestock rotation and distribution.
- (New) Gates would be added to the riparian fence in locations where the fence intersects with OHVs trails and roads. Signs would be posted at each gate to instruct the public to keep the gates close. However, if gates and signs are insufficient to maintain the integrity of the riparian fence, cattleguards would be installed.
- (New) Existing hand dug well 10N 12W section 28. This well would be used to fill a water truck for water hauls to temporary troughs in the southern portion of the allotment. These temporary water hauls would be used to improve livestock distribution in the area.
- (New) There is an existing well in 11N 12W section 14. This well has accessible water and would need a pump to extract water. Adding a pipeline and trough to this well would provide water for livestock during the river's season of use. This would also help draw cattle out of the floodplain.

2.2 Alternative B: Preexisting Grazing Authorization

The Preexisting Grazing Authorization alternative represents a continuation of current management meaning issuing a grazing permit for a period of 10 years under the same terms and conditions as the last permit issued for the allotment. The previous permit expired in 2001 and the allotment has been in non-use since 1996. This alternative would not include the biological considerations recommended in the Biological Opinion provided by the USFWS. Terms and conditions for the previous permit were as follows in Table 2:

Table 2: Alternative B Grazing Permit Mandatory Terms and Conditions

Allotment	Pasture	Livestock Number/Kind	Period		%PL	Type Use	AUMs	Suspended AUMs
			Begin	End				
AZ00094 Palmerita Ranch	Upland Pasture	99 Cattle	3/1	10/31	78	Active	314	308
AZ00094 Palmerita Ranch	River and Upland Pasture	99 Cattle	11/1	2/28	78	Active	154	151

- 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.
- A permanent season of use has been established on the river and associated riparian areas along the Santa Maria and the Big Sandy rivers. The season of use starts the first of November and runs through February 28th.

2.3 Alternative C: Grazing Permitted with Year-round Upland Use with No River Use

This alternative would be the same as the proposed action, except that the Santa Maria River, the river pasture, would be removed from grazing altogether. Grazing would still be authorized year-round in the uplands to a maximum number of 99 livestock for a maximum of 622 AUMs. Reconstruction/repair and additions for the riparian fence would still be required to prevent livestock access, including gates and/or cattleguards. Inspections of the fence twice a year and after rain events, would still be required. Other repairs and additions to range improvements in the uplands as described in the Proposed Action would also be needed and included as part of this alternative.

2.4 Alternative D: Ephemeral Grazing with Seasonal Restrictions on the River Pasture

This alternative would change the Palmerita from a perennial/ephemeral allotment to ephemeral use only. The grazing permit would be renewed for a period of 10 years. Grazing would be authorized upon application when forage conditions warrant. Use of ephemeral forage is in accordance with federal grazing regulations, special management requirements, and other guidance which includes no more than 40 percent of available ephemeral forage may be grazed and grazing may only be authorized when seeds are present on ephemeral forage species. Use authorized outside of the season of use for the river pasture would not include use of the river. This alternative would require the changes to the riparian fence described in the proposed action to prevent livestock from accessing the river during the growing season.

2.5 Alternative E: No Grazing

Under the No Grazing Alternative, livestock grazing would not be authorized on public lands within the Palmerita Ranch allotment for a term of 10 years. Applications for grazing permit renewals would be denied and no grazing permits would be offered. Upon expiration of the 10-year period, livestock grazing would be re-evaluated for approval of applications for grazing preferences attached to the current base properties.

2.6 Alternatives Considered but not Analyzed in Detail

Alternatives considered but not analyzed include:

- Only authorizing grazing on the allotment from November 1st to February 28th for both upland and river pastures in both perennial and ephemeral contexts. Grazing is authorized on the state land lease within the BLM allotment with no fence boundary to prevent unauthorized use on public lands. Unauthorized use may continue unless a physical boundary is put in place around state lands.
- Removal of the allotment from grazing through an RMP amendment was also considered but not analyzed due to amending the RMP does not meet the purpose and need for this project.

CHAPTER 3 AFFECTED ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

This chapter describes the existing conditions relevant to the issues presented in Table 3: Resources and Uses and discloses the potential impacts of the alternatives on those issues.

3.1 Resources and Uses

The BLM is required to consider many authorities when evaluating a federal action. Table 3 below summarizes the resources and uses that have been reviewed by the BLM interdisciplinary team to determine whether they would be affected by the proposed project and rationale for whether the topic will be carried forward for detailed analysis. Those resources or uses determined not present or present but not affected by the Proposed Action need not be carried forward or discussed further. Resources or uses determined to be present and may be affected may be carried forward in the document if there are issues which necessitate a detailed analysis.

Table 3: Resources and Uses

RESOURCE/USE	PRESENT YES/NO	MAY BE AFFECTED YES/NO	RATIONALE	ANALYZED IN SECTION
Air Quality	Yes	No	None of the activities described in the alternatives would be expected to have a measurable impact on the quality of air nor exceed any air quality standards for the area. Some fugitive dust could be expected from livestock movement in areas where the soil is loose however this would not contribute to exceeding any air quality standards.	N/A
Areas of Critical Environmental Concern	Yes	Yes	This resource is carried forward for detailed analysis below.	3.2.1
Cultural Resources	Yes	Yes	This resource is carried forward for detailed analysis below.	3.2.2
Environmental Justice	No	No	Minority, low-income populations, and disadvantaged groups may be present within the county and may use public lands in and near the allotments. The proposed action would not cause any disproportionately high and adverse effects on minority or low-income populations, individually or collectively from any of the actions proposed.	N/A
Farmlands – Prime/Unique	No	No	There are no prime or unique farmlands within or near the project area.	N/A
Fire Management	No	No	The Proposed Action is not expected to impact fire regimes nor cause changes to fire management in this area.	N/A
Fish Habitat	Yes	No	Resource present during high flow events or long-term precipitation. Analyzed in Wildlife Resources.	3.2.13
Floodplains	Yes	No	Resource would not be affected by the Proposed Action.	N/A

RESOURCE/USE	PRESENT YES/NO	MAY BE AFFECTED YES/NO	RATIONALE	ANALYZED IN SECTION
Forestry Resources and Woodland Products	No	No	Resource not present.	N/A
Human Health and Safety	No	No	The Proposed Action would not affect human health and safety.	N/A
Integrated Vegetation Management	No	No	Resource not present.	N/A
Land Use Authorizations/Access	Yes	No	The Proposed Action would not affect access or land use authorizations.	N/A
Lands with Wilderness Characteristics	No	No	There are no lands with wilderness characteristics (LWC) inventoried within the allotment boundary and the Kingman RMP (BLM, 1995) does not designate any LWC units.	N/A
Livestock Grazing Management	Yes	Yes	This resource is carried forward for detailed analysis below.	3.2.15
Mineral Resources	Yes	No	None of the alternatives would affect mineral resources.	N/A
Native American Religious Concerns/ Traditional Values	Yes	TBD		
Paleontological Resources	No	No	There are no known paleontological resources within the Proposed Action. No impacts are anticipated, and no additional analysis is warranted.	N/A
Recreation	Yes	Yes	This resource is carried forward for detailed analysis below.	3.2.3
Socio-economics	No	No	None of the alternatives would cause significant socio-economic changes.	N/A
Soil Resources	Yes	Yes	This resource is carried forward for detailed analysis below.	3.2.4
Threatened, Endangered, and Special Status Species	Yes	Yes	This resource is carried forward for detailed analysis below.	3.2.5
Travel and Transportation Management	Yes	Yes	This resource is carried forward for detailed analysis below.	3.2.6
Vegetation Resources (native and invasive)	Yes	Yes	This resource is carried forward for detailed analysis below.	3.2.7
Visual Resources	Yes	Yes	This resource is carried forward for detailed analysis below.	3.2.8
Wastes – Hazardous or Solid	No	No	There are no hazardous or solid wastes in the project area.	N/A
Water Resources (including water rights)	Yes	Yes	This resource is carried forward for detailed analysis below.	3.2.9
Water Quality (Surface/ Ground)	Yes	Yes	This resource is carried forward for detailed analysis below.	3.2.9
Wetlands/ Riparian Zones	Yes	Yes	This resource is carried forward for detailed analysis below.	3.2.10
Wild and Scenic Rivers	Yes	Yes	This resource is carried forward for detailed analysis below.	3.2.14
Wild Horses and Burros	Yes	Yes	This resource is carried forward for detailed analysis below.	3.2.11
Wilderness	Yes	Yes	This resource is carried forward for detailed analysis below.	3.2.12

Resource/Use	Present Yes/No	May Be Affected Yes/No	Rationale	Analyzed in Section
Wildlife (including Migratory Birds)	Yes	Yes	This resource is carried forward for detailed analysis below.	3.2.13

3.2 Resources Brought Forward for Analysis

The BLM interdisciplinary team evaluated potential impacts from the Proposed Action and Alternatives to determine which resources, and resource uses (as listed in Table 3 above) to determine if detailed analysis would be necessary. Through this process, the BLM interdisciplinary team determined the following resources warrant detailed analysis in this EA.

The description of the Affected Environment for the Preexisting Grazing Authorization and other Alternatives would be the same as that for the Proposed Action.

3.2.1 Areas of Critical Environmental Concern

Affected Environment

Areas of Critical Environmental Concern (ACECs) are areas within public lands that require special management actions to protect existing important and/or rare resources such as wildlife or historical cultural sites. The Three Rivers ACEC is located within the Palmerita Ranch allotment. The 1997 Kingman RMP provides common guidelines for activities that take place on all Kingman Field Office ACECs and a subset of specific guidelines for each ACEC that are designed to facilitate their intended management purpose. Below is the description of the Three Rivers ACEC and the specific management guidelines.

Three Rivers ACEC

The Three Rivers ACEC is in the northern portions of the Palmerita Ranch allotment covering 5,783 public acres. It is approximately 28 miles south of Wikieup on the west side of Highway 93. This area encompasses a portion of the Bill Williams Watershed and supports designated Critical Habitat for T&E species (see Section 3.2.5 for further information). Values of the ACEC are outstanding, existing, and potential riparian resources; threatened and endangered habitat; and recreation values. The specific management guidelines for the Three Rivers ACEC are:

- Manage livestock grazing to achieve threatened and endangered and riparian habitat desired plant community description objectives.
- Confine new major rights-of-ways to existing corridors.
- Prohibit road development within ½ mile of bald eagle aeries.
- Limit off-highway vehicle use in riparian areas to designated roads and trails.
- No intense recreation within ¼ mile of aerie from January 1 through June 1.
- Restrict activities and no intensive recreation within ¼ mile of aerie from January 1 through June 1.
- Prohibit helicopter flights within ½-mile aerie from January 1 through June 1.
- Monitor and assess habitat condition.
- Continue riparian area condition evaluation inventory and monitoring.
- Prohibit removal of native plants except for salvage operations.

The Three Rivers Riparian Area ACEC is designated to protect riparian resources, scenic values, and threatened and endangered species, specifically bald eagle aeries. The riparian habitat in the ACEC provides valuable year-round water, a diversity of vegetation and crucial habitat for bird, fish, wildlife and insect populations.

Environmental Consequences

Proposed Action

Under this alternative, grazing would be permitted within the boundaries of the ACEC. Extensions to the existing riparian fence would be constructed in the ACEC to bar livestock from grazing within the river and adjacent riparian areas from March 1st to October 31st. This would allow vegetation within the river to regenerate during the growing season. Year-round grazing would occur within the southern upland portions of the ACEC south of the riparian fence. Grazing in the upland portion would only occur periodically during as the terms and conditions of the permit would require movement of livestock to another part of the uplands once utilization of vegetation reaches 40%. Adaptative management strategies in the alternative would allow the percentage of AUMs approved to graze within the ACEC would be adjusted according to environmental conditions. This alternative may also reduce unauthorized grazing within the ACEC during growing season by maintenance of the riparian pasture fence and through active removal by the permittee.

Preexisting Grazing Authorization

Under this alternative, grazing would be permitted under the same terms and conditions as the past existing lease. The ACEC would be managed with 99 head year-round outside of riparian and 99 head seasonally from November 1st through February 28th with allowable use that exceeds what is necessary for re-growth of vegetation. The ACEC would not be included in adaptive management or excluded from overuse leading to potential changes and degradation of the riparian habitat.

Year-round Upland Use with No River Use

Under this alternative, livestock would be prevented from grazing in the ACEC by a riparian pasture fence. Occasional livestock may enter the ACEC due to a downed fence, but livestock would be required to be removed immediately by the permittee. This alternative may also increase unauthorized grazing within the ACEC if the riparian fences are not maintained by the active permittee.

Ephemeral with Seasonal Restrictions on the River Pasture

Ephemeral growth of annual vegetation is highly dependent on winter rains and would not occur every year. Livestock number and AUMs authorized during these years would be variable, depending on the amount of annual forage produced. Impacts to the ACEC would be small and infrequent.

