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

Palmerita Ranch Allotment No. 00094 Permit Issuance

FINAL 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), Arizona.

1.1.3 Name and Location of Preparing Office:

Colorado River District, Kingman Field Office

1.1.4 Applicant Name:

Palmerita Ranch, LLC

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 Recreational Vehicle (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).

The allotment has historically 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. The allotment has not been utilized since 1996 despite the grazing permit authorization not expiring until 2001.

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). 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). 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.

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.

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.

Past grazing permits incorporated use on all unfenced land ownerships controlled by the former permittee and the permittee was billed for use on BLM-administered land on the basis of percent public land (PL). The PL identifies the percentage of forage that comes from BLM-administered land, not BLM acreage used by the permittee.

In 1978, the Palmerita allotment was designated as Perennial/Ephemeral, as defined in the Special Ephemeral Rule of 1968. This designation allows for ephemeral increases during years of above normal rainfall where 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.

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)

1.3 Land Health Evaluation

In August 2023, 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 Standards 1 and 2 and failing to achieve Standard 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 without authorized livestock grazing.

The Determination Document signed in August 2023, determined that due to the vacancy of the allotment, current livestock grazing is not considered the causal factor for the non-achievement of Standards. The Palmerita Allotment not achieving Standard 3 is a result of several factors including but is not limited to potential historic grazing, extended drought conditions, off-highway vehicle (OHV) use and overpopulation of wild burros 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 (Appendix D). 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 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 the Palmerita Ranch Allotment.

1.5 Decision to be Made

The Decision to be made is to approve or deny the application for a grazing permit, and if approved, to determine the terms and conditions that would apply to the management of the Palmerita Allotment. The KFO Field 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 the terms and conditions that 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)

1.8 Scoping and Issue Identification

The application for grazing preference was received in October 2017. In May 2019 the BLM initiated formal consultation and conference with the United States Fish and Wildlife Service (USFWS) with a subsequent final Biological Opinion being issued in October of 2021 containing conservation measures for the southwestern willow flycatcher and its critical habitat and the threatened western district population segment of the yellow-billed cuckoo. The project was presented to the BLM Interdisciplinary Team and the Arizona Game and Fish Department (AGFD) Liaison in November 2022 to begin working

on the environmental assessment while finalizing the Land Health Evaluation for the Palmerita Allotment. Internal scoping by the Interdisciplinary Team of BLM specialists provided input to define issues, alternatives, and data needs for the environmental analysis. Key issues identified included potential concerns or impacts to the Three Rivers Area of Critical Environmental Concern (ACEC); land use authorizations/access, cultural resources pertaining to the Palmerita Historic Ranch, recreational access, soil compaction and erosion, biological resources including bats, migratory birds, wildlife, special status species, and their associated habitats; vegetation and invasive species; visual impacts from range improvements, water quality and water resources, wild horses and burros, wilderness, and wild and scenic rivers.

An environmental assessment (EA) for the Proposed Action was prepared in spring/summer 2023. Letters to 15 individuals, organizations and agencies were mailed on August 25, 2023, and the BLM published a news release on August 28, 2023, that was sent to media outlets listed on the Arizona BLM State Office media list announcing the 30-day public comment period from August 28, 2023, through September 27, 2023. The Chemehuevi Indian Tribe, Colorado River Indian Tribes, Fort McDowell Yavapai Nation, Fort Mojave Indian Tribe, Hualapai Indian Tribe, Hopi Tribe, Navajo Nation, Pueblo of Zuni, Salt River Pima-Maricopa Indian Community, Yavapai-Apache Nation, Yavapai-Prescott Indian Tribe were notified of the proposed action with a letter sent on July 17, 2023. The letter included a description of the proposed project, a map of the project location, and an invitation for comments or feedback regarding the project. All the tribes were notified by e-mail on August 28, 2023, that the public comment period was open. The Salt River Pima-Maricopa Indian Community responded to consult on the project but have not provided any specific information or concerns.

Comment letters were received from approximately 1,756 individuals, Federal agencies, State agencies, and non-governmental organizations by email, fax or mail during the comment period. Changes were made to this Final EA as a result of the individual letters as noted in Appendix G: Response to Public Comments.

CHAPTER 2 PROPOSED ACTION AND ALTERNATIVES

2.1 Proposed Action—Issue Grazing Permit with Adaptive Management

Under the Proposed Action, 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 (PL)	Type Use	Animal Unit Months (AUM)
			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 and standard terms and conditions mentioned above, the following terms and conditions would apply to this allotment under the Proposed Action:

- Livestock may not enter the allotment until the riparian pasture fence and its extensions are completed and fully functional.
- On the uplands, if utilization of perennial forage species exceeds 40%, livestock will be moved to a new water or pasture.
- The permittee will remove and exclude livestock from the River Pasture, for the remainder of the season of use, 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 rainfall events exceeding 1 inch in any 24-hour period.
- Construction, reconstruction, and maintenance of range improvements must be done in accordance with the 2021 Biological Opinion for the Palmerita Grazing Allotment Permit Renewal
- 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 approved 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 approved 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 2023 Rangeland Health Assessment (RHA) which shows an average frequency of 6.5%.

Perennial grass frequency has decreased by 50% since grazing was last authorized on the Palmerita Allotment. Therefore, during the first two years of the permit a maximum of 50% of the permitted AUMs may be applied for. 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 2021 biological opinion. Annual riparian monitoring will be conducted during the middle and end of the period of use as defined on the annual grazing bill. This will typically be during the end of December and February. Modifications of grazing use, through notification, would occur during the period of use if utilization exceeds the limits defined in the permit terms and conditions. Approval and potential modifications to grazing in the river pasture would occur at the beginning of the grazing year in March, annually.

Adaptative management allows for greater flexibility within the terms of the permit to allow livestock use to reflect the environmental conditions on the ground. The forage produced in this allotment is highly variable depending on precipitation and other environmental factors. Therefore, 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 are required to effectively manage grazing on the allotment (Figure 4, Appendix C).

As directed by Section 106 of the National Historic Preservation Act, National Register of Historic Places (NRHP)-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 (i.e. construction of range improvements). If during the construction or reconstruction of range improvements, any human remains, funerary objects, sacred objects or objects of cultural patrimony as defined in the Native American Graves Protection and Repatriation Act (P.L. 101-601; 104 Stat. 3048; 25 S.S.C. 3001) are discovered, the permittee shall stop operations in the immediate area of the discovery, protect the remains and objects, and immediately notify the Authorized Officer of the discovery. The permittee shall continue to protect the immediate area of discovery until notified by the Authorized Officer that operations may resume.

The existing or new improvements marked as "Required" must be constructed prior to cattle entering the allotment to facilitate the orderly management of the range.

- (Existing) (Required) Three Rivers Riparian Pasture Fence (#2157)- The majority of the existing fence in T 11N, R 12W, Sections 14, 15, and 16 separating the river from the uplands is in severe disrepair or missing all together. This fence would be repaired or reconstructed. 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.
- (New) (Required) Riparian Pasture Fence Extensions - Extensions to the Riparian Pasture Fence would be constructed. One or a combination of the three western extensions are required. The proposed fence extensions are shown in Figure 5, Appendix C.
- (Existing) (Required) River Gap Fencing - Water gaps across the Santa Maria (#0676) and Big Sandy (#2156) rivers along the north, east and west boundary fences would be repaired and/or reconstructed.
- (Existing) Palmerita Pipeline (#2158) - Repair and/or reconstruction of pipeline and trough system in T 11N, R 11W, Sections 11 and 20. The water source for this improvement is a shared spring on the neighboring Santa Maria Community allotment.
- (Existing) Stoop Tank (#2195) – This tank in T 11N, R 12W, Section 33 would require reconstruction.
- (New) Date Creek Pasture Fence – A new pasture fence would be constructed in T 10N, R 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) (Required) 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) Hand Dug Well - Existing hand dug well T 10N, R 12W, Section 28. A pump would be installed on this well and would be used to fill a water truck for water hauls to temporary troughs in the southern portion of the allotment. Livestock would not water at this location. Temporary trough locations would be analyzed in a future NEPA document.
- (New) Lower Date Creek Well - Existing former agricultural well in T 11N, R 12W, Section 14. A pump, storage tank, and trough would be installed to 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 in 2021 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.

Range Improvements

No new range improvements would apply to Alternative B.

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

Under the Alternative C, the BLM would issue a grazing permit for a period of 10 years for the upland portions of the Palmerita Ranch allotment only, excluding the river pasture, incorporating Mandatory Terms and Conditions (Table 3) and Other Terms and Conditions as listed below, which would become effective upon acceptance of the permit.

Table 3: Alternative C Grazing Permit Mandatory Terms and Conditions

Allotment	Pasture	Livestock Number/Kind	Period		% PL	Type Use	AUMs
			Begin	End			
AZ00094 Palmerita Ranch	Uplands	99 Cattle	3/1	2/28	78	Adaptive	622

Other Terms and Conditions
Standard terms and conditions are found on Grazing Permit/Lease Form 4130-2a. In addition to the mandatory and standard terms and conditions mentioned above, the following terms and conditions would apply to this allotment under the Alternative C:

- Livestock may not enter the allotment until the riparian pasture fence and its extensions are completed and fully functional.
- On the uplands, if utilization of perennial forage species exceeds 40%, livestock will be moved to a new water or pasture.
- Permittee will inspect and maintain the riparian pasture fence and its extensions at least twice annually and after rainfall events exceeding 1 inch in any 24-hour period.
- Construction, reconstruction, and maintenance of range improvements must be done in accordance with the 2021 Biological Opinion for the Palmerita Grazing Allotment Permit Renewal.
- 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 approved 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 approved 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 Adaptive Management framework, including the initial 50% reduction, as described under the Proposed Action applies to Alternative C.

Range Improvements
The following construction or reconstruction of range improvements would apply to Alternative C (Figure 4, Appendix C).

As directed by Section 106 of the National Historic Preservation Act, NRHP-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 (i.e.

construction of range improvements). If during the construction or reconstruction of range improvements, any human remains, funerary objects, sacred objects or objects of cultural patrimony as defined in the Native American Graves Protection and Repatriation Act (P.L. 101-601; 104 Stat. 3048; 25 S.S.C. 3001) are discovered, the permittee shall stop operations in the immediate area of the discovery, protect the remains and objects, and immediately notify the Authorized Officer of the discovery. The permittee shall continue to protect the immediate area of discovery until notified by the Authorized Officer that operations may resume.

The existing or new improvements marked as "Required" must be constructed prior to cattle entering the allotment to facilitate the orderly management of the range.

- (Existing) (Required) Riparian Pasture Fence (#2157)- The majority of the existing fence in T 11N, R 12W, Sections 14, 15, and 16 separating the river from the uplands is in severe disrepair or missing all together. This fence would be repaired or reconstructed. The purpose of this fence would be to protect sensitive riparian and critical T&E habitat and keep livestock from entering the river pasture.
- (New) (Required) Riparian Pasture Fence Extensions - Extensions to the Riparian Pasture Fence would be constructed. One or a combination of the three western extensions would be constructed. The proposed fence extensions are shown in Figure 5, Appendix C.
- (Existing) Palmerita Pipeline (#2158) - Repair and/or reconstruction of pipeline and trough system in T 11N, R 11W, Sections 11 and 20. The water source for this improvement is a shared spring on the neighboring Santa Maria Community allotment.
- (Existing) Stoop Tank (#2195) – This tank in T 11N, R 12W, Section 33 would be reconstructed within its existing footprint of disturbance.
- (New) Date Creek Pasture Fence - New fence would be constructed in T 10N, R 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) (Required) Gates would be added to the riparian fence and its extensions 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) Hand Dug Well - Existing hand dug well T 10N, R 12W, Section 28. A pump would be installed on this well which would be used to fill a water truck for water hauls to temporary troughs in the southern portion of the allotment. Livestock would not water at this location. Temporary trough locations would be analyzed in a future NEPA document.

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

Under Alternative D, the BLM would issue a grazing permit for a period of 10 years authorizing ephemeral use only on the Palmerita Ranch allotment, incorporating Mandatory Terms and Conditions (Table 4) and Other Terms and Conditions as listed below, which would become effective upon acceptance of the permit.

Table 4: Alternative D Grazing Permit Mandatory Terms and Conditions

Allotment	Pasture	Livestock Number/Kind	Period		% PL	Type Use	AUMs
			Begin	End			
AZ00094 Palmerita Ranch	Uplands	0 Cattle	3/1	2/28	78	Ephemeral	0
AZ00094 Palmerita Ranch	River Pasture	0 Cattle	11/1	2/28	78	Ephemeral	0

Other Terms and Conditions
Standard terms and conditions are found on Grazing Permit/Lease Form 4130-2a. In addition to the mandatory and standard terms and conditions mentioned above, the following terms and conditions would apply to this allotment under the Alternative D:

- Livestock may not enter the allotment until the riparian pasture fence and its extensions are completed and fully functional.
- The permittee will remove and exclude livestock from the River Pasture, for the remainder of the season of use, 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 rainfall events exceeding 1 inch in any 24-hour period.
- Construction, reconstruction, and maintenance of range improvements must be done in accordance with the 2021 Biological Opinion for the Palmerita Grazing Allotment Permit Renewal
- During years when grazing is approved, 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 approved 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 approved when seeds are present on ephemeral forage species.

Range Improvements
The same range improvements proposed under the Proposed Action would apply to Alternative D.

2.5 Alternative E: Ephemeral Grazing Only with No River Use

Under Alternative E, the BLM would issue a grazing permit for a period of 10 years authorizing the uplands, excluding the river pasture, for ephemeral use only on the Palmerita Ranch allotment,

incorporating Mandatory Terms and Conditions (Table 5) and Other Terms and Conditions as listed below, which would become effective upon acceptance of the permit.

Table 55: Alternative E Grazing Permit Mandatory Terms and Conditions

Allotment	Pasture Begin	Livestock Number/Kind	Period		% PL	Type Use	AUMs
			Begin	End			
AZ00094 Palmerita Ranch	Uplands	0 Cattle	3/1	2/28	78	Ephemeral	0

Other Terms and Conditions
Standard terms and conditions are found on Grazing Permit/Lease Form 4130-2a. In addition to the mandatory and standard terms and conditions above, the following terms and conditions would apply to this allotment under Alternative E:

- Livestock may not enter the allotment until the riparian pasture fence and its extensions are completed and fully functional.
- When forage conditions warrant, livestock grazing may be approved 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 approved when seeds are present on ephemeral forage species.
- During years when grazing is approved, the permittee/lessee must properly complete, sign and date 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)).
- Permittee will inspect and maintain the riparian pasture fence and its extensions at least twice annually and after rainfall events exceeding 1 inch in any 24-hour period.
- The conservation measures in the Biological Option dated October 21, 2021, related to the construction and maintenance of range improvements will be followed.

Range Improvements
The same range improvements proposed under Alternative C would apply to Alternative E.

2.6 No Action Alternative: No Grazing

Under the No Action 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 preference.

2.6 Alternatives Considered but not Analyzed in Detail

Alternatives considered but not analyzed include:

Seasonal Use Only

- Seasonal grazing on the allotment, from November 1st to February 28th, for both upland and river pastures in both perennial and ephemeral contexts was considered. However, managing a base herd on a seasonal basis would introduce complications such as removing cattle from the allotment during calving and inefficiently utilizing the upland vegetation. The potential to approve ephemeral grazing would be severely limited due to the ephemeral growing season often extending beyond February in years with adequate precipitation. The alternatives analyzed in this EA provide other options for effective grazing management and assurance that the Standards for Rangeland Health will be met.

Making the Allotment Unavailable for Grazing

- An alternative to make the Palmerita allotment unavailable for grazing was considered but removed from consideration. The process for making allotments unavailable for grazing is through a RMP amendment or RMP revision. That process would follow the planning and NEPA regulations, which is outside the scope of the current proposal and would not meet the purpose and need for responding to the current permit application for grazing.

CHAPTER 3 AFFECTED ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

This chapter describes the existing conditions relevant to the issues presented in Table 6: 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 6 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 6: 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 established 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. The BLM, KFO acknowledges that livestock is a	N/A

Resource/Use	Present Yes/No	May Be Affected Yes/No	Rationale	Analyzed in Section
			contributor of greenhouse gas emissions, and that any authorization of grazing would result in some greenhouse gas emissions. However, the contribution of greenhouse gas emissions is expected to be low and by no means solely or cumulatively (years of livestock within a 10-year period) to exceed beyond the emissions produced by other activities (i.e., offroad activities, mining, and wildlife) that have and continue to occur on public lands.	
Areas of Critical Environmental Concern	Yes	Yes	This resource is carried forward for detailed analysis below.	3.2.1
Climate/Climate Change	Yes	No	Climate change is a far-reaching and long-term issue that will affect the Palmerita Allotment, its resources, visitors, and management beyond the scope of this assessment in its 10-year timeframe. Although some effects of climate change are considered known or likely to occur, many potential impacts are unknown. Much depends on the rate at which temperature will continue to rise and whether global emissions of greenhouse gases can be mitigated before serious ecological thresholds are reached. Rangeland monitoring is used to track climate conditions and drought impacts, and adjust grazing management through Communication, Cooperation, and Consultation with the operators. Decisions, if needed, can be made when resource concerns are identified during the life of the permit. The authorized officer maintains the discretion to deny annual applications if conditions do not warrant use.	N/A
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	N/A

Resource/Use	Present Yes/No	May Be Affected Yes/No	Rationale	Analyzed in Section
			populations, individually or collectively from any of the actions proposed.	
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
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 manage any areas for LWCs.	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	No	Consultation with tribes did not identify concerns with these alternatives. They did acknowledge that there are numerous archaeological sites in the area which is discussed in detail in Section 3.2.2 of this EA. Therefore, this resource is not carried forward for detailed analysis.	N/A
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
Socioeconomics	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

Resource/Use	Present Yes/No	May Be Affected Yes/No	Rationale	Analyzed in Section
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
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 6 above) would be analyzed in detailed. Through this process, the BLM interdisciplinary team determined the following resources warrant detailed analysis in this EA.

The description of the Affected Environment is the same for all alternatives.

3.2.1 Areas of Critical Environmental Concern

Affected Environment

ACECs are areas within public lands that require special management to protect the relevant and important values for which the ACEC has been designated such as wildlife or historical cultural sites. The Three Rivers ACEC is located within the Palmerita Ranch allotment (Figure 6, Appendix C). The 1995 Kingman RMP provides common guidelines for activities that take place in 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

Alternative A: Proposed Action

Under this alternative, grazing would be permitted within the boundaries of the ACEC. Prior to livestock entering the allotment, extensions to the existing riparian fence would be required to 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 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%. This alternative's Adaptative Management framework would allow a percentage of AUMs utilized within the ACEC to be adjusted according to environmental conditions.

The proposed range improvements such as the riparian pasture fence extensions, river well and pipeline, Palmerita pipeline and trough, and river water gaps would cause short-term localized impacts to ACEC resources and long-term localized impacts around the livestock watering locations associated with these improvements.

Alternative B: Preexisting Grazing Authorization

Under this alternative, grazing would be permitted under the same terms and conditions as the last existing lease on the Allotment. The ACEC would be managed with up to 99 cattle year-round in the upland portion of the ACEC and up to 99 cattle in the river portion of the ACEC seasonally from November 1st through February 28th. Stocking at this rate may conflict with the resources for with the ACEC was as established. The Adaptive Management framework and range improvements as described in the proposed action would not apply to the ACEC which may lead to potential changes and degradation of the riparian habitat for which the ACEC was established. Portions of the ACEC within the upland area would also be impacted by the presence of livestock, see vegetative and wildlife impacts below.

Alternative C: Year-round Upland Use with No River Use
Under this alternative, impacts to ACEC resources would be the same as the Proposed Action, with the exception of the impacts related to the river portion of the ACEC as livestock would be prevented from grazing in the riparian portion of the ACEC by a riparian pasture fence and its extensions. Livestock would be authorized to graze the upland portion of the ACEC with the same terms and conditions as the Proposed Action which are expected to make progress towards achieving the Arizona Standards for Rangeland Health and therefore improvement of ACEC resources.

Impacts to ACEC resources from the proposed range improvements would be the same as the Proposed Action with the exception of the river well and pipeline and the river gap fences.

Alternative D: Ephemeral with Seasonal Restrictions on the River Pasture
Under this alternative, grazing would be authorized for ephemeral use only within the boundaries of the ACEC with a season of use restriction for the River Pasture from March 1st to October 31st. The riparian pasture fence and its new extensions would be constructed prior to livestock entering the allotment. This would allow vegetation within the river pasture to regenerate during the growing season. Ephemeral growth of annual vegetation is highly dependent on the amount and timing of precipitation. Given these variables, grazing may not be requested or approved on an annual basis. When grazing is approved, the number of livestock and AUMs approved vary from year to year depending on the amount of annual forage produced. When ephemeral grazing is approved, only 40% of the available annual forage may be approved for use. Additionally, seed heads on annual forage species must be present prior to approving use. These terms and conditions would limit the use of perennial forage species and therefore the resources for which the ACEC was designated. For these reasons, impacts to ACEC resources would be less than the Proposed Action.

Impacts to ACEC resources from the proposed range improvements would be the same as the Proposed Action.

Alternative E: Ephemeral Grazing Only with no River Use
This alternative would be the same as Alternative D except that the river pasture would not be authorized for grazing. Grazing in the upland portion would only occur periodically as ephemeral forage may not be available every year. No grazing in the river portion of the ACEC would occur. Therefore, no impacts to the ACEC's riparian resources would be impacted under this alternative.

Impacts to ACEC resources from the proposed range improvements would be the same as the Proposed Action with the exception of the reconstruction of river gap fences.

No Action Alternative: No Grazing
Under this alternative, grazing would not be authorized on the Palmerita allotment. Range improvements within the ACEC such as fencing would not be maintained by an active permittee. No grazing on the Palmerita allotment would have a beneficial effect on the upland and riparian portion of the ACEC and meet ACEC objectives

No range improvements are proposed under this alternative. The lack of a functional river fence would not impede wildlife or burro movement in and out of the riparian area. Livestock waters would also not be maintained which may reduce the amount of water available for wildlife within the ACEC.

3.2.2 Cultural Resources

Affected Environment

The Palmerita Historic Ranch was established in 1899 by the Jesus Fass Family who rank among the earliest Hispanic homesteaders in Arizona. 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 NRHP. They collectively signify important events within the broad 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 are likely to exist on terraced land above the floodplain of the Santa Maria River, in varying densities. According to an interview with a family descendant of the Fass family, his grandmother said that Yavapai Indians came by the ranch and camped along the river (personal communication, 2010). The grandmother further described how Yavapai Indians would come in the summer to collect mesquite and cactus fruits. Additionally, the Hualapai Tribe, the Fort Mojave Indian Tribes, and the Four Southern Tribes (Gila River Indian Community, Salt River Pima-Maricopa Indian Community, Ak-Chin Indian Community and the Tohono O'odham Nation) have ties to this landscape and have been consulted regarding this proposal.

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 Jesus Fass that the great grandmother was of Yaqui descent.

Unauthorized livestock have been observed within the boundaries of the Palmerita Ranch cultural site, including the areas around the ranch buildings. Unauthorized livestock enter these areas through gates that are often left open by the public visiting this area.

Environmental Consequences

Alternative A: 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 Alternative B, the Preexisting Grazing Authorization alternative, as livestock would be excluded from known cultural sites for 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.

The new range improvements would be located and constructed in a way to avoid impacts to cultural resources. All improvements would be surveyed prior to construction and their authorizations would include a clause to notify the Authorized Officer of any cultural resources encountered during their construction. The riparian fence extension option that has the least impact to cultural resources would be constructed to avoid known cultural sites and sensitive areas.

Alternative B: Preexisting Grazing Authorization
Under this alternative, 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 unauthorized livestock have been observed accessing the historic ranch from the river, usually through left open gates.

Unlike the Proposed Action, this alternative would not require the construction of any new range improvements, including the extensions to the existing riparian fence to separate livestock from the river outside of the season of use. Therefore, cultural resources would not be impacted by the construction of range improvements.

Alternative C: Year-round Upland Use with No River Use
Under this alternative, impacts would be similar to the Proposed Action except the cultural resources within the river pasture would be separated from livestock grazing impacts by a riparian fence. Potential impacts to cultural resources from livestock grazing would be minimal.

Impacts to cultural resources by the proposed range improvements would be the same as the Proposed Action.

Alternative D: Ephemeral with Seasonal Restrictions on the River Pasture
Under this alternative, impacts to cultural resources would be similar to the Proposed Action except that grazing would only occur during years of abundant winter rain. Potential impacts to cultural resources would minimal based on the fact that livestock may only be authorized during high precipitation years. Limiting the time and number of livestock within the allotment would minimize impacts to cultural resources.

Impacts to cultural resources by the proposed range improvements would be the same as the Proposed Action.

Alternative E: Ephemeral Grazing Only with no River Use
Under this alternative, impacts to cultural resources would be similar to Alternative D except that excluding livestock from the river pasture would significantly minimize impacts to archaeological sites along the river corridor, a place where predictive models and previous research indicate the highest density cultural resources in Arizona.

Impacts to cultural resources by the proposed range improvements would be the same as the Proposed Action.

No Action Alternative: No Grazing
The No Action Alternative would result in minor benefits to known/recorded and unknown/unrecorded cultural resources within the allotments. Without livestock on the allotment, 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.

No new range improvements would be constructed. Therefore, there would be no impacts to cultural resources by range improvements.

3.2.3 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
Alternative A: 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 cattle 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. 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 outlined in Section 2.1. Existing routes would be used to access range improvements. The TMP may require an amendment to consider the need for existing routes to access range improvements, 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. Impacts to travel and transportation management would not be significant.