No Grazing

Under this alternative, there would be no active grazing from the Palmerita lease. Range improvements such as fencing would not be maintained by an active permittee and may allow unauthorized grazing to occur on riparian sensitive habitat designated within the ACEC from surrounding leases. No grazing from the Palmerita may reduce potential AUM's that could actively grazing within the designated ACEC riparian habitat.

3.2.2 Cultural Resources

Affected Environment

The Palmerita Historic Ranch was established during the Hispanic homesteading era of 1899 by the Fass Family. The ranch remained operational off and on throughout the 1900s. Various improvements were made to the property, including improvements to the main buildings and creating irrigated fields for hay. In 2000, the Palmerita Ranch was donated to the BLM.

There are four structures of historical significance located at the Palmerita Ranch. These structures, as a group, meet the eligibility requirements for inclusion into the National Register of Historic Places (NRHP). They collectively signify important events within the board patterns of America's history and in particular, "Early Hispanic Homesteading" as well as ranching in Arizona, 1872-1954". These unifying themes also determine the categorization of Palmerita Ranch as a historic "district", under NRHP (Metropolis Design Group, 40-41).

No survey information for Native American archaeological sites exists for the Palmerita Ranch. It is anticipated that such sites likely exist on terraced land above the floodplain of the Santa Maria River, in varying densities. According to an interview with a family descendant, his grandmother said that Yavapai Indians came by the ranch and camped along the river. She said that they would come in the summer to collect mesquite and cactus fruits. In addition to the Prescott Yavapai, the Hualapai and Fort Mojave tries have ties to this landscape and must be consulted regarding this proposed project.

Another element of the human landscape at Palmerita Ranch is a family cemetery, located on a hill near the ranch buildings. This cemetery is visited and maintained by surviving family members. It was confirmed by a great grandson of one of the original inhabitants that the cemetery is the final resting place of Native Americans who were part of the family. For this reason, the cemetery is protected under the Native American Graves Protection and Repatriation Act.

Cattle sign from wild/trespass cows has been observed within the boundaries of the Palmerita Ranch cultural site and in and around the ranch buildings. Several gates and barriers have been left open, and BLM suspects that is how the wild/trespass cattle are accessing the area.

Environmental Consequences

Proposed Action

Under the Proposed Action, livestock grazing could directly and indirectly damage archaeological sites but the potential for historic properties to be adversely affected is minimal. The new terms and conditions included in the Proposed Action would further reduce the potential in comparison to the Preexisting Grazing Authorization alternative, as livestock would be prevented access to known cultural sites during a majority of the year. The riparian fence extensions would keep livestock away from sensitive cultural areas, such as the historic Palmerita Ranch. Fencing already around the historic ranch would be strengthened to prevent access while livestock are in the river pasture from November 1st to February 28th. Extensions to the riparian fence would be placed in locations to avoid known cultural sites and sensitive areas.

Preexisting Grazing Authorization

Unlike the proposed action, this alternative would not require the construction of extensions to the existing riparian fence to separate livestock from the river outside of the season of use. Potential for

damage to archaeological sites would be increased in comparison to the Proposed Action. Without a barrier, livestock would be able to access the historic Palmerita Ranch and other cultural resources year-round. Known occurrences of feral/trespass livestock have been observed accessing the historic ranch from the river, usually through left open gates.

Year-round Upland Use with No River Use
Under this alternative, cultural resources would be separated from livestock grazing impacts by a riparian fence. Aside from the occasional stray livestock getting through a downed fence, potential impacts to cultural resources would be minimal.

Ephemeral with Seasonal Restrictions on the River Pasture
Because ephemeral authorization would only occur during years of abundant winter rain, potential impacts to cultural resources would minimal and rarely occurring.

No Grazing
The No Grazing alternative would result in minor benefits to known/recorded and unknown/unrecorded cultural resources within the allotments. Without cattle on the ground, grazing-related impacts would not be present. All sites in the allotment would still be subjected to natural processes and ongoing impacts from the other multiple uses. Artifact collecting and other human-caused disturbances could continue even without livestock grazing.

3.2.3 Recreation

Affected Environment
The Palmerita Ranch allotment is located within an Extensive Recreation Management Area as designated in the Kingman RMP and Final EIS (BLM, 1993) and is managed for a wide-array of dispersed recreational activities including primary uses such as OHV use and hunting; secondary uses of camping, picnicking, backpacking, viewing cultural sites, and wildlife watching; and tertiary uses of hiking, photography, geocaching, and rockhounding.

Alamo Lake State Park is located adjacent to the Palmerita Ranch allotment and includes amenities for overnight and day use. Alamo Lake State Park receives significant visitation between October and May annually, much of which impacts recreational use on adjacent public lands located within the Palmerita Ranch allotment. The Wayside Oasis RV Park is located within the complex and draws in seasonal visitors which predominately use the adjacent public lands for OHV pursuits during the same season as Alamo Lake State Park visitors. The BLM does not currently maintain reliable visitation numbers apart from the Palmerita Ranch, a historical site with a kiosk and visitor register, which received 795 visits in fiscal year 2021 (RMIS, 2023). These points of interest combined with proximity to urban population centers in Phoenix create significant visitation to this area as observed by field staff in recent years.

Environmental Consequences
Proposed Action
Under the proposed action, cattle would be introduced into a heavily recreated area, where cattle have not been authorized since 2001. Total recreational use recorded in BLM's Recreation Management Information System (RMIS) for the Kingman Field Office in 2001 totaled 230,968 visits and 1,070,693 in 2022 (RMIS, 2023), a significant increase overall for visitation across the field office. This figure, while not representative of the allotment area, can be used to extrapolate a general increase in

recreational use and interest across public lands managed by the Kingman Field Office and is also consistent when looking at general population increases across the state of Arizona.

Anticipated impacts to recreational outcomes from authorization of cattle grazing would be focused on the potential for reduction in habitat for hunting opportunities, predominately quail hunting availability in this area as well as outcomes related to OHV opportunities. If habitat is diminished by authorization of the proposed action, then there may be less opportunity for hunter days and subsequently hunter success rates reducing positive recreational outcomes for small game hunters in the project area. Opportunities for OHV recreation would not be directly limited by authorization of cattle grazing but with the installation of new gates throughout the allotment, there would be a potential for increased conflict between recreational and grazing interests in the area which could diminish current recreational outcomes associated with operating an OHV in this area. Additionally, there may be a potential for increases in OHV collisions with livestock in the area due to users not being habituated to having cows in this area which could lead to increased public health and safety concerns. The proposed action does provide for adaptive management however, which could resolve these issues and therefore would not be significant or require additional mitigation.

Preexisting Grazing Authorization
Impacts under this alternative would be similar to that of the proposed action as cattle would be authorized under the same parameters from 2001 but there would be less potential for conflicts to exist between recreationists and the grazing permittees due to the fact that the riparian fence would not be constructed under this alternative and there would be less gates that OHV users could potentially leave open leading to conflicts with grazing operations and decreased potential for conflict. Potential for impacts to hunting opportunities and public health and safety would be similar as under the proposed action. Since there is less emphasis on adaptive management with this alternative, there would be less opportunity for BLM to address anticipated issues to recreational outcomes which may require additional mitigations. Having said that, impacts from this alternative would still not be significant.

Year-round Upland Use with No River Use
Impacts under this alternative would be almost identical to the impacts identified as part of the proposed action apart from hunting opportunities would not be diminished in the riparian areas due to the exclusion of cattle in these areas.

Ephemeral with Seasonal Restrictions on the River Pasture
Impacts under this alternative would be similar to the proposed action but would be less impactful to hunting opportunities across the entirety of the allotment due to the expectation that overall, there would be less grazing occurring and when grazing would occur, it would be during periods when forage was as such that cattle could be supported in addition to wildlife, thus not diminishing hunting opportunities. OHV impacts would be expected to be similar under this alternative as the proposed action with the exception of less potential for impacts to public health and safety as cattle would not be on the allotment as frequently.

No Grazing
Under the no grazing, current management of livestock in the allotment would remain unchanged. This would not lead to any measurable change in regard to recreational hunting opportunities or associated outcomes within the project area.

3.2.4 Soil Resources

Affected Environment

Soils within the Palmerita Ranch allotment are typical of the Sonoran Basin and Range Major Land Resource Area (MLRA). Soils in this area typically have a hyperthermic soil temperature regime and a typic aridic soil moisture regime and are often described as complexes due to the intimate intermingling of soil types. Palmerita is located within the transition zone between the Sonoran Basin and Range MLRA and the Mojave Basin and Range MLRA and includes soil types that are similar to both. Soils ultimately vary with elevation and geographic location. The soils within the allotment are typically deep to very deep and well-draining. This changes towards the northeastern corner of the allotment where the landscape slopes down toward the river. The soil there is characterized by more rocky outcroppings and an increasing percentage of soils that are shallow to very shallow. Soils across the allotment are typically found in floodplains, alluvial fans and wide basin floors. Additional information about soils can be found in Appendix E.

Soil surfaces within the allotment have good to moderate resistance to erosion, especially in areas that are armored by gravel and cryptograms. Monitoring and assessments of the allotment demonstrated that soils were stable, and that the allotment was meeting Standard 1: Upland Sites. Meeting this standard is defined as upland soils exhibiting infiltration, permeability, and erosion rates that are appropriate to soil type, climate and landform (ecological site). A complete description and summary of upland health data is available in the RHA in Appendix E.

Environmental Consequences

Proposed Action

Under this alternative, impacts to soils would be greater than current impacts. Reintroducing authorized livestock grazing to the allotment would increase impacts through compaction and increased erosion of soils. Soil disturbance from grazing activities are dependent on frequency and intensity in a given area. Soils that are continuously trekked on and denuded of cover (i.e., gravel/rock, litter, vegetation) may cause poor structure and lack the ability to withstand natural disturbances such as erosion caused by wind and water in amounts the exceeds normal rates. Compaction of the soil can resist water permeability, as well as limit the ability for plant community structure development (Oudenhoven et al 2015). Livestock concentration in areas such as water sources, fence lines and trails would have greater impacts on the presence of compaction. Surface soil erosion, depending on the severity and extent, can influence long-term soil productivity and ecosystem function.

Adaptative management strategies, as described in Chapter 2, would benefit soils within the allotment by allowing BLM to adjust grazing management to minimize or eliminate grazing impacts to soils. Trampling, erosion and impacts to bank stability may occur in the floodplains along the river. However, the effects would be minimal since a 10% change to banks from livestock grazing would trigger removal from the river pasture. Livestock activity in the riparian corridor would increase trampling of soils and could reduce soil protection by reducing available vegetation and litter. With the proposed action deferring livestock from the river pasture during the critical March through October growing period, impacts to the bank stability of the Santa Maria and Big Sandy rivers would be reduced compared to year-long use. A majority of yearly rainfall during monsoon season (June-September), which is during the deferred grazing period. Since the banks are less likely to be saturated when grazing is allowed in the river pasture, compaction and trampling is anticipated to be minimal.

Livestock rotation between pastures, or to a new part of a pasture, may reduce overall impacts to soils. New fencing, troughs and other range improvements would help facilitate livestock rotation and prevent livestock from entering areas of the allotment reducing the overall frequency and intensity of grazing activities.

Preexisting Grazing Authorization
It would be expected for soil impacts to be higher in comparison to the Proposed Action alternative because the new terms and conditions would not be included under the Preexisting Grazing Authorization alternative. Livestock would have access to the entirety of the allotment year-round with no adaptative management strategies to allow the adjustment of grazing pressure in response to environmental conditions within the allotment. Higher intensity grazing may result in more soil disturbance and compaction from livestock movements. This alternative would not include new range improvements or improvements to existing range improvements which would facilitate rotation of livestock around the allotment, improving their disturbance across the landscape. Livestock would be concentrated around existing waters, increasing compaction and erosion in those areas. Without the ability to rotate livestock effectively around the allotment, certain desirable areas, particularly around existing water facilities, may be more heavily impacted, increasing compaction and erosion in those areas. Extensions to the riparian fence would not be required and there would be no physical barrier preventing livestock from accessing the river during periods of inundation or during the growing season. The resulting defoliation and bank trampling would potentially increase sedimentation of the river.

Year-round Upland Use with No River Use
Effects to soil condition would be the same as the Proposed Action, except that effects would be constrained to the uplands of the allotment.

Ephemeral with Seasonal Restrictions on the River Pasture
This alternative is the same as the Proposed Action, except that the allotment would only be authorized for ephemeral use. Impacts to soils under this alternative would be infrequent and variable. Turnout of livestock would depend on the presence of adequate ephemeral forage, which do not occur on a regular basis. During periods of drought, ephemeral use would be even more infrequent. This in turn, would reduce the overall duration of livestock grazing on the allotment. Impacts such as compaction and soil cover loss caused by livestock grazing would be minimal and short-term. Impacts to the floodplains and banks of the river would also be minimal as the approval of ephemeral use in the river pasture would be restricted to Nov 1st to February 28th. Long-term impacts to soils from ephemeral use is expected to be minimal.