Alternative B: Preexisting Grazing Authorization
Under this alternative, a grazing permit would be issued with the same terms and conditions as the grazing permit that expired in 2001 and would not include the provisions that USFWS provided in the Biological Opinion which would not include the fence to keep cattle out of the riparian areas. These terms and conditions include provisions to approve use of ephemeral forage crop when conditions warrant, and grazing would be seasonally precluded from the riparian areas using existing fence lines originally authorized in the 2001 grazing permit. Impacts to travel and transportation management from this alternative would be similar to the Proposed Action, although there would not be a need for maintenance of access roads to the reconstructed range improvements.

Alternative C: 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.

Alternative D: 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 approval 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.

Alternative E: Ephemeral Grazing Only with no River Use
Under this alternative, the permit would provide similar provisions to Alternative C, but for ephemeral use only of the uplands with use of the riparian areas being completely excluded. Impacts to travel and transportation management from this alternative would be similar to Alternative C as the proposed construction range improvements include new fences and waters would create new access considerations.

No Action Alternative: 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.

3.2.4 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, 1995) 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 allotment 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

Alternative A: Proposed Action

Under the Proposed Action, cattle would be introduced into an area of heavy recreational use 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 over the 22-year period. This figure, while not representative of the allotment area specifically, 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 the authorization of livestock 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 becomes diminished by livestock grazing as described in 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. Reduction in positive recreational outcomes would be addressed through adaptive management which, as designed, would improve habitat quality if degradation is observed.

Opportunities for OHV recreation would not be directly limited by authorization of livestock grazing but with the installation of new fence lines and associated 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. Recreational use of the public lands would not be significantly impacted as a result of the Proposed Action given that recreational outcomes would largely remain the same. There would be potential for increased conflicts between recreational and grazing interests in the

area with the presence of cattle and range improvements interfacing with the recreating public (e.g., gates left open, fence lines cut, vandalism of range improvements, etc.).

Alternative B: Preexisting Grazing Authorization
Impacts under this alternative would be similar to that of the Proposed Action as cattle would be authorized under the same terms and conditions as the 2001 permit but there would be less potential for conflicts to exist between recreationists and the grazing permittees. Potential for impacts to hunting opportunities would be similar as under the Proposed Action. As the riparian fence would not be constructed under this alternative there would be fewer gates that OHV users could potentially leave open leading to conflicts with grazing operations decreasing potential conflicts.

Adaptive management is excluded from this alternative, therefore, there would be less opportunity for BLM to address issues specifically related to small game hunting and associated positive recreational outcomes. Impacts from this alternative would still not be significant as predominate impacts are related to conflicts between the use, not total loss of recreational outcomes.

Alternative C: 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.

Alternative D: 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 public interaction with cattle on the allotment.

Alternative E: Ephemeral Grazing Only with no River Use
Impacts under this alternative would be the same as Alternative C, except the allotment would be authorized for ephemeral use only with the riparian areas being completely excluded. Impacts would be similar but less than to those identified for the Alternative C especially as it relates to less potential for diminished hunting opportunities.

No Action Alternative: No Grazing
Under the No Action Alternative, 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.

3.2.5 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. Current sources of soil disturbance within the allotment include wild burros and OHV use. 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

Alternative A: 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 is 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 that 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, related to vegetation and wildlife habitat objectives would also benefit soils within the allotment by allowing BLM to adjust grazing management to minimize or eliminate grazing if the adaptive management objectives are triggered. 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 (Alternative B). Most of the yearly rainfall happens during the 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.

The proposed range improvements would cause short-term localized impacts to soils as they are being constructed and long-term localized impacts around the livestock watering locations. 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.

Alternative B: Preexisting Grazing Authorization
Under this alternative, impacts to soils would be higher in comparison to the Proposed Action (Alternative A) because the new terms and conditions would not be included. 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.

Alternative C: Year-round Upland Use with No River Use
Under this alternative, impacts to soils would be the same as the Proposed Action, except that effects would be constrained to the uplands of the allotment.

Impacts to soils from the proposed range improvements would be the same as the Proposed Action with the exception of the Lower Date Creek well and the rivers' water gap fences.

Alternative D: Ephemeral with Seasonal Restrictions on the River Pasture
This alternative is the same as the Proposed Action, except that the allotment would be authorized for ephemeral use only. 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.

Impacts to soils from the proposed range improvements would be the same as the Proposed action.

Alternative E: Ephemeral Grazing Only with no River Use
This alternative is similar to Alternative C, except that the allotment would only be authorized for ephemeral use only. Impacts to soils would be infrequent and variable. Livestock may only enter the allotment following the approval of an application for ephemeral grazing. An inspection to ensure adequate ephemeral forage and other resource concerns, including soil moisture, would be conducted to ensure compliance with the ephemeral rule and other terms and conditions prior to approving an

application to graze. Grazing would not be approved for the river pasture resulting in no impacts to riparian or floodplain soils. Generally, ephemeral grazing does not occur every year and impacts to soils would be minor and short-term.

The construction and reconstruction of range improvements may impact soils. The extension of the River Pasture Fence and the new Date Creek pasture fence would cause temporary and localized soil disturbances. The reconstruction of Stoop Tank, the Palmerita Pipeline and Trough, and the hand dug well may cause short-term localized disturbances during construction and long-term soil disturbances where livestock congregate around the water sources. However, the addition and reconstruction of these improvements are expected to improve the distribution of livestock resulting in a reduced overall disturbance to soils within the allotment.

No Action Alternative: No Grazing
Under the No Action Alternative, no grazing permit would be issued for 10 years on the Palmerita allotment. Livestock grazing would not be authorized and therefore would not contribute towards any soil disturbance. No range improvements would be constructed or reconstructed and, therefore, result in no additional disturbances. 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.

3.2.6 Threatened, Endangered, (T&E) and Special Status Species

Affected Environment

A Biological Opinion (See Appendix D) was provided by the USFWS in August 2021, for implementing recovery and habitat preservation within for the Palmerita Allotment and covers species and habitat information on T&E species for the Northern Mexican gartersnake (*Thamnophis eques megalops*), Southwestern willow flycatcher (*Empidonax traillii extimus*), and Yellow-billed cuckoo (*Coccyzus americanus*) (Figure 6, Appendix C). 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 five 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 7 Species not described in detail below are described within the Rangeland Health Assessment for the Palmerita Allotment.

Table 7: BLM Sensitive Species Occurring or May Potentially Occur Within the Palmerita Allotment

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
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 (Endangered and Threatened Wildlife and Plants; Proposed Rule to Remove the Bald Eagle in the Lower 48 States From the List of Endangered and Threatened Wildlife; Proposed Rule, 1999).

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).

Sonoran Desert Tortoise

Mojave Desert tortoise (*G. agassizii*) and Sonoran Desert tortoise (*G. morafkai*) both occur within Arizona, with the Mojave species occurring in northwestern Arizona and the Sonoran species occurring through the rest of the state and into Mexico. Both species have similar habitat requirements with the exception that G. agassizii is more commonly found in valley areas than *G. morafkai*; both species can be found on bajadas and rocky slopes (AGFD 2013, 2020). Both species have similar diets and use burrows or natural cavity features for nesting and to shelter from extreme temperatures (AGFD 2013, 2020). *G. agassizii* activity peaks in spring (AGFD 2013), in contrast, *G. morafkai* is active in early to

mid-spring, followed by a period of reduced activity, and a larger second peak of surface activity during the summer monsoon (USFWS 2015). Desert tortoise may occur within the Palmerita allotment based on range and potential habitat. There are no ACEC designations within the Palmerita allotment for the preservation and protection of desert tortoise.

Desert Bighorn Sheep

Bighorn sheep are wide-ranging animals and require a variety of habitat characteristics. Topography, visibility, water availability and forage quality and quantity are all characteristics of habitat needs for bighorn sheep. Steep terrain provides the opportunity for bighorn sheep to escape predators and is particularly important for lambing. Additionally, washes may provide high quality browse for a longer time into the summer than other areas. Males are loosely segregated from females, except during the breeding season, and are typically found in less steep and rugged terrain than ewes. (USFWS 2000) Desert Bighorn Sheep habitat is present within the northeastern portion of the Palmerita allotment, north of the Santa Maria River. Desert Bighorn Sheep may utilize the riparian habitat for foraging and watering opportunities.

Environmental Consequences

Alternative A: Proposed Action

Under this alternative, grazing would be authorized on the entire allotment. However, 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 defined in the conservation measures of the 2021 Biological Opinion, and utilization of the uplands would also be limited to 40%. 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 by the Biological Opinion and corresponding recovery plans for the above-mentioned T&E species may increase riparian potential and increase chance of recovery for T&E species.

Potential impacts from authorizing livestock grazing may include reduced vegetation and degradation to the riparian habitat may alter stream flow and presence of water or availability necessary for aquatic species such as amphibians and fish to thrive. Pooling and shading may no longer be available which is necessary for many aquatic species to reproduce and rear young. Reduced water availability would limit the potential for invertebrate species and insects to occur, which in turn reduces foraging availability for fish, amphibians, and bats that prey upon invertebrates and insects. Loss of riparian plant species would reduce nesting and stop-over opportunities for migrating and non-migrating avian species. However, the adaptive management framework is designed to limit these potential impacts through limiting riverbank trampling and utilization of riparian species to 40%.

Grazing may lead to degradation of upland species and potential habitat loss for desert tortoise, desert bighorn sheep and other sensitive species within the area. The upland habitat has limited perennial and available forgeable species. Use on the upland species will increase competition for forage, reducing habitat quality necessary for native species to thrive. However, the adaptive management framework is designed to limit these potential impacts by limiting the utilization of upland forage species to 40%.

Overall, livestock grazing would compete with native wildlife for forage, water, and shelter opportunities which can overtime reduce wildlife populations and habitat.

During the construction and maintenance of assigned range improvements wildlife would be temporarily displaced during activities. Construction and reconstruction of range improvements may require the removal of vegetation and potential habitat. Range improvements such as fencing may reduce unauthorized use and better manage livestock. Range improvements would require stipulations that would be applicable to the general area for both construction and maintenance to reduce impacts to habitat and wildlife during activities. All fencing would meet wildlife friendly fencing standards to allow native wildlife crossing. This would include stipulations associated with ACEC requirements, Designated Critical Habitat requirements, seasonal restrictions, and other stipulations to reduce impacts to sensitive species that may be present in the area.

Alternative B: Preexisting Grazing Authorization
Under this alternative, grazing would be permitted under the same terms and conditions as the 2001 permit. 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. T&E habitat would not be included in adaptive management or excluded from overuse leading to potential changes and degradation of the riparian habitat. Authorized grazing on T&E habitat may lead to degradation of the system. Degradation of the system may lead to loss of T&E habitat and species recovery. Grazing may lead to degradation of upland species and potential habitat for desert tortoise, desert bighorn sheep and other sensitive species within the area.

Overall, grazing would reduce foraging opportunities for wildlife and reduce reproductive opportunities of forgeable plant species. Presence of cattle may temporarily displace wildlife from foraging opportunities. Trampling and compaction may occur altering habitat, riparian banks, and possible burrow destruction. Livestock would compete with native wildlife for forage, water, and shelter opportunities which can overtime reduce wildlife populations and habitat.

During the construction and maintenance of range improvements, wildlife would be temporarily displaced during activities. Construction of defunct and reclaiming improvements may require the removal of vegetation and potential habitat. Range improvements such as fencing may reduce unauthorized use and better manage livestock. Range improvements would require stipulations applicable to the general area for both construction and maintenance to reduce impacts to habitat and wildlife during activities. All fencing would meet wildlife friendly fencing standards to allow native wildlife crossing. Range improvements would require stipulations applicable to the general area for both construction and maintenance. This would include stipulations associated with ACEC requirements, Designated Critical Habitat requirements, seasonal restrictions, and other stipulations to reduce impacts to sensitive species that may be present in the area.

Alternative C: Year-round Upland Use with No River Use
Under this alternative, impacts would be similar to the Proposed Action except that livestock would be prevented from grazing in Designated Critical Habitat and habitat for T&E species by a riparian pasture fence. Riparian vegetation would increase the densities of riparian trees and understory species thus increasing the availability of avian nesting and roosting habitat, and better shelter opportunities for local T&E species. Increased vegetation will support stream banks and dissipate energy from high flow events

reducing bank erosion. Reduced erosion and increased vegetation will create better pooling habitat for needed for prey opportunities for present T&EE species. The absence of livestock grazing within a riparian system will reduce competition of foraging and habitat opportunities need for T&E species to recover.

Grazing may lead to degradation of upland species and potential habitat for desert tortoise, desert bighorn sheep and other sensitive species within the area. Overall, grazing would reduce foraging opportunities for wildlife and reduce reproductive opportunities of forgeable plant species. Presence of cattle may temporarily displace wildlife from foraging opportunities. Trampling and compaction may occur altering habitat, and possible burrow destruction. Cattle would compete with native wildlife for forage, water, and shelter opportunities which can overtime reduce wildlife populations and habitat. Authorized grazing could lead to degradation to T&E and Designated Critical habitat if not managed properly.

During the construction and maintenance of assigned range improvements wildlife would be temporarily displaced during activities. Construction or reconstruction of range improvements may require the removal of vegetation and potential habitat. Range improvements such as fencing may reduce unauthorized use and better manage livestock. Range improvements would require stipulations applicable to the general area for both construction and maintenance to reduce impacts to habitat and wildlife during activities. All fencing would meet wildlife friendly fencing standards to allow native wildlife crossing.

Range improvements would require stipulations applicable to the general area for both construction and maintenance. This would include stipulations associated with ACEC requirements, Designated Critical Habitat requirements, seasonal restrictions, and other stipulations to reduce impacts to sensitive species that may be present in the area.

Alternative D: Ephemeral with Seasonal Restrictions on the River Pasture
Under this alternative, impacts to T&E would be similar to the Proposed Action, except that grazing would be authorized for ephemeral use only. 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, may still occur. The approval of ephemeral grazing could lead to degradation to T&E and Designated Critical habitat and could loss of species and recovery.

Grazing may lead to degradation of upland species and potential habitat for desert tortoise, desert bighorn sheep and other sensitive species within the area. Overall, grazing would reduce foraging opportunities for wildlife and reduce reproductive opportunities of forgeable plant species. Presence of cattle may temporarily displace wildlife from foraging opportunities. Trampling and compaction may occur altering habitat, riparian banks, and possible burrow destruction. Cattle would compete with native wildlife for forage, water, and shelter opportunities which can overtime reduce wildlife populations and habitat.

During the construction and maintenance of assigned range improvements wildlife would be temporarily displaced during activities. Construction or reconstruction of range improvements may require the

removal of vegetation and potential habitat. Range improvements such as fencing may reduce unauthorized use and better manage livestock. Range improvements would require stipulations applicable to the general area for both construction and maintenance to reduce impacts to habitat and wildlife during activities. All fencing would meet wildlife friendly fencing standards to allow native wildlife crossing. Range improvements would require stipulations applicable to the general area for both construction and maintenance. This would include stipulations associated with ACEC requirements, Designated Critical Habitat requirements, seasonal restrictions, and other stipulations to reduce impacts to sensitive species that may be present in the area.

Alternative E: Ephemeral Grazing Only with no River Use
Under this alternative, grazing would be authorized for ephemeral use only (see above for ephemeral guidance) and would be prevented from grazing in the riparian portion by a riparian pasture fence. Prior to livestock entering the allotment, extensions to the existing riparian fence would be required to be constructed to bar livestock from grazing within the river and adjacent riparian areas. Grazing in the upland portion would only occur when an application for ephemeral grazing is approved where seed heads must be present on annual forage species and no more than 40% of the available annual forage may be approved for use.

Potential impacts from the construction and reconstruction of range improvements would be the same as under alternative C.

No Action Alternative: No Grazing
Under this alternative, grazing would not be authorized on the Palmerita allotment. No grazing on the Palmerita Allotment would reduce competition of resources between livestock and T&E. No new or reconstructed range improvements would be authorized. Range improvements such as fencing would not be maintained by an active permitee. Unmaintained range improvements would also reduce presence and opportunities to displace or injure wildlife.

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 (*Cylindropuntia spp.*), prickly pear (*Opuntia spp*.), hedgehog (*Echinocerus spp*) and barrel (*Ferrocactus spp.*) 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 mediterranean grass (*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 in 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

Alternative A: Proposed Action

The Proposed Action would add livestock onto an allotment that has not experienced substantial amounts of grazing for over 20 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 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. However, precipitation is the most important single factor in determining the type and productivity of vegetation in a given area (Holechek et al 2011).

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. 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. Every two years the BLM would review monitoring data related to galleta frequency to determine the number of AUMs that may be approved through application. This would allow the BLM to adjust the number of livestock that may utilize big galleta grass. Also, livestock would be rotated between pastures, or to a new part of a pasture would be triggered once 40% utilization of perennial forage species has been reached. This may reduce overall impacts to vegetation communities including big galleta grass. During periods of non-use, when livestock are rotated away from an area, vegetation, such as big galleta grass, may have the opportunity to recover. Rotation of livestock would benefit upland and riparian vegetation by limiting utilization to an acceptable level of 40% or below and only seasonally grazing the river pasture.

The construction and reconstruction of range improvements may cause impacts vegetation. The extension of the River Pasture Fence, the new Date Creek pasture fence, and reconstruction of the river water gaps would cause temporary and localized vegetation disturbances through the removal and displacement of perennial vegetation. The reconstruction of Stoop Tank, the Palmerita Pipeline and Trough, Lower Date Creek well, and the Hand Dug Well may cause short-term localized disturbances during construction and long-term vegetation disturbances where livestock congregate around the water sources. However, the addition and reconstruction of these improvements are expected to improve the distribution of livestock resulting in less disturbance to vegetation within the allotment overall.

Alternative B: 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.

No range improvements are included in this alternative.

Alternative C: 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 livestock would be excluded. Grazing pressure would be focused primarily on the upland plant communities, particularly the perennial grasses. The additional grazing pressure from use 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.

This alternative has the same improvements and associated impacts to vegetation as the Proposed Action, except the river water gaps and Lower Date Creek well would not require reconstruction. Therefore, fewer impacts associated with the reconstruction of range improvements in the river pasture are expected.

Alternative D: Ephemeral with Seasonal Restrictions on the River Pasture
This alternative is the same as the Proposed Action, except that the allotment would be authorized for ephemeral use only. Impacts to vegetation under this alternative would be infrequent, variable, and limited to annual vegetation species. 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 the allotment. 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.

This alternative has the same improvements and associated impacts to vegetation as the Proposed Action.

Alternative E: Ephemeral Grazing Only with no River Use
This alternative is similar to Alternative C, except that the allotment would only be authorized for ephemeral use. Impacts to vegetation would be infrequent and variable. Livestock may only enter the allotment following the approval of an application for ephemeral grazing. An inspection to ensure adequate ephemeral forage and other resource concerns, including the assurance seed heads are present on annual species, would be conducted to ensure compliance with the ephemeral rule and other terms and conditions prior to approving an application to graze. Grazing would not be approved for the river pasture resulting in no impacts to riparian or floodplain vegetation. Generally, ephemeral grazing does not occur every year and impacts to vegetation would be minor and short-term.

The construction and reconstruction of range improvements may cause impacts vegetation. The extension of the River Pasture Fence and the new Date Creek pasture fence would cause temporary and localized vegetation disturbances through the removal and displacement of perennial vegetation. The

reconstruction of Stoop Tank, the Palmerita Pipeline and Trough, and the hand dug well may cause short-term localized disturbances during construction and long-term vegetation disturbances where livestock congregate around the water sources. However, the addition and reconstruction of these improvements are expected to improve the distribution of livestock resulting in a reduced overall disturbance to vegetation within the allotment.

No Action Alternative: No Grazing
Under this alternative, livestock would not be authorized. Therefore, there would be no impacts to the plant communities from authorized livestock grazing. 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.

No range improvements are proposed under this alternative.

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

Alternative A: Proposed Action
Under the Proposed Action, adaptive management would be utilized to adjust AUMs and during the first two years only 50% of the total AUMs authorized may be approved for use. Extensions of the riparian fence would be constructed to exclude cattle from the riparian areas during the growing season and two

existing waters would be repaired to water livestock as well as a third hand dug well that would be used for water hauls when needed. This alternative would also authorize grazing on an allotment where grazing has not been authorized since 2001 and therefore, would increase the number of livestock in the area. An increase in livestock combined with development of water sources 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 when compared to the existing characteristic landscape as outlined in Appendix F meeting VRM class objectives for aesthetic management.

Construction of new portions of the riparian fence to keep cattle 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 livestock 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 grazing impacts surrounding waters. 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.

Alternative B: 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 2021 Biological Opinion which would eliminate construction of the fence to keep livestock out of the riparian areas. There would still be provisions to authorize ephemeral forage crop when conditions warrant and grazing would still be seasonally restricted from the riparian areas, although the new portions of the riparian fence would not be present to ensure exclusion of livestock. 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 no physical barrier excluding livestock from riparian areas during the growing season and livestock 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 and with potential for greater contrast along the riparian corridors due to impacts on vegetation from livestock.

Alternative C: 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 livestock 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.

Impacts to VRM from range improvements would be the same as the Proposed action with the exception of the Lower Date Creek well and water gap fencing.

Alternative D: 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 livestock could only graze on an ephemeral basis upon approval of an application to graze 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.

Impacts to VRM from range improvements would be the same as the Proposed Action.

Alternative E: Ephemeral Grazing Only with no River Use
Under this alternative, the permit would provide similar provisions to Alternative C, but be for ephemeral use of the upland forage with use of the riparian areas being completely excluded. Impacts to visual contrast generated from this alternative would be almost identical (weak to moderate) to those identified in Alternative C but the prospectus for management of riparian and upland vegetation would be greater and thus lessen project generated contrast the most of all action alternatives.

Impacts to VRM from range improvements would be the same as the Proposed Action.

No Action Alternative: 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.

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

Alternative A: 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 resulting in additional sedimentation of water, when present. 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. The range improvements proposed under the Proposed Action may aid in the improvement of water quality by more evenly distributing livestock across the landscape and providing water for livestock outside of the river corridor. The new wells proposed would not affect water quality as they would follow standards set by Arizona Department of Water Resources. The quantity of water used for the proposed livestock operations would not have an overall impact to the regional water availability.

Alternative B: 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 allow livestock to wander into the river corridor during periods of flowing water and growing season. Use during periods of flow may lead to poor water quality from droppings and increase sedimentation. Use during growing season, excessive use on riparian habitat would reduce the proper functioning conditions of the system. Reduced riparian vegetation or the ability of riparian vegetation to reproduce would lead to degradation of the system increasing high water flow events and the systems ability to retain water. High flow events would be caused by reduced riparian vegetation needed to dissipate flow energy. Lack of riparian vegetation would not allow for pooling of water necessary for habitat.

No new or reconstructed range improvements would be installed. The only water source for livestock in the river pasture would be the river which may lead to excessive use of the river and its banks causing increase sedimentation and droppings to negatively impact water quality and quantity.

Alternative C: Year-round Upland Use with No River Use
In this alternative, impacts to water quality and quantity would be similar to the Proposed Action except 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 resources and quality would not be impacted by livestock under this alternative.

The range improvements would be the same as the Proposed Action with the exception of the water gaps and the Lower Date Creek well. These improvements are not expected to have any direct negative impacts to water quality or quantity.

Alternative D: Ephemeral with Seasonal Restrictions on the River Pasture
Under this alternative, impacts to water quality and quantity are the same as the Proposed Action except that grazing would be approved for ephemeral grazing only. 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 be short in duration. 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.

Impacts to water quality and quantity from range improvements would be the same as the Proposed Action.

Alternative E: Ephemeral Grazing Only with no River Use
Under this alternative, impact to water quality and quantity would be similar to Alternative C except that grazing would be authorized for ephemeral grazing only. Livestock would be excluded from the river pasture and grazing may only be approved during years when forage conditions warrant. In comparison with Alternative C, water resources and quality are expected to benefit from this alternative due to the lack of grazing and range improvements constructed within the river pasture. Infrequent livestock grazing under approved ephemeral applications are likely to have insignificant impacts to water quality and quantity due to reduced water consumption, exclusion of the river pasture, and reduced impacts to soils which may otherwise increase the potential for sedimentation.

Impacts to water quality and quantity from range improvements would be the same as under Alternative C.

No Action Alternative: No Grazing
This alternative would result in the Palmerita allotment remaining unpermitted for livestock grazing. The No Action 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. No range improvements are proposed that may impact water quality or quantity.

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.

Proper Functioning Condition (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 in proper functioning condition.

Environmental Consequences

Alternative A: Proposed Action

Under this alternative, the river pasture would be excluded from grazing during the growing season and outside of the growing season if utilization of palatable species reaches 40%, as provided by USFWS in the conservation measures of the 2021 Biological Opinion. The exclusion of livestock grazing during the growing season is expected to allow for riparian recovery needed to maintain suitable riparian habitat as well as maintain proper functioning condition of these areas.

Range improvements included under the Proposed Action are expected to benefit wetland and riparian zones by preventing livestock grazing outside of the growing season and providing water sources away from these areas. There may be short term impacts to wetland and riparian areas during the construction of range improvements.

Alternative B: Preexisting Grazing Authorization

Under this alternative, grazing would be permitted under the same terms and conditions as previous grazing permit that expired in 2001. 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. Management of the river pasture would not include an adaptive management framework to remove livestock once utilization reaches 40% which may lead to potential changes and degradation of the riparian habitat.

No range improvements would be constructed or reconstructed to prevent livestock from entering the river pasture outside of the period of use nor draw livestock out of the riparian areas to alternate water sources.