No Grazing
Under the No Grazing alternative, no grazing permit would be issued for up to 10 years on the Palmerita allotment. Livestock grazing would not be authorized and therefore would not contribute towards any soil disturbance. The current condition of soil health would remain the same with the exception of soil disturbance caused by other multiple use activities and impacts of weather events such as monsoon rains or wind.

3.2.5 Threatened, Endangered, and Special Status Species

Affected Environment

A Biological Assessment (See Appendix D) was done for the Palmerita Allotment and covers species and habitat information on Threatened and Endangered (T&E) species for the Northern Mexican gartersnake (*Thamnophis eques megalops*), Southwestern willow flycatcher (*Empidonax traillii extimus*), and Yellow-billed cuckoo (*Coccyzus americanus*). A Biological Opinion was provided by the USFWS) for implementing recovery and habitat preservation for all three species. All three species occur within the allotment, including designated critical habitat for the Northern Mexican gartersnake and Southwestern willow flycatcher. The California Least Tern (*Sterna antillarum browni*) and the Yuma Clapper/Ridgway's Rail (*Rallus longirostris yumanensis*) have potential to occur in the project area if habitat is present during high precipitation years. Field studies for all species are currently being done to provide habitat and species potential, including population numbers for the area with efforts to be continued in the future.

BLM Sensitive Species

This category of species includes those that are on the Arizona BLM Sensitive Species list. Sensitive species are usually rare within at least a portion of their range. Many are protected under certain State and/or Federal laws. Species designated as sensitive by the BLM must be native species found on BLM administered lands for which the BLM has the capability to significantly affect the conservation status of the species through management, and either:

1. There is information that a species has recently undergone, is undergoing, or is predicted to undergo a downward trend such that the viability of the species or a distinct population segment of the species is at risk across all or a significant portion of the species range; or

2. The species depends on ecological refugia or specialized or unique habitats on BLM-administered lands, and there is evidence that such areas are threatened with alteration such that the continued viability of the species in that area would be at risk.

All federally designated candidate species, proposed species, and delisted species in the 5 years following delisting are included as BLM sensitive species. Based on the presence of suitable habitat and/or historical records of occurrence, the BLM sensitive species that may occur in the project area are listed in Table 4. Species not described in detail below are described within the Rangeland Health Assessment for the Palmerita Allotment.

Table 4: BLM Sensitive Species Potentially Occurring Within the KFO

Species	Scientific Name	Status
Amphibians		
Arizona Toad	*Anaxyrus microscaphus*	BLM Sensitive
Northern Leopard Frog	*Lithobates pipiens*	BLM Sensitive
Lowland Leopard Frog	*Lithobates yavapaiensis*	BLM Sensitive
Fish		
Gila Longfin Dace	*Agosia chrysogaster*	BLM Sensitive
Roundtail Chub	*Gila robusta*	BLM Sensitive
Mammals		
Pale Townsend's Big-eared Bat	*Corynorhinus townsendii pallemaculatum*	BLM Sensitive
Spotted Bat	*Euderma maculatum*	BLM Sensitive
California Leaf-nosed Bat	*Macrotus californicus*	BLM Sensitive

Species	Scientific Name	Status
Cave Myotis	*Myotis velifer*	BLM Sensitive
Invertebrates		
Monarch Butterfly	*Danaus plexippus plexippus*	BLM Sensitive
Reptiles		
Sonoran Desert Tortoise	*Gopherus morafkai*	BLM Sensitive
Desert Mud Turtle	*Kinosternon sonoriense sonoriense*	BLM Sensitive
Northern Mexican Gartersnake	*Thamnophis eques magalops*	Threatened
Birds		
Western burrowing owl	*Athene cunicularia*	BLM Sensitive
Golden Eagle	*Aquila chrysaetos*	BLM Sensitive
Ferruginous Hawk	*Buteo regalis*	BLM Sensitive
Yellow-billed Cuckoo	*Coccyzus americanus*	Threatened
Gilded Flicker	*Colaptes chrysoides*	BLM Sensitive
Southwestern Willow Flycatcher	*Empidonax traillii extimus*	Endangered
American Peregrine Falcon	*Falco peregrinus anatum*	BLM Sensitive
Bald Eagle – Winter Population	*Haliaeetus leucocephalus*	BLM Sensitive
Bald Eagle – Sonoran Desert Population	*Haliaeetus leucocephalus*	BLM Sensitive
Yuma Ridgway's Rail	*Rallus obsoletus yumanensis*	Endangered
LeConte's Thrasher	*Toxostoma lecontei*	BLM Sensitive

Northern Leopard Frog (Lithobates pipiens)

Northern leopard frogs are found in a variety of habitats including grassland, brush land, woodland, and forest ranging high into mountains, usually in permanent waters with rooted aquatic vegetation; also frequents ponds, canals, marshes, springs, and streams. They may forage far from water where they can absorb dew to keep moist. Aquatic larvae have been found to over winter in some areas (AGFD, 2002a).

Lowland Leopard Frog (Lithobates yavapaiensis)

Lowland leopard frogs occur in ponds and stream pools along water systems in desert grasslands to pinyon juniper (Platz and Frost, 1984). The species occurs at elevations ranging from sea level to 1817 meters (Sredl et al., 1997b). They are habitat generalists and breed in rivers, permanent streams, permanent pools in intermittent streams, beaver ponds, wetlands, springs, earthen cattle tanks, livestock drinkers, irrigation sloughs, wells, mine adits, and abandoned swimming pools (Platz and Frost 1984; Scott and Jennings in AGFD 2001; Sredl and Saylor 1998 in AGFD 2001). Benedict (2002) detected this species occupying open water channels, higher elevation bedrock seeps, and an open cattle pond/spring in the Bill Williams Basin. Lowland leopard frogs occupied habitat in Arizona, consisting of 82% natural lotic habitats and 18% lentic habitats (primarily stock tanks) (Sredl et al., 1997a). In lotic habitats, the species is concentrated at springs, near debris piles, at heads of pools, and near deep pools associated with root masses (Jennings 1987 in AGFD 2001). Sartorius and Rosen (2000) document this species using filamentous algae (Cladophora) mats for concealment. Habitat heterogeneity in the aquatic and terrestrial environment appears to be an important factor for lowland leopard frogs (AGFD, 2001). Shallow water and emergent and perimeter vegetation likely provide basking habitat. Deep water, root masses, undercut banks, and debris piles provide refuge from predators and potential hibernacula (Jennings 1987 in AGFD 2001; Platz, 1988; Jennings and Hayes, 1994a). In semipermanent aquatic systems, this species may survive the loss of water by retreating into deep mud cracks, mammal burrows, or rock fissures (Howland et al., 1997). Recent data from the population along the Bill Williams River found that frogs favored shallow braided channels with small amounts of emergent vegetation (Cotten and Leavitt, 2014). Lowland leopard frogs have been recently reported from approximately 7 miles (11.2 km) upstream of the confluence of the Colorado and Bill Williams Rivers,

within the Bill Williams River National Wildlife Refuge (Jennings and Hayes 1994b; Clarkson and Rorabaugh, 1989; AGFD 1998 in SAIC/Jones & Stokes 2003). Since then, two individual lowland leopard frogs have been found within the Bill Williams National Wildlife Refuge, and a robust population has been discovered along the Bill Williams River just east of Planet Ranch (Cotten and Leavitt, 2014).

Gila Longfin Dace (Agosia chrysogaster)
Native to the Bill Williams drainages in Arizona. Habitat is wide ranged from intermittent hot low-desert streams to clear brooks in higher elevations occupying small or medium streams with sandy gravely bottoms. They are generally found in less than 75 F temperatures but can tolerate higher temperatures with low dissolved oxygen. In flooding events, longfin dace will move with the current and back into the channel as discharge declines. They may be found in algae mats or under logs or stones during drought. (AGFD 2023)

Roundtail Chub (Gila robusta)
Roundtail Chub occurs in several tributaries of the Bill Williams River Basin in cool to warm water, mid-elevation streams and rivers from 2,000 to 5,000 feet. Microhabitat consists of pools up to 2 meters deep with cover consisting of large boulders, trees and materials, and deep waters. (AGFD 2023)

Desert Mud Turtle (Kinosternon sonoriense sonoriense)
The Desert Mud Turtle can be found in the Lower Colorado, including the Big Sandy and Burro River drainages in Arizona from sea level to about 6,700 feet. They are found in habitats such as springs, creeks, ponds, and waterholes of intermittent streams. (AGFD 1999)

Golden Eagle (Aquila chrysaetos)
Golden eagles are typically found in open country, prairies, arctic and alpine tundra, open wooded country and barren areas, especially in hilly or mountainous regions. Black-tailed jackrabbits and rock squirrels are the main prey species taken (Eakle and Grubb, 1986). Carrion also provides an important food source, especially during the winter months. Nesting occurs on rock ledges, cliffs, or in large trees. Several alternate nests may be used by one pair and the same nests may be used in consecutive years or the pair may shift to an alternate nest site in different years. In Arizona they occur in mountainous areas and vacate desert areas after breeding. Nests were observed at elevations between 4,000 and 10,000 feet. Nests are commonly found on cliff ledges; however, ponderosa pine, junipers, and rock outcrops are also used as nest sites.

Bald Eagle (Haliaeetus leucocephalus)
Bald eagles are birds of aquatic ecosystems, frequenting estuaries, large lakes, reservoirs, major rivers, and some seacoast habitats. Fish is a major component of its diet, but waterfowl, gulls, small mammals, and carrion are also eaten. Carrion and easily scavenged prey items provide important sources of winter food in terrestrial habitats that are away from open water. Bald eagles inhabit primarily riparian habitats in cottonwood groves along streams and rivers, and in coniferous forests. The species may also use prairies if adequate food is available. Bald eagles usually nest in large trees near water but are known to nest on cliffs and (rarely) on the ground. Another important habitat factor is the presence of large trees, snags, or ledges for foraging perches. In Arizona, bald eagles choose both cliffs and trees for nesting. Cliffs are typically tall, and exposure varies. Territories usually have more than a single nest location and often both cliff and tree nests are present. Mature to over-mature cottonwood trees are the most

often chosen nest trees. The trees must be sturdy and open to support a nest that is often 5 feet wide and 3 feet deep. In winter, bald eagles often congregate at specific wintering sites that are generally close to open water and offer good perch trees and night roosts. Eagles seek wintering (non-nesting) areas offering an abundant and readily available food supply with suitable night roosts. Night roosts typically offer isolation and thermal protection from winds. In northern Arizona, where water is scarce, bald eagles are often found nesting away from water sources.

Federal Register for Bald Eagle. https://www.fws.gov/policy/library/1999/99fr36454.pdf.

LeConte's Thrasher (Toxostoma lecontei)
LeConte's Thrashers live in low, sandy, open deserts that are home to few other bird species. Over most of their range, saltbush, shadscale, cholla cactus, creosote, yucca, mesquite, and ocotillo are common plants, but they are usually sparsely distributed in these mostly flat or rolling landscapes. LeConte's Thrashers generally do not inhabit steep-sided canyons, preferring small arroyos, open flats, or dunes. (Cornell Lab of Ornithology, 2019).

Environmental Consequences
Proposed Action
Under this alternative, the riparian and critical habitat would be excluded from grazing during the growing season and outside of the growing season if use has reached 40%, as suggested by USFWS. The proposed action would allow use of the riparian pasture during the non-growing season and allow for riparian recovery needed to maintain suitable riparian habitat required by all species above. There is currently no authorized grazing occurring on the Palmerita allotment, however, there has been documented unauthorized use within the T&E habitat. Managing the T&E habitat as prescribed would increase riparian potential and increase chance of recovery for T&E species. Authorized grazing on T&E habitat may lead to degradation of the system. Degradation of the system may lead to lose of T&E habitat and species recovery. Overall, grazing would reduce foraging opportunities for the general wildlife in the area. Presence of cattle may temporarily displace wildlife from foraging opportunities. Trampling and compaction may occur altering habitat, riparian banks, and possible burrow destruction.

Preexisting Grazing Authorization
Under this alternative, grazing would be permitted under the same terms and conditions as the past existing lease. The riparian habitat would be managed with 99 head seasonally from November 1st through February 28th with allowable use that exceeds what is necessary for re-growth of vegetation and recovery of T&E species and habitat. The T&E habitat would not be included in adaptive management or excluded from overuse leading to potential changes and degradation of the riparian habitat.

Year-round Upland Use with No River Use
Under this alternative, livestock would be prevented from grazing in the T&E habitat by a riparian pasture fence. Occasional livestock may enter the due to a downed fence, but livestock would be required to be removed immediately by the permittee. This alternative may also increase unauthorized grazing within the T&E habitat if the riparian fences are not maintained by the active permittee.

Ephemeral with Seasonal Restrictions on the River Pasture
Ephemeral growth of annual vegetation is highly dependent on winter rains and would not occur every year. Livestock number and AUMs authorized during these years would be variable, depending on the amount of annual forage produced. Impacts to T&E species and habitat would be small and infrequent.