Alternative C: Year-round Upland Use with No River Use

Under this alternative, livestock would be excluded from the riparian area by a pasture fence. Livestock impacts to wetlands and riparian zones is expected to be negligible under this alternative as livestock would not be authorized to use the wetland and riparian areas within the allotment.

The proposed range improvements would be the same as the Proposed Action with the exception of the water gaps and the Lower Date Creek well. The reconstruction and extension of the river pasture fence are expected to significantly benefit wetland and riparian area resources by preventing livestock from entering these areas.

Alternative D: Ephemeral with Seasonal Restrictions on the River Pasture
Under this alternative, impacts to wetland and riparian areas are expected to be the same as the Proposed Action except that grazing would be authorized for ephemeral use only. 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. When livestock grazing is approved, impacts to wetland and riparian areas are expected to be significantly less than the Proposed Action due the period of ephemeral grazing typically being shorter than the authorized period of use and only ephemeral forage being approved for use. No impacts to riparian vegetation are expected.

Impacts from the proposed range improvements would be the same as the Proposed Action

Alternative E: Ephemeral Grazing Only with no River Use
Under this alternative, impacts to wetland and riparian areas are expected to be the same as Alternative C except that grazing would be authorized for ephemeral use only. 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. Under this alternative, livestock impacts to wetlands and riparian zones is expected to be negligible as livestock would not be authorized to use the wetland and riparian areas within the allotment.

Impacts from the proposed range improvements would be the same as Alternative C.

No Grazing
Under this alternative, livestock grazing would not be authorized on the Palmerita Allotment, including the wetland and riparian areas. There would be not impacts to wetland and riparian areas.

There are no proposed range improvements and existing improvements such as fencing would not be maintained by an active permitee.

3.2.11 Wild Horses and Burros

Affected Environment
The Palmerita Ranch allotment encompasses a portion of the Alamo HMA/Herd Area (HA) and is bordered to the north by the Big Sandy HMA/HA. The Alamo HMA encompasses approximately 341,000 acres, 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. Historically, burros have competed with livestock and wildlife for forage on the Palmerita Allotment. However, there has been no forage competition with livestock since livestock grazing has not occurred on the allotment since 1996.

Environmental Consequences
Alternative A: Proposed Action
Under this alternative, burros would be negatively impacted due to an increase in competition for forage and water sources. 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. However, overall impacts to burros are expected to be minimal due to the majority of burros in the area existing in the surrounding HMAs.

Burros within 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 construction and reconstruction of range improvements would provide access to more water in the uplands from existing water facilities. Currently, due to existing fences that are down along the river, wild burros have been able to freely move between the uplands and the river. Under this alternative, range improvements such as the riparian fence would be maintained/reconstructed and would then inhibit access to the river by wild burros occupying the southern portions of the allotment. However, new or existing fence projects under this action are located outside of any HMA where burros are not managed.

Alternative B: Preexisting Grazing Authorization
Under this alternative, impacts to burros would be the same as the Proposed Action except that burros would only be limited to existing waters as no new range improvements would be constructed.

Alternative C: Year-round Upland Use with No River Use
Under this alternative, impacts to burros would be the same as Proposed Action except the water gaps in the river, which are major burro corridors, would not be repaired and no additional water sources within the river pasture would be constructed.

Alternative D: 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 including the river.

Alternative E: Ephemeral Grazing Only with no River Use
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. Burros would not have any interactions with livestock in the river since under this alternative access to the river would not be permitted by livestock.

No Action Alternative: No Grazing
This alternative would not affect wild 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. Section 4(d)4(2) of the Wilderness Act of 1964 states: "the grazing of livestock, where established prior to the effective date of this Act (Arizona Desert Wilderness Act of 1990 in this case), shall be permitted to continue subject to such reasonable regulations are deemed necessary by the BLM." The Palmerita Ranch allotment contains approximately 4,247 acres of the Arrastra Mountain wilderness area. The Arrastra Mountain wilderness area has no current Wilderness Management Plan (WMP) Further, there is no plan or funding allocation to complete a WMP for Arrastra Mountain wilderness. Therefore, management of grazing operations within this area

is governed by the May 31, 1991, decision on Environmental Assessment AZ-026-91-14. The Kingman RMP and Final EIS (BLM, 1995) allocated all wilderness closed to off-highway vehicle use. Access to range improvements, absent a WMP, is evaluated and approved on a case-by-case basis using the Minimum Requirements Decision Guide (MRDG) and subsequent analysis under the NEPA. There are range improvements located within the Arrastra Mountain wilderness area including allotment boundary fences that separate the Alamo, Chino Springs, Palmerita Ranch, and Santa Maria Community allotments from one another. These fences are currently maintained using non-motorized/non-mechanized means of access.

Environmental Consequences

Alternative A: Proposed Action

Under the Proposed Action, adaptive management would be utilized to adjust AUMs and during the first two years only 50% of the total AUMs authorized may be approved for use. New portions of the riparian fence would be constructed to exclude cattle from the riparian areas during the growing season 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 the number of livestock in the area. There is no proposal to install additional range improvements within the wilderness area. Therefore, impacts associated with the Proposed Action would involve livestock grazing occurring in the wilderness area during the same period as grazing would occur within the riparian area due to the fact that livestock 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 on the Palmerita allotment. However, the LHE did show that standards on the Palmerita allotment were only partially being met. It is possible that the addition of the fence to exclude livestock from the riparian area and subsequently the wilderness area could reduce livestock pressure on the wilderness area. Wilderness character, which includes the natural distribution of native plants within the ecosystem, could be impacted by livestock grazing in the wilderness area. This impact to wilderness character however should not be significant due to the adaptive management framework that would be in place to ensure that forage conditions remain the same.

Alternative B: 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 2021 Biological Opinion and would also not include the construction of the fence to keep livestock 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 the existing riparian fence would not ensure the 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.

Alternative C: 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 or to wilderness character.

Alternative D: 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 approval when forage conditions warrant. This would include precluding use in the riparian areas and subsequently the wilderness areas unless use was approved during the period where use of the riparian area was authorized under the Proposed Action. Therefore, this alternative would have less impacts to wilderness compared to the Proposed Action but would have more impacts on wilderness character than than to the year-round upland use with no river use alternative (Alternative C) as cattle still could graze in the wilderness on an intermittent basis with BLM authorization.

Alternative E: Ephemeral Grazing Only with no River Use
Under this alternative, the permit would provide similar provisions to Alternative C, but be for ephemeral use only with use of the riparian areas being completely excluded. Impacts under this alternative would be identical to that of Alternative C as cattle would not have access to the Arrastra Mountain Wilderness area. Under this alternative there would be no impact to the wilderness area or to wilderness character.

No Action Alternative: 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.

3.2.13 Wildlife (including Migratory Birds)

Affected Environment

The Palmerita Ranch allotment provides habitat for year-round large and small game species such as common mammals including squirrels, bats, bobcats, and coyotes, common reptiles including multiple venomous and non-venomous snake species, lizards, and Sonoran Desert tortoise. There is currently no authorized grazing occurring on the Palmerita allotment.

The xero-riparian habitat is home to several raptor and avian species as nesting, breeding, and stop-over habitat. Fish species may be present during high flow events and preserved in small pools along the river corridor. A more defined list of species is provided in the Rangeland Health Evaluation and Appendix E.

Fish habitat can be found just downriver of the allotment at Alamo Lake.

Migratory Birds
The Palmerita Allotment falls within the Sonoran and Mohave deserts Region 33 Bird Conservation Region (BCR) which is dominated by cacti, slow-growing grasses, creosote, and other desert shrubs covering southern California and southern Nevada extending from southwest Arizona and into Mexican states of Baja California, Sonora, and Sinaloa (NACI, 2021). The Colorado River and other adjacent wetlands provide habitat for waterfowl and other wetland avian species.

Bats
Riparian habitats are important foraging areas for a variety of bat species.

Environmental Consequences
Alternative A: Proposed Action
Under this alternative, the riparian habitat would be excluded from grazing during the growing season and outside of the growing season if use has reached 40%, as defined in the conservation measures of the 2021 Biological Opinion. 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 general wildlife.

Potential impacts from authorizing livestock grazing within riparian habitat may include reduced vegetation and degradation to the riparian habitat which may alter stream flow and presence of water or availability necessary for aquatic species such as amphibians and fish to thrive. Pooling and shading are necessary for many aquatic species to reproduce and rear young. Reduced water availability would limit the potential for invertebrate species and insects to occur, which in turn reduces foraging availability for fish, amphibians, and bats that prey upon invertebrates and insects. Limited water availability may lead to population declines and/or loss of species without water as a resource. Loss of riparian plant species would reduce nesting and stop-over opportunities for migrating and non-migrating avian species. However, the adaptive management framework includes triggers to remove livestock from riparian areas once streambank trampling is detected and when utilization of riparian vegetation reaches 40%. This framework is expected to prevent irreversible harm to the riparian area and associated wildlife habitat.

Potential impacts of grazing may include degradation of upland species and potential habitat loss for general wildlife within the area. The upland habitat has limited perennial and available forgeable species. Use on the upland species will increase competition for forage, reducing habitat quality necessary for native species to thrive. However, the adaptive management framework includes triggers to move livestock between pastures when utilization of upland vegetation reaches 40%. This framework is expected to prevent irreversible harm to upland areas and associated wildlife habitat.

During the construction and maintenance of assigned range improvements wildlife would be temporarily displaced during these activities and human presence. Construction and reconstruction of range improvements may require the removal of vegetation and potential habitat. Range improvements such as fencing would improve livestock distribution and overall management. All fencing would meet wildlife friendly fencing standards to allow native wildlife crossing. Range improvements would require stipulations applicable to the general area for both construction and maintenance. This would include stipulations associated with ACEC requirements, seasonal restrictions, and other stipulations to reduce impacts to sensitive species that may be present in the area.

Alternative B: Preexisting Grazing Authorization
Under this alternative, grazing would be permitted under the same terms and conditions as the past 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 riparian habitat. The riparian habitat would not be included in adaptive management or excluded from overuse leading to potential changes and degradation of the system. Degradation of the system may lead to loss of habitat and species.

Grazing within the uplands may lead to degradation of habitat for general wildlife within the area. Overall, grazing would reduce foraging opportunities for wildlife and reduce reproductive opportunities of forgeable plant species. Presence of cattle may temporarily displace wildlife from foraging opportunities. Trampling and compaction may occur altering habitat, riparian banks, and possible burrow destruction. Cattle would compete with native wildlife for forage, water, and shelter opportunities which can overtime reduce wildlife populations and habitat. The upland habitat has limited perennial and available forgeable species.

No range improvements are proposed under this alternative.

Alternative C: Year-round Upland Use with No River Use
Under this alternative, impacts to wildlife would be the same as the Proposed Action, except livestock would be excluded from the river pasture through by the river pasture fence. When compared to the Proposed Action, absence of livestock on a riparian system would improve bat foraging habitat by increasing insect abundance. Riparian vegetation would increase the densities of riparian trees and understory species thus increasing the availability of bat roosting habitat, avian and migratory bird nesting and roosting habitat, and better shelter opportunities for general wildlife species. Increased vegetation will support stream banks and dissipate energy from high flow events reducing bank erosion. Reduced erosion and increased vegetation will create better pooling habitat for needed for fish, amphibians, and invertebrates. The absence of livestock grazing within a riparian system will reduce competition of foraging and habitat opportunities.

Grazing may lead to degradation of upland species and potential habitat for general wildlife within the area. Grazing should not have any impact on roost sites as the bats roost in mines, caves, rock crevices, or trees which wouldn't be affected by livestock. Grazing may reduce foraging opportunities for wildlife and reduce reproductive opportunities of forgeable plant species. Presence of cattle may temporarily displace wildlife from foraging opportunities. Trampling and compaction may occur altering habitat, and possible burrow destruction. Cattle would compete with native wildlife for forage, water, and shelter opportunities which can overtime reduce wildlife populations and habitat. However, the adaptive management framework includes triggers to move livestock between pastures when utilization of upland vegetation reaches 40%. This framework is expected to prevent irreversible harm to upland areas and associated wildlife habitat.

During the construction and maintenance of assigned range improvements wildlife would be temporarily displaced during activities. Construction and reconstruction of range improvements may require the removal of vegetation and potential habitat. Range improvements such as fencing may reduce

unauthorized use and better manage livestock. Range improvements would require stipulations applicable to the general area for both construction and maintenance to reduce impacts to habitat and wildlife during activities. All fencing would meet wildlife friendly fencing standards to allow native wildlife crossing. Range improvements would require stipulations applicable to the general area for both construction and maintenance such as ACEC requirements, Designated Critical Habitat requirements, seasonal restrictions, and other stipulations to reduce impacts to sensitive species that may be present in the area.

Alternative D: Ephemeral with Seasonal Restrictions on the River Pasture
Under this alternative, impacts to wildlife would be the same as the Proposed action except, grazing would be authorized for ephemeral use only. 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. A maximum of 40% of available annual forage species may be approved for use when seed heads are present on annual forage species. Impacts to the river pasture would be small and infrequent.

Grazing may lead to degradation of upland species and potential habitat for desert tortoise, desert bighorn sheep and other sensitive species within the area. However, ephemeral grazing only would have a reduced impact on wildlife when compared to year-round grazing. Presence of cattle may temporarily displace wildlife from foraging opportunities. Trampling and compaction may occur altering habitat and possible burrow destruction. A maximum of 40% of available annual forage species may be approved for use when seed heads are present on annual forage species. Impacts to the uplands would be small and infrequent.

During the construction and maintenance of assigned range improvements wildlife would be temporarily displaced during activities. Construction and reconstruction of range improvements may require the removal of vegetation and potential habitat. Range improvements such as fencing may reduce unauthorized use and better manage livestock. Range improvements would require stipulations applicable to the general area for both construction and maintenance to reduce impacts to habitat and wildlife during these activities and the presence of humans. All fencing would meet wildlife friendly fencing standards to allow native wildlife crossing. This would include stipulations associated with ACEC requirements, Designated Critical Habitat requirements, seasonal restrictions, and other stipulations to reduce impacts to sensitive species that may be present in the area.

Alternative E: Ephemeral Grazing Only with no River Use
Under this alternative, impacts to wildlife would be similar to Alternative D except, grazing would be excluded from the riparian pasture, year-long, by a riparian pasture fence. Prior to livestock entering the allotment, extensions to the existing riparian fence would be required to be constructed to bar livestock from grazing within the river and adjacent riparian areas.

Grazing in the upland portion would only occur periodically because ephemeral grazing may not be approved unless adequate ephemeral forage is available for both livestock and wildlife alike. When ephemeral grazing is approved, only 40% of the available ephemeral forage may be approved for use and seed heads must be present on annual forage species. These terms and conditions ensure there is

adequate forage remaining for wildlife and the annual forage species are able to reproduce via seed before they are utilized.

The proposed range improvements and impacts from range improvements are the same as under Alternative C.

No Grazing
Under this alternative, there would be no authorized grazing on the Palmerita Allotment. Range improvements such as fencing would not be maintained by an active permitee. Foraging opportunities for wildlife would not be reduced. Trampling, compaction, and displacement would not occur from the presence of authorized livestock. Riparian improvement would improve bat foraging habitat by increasing insect abundance. Grazing should not have any impact on roost sites as the bats roost in mines, caves, rock crevices, or trees which wouldn't be affected by 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 (WSR) 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 manage 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
Alternative A: 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 WSR designation, where grazing has not been authorized since 2001 and therefore, would increase cattle in the 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 within the WSR corridor 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 prevent cattle from adjacent allotments entering the WSR segment as unauthorized livestock use. 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 unauthorized livestock and any unauthorized livestock issues were resolved. Under the Proposed Action, adaptive management would be used if monitoring conditions warranted reducing or completely eliminating AUMs. For these reasons, impacts to WSR are expected to be minimal.

Alternative B: 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 2021 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 forage allocations 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.

Alternative C: 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.

Alternative D: 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 as compared to the Proposed Action.

Alternative E: Ephemeral Grazing Only with no River Use
Under this alternative, the impacts to the WSR segment would be identical to those identified in Alternative C. There would be no impact to the WSR segment since cattle would be completely excluded from the riparian area that defines the segment.

No Action Alternative: 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.

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.

Environmental Consequences

Alternative A: Proposed Action

Under the Proposed Action, livestock grazing on the allotment would increase from zero to up to 99 livestock year-long in the uplands and up to 99 livestock seasonally in the river pasture. This would benefit livestock grazing since livestock grazing has not been authorized on the allotment in over 20 years. 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, therefore, promote the sustainability of the grazing operation as a whole. Livestock grazing would benefit as a whole under the Proposed Action.

The proposed 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), reconstruction of a well in the river pasture (Lower Date Creek Well), southwest (future water hauls 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.

Alternative B: Preexisting Grazing Authorization

This alternative would increase livestock grazing on the allotment. Livestock grazing would be authorized 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. 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.

Only existing range improvements would be maintained, and no new range improvements would be installed.

Alternative C: 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 99 livestock for a maximum of 622 AUMs for use in the uplands. This would affect livestock operations by decreasing flexibility of livestock management but, when compared to the No Action Alternative, there would be an overall benefit to livestock.

The same new range improvement as the Proposed Action would be authorized, with the exception of the water gaps and the Lower Date Creek Well in the river pasture. These improvements are expected to benefit livestock grazing.

Alternative D: Ephemeral with Seasonal Restrictions on the River Pasture
This alternative would be the same as the Proposed Action, except that grazing would be authorized for ephemeral use only where grazing would only be approved during years of adequate forage. Applications for ephemeral grazing may be approved year-long in the uplands and seasonally in the river pasture. Additional terms and conditions related to ephemeral grazing such as no more than 40% of the available ephemeral forage may be approved for use and ephemeral grazing may only be approved if seed heads are present on annual forage species. Due to the lack of a base herd, this alternative would provide less flexibility and limit grazing to only years when conditions support the approval of ephemeral use. When compared to the No Action Alternative, this alternative would benefit livestock grazing.

The same new range improvements as the Proposed Action would be authorized.

Alternative E: Ephemeral Grazing Only with no River Use
This alternative would be the same as Alternative D, except that the river pasture would be excluded from livestock grazing. Applications for ephemeral grazing may be approved year-long in the uplands. Additional terms and conditions related to ephemeral grazing such as no more than 40% of the available ephemeral forage may be approved for use and ephemeral grazing may only be approved if seed heads are present on annual forage species. Due to the lack of a base herd, this alternative would provide the less flexibility and limit grazing to only years when conditions support the approval of ephemeral use. When compared to the No Action Alternative, this alternative would benefit livestock grazing.

The same new range improvements as Alternative C would be authorized.

No Action Alternative: No Grazing
This alternative would impact livestock grazing management by not authorizing livestock grazing on the Palmerita for a period of 10 years. Under this alternative, grazing may continue on the State Land portion of the allotment. Existing range improvements on BLM administered lands would fall further into disrepair from continued lack of maintenance and use.

No new range improvements would be authorized under this alternative.

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 other 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, unauthorized livestock use, 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 (Alternative A), Year-long (Alternative C), Ephemeral (Alternative D), and Ephemeral no River use (Alternative E) alternatives. Future wild burro management actions as those proposed in the Big Sandy, Alamo, and Lake Havasu Herd Management Area Wild Burro Gather and Population Control Plan EA (EA #DOI-BLM-AZ-C010-2023-0025-EA) would reduce the number of wild burros and thus their impacts on the resources and vegetation within 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 Alternatives A, C, D, and E 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 (Alternative A) would have a comparatively smaller cumulative effect than the Preexisting Grazing Authorization alternative (Alternative B) which does not contain the same mechanisms to prevent overgrazing of the ACEC. The Year-round Use with No River (Alternative C), Ephemeral Grazing Only with No River (Alternative E),

and No Grazing (No Action Alternative) 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, NRHP-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 (i.e. construction of range improvements).

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 (Alternative A), Year-round Use Alternative (Alternative C), Ephemeral Alternative (Alternative D), Ephemeral no River Use Alternative (Alternative E), and No Grazing Alternative (No Action) 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 (Alternative B) 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 Travel and Transportation Management

The BLM manages an inherited route network across the public lands through the travel and transportation management planning process. Past activities such as homesteading, grazing, mining, administrative (e.g., agency actions or rights of ways), and recreational use of the public lands have played a primary role in shaping the access that currently exists across the public lands. A need to access and establish homesteads (e.g., Palmerita and Grapevine Ranches), range improvements, mining projects (e.g., Anderson mine), administrative sites (e.g., gauging stations), and recreational use of the public land to access points or points of interest have all played a role in creating historic access in this area.

Presently, the creation of new routes is driven by the explosion of interest in OHV use that has led to creation of unauthorized trails and route proliferation in this area. The BLM's proposed travel management plan would designate routes in this area as open, limited, or closed based on access needs compared to resource management objectives and would be the only RFFA that would impact travel and transportation management.

Additional access requirements for range improvements proposed under the Proposed Action (Alternative A), Year-round Use Alternative (Alternative C), Ephemeral Alternative (Alternative D), and Ephemeral No River Use Alternative (Alternative E), would not individually add to past, present, or

RFFAs to create a collectively significant action over time. Instead, access to these range improvements would be evaluated and analyzed or incorporated as appropriate into a travel management plan in a manner that would still serve to create a logical and sustainable system of routes across the public lands.

4.2.4 Cumulative Impacts to Recreation

Past impacts to recreational use of the public lands have included overuse by burros or cattle potentially lessening small game hunting opportunities, natural processes such as soil erosion impacting route access, Congressional designations of wilderness impacting OHV access but enhancing primitive recreational opportunities, designations of critical habitat impacting OHV access to sensitive areas, and acquisition of historic properties enhancing public access. These impacts can be positive or negative across activities and can either enhance or diminish recreational outcomes of users.

For example, Congressional wilderness designation may enhance outcomes for non-motorized users while motorized users may have diminished outcomes. The same may be true for designation of critical habitat as bird watchers may have enhanced outcomes and motorized users may have diminished outcomes. Visitor perception of recreational outcomes will change user to user and be contingent on how long a recreationist may have been visiting a place. For instance, long-term users would likely be more sensitive to additional change over time than a new user and therefore past impacts would impact the latter user less.

Present impacts to recreational use would be similar to historical impacts and would vary depending on the visitor's primary activity and familiarity with using an area. RFFA impacts would be related to designation of routes in the area as open, limited, or closed through a future travel management plan and would either enhance or diminish a visitor's outcome. Enhancement or diminishment from the proposed travel management plan would only vary by visitor and not necessarily the primary activity they are engaged in.

The presence of cattle and range improvements proposed under any of the action alternatives (Alternatives A through E) could add to recreational impacts individually, but those impacts coupled with past, present, and RFFA impacts would not cumulatively be significant as impacts to recreational outcomes currently experienced would remain similar to those previously experienced, currently or may be expected.

4.2.5 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. Additionally, wild burros would continue to utilize the area, though if approved, the wild burro and gather plan EA mentioned above would help to reduce the number of wild burros that would be found in this area.

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 (Alternative D), 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 Action Alternative (No Action Alternative), livestock would not contribute to any soil impacts cumulatively and presently caused by other present and RFFAs.

The Preexisting Grazing Authorization Alternative (Alternative B) 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, except the no grazing alternative, 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.

4.2.6 Cumulative Impacts to Threatened and Endangered Species

Relevant past, present, and RFFA include recreation, wild burros, climatic changes and grazing in adjacent allotments. Recreation, especially OHV use, impacts to T&E species has and continues to occur within T&E habitat along the Santa Maria and Big Sandy rivers. Areas of habitat identified as directly impacted 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 livestock impacts to T&E habitat within the Alamo Crossing allotment would be temporary and negligible. The presence of livestock there would be infrequent and temporary depending on adequate winter rains. The ephemeral grazing only permits inherently include 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. 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 (Alternatives A through E) impacts to T&E species within the surrounding landscape would increase. However, all action alternatives (except Alternative B) 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 alternatives C and E and the No Action alternative livestock grazing impacts would be negligible due to livestock not being present within protected critical habitats.

With the exception of the No Grazing alternative, 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.

4.2.7 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 would 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 under the Proposed Action would be written to prevent overgrazing. The Preexisting Grazing Authorization Alternative (Alternative B) would not have similar mechanisms in place to adjust livestock grazing to meet the needs of the vegetative community. Under the No Action 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 (crushing, removal, consumption, etc..), 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 Visual Resources

Past impacts such as sporadic mining, OHV use, construction of historic highways (e.g., major county roads), development of private and public facilities, vegetative use of domestic livestock and wild burros, and installation of distribution lines have added to the overall contrast of the existing characteristic landscape. Present developments have not readily added contrast to the existing characteristic landscape that has created a greater level of baseline contrast.

There are no planned future developments that further add to the infrastructure in the characteristic landscape or RFFA actions that would incrementally add to changes in the existing characteristic landscape. Impacts to visual resources under any of the action alternatives (Alternatives A through E) would not impact existing baseline contrast that when coupled with past, present, or RFFA impacts be significant. Any change as a result of the action alternatives (Alternatives A through E) that would be readily observable to the casual observer would be only weak to moderate overall meeting VRM class objectives of the area.

4.2.9 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 are authorized for ephemeral use only. 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 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 by

either fully excluding livestock use from the river (Alternatives C and E) or include adaptive management to remove livestock from the river pasture once utilization has reached 40% and/or streambank alteration is detected (Alternatives A and D). 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.

4.2.10 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 and should the gather plan be approved their numbers would be reduced thus reducing their footprint and impact to these areas. 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 impacted by OHV use 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 (Alternatives C, D, and E), provide a mechanism for keeping grazing from negatively impacting riparian resources. All action alternatives (Alternatives A, C, D, and E) 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 (No Action Alternative), the Year-round with No River Access (Alternative C), and the Ephemeral Grazing Only with No River Access (Alternative E) alternatives 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 impact 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.