No Grazing
Under this alternative, there would be no active grazing from the Palmerita lease. Range improvements such as fencing would not be maintained by an active permitee and may allow unauthorized grazing to occur within riparian sensitive and designated critical habitat from surrounding leases. Use could continue within designated and present T&E habitat from surrounding leases reducing habitat quality and potentially effecting the T&E species individuals and populations. No grazing from the Palmerita may also reduce potential AUM's that could actively graze within riparian sensitive and designated critical habitat. Although use may continue from unauthorized livestock, it may be more sustainable than active grazing under the Palmerita lease.

3.2.6 Travel and Transportation Management

Affected Environment
Routes within the Palmerita allotment boundary consist of roads (most of which are maintained by La Paz County) and primitive roads, most of which exist on the BLM-managed public lands and are subject to limited to no amount of annual maintenance. Approximately 182.15 miles of roads and primitive roads exist within the allotment boundaries on lands managed by the Arizona State Lands Department, Army Corps of Engineers (ACOE) withdrawn lands, and the BLM. Approximately 128 miles of those routes are on BLM managed lands and fall within the Poachie Travel Management Area (TMA), a TMA that is currently being analyzed in the Draft 2023 Kingman Field Office Travel Management Plan (TMP) and EA. The TMP will serve to designate routes within the allotment upon approval of the EA. Currently, the TMP is proposing to close access to 62.55 miles of routes within the allotment and designate motorized access along 65.45 miles of routes within the allotment.

These designations would only apply to routes located on public lands but could, in some instances, restrict access to State lands or ACOE withdrawn lands (e.g., a route on BLM lands is required for access to State or ACOE managed lands). Upon implementation of a TMP, the routes remaining opened to motorized travel would be categorized as level 1, 3, or 5 maintenance intensities with level 1 roads requiring minimal maintenance and level 5 requiring maximum maintenance. Overall, most of the routes located in the allotment on BLM managed lands would be level 1 roads where BLM is unlikely to maintain these routes. OHV use in the allotment is significant due to population increases in the nearby Phoenix Metro area as well as Wickenburg, Arizona to the south of the project area. OHV use is currently unmanaged within the allotment boundary due to the lack of an approved TMP and therefore, illegal routes travelling cross-country continue to be created by users. The TMP, upon approval and implementation, would give BLM a tool to manage OHV use in this area that would align with BLM's multiple use and sustained yield mandate.

Environmental Consequences
Proposed Action
Under the proposed action, adaptive management would be utilized to adjust AUMs and during the first two years of the permit AUMs would be at 50% of the total allotted for the permit. A new fence would also be constructed to keep cattle out of the riparian areas during the growing season and two existing

waters would be repaired to water cows as well as a third hand dug well that would be used for water hauls when needed in the central portion of the allotment. Gates and/or cattleguards would also be installed where the proposed fence line intersects existing roads. This alternative would also authorize grazing on an allotment where grazing has not been authorized since 2001 and therefore, would increase AUMs in the area. Potential impacts from the proposed action to the ongoing TMP for the area would be related to the need for additional access to new range improvements such as the proposed fence that would exclude cattle from the riparian areas. A route may be needed adjacent to the fence line for maintenance operations, this would require an amendment to the TMP, if approved prior to this EA. Additionally, some routes not identified as requiring maintenance, may need to be reclassified if the routes accessing range improvements become impassable and it is determined that regular and continuous maintenance is required. Changing maintenance intensity along some routes may diminish recreational outcomes for certain user groups. For example, if the setting was a primitive route and maintenance changed it to a road, certain users may seek out more primitive experiences and in doing so re-establish roads that the TMP had closed or create new cross-country routes. These impacts would not be significant and could be dealt with on a case-by-case basis.

Preexisting Grazing Authorization
Under this alternative, there would be no proposed change to the grazing permit that expired in 2001 and would not include the provisions that USFWS provided in the Biological Opinion which would eliminate construction of the fence to keep cows out of the riparian areas. There would still be provisions to authorize ephemeral grazing when conditions warrant and grazing would still be precluded from the riparian areas, although no fence would exist to ensure exclusion of cattle. Impacts to travel and transportation management from this alternative would be similar to the proposed action, although there would not be a need for new access roads as a result of construction of new range improvements.

Year-round Upland Use with No River Use
Under this alternative, the permit would provide the same provisions as the proposed action with the exception that cattle use would be completely excluded year-round from the riparian areas. Therefore, impacts to travel and transportation management associated with this alternative would be the same as that of the proposed action.

Ephemeral with Seasonal Restrictions on the River Pasture
Under this alternative, the permit would provide the same provisions as the proposed action with the exception that cattle could only graze on an ephemeral basis upon authorization when forage conditions warrant use. Therefore, impacts to travel and transportation management associated with this alternative would be the same as that of the proposed action.

No Grazing
Impacts under this alternative would be the same as are currently in existence on the ground and therefore no impacts to the current travel and transportation management proposal for the allotment would exist.

3.2.7 Vegetation Resources (native and invasive)

Affected Environment
Vegetation in the Palmerita Ranch allotment is a mix of Sonoron-Mojave Desert scrub characterized by a mixture of the Mojave native Joshua trees (*Yucca brevifolia*) and the saguaro cactus *(Carnegia*

gigantea) of the Sonoran desert. Other tree species typically found in the uplands of the allotment are littleleaf palo verde (*Parkinsonia microphylla*), honey mesquite (*Prosopis glandulosa*), and cat-claw acacia (*Acacia greggii*). The rest of the upland plant community consists of a mixture of desert scrubs, cacti, perennial grasses, and annual grasses and forbs. Most common shrub species are cresotebush (*Larrea tridentata*), white bursage (*Ambrosia dumosa*), desert-thorn (*Lycium sp*.), Mexican bladdersage (*Salazaria mexicana*), whitestem paperflower (*Psilostrophe cooperi*), range ratany (*Krameria erecta*) and white ratany (*Krameria grayi*), longleaf jointfir (*Ephedra trifurca*), rayless goldenhead (*Acamptopappus sphaerocephalus*), and burrobrush (*Hymenoclea salsola*). Cacti vegetation includes a variety of cholla, prickly pear, hedgehog and barrel species. Down along the Santa Maria River, Fremont cottonwood (*Populus fremontii*), *Salix* ssp., cattails and sedges are common along the banks, with honey mesquite bosques dominating the floodplains. Dominant perennial grasses include bush muhly (*Muhlenbergia porter*i), low woollygrass (*Tridens pulchellus*) and big galleta.

Common throughout the Palmerita Ranch allotment are invasive species such as mustards and annual grasses that would likely be present and dominate native annuals during wet seasons. Saharan mustard (Barssica tournefortii) is a common mustard found in the many sandy soils throughout the uplands. An invasive annual grass that is considered palatable for livestock is both the common and Arabian mediterraneangrass (Schismus arabicus and Schismus barbatus). This annual grass is found across landscapes such as shrublands and deserts, particularly in disturbed areas. It grows abundantly during years of good winter rains and can remain intact into the following season unless consumed or removed by wind. Tamarisk, also considered invasive in many of Arizona's waterways, is present along the river.

The vegetation community of a given area is determined in large part by the amount of precipitation an area receives (Holechek et al. 2011). According to the Ecological Site Descriptions (ESD) for the area, the Palmerita Ranch allotment falls within a 7-10 inch precipitation zone. Precipitation data pulled from the nearest rain gauge to the allotment (7 miles to the west) at the Alamo Dam Weather Station (020100) shows a mean average rainfall of 7.56 inches over the last two decades. Without an outlier year in 2005 when the area received 22.5 inches of rainfall, the typical year averages about 6.88 inches of rain in the Palmerita. The same data shows wide fluctuations over the past 20 years (2000-2022) from as high as 22.5 inches in 2005 to as low as 2.2 inches in 2002. The average yearly rainfall for the area since the station began collecting data in 1977 up to present day is 8.38 inches. Under normal conditions, perennial vegetation should produce new leaves, flower, drop seed, and even reproduce asexually. This becomes limited when precipitation levels are below average. Holechek et al. (2011) explains that two or more consecutive years of drought have far more impact on vegetation than one year of drought followed by normal or above-normal precipitation. From 2020 to 2022, the area around the Palmerita was listed as being in severe to exceptional drought (National Integrated Drought Information Systems).

Arizona Standards for Rangeland Health Standard 3 is Desired Resource Conditions. Meeting this standard is defined as "productive and diverse uplands and riparian-wetland communities of native species exist and are maintained as indicated by factors such as composition, structure, and distribution. Objectives for Standard 3 used to determine rangeland conditions on key areas of the Palmerita allotment were developed by an interdisciplinary team. The team used Natural Resources Conservation Service Ecological Site Descriptions, vegetation measures for composition, cover, and frequency, and professional judgment to describe site specific plant community objectives. Threatened and endangered species and BLM sensitive species' habitat and forage requirements were considered when developing objectives. Using desired plant community objectives as an indicator of ecosystem function and

rangeland health, the RHA determined that Standard 3 was failing on half of the key areas within the allotment.

Data obtained during monitoring and presented in the RHA indicate that plant communities are water stressed and desired grass communities are receding. Long-term monitoring data shows that the frequency of big galleta grass and other perennial grass species have declined in frequency since monitoring began back in the 1980s. The frequency of perennial grasses continued to decline even after livestock grazing was discontinued 1996. Frequency of big galleta has only just begun to rebound in the last decade. Data from monitoring plots show the frequency of perennial grasses range from zero to about ten percent. Observations made outside of the monitoring plots also found a relatively low frequency of grasses throughout the allotment.

Environmental Consequences

Proposed Action

The Proposed Action would add livestock onto an allotment that has not had experienced substantial amounts of grazing for nearly 30 years. Added grazing pressure from livestock to both uplands and riparian vegetation communities may impede recovery of plants that have yet to significantly regenerate from past grazing management and prolonged drought. Livestock utilization has the potential to impact the recovery of palatable forage species, particularly perennial grasses. Livestock grazing, in addition to grazing by wild burros, may reduce vigor and recruitment ability of perennial species. Big galleta, being the dominant perennial grass in the allotment, would experience the greatest impact from livestock grazing. Adaptative management strategies, as described in Chapter 2, would benefit vegetation communities within the allotment by allowing BLM to adjust grazing management to minimize or eliminate grazing impacts to vegetation communities. Precipitation is the most important single factor determining the type and productivity of vegetation in a given area (Holechek et al 2011). Using adaptative management, compounding effects of drought and reintroduced authorized livestock on upland and riparian vegetation could be balanced, allowing BLM to fulfill its multiple use mandate. Livestock rotation between pastures, or to a new part of a pasture, may reduce overall impacts to vegetation communities. During periods of non-use, when livestock are rotated away from an area, vegetation may have the opportunity to recover. Rotation of livestock would benefit upland and riparian vegetation by limiting utilization to an acceptable level. New fencing, troughs and other range improvements would help facilitate livestock rotation and prevent livestock from entering areas of the allotment that are recovering.

Preexisting Grazing Authorization

This alternative would authorize year-round grazing at the full 99 head of cattle with no adaptative management strategies to allow the adjustment of grazing pressure in response to vegetation conditions within the allotment. Without the ability to rotate livestock effectively around the allotment, certain desirable areas, particularly around water facilities, may be more heavily impacted without new range improvements to improve livestock distribution on the landscape. The additional grazing pressure, from the number of livestock authorized in this alternative, on plant communities that are already stressed from extended drought could result in slowed recovery or potential deterioration, especially if other pressures, such as drought continue.

Year-round Upland Use with No River Use
This alternative is the same the Proposed Action, except grazing would only be authorized in the uplands The riparian vegetation within the river would not be impacted by this alternative as use would be restricted to wildlife and wild burros. Grazing pressure would be focused primarily on the upland plant communities, particularly the perennial grasses. The additional grazing pressure from of livestock to plant communities that are already stressed from extended drought could result in slowed recovery or potential deterioration, especially if other pressures, such as drought continue. Adaptative management, like the proposed action, would be used to adjust AUMs depending on environmental triggers. Conditions for rotation of livestock between and within pastures would be the same as the proposed action.

Ephemeral with Seasonal Restrictions on the River Pasture
This alternative is the same as the Proposed Action, except that the allotment would only be authorized for ephemeral use. Impacts to vegetation under this alternative would be infrequent and variable. Ephemeral forage is dependent on sufficient winter rains, which do not occur on a regular basis. During periods of drought, ephemeral use would be even more infrequent. Recently, drought has limited the production of ephemeral forage on the allotment, and it is expected that production may remain limited even under average precipitation. Impacts to perennial forage would be minimal under this alternative because ephemeral grazing is only approved for the use of annual species. Utilization of perennial forage would result in removal of livestock from federal lands. Impacts to riparian forage would also be minimal as the approval of ephemeral use in the river pasture would be restricted to Nov 1st to February 28th.