4.2.11 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 Alternatives A through E would continue to have an incremental cumulative impact 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.

4.2.12 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.

4.2.13 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 impact 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.

4.2.14 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 (other than Alternatives C and E which do not include use of the river) 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. These impacts, while they may change the classification, would not be significant in terms of the segment's future suitability for designation.

4.2.15 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. The Primrose allotment to the west is not authorized for grazing per a BLM decision issued in August of 2022, (Final decision for actions analyzed in EA#DOI-BLM-AZ-C030-2021-0041-EA).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. The Alamo Crossing grazing allotments to the west has been approved for ephemeral designation. Livestock in this allotment would only be present temporarily after winters with adequate rainfall.

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

It is anticipated that all alternatives would continue to have an incremental cumulative impact 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 8: BLM Resource Specialists

NAME	TITLE
Leah Knighton	Rangeland Management Specialist
Joelle Acton	Wildlife Specialist
Matthew Driscoll	Outdoor Recreation Planner
Doug Whitbeck	Rangeland Management Specialist
Angelica Rose	Planning and Environmental Coordinator
Timothy Watkins	AZ State Tribal Liaison
Chad Benson	Wild Horse and Burro Specialist
Chris Bryant	Assistant Field Manager
Amanda Dodson	Field Manager

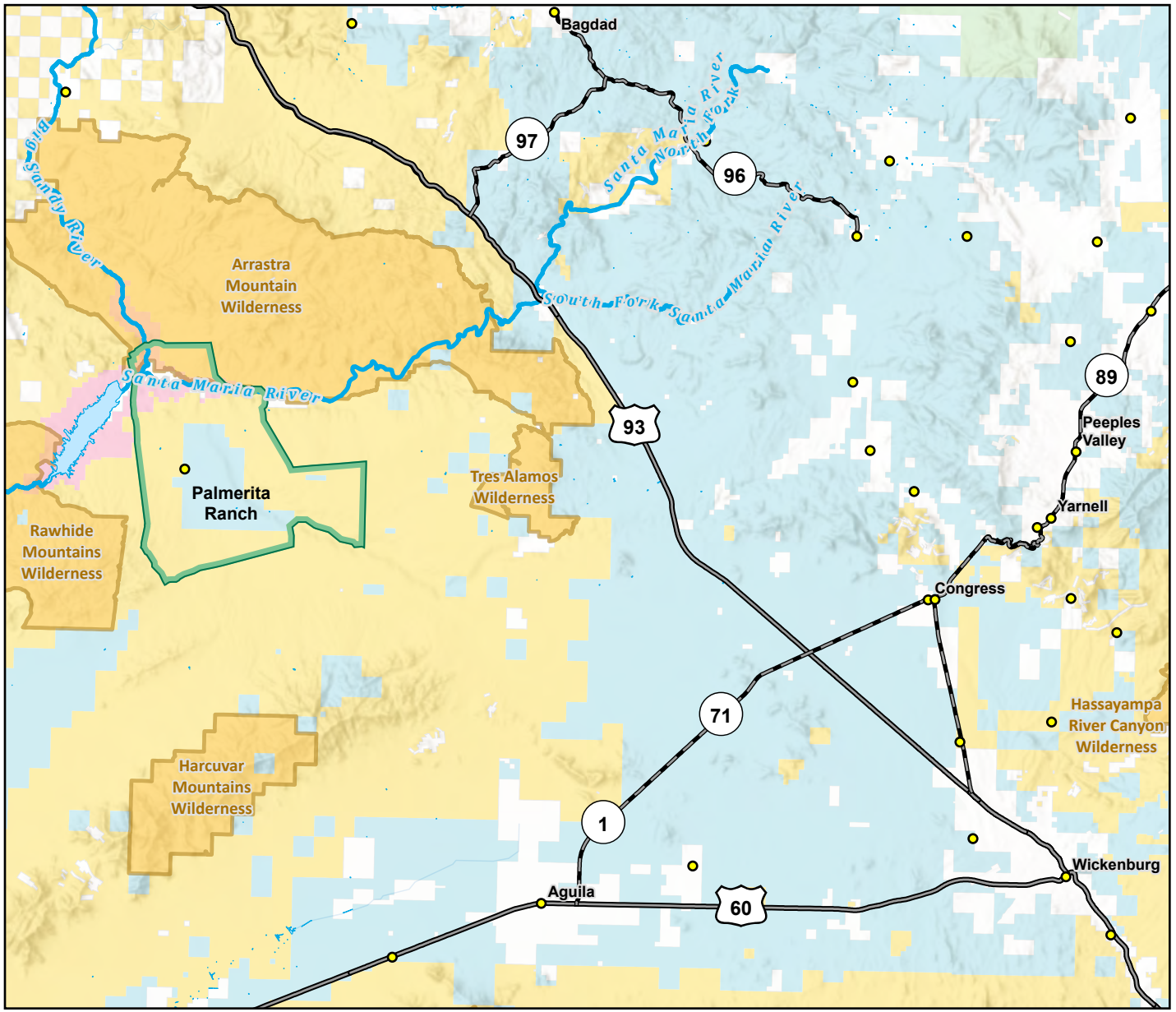
APPENDICES

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
Appendix G – Response to Public Comments

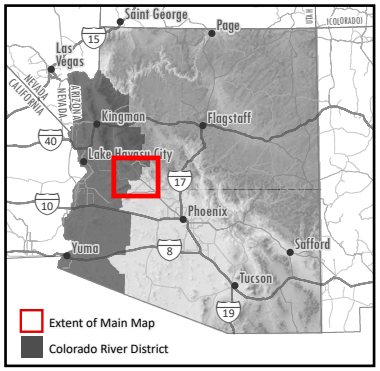
APPENDIX C – MAPS AND FIGURES

Palmerita Ranch Allotment (Figure 1)

Colorado River District - Kingman Field Office - Lake Havasu Field Office - Yuma Field Office



Map Location within Arizona



- Palmerita Ranch Allotment Boundaries
- Town or Place of Interest
- U.S. Highway
- State Highway
- Waterbody
- River
- Wilderness Area Boundary
- Federal Land within Wilderness Area
- Bureau of Land Management
- Indian Lands
- Local or State Parks
- Military
- Private
- State
- US Forest Service

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Map Produced by BLM Colorado River District Staff
File: BLM_CRD_PalmeritaRipFence
Date: 7/18/2023
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AZ Reference System: U.S. PLSS GSR
CA Reference System: U.S. PLSS SBM

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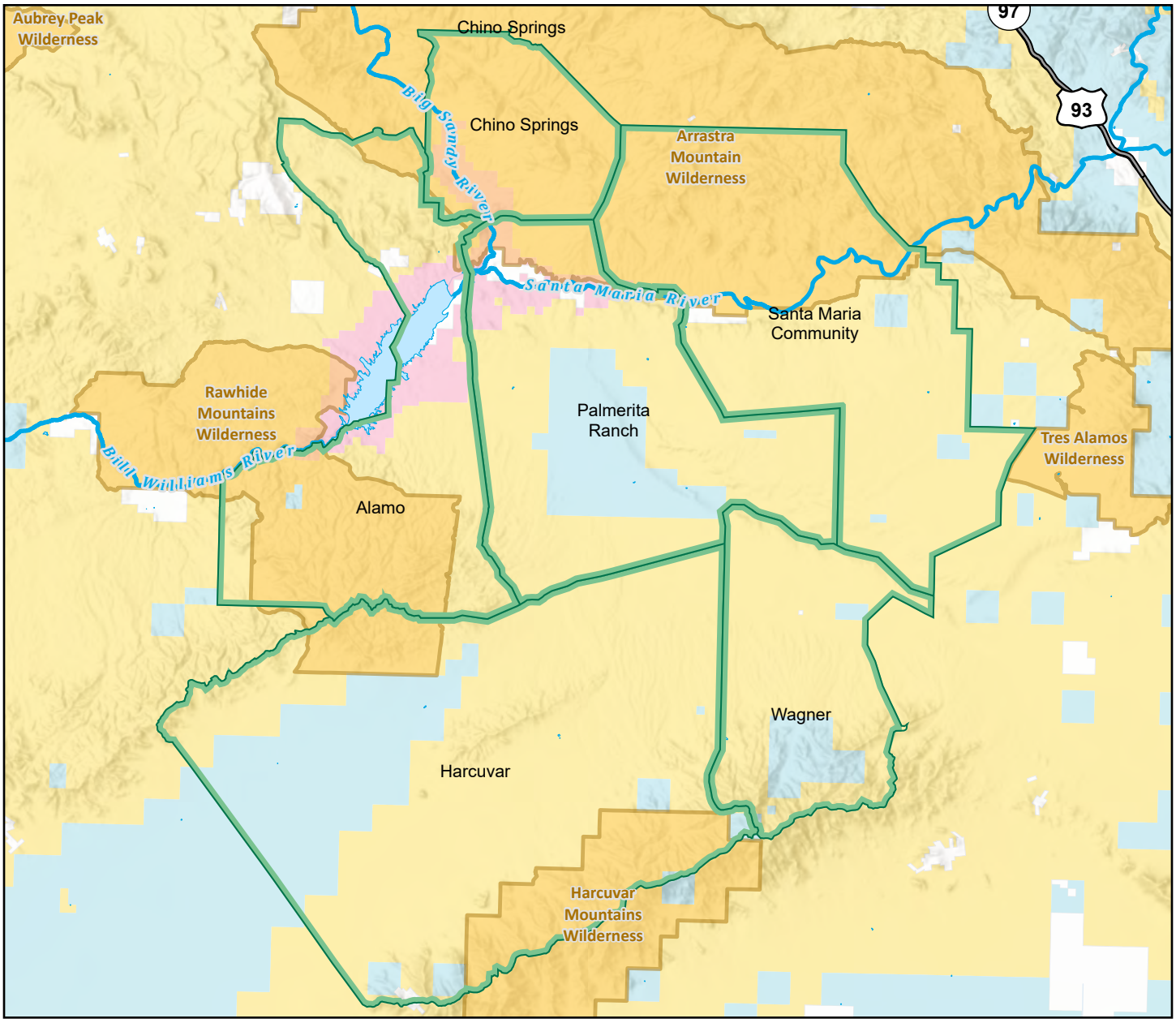

Palmerita and Surrounding Allotments (Figure 2)

Colorado River District - Kingman Field Office - Lake Havasu Field Office - Yuma Field Office

Grazing Allotment Boundaries
U.S. Highway
State Highway
Waterbody
River
Wilderness Area Boundary
Federal Land within Wilderness Area
Bureau of Land Management
Military
Private
State

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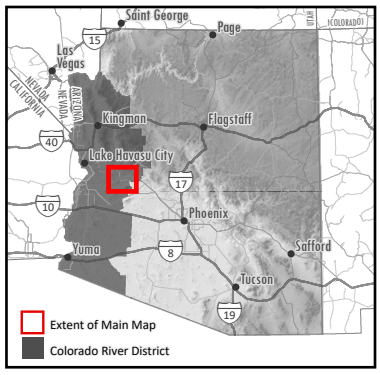
Map Location within Arizona