No Grazing
Impacts to the plant communities in the allotment would not be increased by the presence of livestock. Use from wildlife and wild burros would still occur on both the uplands and within the river floodplain. Vegetation would still have to contend with the impacts of variable precipitation and potential drought common to the area.

3.2.8 Visual Resources

Affected Environment

The project area is located in BLM Visual Resource Management (VRM) Classes I, III, and IV. VRM Classes are used by the BLM to objectively manage the aesthetic value of landscapes and determine if proposed activities are in conformance with a particular landscape based on the allowable level of change within a landscape. VRM Class I areas are typically located in designated Wilderness (Arrastra Mountain Wilderness Area) and no modification of the natural landscape should be evident to the casual observer, whereas VRM Class IV areas typically allow for a greater level of modification of the landscape and include areas where modifications may be readily recognizable to the casual observers.

VRM Class IV accounts for 83% of the area, while VRM Class III accounts for 9%, and VRM Class I accounts for 8%. The allotment is located within the Basin and Range physiographic province and includes views of Black Mesa, the Artillery Mountains to the northwest, Rawhide Mountains to the southwest, and Harcuvar Mountains to the south. The project area itself is mostly flat and characterized by the intersection of major drainages such as the confluence of the Santa Maria and Big Sandy Rivers, Date Creek, and Bullard Wash. Vegetation on the uplands includes dominant species such as creosote, yucca, and notable areas of Joshua trees while vegetation along the major drainages is more diverse and

characteristic of riparian habitat featuring willows, cottonwoods, salt cedar, and a plethora of understory grasses and smaller shrubs. Viewpoints throughout the grazing allotment could be characterized as either existing within expansive valleys with views of surrounding mountain ranges or as areas of stark vegetation contrast between riparian vegetation growing in the major drainages that provide visual interest to the casual observer. Viewpoints featuring the contrast between riparian vegetation and uplands are the focal point visually within the allotment boundary. Developments within the area are both scattered across the landscape in the form of historic mining and range infrastructure and rural housing developments that give way to long linear infrastructure in the form of minor electrical distribution lines and developed/maintained roadways as well as a litany of secondary OHV routes.

Environmental Consequences

Proposed Action

Under the proposed action, adaptive management would be utilized to adjust AUMs and during the first two years of the permit AUMs would be at 50% of the total allotted for the permit. A new fence would also be constructed to keep cattle out of the riparian areas during the growing season and two existing waters would be repaired to water cows as well as a third hand dug well that would be used for water hauls when needed in the central portion of the allotment. This alternative would also authorize grazing on an allotment where grazing has not been authorized since 2001 and therefore, would increase AUMs in the area. An increase in AUMs combined with development of new waters and fence lines could decrease productivity within the native plant communities in the allotment. This, however, may be over a long duration and fluctuate over time based on adaptive management measures and would produce weak contrast to the casual observer.

Construction of a new fence to keep cows out of the riparian area would generate a visual impact because of the fence itself and could create vegetative contrast in a linear form across the landscape because of activities associated with fence construction (e.g., clearing brush) and due to cows trailing along the fence line impacting vegetation. This contrast would be localized to the area of the proposed fence (Figure 4, Appendix C) which is in VRM Class IV and would be of a weak to moderate contrast depending upon the viewing platform. Maintenance of the two existing waters could drive livestock back to these locations and denude the vegetation and landform in concentrated areas around water sources creating a weak localized contrast to the casual observer. Additionally, water hauls used in the central portion of the allotment could create weak localized contrast around the hauls but could also help disperse cattle appropriately across the allotment lessening any contrast in vegetation that would be generated from over grazing. Due to the limited number and localized nature of these developments, contrast to the casual observer would be weak. Overall, the proposed action would create a weak to moderate contrast throughout the landscape and be in conformance with VRM management objectives. Appendix F outlines the analysis of the contrast generated from this project through the development of a viewshed analysis, key observation points (KOPs), and contrast was documented from KOPs using BLM Form 8400-4 to substantiate this analysis.

Preexisting Grazing Authorization

Under this alternative, there would be no proposed change to the grazing permit that expired in 2001 and would not include the provisions that USFWS provided in the Biological Opinion which would eliminate construction of the fence to keep cows out of the riparian areas. There would still be provisions to authorize ephemeral grazing when conditions warrant and grazing would still be precluded from the riparian areas, although no fence would exist to ensure exclusion of cattle. Therefore, impacts

would be like that of the proposed action but without visual impacts resulting from fence construction to preclude use of riparian areas. However, impacts may be greater to riparian vegetation if there is not physical barrier excluding cattle from riparian areas during the growing season and could therefore impact the unique vegetative contrast that exists along riparian corridors. It is anticipated that changes from this alternative in terms of contrast would be weak to moderate like the proposed action with less contrast generated from new fence construction with potential for greater contrast along the riparian corridors due to impacts on vegetation from cattle.

Year-round Upland Use with No River Use
Under this alternative, the permit would provide the same provisions as the proposed action with the exception that cattle use would be completely excluded year-round from the riparian areas. Therefore, it is anticipated that visual contrast generated from this alternative would be the same (weak to moderate) with the caveat that there would likely be an improvement in riparian vegetation which would be a positive impact overall on the viewshed from the perspective of the casual observer.

Ephemeral with Seasonal Restrictions on the River Pasture
Under this alternative, the permit would provide the same provisions as the proposed action with the exception that cattle could only graze on an ephemeral basis upon authorization when forage conditions warrant use. This would include precluding use in the riparian areas unless use was granted during the period where use of the riparian area was authorized under the proposed action. Therefore, it is anticipated that visual contrast generated from this alternative would be the same (weak to moderate) with the caveat that there would likely be an improvement in vegetation across the allotment when compared to the proposed action which would be a positive impact overall on the viewshed from the perspective of the casual observer.

No Grazing
Impacts under this alternative would be the same as are currently in existence on the ground and therefore no new contrast would be generated from this alternative and there would be no impacts to current visual condition and similarly no improvement.

3.2.9 Water Resources and Quality

Affected Environment
The Palmerita Ranch Allotment is split into four sub-watersheds within the Bill Williams watershed (Hydrological Unit Code [HUC]-6 150302): Lower Santa Maria River (HUC-10 1503020305, Date Creek Watershed (HUC-10 1503020304), Bullard Wash (HUC-10 1503020401), Lower Big Sandy River (HUC-10 1503020108). Water resources on the Palmerita allotment are dominated by the river corridors in the north of the allotment. The Santa Maria and Big Sandy rivers flow through the allotment before joining at the confluence on the western boundary. The rivers combine to form the Bill Williams River which flows into Alamo Lake. Both the Big Sandy and Santa Maria rivers are characterized by a variety of channel patterns with wide, braided sandy alluvial channels (Klawon) being the main pattern through the Palmerita. Both rivers have intermittent flows fed by tributaries upstream of the allotment. Flows are most frequent in late summer and early fall when streamflows are fed by monsoonal precipitation or during early spring. Occasionally, period of high flows or flood events can occur during particularly wet years.

The Arizona Department of Environmental Quality (ADEQ) is the agency that monitors streams and water bodies for impairments and determines if they are impaired or in conformance with the Clean Water Act. In 2022, ADEQ completed an assessment of waterways in Arizona. The lower Santa Maria and Big Sandy rivers were categorized as inconclusive or not assessed. The reasoning according to the report for lack of assessment is due to the "majority of waters in Arizona are ephemeral (flow only in response to precipitation) or intermittent (only flow seasonally) and not easily sampled. Monitoring ephemeral and intermittent waters is mostly limited to special investigations." Both the Santa Maria and Big Sandy are intermittent rivers.

While not within the boundaries of the allotment both the Bill Williams and Alamo Lake downstream of the allotment were categorized as impaired by the 2022 assessment.

Environmental Consequences

Proposed Action

The Proposed Action would result in livestock grazing being permitted on the Palmerita allotment with use of the river being confined to November 1st—February 28th. Livestock activity in the river pasture would increase trampling of soils and could reduce soil protection by reducing available vegetation and litter. Deferring livestock from the river pasture during the critical March through October growing period, impacts to water quality and bank stability of the Santa Maria and Big Sandy rivers would be greatly reduced compared to year-long use in these areas. These intermittent rivers typically are not flowing during the season of use for the river. Hoof action by livestock at this time would likely cause little sedimentation in the river or downstream.

Preexisting Grazing Authorization

Similar to the Proposed Action, grazing within the river would be restricted to the months of November through February. However, the riparian fence would not be extended beyond its current length. Gaps in the fence could potentially allow livestock to wander into the river corridor during periods of flowing water.

Year-round Upland Use with No River Use

In this alternative, the river pasture would be removed from grazing by a riparian fence. Livestock would not have access to the river and adjacent riparian areas during any time of the year. Water quality would not be greatly impacted by livestock under this alternative.

Ephemeral with Seasonal Restrictions on the River Pasture

Ephemeral forage is highly dependent on winter rains and annual growth would occur mostly in the uplands of the allotment. Authorization for ephemeral grazing would not happen every year and would only last for up to 60 days at a time. Grazing would be excluded from the river pasture during the growing season, so impacts to water quality would be limited to years when ephemeral forage was available at the same time as the season of use for the river.

No Grazing

This alternative would result in the Palmerita allotment remaining unpermitted for livestock grazing. No Grazing alternative would result in no additional impacts to water quality and bank stability within the Santa Maria and Big Sandy rivers and adjacent riparian areas. Wildlife and wild burros would still be able to use the riparian areas.

3.2.10 Wetlands/Riparian Zones

Affected Environment

The Santa Maria River flows east to west along the northern end of the allotment until meeting the Big Sandy River. Both rivers merge and discharge into Alamo Lake further downstream. The lands surrounding the river are managed by the ACOE, private lands and the BLM. Both rivers are part of the Three Rivers ACEC and the Arizona Game and Fish Department wildlife management area. Along both rivers, Fremont cottonwood, *Salix* ssp., cattails and sedges are common along the banks, with honey mesquite bosques dominating the floodplains.

PFC Assessments were conducted throughout the river. One stream reach of the Santa Maria River flows through the allotment. Reaches are delineated on observable differences in geomorphology (valley form and channel dimension, pattern and profile), hydrology (stream-discharge and sediment-load properties), soils, and vegetation (type and pattern of riparian plant communities) (USFS 1992; Maxwell et al. 1995). This reach was found to be functional-at-risk.

Environmental Consequences

Proposed Action

Under this alternative, the river pasture would be excluded from grazing during the growing season and outside of the growing season if use has reached 40%, as suggested by USFWS. The proposed action would allow use of the river pasture during the non-growing season and allow for riparian recovery needed to maintain suitable riparian habitat. There is currently no authorized grazing occurring on the Palmerita allotment, however, there has been documented unauthorized use within the river pasture. Managing the riparian pasture as prescribed would increase riparian potential. If terms and conditions are not followed, authorized grazing on T&E habitat may lead to degradation of the system. Degradation of the system may lead to lose of T&E habitat and species recovery.

Preexisting Grazing Authorization

Under this alternative, grazing would be permitted under the same terms and conditions as the past existing lease. The river pasture would be managed with 99 head seasonally from November 1st through February 28th with allowable use that exceeds what is necessary for re-growth of vegetation and recovery of riparian habitat. The river pasture would not be included in adaptive management or excluded from overuse leading to potential changes and degradation of the riparian habitat.

Year-round Upland Use with No River Use

Under this alternative, livestock would be prevented from grazing in the riparian pasture being excluded by a pasture fence. Occasional livestock may enter due to a downed fence, but livestock would be required to be removed immediately by the permittee. This alternative may also increase unauthorized grazing within the riparian habitat if the river pasture fences are not maintained by the active permittee.

Ephemeral with Seasonal Restrictions on the River Pasture

Ephemeral growth of annual vegetation is highly dependent on winter rains and would not occur every year. Livestock number and AUMs authorized during these years would be variable, depending on the amount of annual forage produced. Impacts to the river pasture would be small and infrequent.

No Grazing
Under this alternative, there would be no active grazing from the Palmerita lease. Range improvements such as fencing would not be maintained by an active permitee and may allow unauthorized grazing to occur within riparian sensitive habitat from surrounding leases. Use could continue within riparian habitat from surrounding leases reducing habitat quality and potentially effecting the riparian system and occupants. No grazing from the Palmerita may also reduce potential AUM's that could actively graze within riparian sensitive and designated critical habitat. Although use may continue from unauthorized livestock, it may be more sustainable then having active grazing under the Palmerita lease.

3.2.11 Wild Horses and Burros

Affected Environment

The Palmerita Ranch allotment is within the Alamo Herd Area and bordered by the Big Sandy HMA situated along the northern border of above the Santa Maria River, and the Alamo HMA on the west within the boundaries of the Palmerita Ranch allotment. The Alamo HMA encompasses 341,000, with an appropriate management level (AML) of 160 burros. The Big Sandy HMA has an AML of 139 burros. Wild burros are frequently observed within the Palmerita Ranch allotment, especially along the river corridors.