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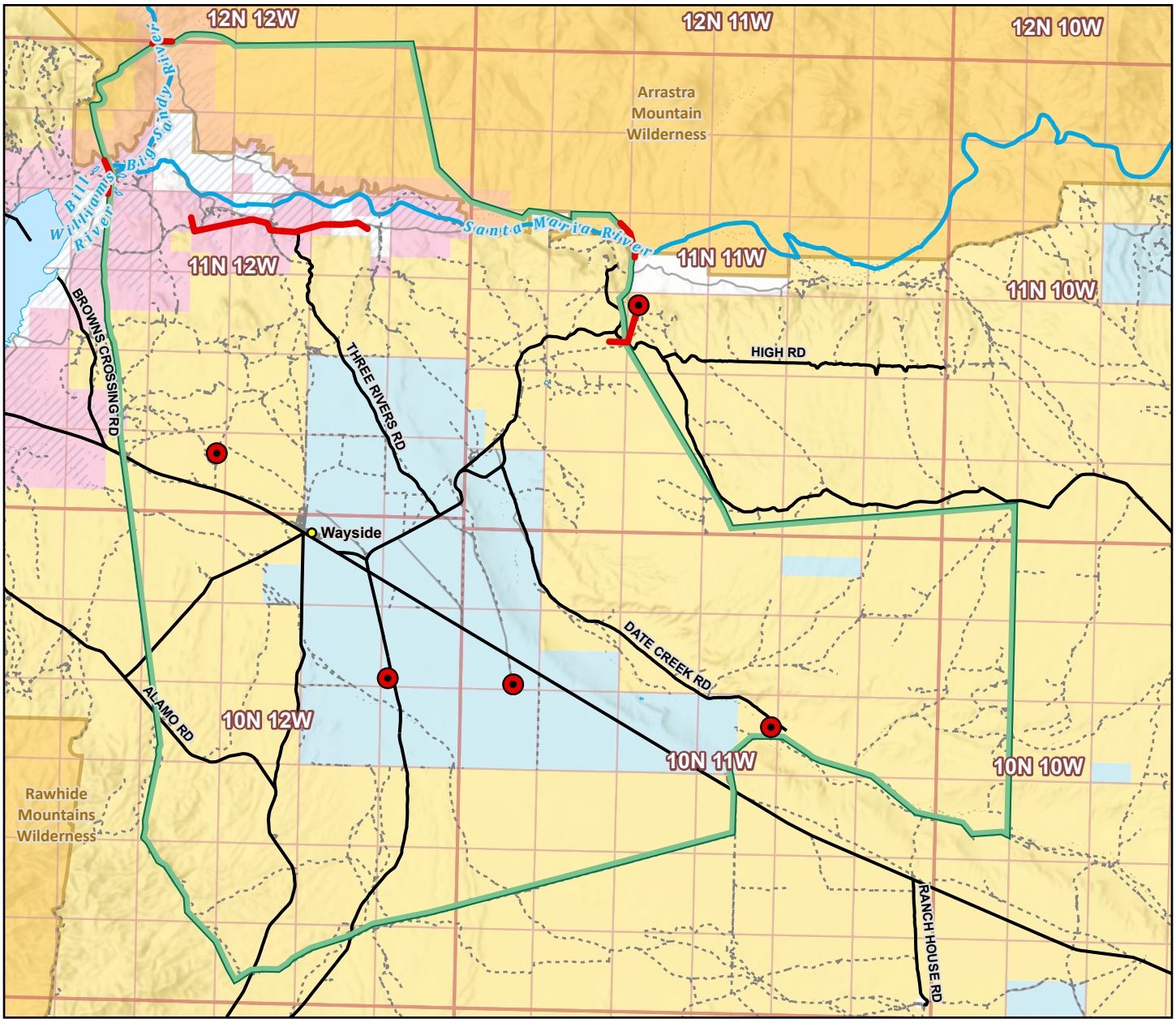

Existing Range Improvements (Figure 3)

Colorado River District - Kingman Field Office - Lake Havasu Field Office - Yuma Field Office

- Palmerita Ranch Allotment Boundaries
- Existing Pipes and Fence Range Improvements
- Existing Water Facilities
- Existing Riparian Fence Palmerita
- Town or Place of Interest
- County or Major Routes
- Minor Routes
- Route Not Assessed
- Waterbody
- River
- Township / Range
- Section
- Wilderness Area Boundary
- Federal Land within Wilderness Area
- Bureau of Land Management
- Military
- Private
- State

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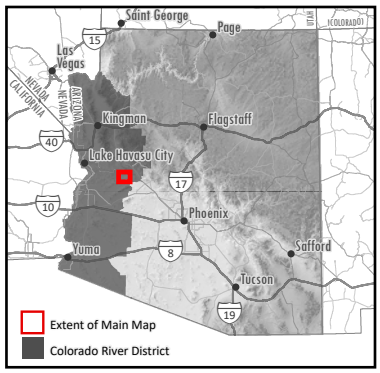
Map Location within Arizona



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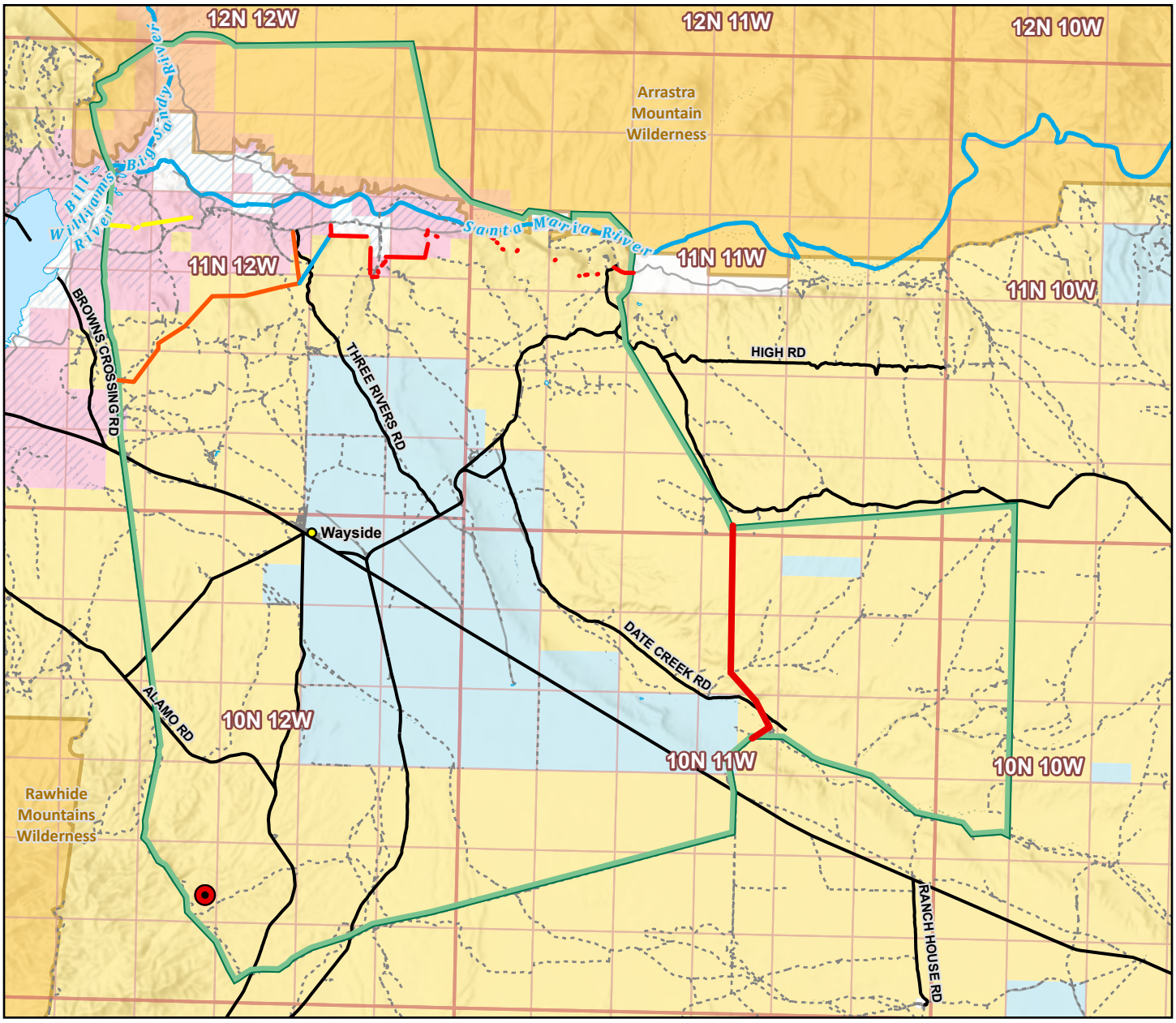

Proposed Range Improvements (Figure 4)

Colorado River District - Kingman Field Office - Lake Havasu Field Office - Yuma Field Office

- Palmerita Ranch Allotment Boundaries
- Proposed Riparian Fence
- Proposed Riparian Fence Alt A
- Proposed Riparian Fence Alt B
- Proposed Riparian Fence Alt C
- Proposed Eastern Pasture Fence
- Proposed Water Facilities
- Town or Place of Interest
- County or Major Routes
- Minor Routes
- Route Not Assessed
- Waterbody
- River
- Township / Range
- Section
- Wilderness Area Boundary
- Federal Land within Wilderness Area
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- State

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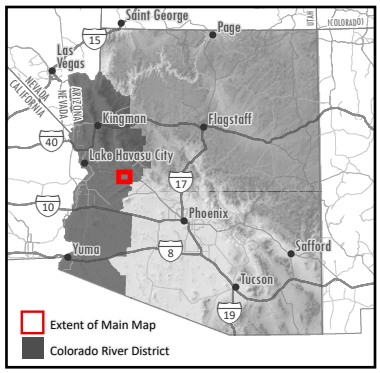
Map Location within Arizona



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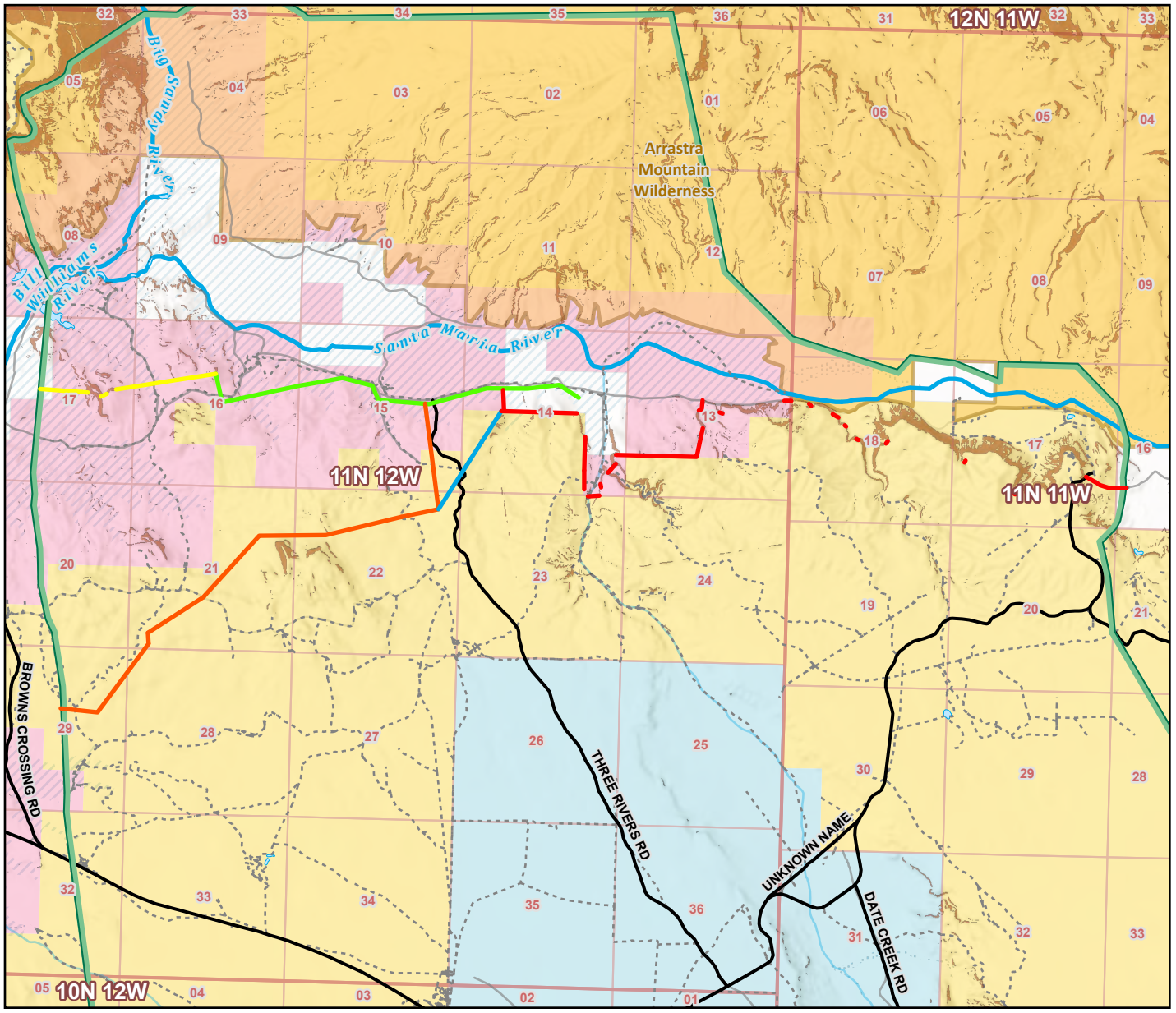
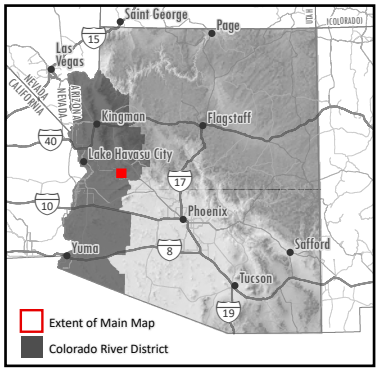
Riparian Fence Additions-Palmerita Ranch Allotment (Figure 5)

Colorado River District - Kingman Field Office - Lake Havasu Field Office - Yuma Field Office



Map Location within Arizona



- Palmerita Ranch Allotment Boundaries
- Proposed Riparian Fence Additions
- Proposed Riparian Fence Additions Alt A
- Proposed Riparian Fence Additions Alt B
- Proposed Riparian Fence Additions Alt C
- Existing Riparian Fence
- County or Major Routes
- Minor Routes
- Route Not Assessed
- Waterbody
- River
- Intermittent Stream
- Township / Range
- Section
- Wilderness Area Boundary
- Federal Land within Wilderness Area
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