Environmental Consequences

Proposed Action
Under this alternative, burros would have reduced access to forage as a portion would be allocated for livestock. Reconstruction of existing range improvements, such as dirt tanks and water facilities, and the implementation of water hauls would provide increased access to water within the upland portion of the allotment. Extensive new fencing and repairs to old fencing along the river pasture and the new eastern pasture, may impeded burro movements within the allotment.

Preexisting Grazing Authorization
Under this alternative, wild burros would not be displaced or disturbed due to livestock operations under the No Action Alternative. Movement of burros within the allotment would not be inhibited by new fencing. Burros would continue to have uninhibited access to the river. Utilization would continue to occur on vegetation plant communities by wild burros. Future livestock grazing would be impacted by continued deteriorating range conditions and forage consumed by wild burros, which reduces the forage available to livestock grazing.

Year-round Upland Use with No River Use
Impacts to burros would be the same as the Proposed Action. Burros would have access to more water in the uplands from existing water facilities that are repaired and then maintained. Extensions to the riparian fence, would inhibit access to the river by wild burros. Movement of burros within the allotment would be inhibited by new fencing. Burros throughout the allotment could be affected by livestock activities since burros could be attracted to livestock waters/corrals and could be caught in these corrals during livestock operations. The intensity of impacts would vary by individual and could be indicated by behaviors such as agitation. This Alternative would result in a decrease in forage availability and quality, and increased competition between livestock and wild burros for available forage and water resources. Overall, impacts to burros are expected to be minimal.

Ephemeral with Seasonal Restrictions on the River Pasture
Impacts to burros would be similar to the Proposed Action, except that interactions with livestock would only occur during years when ephemeral use has been approved.

No Grazing
This alternative would not affect wild horse and burro management within the boundaries of the allotment.

3.2.12 Wilderness

Affected Environment

The Arizona Desert Wilderness Act was signed into law by Congress in November 1990 and designated 1.1 million acres on BLM-administered public lands as wilderness including nine wilderness areas managed by the Kingman Field Office. The Palmerita Ranch allotment contains approximately 4,247 acres of the Arrastra Mountain wilderness area. The Arrastra Mountain wilderness area has no valid Wilderness Management Plan (WMP) proposed or approved due to a long history of appealed and litigated decisions regarding both the Range Improvement Maintenance (RIM) Plan and Wilderness Inholding Access. Therefore, management of grazing operations within this area would be deferred to the May 31, 1991, decision on Environmental Assessment AZ-026-91-14. The Kingman RMP and Final EIS (BLM, 1993) allocated all wilderness closed to off-highway vehicle use. Access to range improvements, absent a WMP, would be evaluated and approved on a case-by-case basis using the Minimum Requirements Decision Guide (MRDG) and subsequent analysis under the NEPA. Currently, there is no plan or funding allocation to complete a WMP for Arrastra Mountain wilderness. There are range improvements located within the Arrastra Mountain wilderness area in the form of allotment boundary fences that separate the Alamo, Chino Springs, Palmerita Ranch, and Santa Maria Community allotments from one another. As no WMP exists for the Arrastra Mountain wilderness area, these fences are currently maintained using non-motorized/non-mechanized means.

Environmental Consequences

Proposed Action
Under the proposed action, adaptive management would be utilized to adjust AUMs and during the first two years of the permit AUMs would be at 50% of the total allotted for the permit. A new fence would also be constructed to keep cattle out of the riparian areas and subsequently the wilderness during the growing season. This alternative would also authorize grazing on an allotment where grazing has not been authorized since 2001 and therefore, would increase AUMs in the area. There is no proposal to install additional range improvements within the wilderness area or to maintain the allotment boundary fences in any different way than is currently being done. Therefore, impacts associated with the proposed action would involve cattle grazing occurring in the wilderness area during the same period as grazing would occur within the riparian area due to the fact that cattle could not access the wilderness area from the south if they were not able to access the riparian area.

The Wilderness Act, Section 4(d)4(2) states: “the grazing of livestock, where established prior to the effective date of this Act, shall be permitted to continue subject to such reasonable regulations as are deemed necessary by the BLM.” Per section 1.2 above, grazing has been a permitted use on the public lands within the Arrastra Mountain wilderness area prior to the Arizona Desert Wilderness Act of 1990 and continued in the area until 1996 when use of the permit ceased. Since there has not been a valid permit on the allotment since 2001, it is likely that forage within the wilderness area has somewhat

increased as the pressure from livestock grazing has not been present at least on the Palmerita allotment. Having said that, the LHE did show that standards on the Palmerita allotment were only partially being met and therefore an assumption could be made that range conditions have not drastically changed or improved from the time the allotment was last utilized (1996). Since the proposed action imposes a more proactive grazing approach and adaptive management considerations, it is likely that conditions could improve through monitoring and subsequent AUM adjustments. It is also possible that the addition of the fence to exclude cows from the riparian area and subsequently the wilderness area could reduce cattle pressure on the wilderness area provided the permittee and BLM follow through with maintenance and monitoring adjustments to include reducing AUMs when monitoring indicates that strategy should be used. Issues related to overgrazing in the wilderness if monitoring objectives are not being met could impact wilderness character, specifically naturalness as overgrazing could impact the natural distribution of native plants impacting the ecosystem within the wilderness to function naturally. This impact to wilderness character however should not be significant provided that regular monitoring is conducted, and adaptive management strategies are used to ensure that forage conditions remain the same or do not get worse.

Preexisting Grazing Authorization
Under this alternative, there would be no proposed change to the grazing permit that expired in 2001 and would not include the provisions that USFWS provided in the Biological Opinion which would eliminate construction of the fence to keep cows out of the riparian areas and subsequently the wilderness areas. There would still be provisions to authorize ephemeral grazing when conditions warrant and grazing would still be precluded from the riparian areas, although no fence would exist to ensure exclusion of cattle. Impacts under this alternative would be similar to the proposed action although, no physical barrier would exist to deter cattle from entering the wilderness as there is with the proposed action. Therefore, this alternative may be slightly more impacting than the proposed action as it would require greater oversight on-the-ground which may not happen.

Year-round Upland Use with No River Use
Under this alternative, the permit would provide the same provisions as the proposed action with the exception that cattle use would be completely excluded year-round from the riparian areas and subsequently the wilderness area. Since cattle could not access the riparian area, they would not be able to travel north into the Arrastra Mountain Wilderness area. Therefore, this action alternative would have no impact to the wilderness area and would be preferred in terms of minimizing impacts to wilderness character.

Ephemeral with Seasonal Restrictions on the River Pasture
Under this alternative, the permit would provide the same provisions as the proposed action with the exception that cattle could only graze on an ephemeral basis upon authorization when forage conditions warrant use. This would include precluding use in the riparian areas and subsequently the wilderness areas unless use was granted during the period where use of the riparian area was authorized under the proposed action. Therefore, this alternative would be less impacting than the proposed action but more impacting than the year-round upland use with no river use alternative as cattle still could graze in the wilderness on an intermittent basis with BLM authorization.

No Grazing
Impacts under this alternative would be the same as are currently in existence on the ground and therefore there would be no impacts to existing wilderness character. Additionally, there would be no new constraints to keep adjacent allotment cattle out of this portion of the wilderness so trespass cattle in the wilderness within the Palmerita allotment may be an issue that BLM would need to work to remedy.

3.2.13 Wildlife (including Migratory Birds)

Affected Environment

The Palmerita Ranch allotment provides habitat for year-round large and small game species. Common mammals include antelope squirrels, bats, bobcats, and coyotes. Common reptiles include multiple venomous and non-venomous snake species, lizards, and potentially desert tortoise. The xero-riparian habitat is home to several raptor and avian species as nest, breeding, and stop-over habitat. Fish species may be present during high flow events and preserved small pools along the river corridor. A more defined list of species is provided in the Palmerita RHA.

Upland and xeric-riparian habitat in the Palmerita allotment provides habitat for several species of birds of prey and a variety of species of reptiles. Riparian habitat along the Santa Maria River provides additional habitat for many passerine species. Fish habitat can be found just downriver of the allotment at Alamo Lake. For more detailed species information see Appendix E.

Environmental Consequences

Proposed Action
The Proposed Action would authorize grazing of some percentage of AUMs determined by adaptative management within wildlife habitat. Grazing at percentages that allow for continued vegetative reproduction would affect the available forage that could be present for that year. Overall, grazing would reduce foraging opportunities for the general wildlife in the area. Presence of cattle may temporarily displace wildlife from foraging opportunities. Trampling and compaction may occur altering habitat and possible burrow destruction.

Preexisting Grazing Authorization
Under this alternative, grazing would be permitted under the same terms and conditions as the past existing lease. The riparian habitat would be managed with 99 head seasonally from November 1st through February 28th with allowable use that exceeds what is necessary for re-growth of vegetation and recovery of T&E species and habitat. The T&E habitat would not be included in adaptive management or excluded from overuse leading to potential changes and degradation of the riparian habitat. Grazing under these terms and conditions would reduce foraging opportunities for the general wildlife in the area and the potential for reproductive growth of vegetation. Presence of cattle may temporarily displace wildlife from foraging opportunities. Trampling and compaction may occur altering habitat and possible burrow destruction. Over time there would be an increase to bare ground as plant reproduction would be inhibited and soils would lose integrity from compaction and loss of root structure.

Year-round Upland Use with No River Use
Under this alternative, livestock would be prevented from grazing in the riparian pasture being excluded by a pasture fence. Occasional livestock may enter due to a downed fence, but livestock would be required to be removed immediately by the permittee. This alternative may also increase unauthorized grazing within the riparian habitat if the river pasture fences are not maintained by the active permittee.

Overall, grazing would reduce foraging opportunities for the general wildlife in the area. Presence of cattle may temporarily displace wildlife from foraging opportunities. Trampling and compaction may occur altering habitat and possible burrow destruction.

Ephemeral with Seasonal Restrictions on the River Pasture
Ephemeral growth of annual vegetation is highly dependent on winter rains and would not occur every year. Livestock number and AUMs authorized during these years would be variable, depending on the amount of annual forage produced. Impacts to the river pasture would be small and infrequent. Overall, grazing would reduce foraging opportunities for the general wildlife in the area and at the time of active grazing. Presence of cattle may temporarily displace wildlife from foraging opportunities. Trampling and compaction may occur altering habitat and possible burrow destruction.

No Grazing
Under this alternative, there would be no active grazing from the Palmerita lease. Range improvements such as fencing would not be maintained by an active permitee and may allow unauthorized grazing to occur within riparian sensitive habitat from surrounding leases. Use could continue within riparian habitat from surrounding leases reducing habitat quality and potentially effecting the riparian system and occupants. No grazing from the Palmerita may also reduce potential AUM's that could actively graze within riparian sensitive and designated critical habitat. Although use may continue from unauthorized livestock, it may be more sustainable than active grazing under the Palmerita lease. Foraging opportunities for wildlife would not be reduced. Trampling, compaction, and displacement would not occur from the presence of authorized livestock.

3.2.14 Wild and Scenic Rivers

Affected Environment
Segments A and B of the Santa Maria River were identified in the Arizona Statewide Wild and Scenic Rivers Legislative EIS (BLM, 1994) for possible inclusion into the National Wild and Scenic River System. Approximately 1.10 miles of Segment A is located within the Palmerita Ranch allotment. This monitoring segment of the Santa Maria River stretches from U.S. Highway 93 to Alamo Lake and has been found to possess free-flowing values, outstandingly remarkable values for scenic as well as fish and wildlife resources. Based on the free-flowing and outstandingly remarkable values, the segment's potential classification is "Wild" defined in BLM Manual 6400 as "rivers or sections of rivers free of impoundments and generally inaccessible except by trails, with watersheds or shorelines essentially primitive and waters unpolluted." The BLM's policy goal for suitable rivers is to manager their free-flowing condition, water quality, tentative classification, and any outstandingly remarkable values until (if) Congress designates the river or releases it for other uses (BLM, 2012). Currently, Segment A of the Santa Maria River is monitored every five years per the guidance contained in Chapter 3 of BLM Manual 6400.

Environmental Consequences
Proposed Action
Under the proposed action, adaptive management would be utilized to adjust AUMs and during the first two years of the permit AUMs would be at 50% of the total allotted for the permit. A new fence would also be constructed to keep cattle out of the Santa Maria River during the growing season. This alternative would also authorize grazing on an allotment, to include the portion of the Santa Maria River identified as suitable for Wild and Scenic River (WSR) designation, where grazing has not been

authorized since 2001 and therefore, would increase AUMs in WSR corridor. Introduction of cattle into the riparian area could potentially lead to diminished vegetative productivity within the confines of the Santa Maria River which lends itself to potential for impacts to outstandingly remarkable values (ORV) (scenic; fish and wildlife habitat) identified in BLM's 1994 Legislative EIS. Loss of vegetation due to cattle grazing could reduce scenic quality within the WSR corridor as outlined in section 3.2.8 of this document and would impact fish and wildlife as outlined in sections 3.2.5 and 3.2.13 of this document, both of which are ORVs identified to exist in Segment A of the Santa Maria River. Cattle excrement could impact water quality by introducing higher potential for contamination from the presence of E. coli making the water source less available for public consumption.

Free-flowing values and classification (Wild in this case) would not be impacted by the proposed action as no modification (impoundments) of the waterway are proposed and no new routes than currently exist would be used by the allottee to manage the allotment, therefore not increasing or changing current access to the river segment. Exclusion of cattle during the growing season due to a new fence would be of a benefit to the WSR segment as no fence currently exists to manage cattle from adjacent allotments potentially trespassing in the WSR segment. Therefore, this component of the project would be a benefit provided the fence was maintained on a regular basis and the WSR segment was monitored for trespass cattle and any trespass issues were resolved. Under the proposed action, adaptive management would be used if monitoring conditions warranted reducing or completely eliminating AUMs. Ultimately, due to running reduced AUMs the first two years and through adaptive management, any impact to ORVs or water quality would be short-term and not impact the segment's suitability for Congressional designation and therefore not be significant.

Preexisting Grazing Authorization
Under this alternative, there would be no proposed change to the grazing permit that expired in 2001 and would not include the provisions that USFWS provided in the Biological Opinion which would eliminate construction of the fence to keep cows out of the WSR segment. There would still be provisions to authorize ephemeral grazing when conditions warrant and grazing would still be precluded from the WSR segment during the growing season, although no fence would exist to ensure exclusion of cattle. Impacts generated from this alternative would be similar to that of the proposed action although would likely be greater as there is no physical boundary precluding cattle from the WSR segment and therefore a higher potential for trespass with less management oversight exists.

Year-round Upland Use with No River Use
Under this alternative, the permit would provide the same provisions as the proposed action with the exception that cattle use would be completely excluded year-round from the riparian areas. Therefore, there would be no impact to the WSR segment making this the preferred action alternative as far as WSR values are concerned.

Ephemeral with Seasonal Restrictions on the River Pasture
Under this alternative, the permit would provide the same provisions as the proposed action with the exception that cattle could only graze on an ephemeral basis upon authorization when forage conditions warrant use. This would include precluding use in the riparian areas unless use was granted during the period where use of the riparian area was authorized under the proposed action. Impacts to the WSR segment under this alternative would be similar as under the proposed action with the caveat that grazing

would only occur during favorable forage conditions and therefore, impacts to WSR values would be less under this alternative than the proposed action.

No Grazing
Impacts under this alternative would be the same as are currently in existence on the ground and therefore no impacts to WSR values would exist from this alternative and there would be no impacts to current ORVs and also no potential for improvement as a result of fence construction to exclude cattle grazing from the WSR segment.

3.2.15 Livestock Grazing Management

Affected Environment
Federal lands within the Palmerita allotment are not currently authorized for livestock grazing and haven't been since the last permit expired in 2001. Range improvements that are associated with the allotment are boundary fences, a dirt tank and the Date Creek well and corrals. Grazing is an authorized use on state land within the allotment as part of a grazing lease from Arizona Lands Department. However, due to inadequate fencing between state and federal land, it isn't feasible for livestock to graze state land without also using BLM land.

Environmental Consequences
Proposed Action
Under the Proposed Action, livestock grazing is expected to increase on the allotment in comparison to current conditions. Livestock would be reauthorized on the allotment for the first time in 22 years. New range improvements would aid in rotation and distribution of livestock on the landscape by creation of two new pastures: the east pasture and the river pasture. Water facilities would be located in the southeast (Date Creek Well), northwest (Stoop tank), southwest (waterhauls from an old hand dug well), and northeast (reconstructed trough and pipeline) with additional water facilities on state land. Additional fencing in the east and along the riparian corridor would form new pastures that would be rotated between when utilization of forage has reached acceptable levels within each pasture. The adaptative management framework, as described in Chapter 2, would benefit livestock grazing within the allotment by allowing BLM to adjust grazing management to minimize or eliminate grazing impacts to vegetation communities. Keeping livestock utilization of perennial forage to acceptable levels would increase the sustainability of important perennial species, such as big galleta, and the grazing operation as a whole.

Preexisting Grazing Authorization
This alternative would increase livestock grazing on the allotment. Livestock grazing would be reauthorized at the same terms and conditions as the most recent permit, 2001. The terms and conditions would not include any adaptive management strategies that would adjust grazing pressure depending on environmental conditions. Only existing range improvements would be maintained, and no new range improvements would be installed. Under this alternative, grazing management would remain flexible. However, the lack of adaptative management and new range improvements may decrease the sustainability and efficiency of the grazing operation.

Year-round Upland Use with No River Use
This alternative would be the same as the proposed action, except grazing would be constrained to the uplands, eliminating use of the riparian area, of the allotment. This would reduce the overall authorized use of the allotment to a maximum of 99 livestock for a maximum of 622 AUMs. This would affect livestock operations by decreasing flexibility of livestock management.

Ephemeral with Seasonal Restrictions on the River Pasture
This alternative would the same as the proposed action, except that grazing would be intermittent as ephemeral use of the allotment would only be approved during years of adequate forage. This alternative would provide the least flexibility and limit grazing to only years when conditions support the approval of ephemeral use.

No Grazing
This alternative would impact livestock grazing management by removing authorized livestock grazing on the Palmerita for a period of 10 years. The ability to graze on state land may also be reduced or eliminated as it would require construction of several miles of barriers between state and federal land to ensure that livestock would not drift onto public land. Existing range improvements would fall further into disrepair from continued lack of maintenance and use.

CHAPTER 4 CUMULATIVE EFFECTS ANALYSIS
This section introduces other actions that overlap geographically and temporally with the proposed project and will be considered in cumulative impacts.

4.0 Introduction
Past, present, and reasonably foreseeable future actions are analyzed to the extent that they are relevant and useful in analyzing whether the reasonably foreseeable effects of the Proposed Action and/or Alternatives may have an additive and significant relationship to those effects.

Per the CEQ regulations found at 40 CFR 1508.1(g), 'effects' and 'impacts' are synonymous in this EA. Effects are changes to the human environment from the proposed action or alternatives that could include ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social, or health, whether direct, indirect, or cumulative.

The CEQ defines cumulative impacts as follows:

> '…are effects on the environment which results from the incremental impact of the action when added to other past, present, and reasonably future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time' (40 CFR §1508.1(g)(3)).

4.1 Past, Present Actions, and Reasonably Foreseeable Future Actions
Past actions considered are those whose impacts to one or more of the affected resources have persisted to present day. Present actions are those occurring at the time of this evaluation and during implementation of the Proposed Action. Reasonably foreseeable future actions (RFFA) constitute those

actions that are known or could reasonably be anticipated to occur within the analysis area for each resource, within a time frame appropriate to the expected impacts from the Proposed Action.

4.2 Cumulative Impacts Analysis

Based on the environmental impacts analysis described above in Chapter 3 (Affected Environment and Environmental Consequences), the potential resources directly or indirectly affected by the Proposed Action or Alternatives are considered for cumulative effects.

4.2.1 Cumulative Impacts to Areas of Critical Environmental Concern

Relevant past, present and RFFAs for the Three Rivers ACEC, include historic grazing practices, recreation, climatic changes and wild burro use. Past grazing management allowed year-round access to the river and may have affected the vegetative communities that make up the floodplains and adjacent riparian areas, including habitat for T&E species. Wild burros that have wandered outside the boundaries of the Big Sandy and Alamo HMAs utilize the ACEC, trampling and browsing vegetation in the area. Wild burros would still use the river but may be kept away by new range improvements, including extensions to the riparian fence that is part of the Proposed Action, Year-long and Ephemeral alternatives. Future wild burro management actions would reduce impacts of wild burros on the ACEC. Presently, OHV use occurs extensively throughout the ACEC and would be expected to continue into the foreseeable future.

Stipulations that are part of the Proposed Action and Ephemeral Use alternatives would provide mechanisms to prevent livestock grazing from adversely interacting with other actions, such as drought, to negatively impact riparian habitat that is part of the ACEC. The Proposed Action would have a comparatively smaller cumulative effect than the Preexisting Grazing Authorization alternative which does not contain the same mechanisms to prevent overgrazing of the ACEC. The Year-round Use and No Grazing Alternatives would have a negligible impact on the ACEC from livestock grazing due to livestock not being present within protected riparian areas.

4.2.2 Cumulative Impacts to Cultural Resources

Cultural resources have been affected not only by natural processes but by historic livestock grazing, wild burros, recreation, artifact collecting and other human-caused disturbances. Range improvements, vegetative treatments (if they should occur), mineral exploration, rights-of-way projects and other authorized uses conducted on federal lands require that cultural resource survey be completed to determine the presence of cultural resources prior to ground disturbing activities. As directed by Section 106 of the National Historic Preservation Act, National register-eligible sites are generally avoided, or mitigated if avoidance is not possible for projects with a federal nexus. Avoidance through project redesign is the preferred method of mitigation; however, when avoidance is not feasible, data recovery or other forms of mitigation are implemented prior to ground-disturbing activities.

While the past, present, and RFFAs may result in some effect on cultural resources, they are unlikely to continue to do damage beyond what has, is, and may continue to occur. Additionally, livestock grazing as proposed from the Proposed Action, Year-round Use Alternative, Ephemeral Alternative and No Grazing Alternative are not anticipated to result in substantive cumulative effects to cultural resources. If any cumulative impacts do occur (e.g. avoidance or mitigation is not possible), they would be similar

for all the alternatives. The Preexisting Grazing Authorization Alternative is likely to have a greater impact on cultural resources in comparison with other alternatives.
Cultural Resources would still be subjected to natural processes and ongoing impacts from other multiple uses.

4.2.3 Cumulative Impacts to Soil

Soils resources have historically been, continue to be, and are expected to be disturbed by activities like wild burros and recreation activities such as seasonal hunting, camping and OHV use. Such activities contribute towards degradation of soil structure and its ability to resist erosion. Wild burros are known to create trails that expose soil and cause compaction. OHV use provides the ability for recreationalists to explore public lands, but noticeably new trails can cause proliferations or expand established trails. The creation of new roads further increases soil degradation beyond designated routes and soil erosion potential. OHV use occurs in and around Stoop Tank, a dirt tank located close to Wayside. Compaction and erosion of the berms and the surrounding soils would occur in the dirt tank's present deteriorated state and would likely continue after any reconstruction or maintenance activities in the area.

Activities on State Lease land include reconstruction of facilities for potential cattle-based operations including well facilities, reconstruction of water catchment features (stock pond and apron), barbwire fencing and corral structures. These and other construction activities are likely to occur into the future as livestock grazing on state land is not controlled by the BLM and exists at the discretion of the State of Arizona. Past and future grazing practices may have a direct impact with soil compaction in the vicinity of cattle structures to include stock ponds, catchment and troughs, corrals and fence lines—largely due to cattle hoof weight on soil surfaces, infrequent large transport vehicles for cattle and repetitive cattle usage along foraging corridors. As distance increases away from structures and places of frequent use, soil compaction becomes non-present, maintaining a natural occurring density. In all alternatives, existing roads and road impacts would continue to occur as administrative and recreational usage of the roads would not cease. Most evident would be the persistence of small soil erosional patterns adjacent to road shoulders. These outcomes are expected to continue regardless of grazing operations.
The action alternatives would likely result in impacts to soil compaction around construction of new range improvements, fencing, pipelines and troughs. Cattle would congregate in new areas of the allotment. However, soil impaction is expected to be minimal as new range improvements would improve distribution of livestock on the landscape localizing impacts to cattle trails and around water facilities. Under the Ephemeral Use Alternative, should livestock be turned out, impacts to soil would be similar to impacts caused by the present wild burros but on a temporary basis unlike burros that are present throughout the allotment on a year-round basis. Livestock would not be as widely distributed across the allotments as burros and would likely be concentrated near water sources. Under the No Grazing Alternative, livestock would not contribute to any soil impacts cumulatively and presently caused by other present and RFFAs.

The Preexisting Grazing Authorization Alternative is likely to have a greater cumulative impact on soils when compared to the other alternatives due to more livestock on the landscape with no mechanisms to reduce numbers based on environmental conditions. Livestock would still congregate around water facilities on federal and state land, leading to impacts to soil compaction within the vicinity of the facilities.

It is anticipated that all alternatives would continue to have an incremental cumulative impact to soil resources, particularly when added to other past, present, and reasonably foreseeable activities in the area. However, none of these impacts are anticipated to be significant.

4.2.4 Cumulative Impacts to Threatened and Endangered Species

Relevant past, present, and RFF actions include recreation, wild burros, climatic changes and grazing in adjacent allotments. Recreation, especially OHV use, impacts T&E species due to unregulated OHV use that has and continues to occur within T&E habitat along the Santa Maria and Big Sandy rivers. Areas of habitat identified as directly impact by OHV would be addressed in a future action in an in-process TMP which would close some routes to minimize impacts in T&E habitats.

Grazing on adjacent allotments (Santa Maria Community, Harcuvar and Wagner) would have a negligible impact on all wildlife species due to overall lack of critical and occupied habitat. Critical habitat within the Alamo Crossing allotment would be negligibly affected due to its ephemeral designation. Any impacts to T&E habitat if livestock were turned out in this allotment would be temporary and negligible. The presence of livestock there would be infrequent and temporary depending on adequate winter rains. Stipulations within the permit provide a mechanism to keep grazing from adversely interacting with climatic variability, such as drought, that could negatively impact the vegetative communities that create the habitat for T&E species. Similarly, the permit is written to prevent overgrazing. Wild burros can contribute to degradation of T&E habitat through overgrazing. Future herd management actions by BLM Kingman would reduce the impacts of wild burros to T&E habitats.

Under the action alternatives impacts to T&E species within the surrounding landscape would increase. However, all action alternatives have stipulations within the permit that would reduce the impacts on T&E habitat through removal of livestock grazing when certain thresholds have been reached. Under the Year-round Use and No Grazing alternative, livestock grazing impacts would be negligible due to livestock not being present within protected critical habitats.

It is anticipated that all alternatives would continue to have an incremental cumulative impact to threatened and endangered species, particularly when added to other past, present, and reasonably foreseeable activities in the area. However, none of these impacts are anticipated to be significant.

4.2.5 Cumulative Impacts to Vegetation Resources

Both native and invasive species have been influenced by several past and present activities. Similar to soil impacts, wild burros and OHV use all contribute towards habitat loss trampling and the decrease in ability for native plants to naturally recover. Healthy native communities have the resiliency to withstand disturbances but is limited. Repeated activities such as the use of trails created by burros and OHVs have the potential to entirely remove vegetation not only reduce habitat but create the ability for invasive species to proliferate. Past livestock grazing management and the present burro use of vegetation are known to degrade desired communities when overgrazing of the resources occur. Loss of understory plants have carried over from previous grazing regimes and has potentially altered vegetation communities. Recreational use impacts vegetation resources by the continued transmittal of invasive plant propagules from non-local source populations to along roads and trails within the allotment, and

further spreading those from infested areas to non-infested areas. Tamarisk has been documented within the river bottoms and may be spread to other areas along the waterways and mostly likely has in the past and will continue to do so in the foreseeable future. Although, not documented in the allotment currently, the presence of tamarisk could lead to a possible establishment of a population of tamarisk beetles at some future point. This may lead to a shift in the composition of the vegetative community from its present form, which would affect habitat for multiple species.

Under the Proposed Action, and other action alternatives, impacts to desired vegetation resources would not be as they historically were under the terms and conditions of the previous permit. Stipulations within the permit provide a mechanism to keep grazing from adversely interacting with climatic variability, such as drought, that could negatively impact the vegetative community. Similarly, the permit is written to prevent overgrazing. The Preexisting Grazing Authorization alternative would not have similar mechanisms in place to adjust livestock grazing to meet the needs of the vegetative community. Under the No Grazing Alternative, livestock would not contribute to any current or cumulative impacts to vegetation caused by other present and RFFAs.

It is anticipated that all alternatives would continue to have an incremental cumulative impact to the vegetative community, particularly when added to other past, present, and reasonably foreseeable activities in the area. However, none of these impacts are anticipated to be significant.

4.2.6 Cumulative Impacts to Water Resources and Quality

Relevant past, present and RFFAs include extensive recreation within the allotment and surrounding areas, grazing in adjacent allotments, climatic changes including extended drought, wild burro herd management, construction of Alamo Lake Dam and existing roads. Grazing in allotments (Santa Maria Community, Wagner and Harcuvar) to the east and south of the Palmerita have been approved for full use, including areas along the Santa Maria River. Grazing allotments (Alamo Crossing, Primrose) to the west have been approved for ephemeral designations. Livestock in these allotments would only be present temporarily after winters with adequate rainfall, and their presence or numbers would have negligible impact on water quality.

Recreation, especially OHV use, impacts water quality in and around the Santa Maria and Big Sandy waterways due to unregulated OHV use that has and continues to occur within the floodplains. Routes of OHV use that directly impact water resources and quality would be addressed in a future action in an in-process TMP which would close some routes to minimize impacts. ADWR rates Alamo Lake and the Bill Williams River, which are downstream of the allotment, as impaired. The causes for impairment and outcomes are likely to continue regardless of livestock grazing.

Stipulations within the permit, as written in the Proposed Action and other action alternatives, provide a mechanism for keeping grazing from negatively impacting water resources, quality and bank stability. All action alternatives restrict access to the Santa Maria and Big Sandy rivers during periods of year when there is little to no flowing water which reduces the impact of hoof action and sedimentation of waterways. The No Grazing and Year-round Alternates remove access to the river for livestock grazing and would have negligible direct impacts to water quality and resources within the allotment. Minor sediments from increased erosion in the uplands may occur but would negligibly affect overall water quality. The Preexisting Grazing Authorization Alternative does not have restrictions on river access.

4.2.7 Cumulative Impacts to Wetlands/Riparian Resources

Wetlands and Riparian resources within the allotment may experience some level of ongoing impacts from OHV use, other recreation, wild burros, climatic changes, and possibly some historic livestock grazing that may have contributed towards current riparian health conditions. Previous grazing management of the allotment did not include a complete barrier between the uplands and riparian areas, or a season-of-use prior to 1994. Livestock had unimpeded access to riparian areas year-round and could utilize vegetation during the critical growing season. Overpopulation of wild burros have impacted riparian banks by trampling soil and vegetation and over utilizing riparian obligate species. Impacts from wild burros could be addressed in the future herd management actions. OHV use impacts riparian habitats, especially unregulated OHV use, by tearing and crushing riparian vegetation and creating trails that can lead to erosion and further degradation of the area. Unregulated OHV use has and continues to occur within riparian areas along the Santa Maria and Big Sandy rivers. Areas identified as directly impact by OHV would be addressed in a future action in an in-process TMP which would close some routes to minimize impacts in T&E habitats.

Stipulations within the permit, as written in the Proposed Action and other action alternatives, provide a mechanism for keeping grazing from negatively impacting riparian resources. All action alternatives restrict access to the Santa Maria and Big Sandy rivers, and adjacent riparian areas, during periods of year that is outside of the critical growing season for riparian vegetation communities, allowing the resource to regenerate for the majority of the year. There are also mechanisms written into the permit that would allow for the removal of livestock from riparian areas to prevent overgrazing. Stipulations within the permit provide a mechanism to keep grazing from adversely interacting with climatic variability, such as drought, that could negatively impact the vegetative community. The No Grazing and Year-round Alternates remove access to the river for livestock grazing and would have negligible direct impacts to water quality and resources within the allotment. Minor sediments from increased erosion in the uplands may occur but would negligibly affect overall water quality. The Preexisting Grazing Authorization Alternative does not have restrictions on river access.

It is anticipated that all alternatives would continue to have an incremental cumulative impacts to riparian resources, particularly when added to other past, present, and reasonably foreseeable activities in the area. However, none of these impacts are anticipated to be significant.

4.2.8 Cumulative Impacts to Wild Horses and Burros

Relevant past, present and RFFAs include extensive recreation within the allotment and surrounding areas, grazing in adjacent allotments, and climatic changes including extended drought. Future wild burro herd management may have an effect on burro populations within the allotment. Increases in recreational activities in the area may also lead to increased conflicts with burros, particularly with increasing OHV traffic on roads and trails. Climatic changes could bring hot and dry weather to the region in the foreseeable future, potentially reducing the amount of precipitation available for forage. Future droughts could further alter the plant communities in the allotment, affecting the production of forage available to burros.

It is anticipated that all alternatives would continue to have an incremental cumulative impacts to wild burros, particularly when added to other past, present, and reasonably foreseeable activities in the area. However, none of these impacts are anticipated to be significant.

4.2.9 Cumulative Impacts to Wilderness

Increases in the visitation of adjacent public lands, particularly OHV use, may impact perceived solitude through increased noise when those adjacent motorized uses illegally enter the wilderness area.

It is anticipated that the continued and future recreational use of the area coupled with cattle grazing as outlined in any of the action alternatives may have incremental cumulative impacts to wilderness character such as naturalness and opportunities for solitude and unconfined primitive recreational experiences in the Arrastra Mountain Wilderness, however, these incremental impacts from multiple activities are not anticipated to be significant provided the wilderness area is continually monitored for regulatory compliance and the grazing permit is monitored for compliance with the terms and conditions of the permit.

4.2.10 Cumulative Impacts to Wildlife

Wildlife and their habitat within the allotment may experience some level of ongoing impacts from OHV use, other recreation, wild burros and potentially some historic livestock grazing that may have contributed towards current rangeland health conditions. These past, present and future land uses can impact various aspects of wildlife and their habitat including movement patterns from habitat fragmentation, degradation of habitat conditions, direct loss of habitat acres through disturbances such as reduced reproductive success, increased predation, drought and in general low-quality habitat resulting from nearby development of private lands.

Past livestock grazing resulted in the degradation of wildlife habitat from overgrazing and the introduction of invasive plant species. Livestock grazing in the region has evolved and changed considerably since the 1860s. At the turn of the previous century, large herds of livestock grazed in uncontrolled open range, causing changes in plant, soil, and water relationships. In response, livestock grazing reform began in 1934 with passage of the Taylor Grazing Act. Subsequent laws, regulations, and policy changes have resulted in adjustments in livestock numbers, season-of-changes, and other management changes. Wild burro grazing of wildlife habitat results in similar degradation to livestock grazing.

Recreational pursuits, particularly OHV use, have caused disturbance to most all species and their habitats. With the increase in local populations has come the dramatic increase in the level of OHV use, resulting increased disturbance, injury, and mortality to wildlife, particularly ground dwelling species with low mobility. Impacts vary by species and by location, level of use, and speed of travel over the road.

It is anticipated that all alternatives would continue to have an incremental cumulative impacts to wildlife, particularly when added to other past, present, and reasonably foreseeable activities in the area. However, none of these impacts are anticipated to be significant.

4.2.11 Cumulative Impacts to Wild and Scenic Rivers

Increases in OHV incursions in Segment A of the Santa Maria River have been a management issue in the past, present, and likely will continue to be an issue within this suitable wild and scenic river segment. Impacts to the segment from OHV incursions put pressure on the proposed classification of the 1.10-mile portion of Segment A.

Authorization of any of the action alternatives may impact the segment's outstandingly remarkable values both the scenic and wildlife/vegetation values that exist for this segment. Both OHV use and cattle grazing have the potential to impact water quality within the stream during similar time periods as high OHV use of this segment and the time period that cattle would be allowed in the segment align and overlap with one another. Although these individual activities, both OHV use and proposed authorization of grazing in the segment, impact various aspects of the segment's suitability for inclusion into the system of Wild and Scenic Rivers, these impacts are localized to a 1.10-mile portion of an approximately 13-mile segment. Overall, these would not be significant in terms of the segment's future suitability for designation.

4.2.11 Cumulative Impacts to Livestock Grazing

Relevant past, present and RFFAs include extensive recreation within the allotment and surrounding areas, grazing in adjacent allotments, climatic changes including extended drought, and wild burro herd management. Grazing in allotments (Santa Maria Community, Wagner and Harcuvar) to the east and south of the Palmerita have been approved for full use, including areas along the Santa Maria River. Grazing allotments (Alamo Crossing, Primrose) to the west have been approved for ephemeral designations. Livestock in these allotments would only be present temporarily after winters with adequate rainfall. Climatic changes could bring hot and dry weather to the region in the foreseeable future, potentially reducing the amount of precipitation available for forage. Future droughts could further alter the plant communities in the allotment, affecting the production of forage available to livestock. Changes to production could, at some future date, change the number of AUMs that the allotments in the area could support which could affect livestock management.

Under the Preexisting Grazing Authorization and all action alternatives, livestock grazing within the surrounding area would increase overall, and under the no grazing alternative livestock grazing would remain be unchanged from current conditions.

It is anticipated that all alternatives would continue to have an incremental cumulative impacts to livestock grazing, particularly when added to other past, present, and reasonably foreseeable activities in the area. However, none of these impacts are anticipated to be significant.

CHAPTER 5 LIST OF PREPARERS

Table 5: BLM Resource Specialists

NAME	TITLE
Leah Knighton	Rangeland Management Specialist
Joelle Acton	Wildlife Specialist
Matthew Driscoll	Outdoor Recreation Planner
Douglas Whitbeck	Management and Program Analyst
Angelica Rose	Planning and Environmental Coordinator
Chad Benson	Wild Horse and Burro Specialist
Chris Bryant	Assistant Field Manager
Amanda Dodson	Field Manager

APPENDICES

Appendix A – Acronyms and Abbreviations
Appendix B - List of References
Appendix C – Maps and Figures
Appendix D—Biological Opinion
Appendix E—Determination Document and Rangeland Health Assessment for the Palmerita Ranch Allotment
Appendix F—Visual Resources Management Analysis