

Grazing Permit Renewal for Childs, Coyote Flat #2, and Sentinel Allotments

ENVIRONMENTAL ASSESSMENT

DOI-BLM-AZ-P020-2021-0013-EA

U.S. Department of the Interior
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21605 North 7th Avenue
Phoenix, Arizona 85027
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July 2021



It is the mission of the Bureau of Land Management to sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.

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1.0 INTRODUCTION/PURPOSE AND NEED

1.1 Introduction

The Childs, Coyote Flat #2, and Sentinel allotments (collectively known as the Ajo/Sentinel Complex, or Complex) are located near the unincorporated communities of Ajo and Sentinel, Arizona. Ajo is about 87 miles southwest of Phoenix in Pima County; Sentinel is approximately 20 miles northwest of Ajo, in Maricopa County (Map 1). The Bureau of Land Management (BLM) is proposing to fully process the term grazing authorizations on the Childs, Coyote Flat #2, and Sentinel allotments. The BLM completed a Land Health Evaluation (LHE) for the Ajo/Sentinel Complex in 2021 (Appendix A).

The complex is based around the communities of Ajo and Sentinel, expanding up to approximately 20 miles northwest and 12 miles south of the Ajo city limits and approximately six miles south of Sentinel, Arizona. The Ajo portion of the Complex is surrounded by a mixture of federal and tribal lands with the Barry M. Goldwater Range (BMGR) to the north, the Tohono O’odham Indian Reservation to the east, the Organ Pipe Cactus National Monument to the south, and the Cabeza Prieta National Wildlife Refuge to the west, and is roughly bisected by State Highway 85, which runs north and south/southeast through Ajo, Arizona and extends to the United States-Mexico border. The Sentinel portion is bound by U.S. Interstate 8 to the north, BMGR to the south and east, and private farmland to the west.

1.2 Purpose and Need

The purpose of this action is to respond to an application for renewal of an expiring livestock grazing lease to graze livestock on public land, and consider livestock grazing opportunities on public lands where consistent with management objectives.

1.3 Scoping and Issue Identification

The BLM initiated internal scoping for this project on February 17, 2021. The following issues were discussed:

- Are the allotments achieving or making significant progress toward meeting the Arizona Rangeland Health Standards? If not, what measures should be incorporated into the permit renewal to ensure Rangeland Health Standards will be achieved in the future?
- What measures can be incorporated into the Proposed Action or other action alternatives to minimize or limit impacts to the Acuña cactus (*Sclerocactus eretocentrus var. acunensis*) and designated critical habitat?
- What measures can be incorporated into the Proposed Action or other action alternatives to minimize or limit impacts to the Sonoran pronghorn (*Antilocapra americana sonoriensis*)?

1.4 Land Use Plan Conformance Statement

The Lower Sonoran RMP (BLM 2012) is the applicable land use plan. The RMP identifies resource management objectives and management actions that establish guidance for managing a broad spectrum of land uses and allocations for public lands in the Lower Sonoran Field Office. The RMP allocated public lands within the Ajo/Sentinel Complex as available for domestic livestock grazing.

Rangeland management decisions in the Lower Sonoran RMP that pertain to the Proposed Action include the following:

Rangeland Management (GR) Desired Future Conditions

- GR-1: “Manage livestock grazing in the Lower Sonoran Decision Area to provide for multiple uses while maintaining healthy ecosystems”.
- GR-1.1 “Livestock grazing use and associated practices will be managed in a manner consistent with other multiple use needs and other desired resource condition objectives to ensure that the health of rangeland resources and ecosystems are maintained or improved. Management will achieve, or make significant progress toward achieving, Land Health Standards and produce a wide range of public values, such as wildlife habitat, livestock forage, recreation opportunities, clean water, and functional watersheds.”
- GR-1.1.1 “Approximately 830,200 acres of BLM-administered lands are allocated and available for livestock grazing, as shown in Table 2-6 and Map II, Livestock grazing. Approximately 100,000 acres of BLM-administered lands will not be available for grazing.”
- GR-1.1.7 “All existing water developments will be evaluated and modified, as necessary, to provide the maximum benefit and minimum impact to priority wildlife and special status species.”
- GR-1.1.8 “Grazing management on allotments categorized as “Maintain” and “Improve” may include rest rotation, deferred rotation, deferred, seasonal, short duration or other management practices to be implemented where needs are identified through monitoring. On “Custodial” allotments, grazing systems or season of use will be coordinated with the permittee, Arizona State Land Department, and/or Natural Resources Conservation Service.”
- GR-1.1.10 “Allotments may be classified as ephemeral, in accordance with the Special Ephemeral Rule published December 7, 1968, through Rangeland Health Assessments during the permit renewal process. The BLM has established criteria and standard operating procedures (SOPs; Best, Management Practices and Standard Operating Procedures), based upon the Special Rule through which allotments can be classified and managed as ephemeral.”
- GR-1.1.11 “The Arizona Guidelines for Grazing Administration, as approved in the Arizona Standards for Rangeland Health and guidelines for Grazing Administration (1997), will apply where appropriate to all livestock grazing activities.”
- GR-1.1.12 “Land not allocated for livestock use will remain unallocated for this use and its forage and other vegetation will be reserved for wildlife and nonconsumptive uses.”
- GR-1.1.13 “If an evaluation of land health standards identifies an allotment where land health standards cannot be achieved under any level or management of livestock use and where current grazing use has been identified as the causal factor, then decisions identifying those areas as available for livestock grazing will be revisited.”
- GR-1.1.14 “Should a livestock grazing permit be relinquished, the allotment and associated resources and public uses will be evaluated to determine the appropriate allocation of available forage.”

- GR-1.1.16 “Construction of new livestock waters in Category I and Category II desert tortoise habitat and in bighorn sheep habitat will be addressed on a case-by-case basis.”
- GR-1.1.17 “Range improvement permits and cooperative range improvement agreements shall specify the standards, design, construction, and maintenance criteria for the range improvements and other additional conditions and stipulations or modification deemed necessary. The extent, location, and timing of such actions will be based on allotment-specific management objectives adopted through the evaluation process, interdisciplinary development, and analysis of proposed actions and funding.”

1.5 Relationships to Statutes, Regulations, Manuals and Other Plans

The Taylor Grazing Act of 1934 and the FLPMA recognize grazing as a valid use of the public lands and require BLM to manage livestock grazing in the context of multiple use and sustained yield. Additionally, livestock grazing on public lands is managed according to grazing regulations found in the Code of Federal Regulations (at 43 CFR Part 4100).

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

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

BLM Arizona adopted the *Arizona Standards for Rangeland Health and Guidelines for Livestock Grazing Management* (BLM 1997) (also called the Rangeland Health Standards, Land Health Standards, Standards and Guidelines, and/or S&Gs) for all land use plans in 1997. The Rangeland Health Standards are intended to ensure grazing does not adversely affect rangeland health. Guidelines direct the selection of grazing management practices and livestock facilities (if appropriate) to attain and maintain, or make significant progress toward, the standards in three areas: uplands sites, riparian-wetland areas, and desired resource conditions. Methods and practices (guidelines) address watersheds, ecological condition, water quality, and habitat for special status species. Standard 1 - Uplands Sites has two guidelines; Standard 2 - Riparian-Wetland Areas has three guidelines, and Standard 3 - Desired Resource Conditions has seven guidelines. Additionally, the following pertinent laws and/or agency regulations also apply:

- Taylor Grazing Act of 1934.
- Federal Land Policy and Management Act of 1976 (43 U.S.C. 1701 et seq.).
- Public Rangelands Improvement Act of 1978.
- 43 CFR 4100 Grazing Administration - Exclusive of Alaska.
- Fundamentals of Rangeland Health (43 CFR 4180.1)
- Arizona Water Quality Standards, Revised Statute Title 49, Chapter II

- Endangered Species Act of 1973, as amended.
- National Historic Preservation Act of 1966, as amended.
- Migratory Bird Treaty Act of 1917, and Executive Order 13186 – *Responsibilities of Federal Agencies to Protect Migratory Birds*
- Special Ephemeral Rule *Federal Register* Vol. 33, No. 238, Page 18245.

1.6 Decision to be Made

The Lower Sonoran 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 to renew, renew with modifications, or not renew the leases and permits. If renewed, management actions, mitigation measures, and monitoring requirements will be prescribed for the Ajo/Sentinel Complex to ensure management objectives and Rangeland Health Standards continue to be achieved.

2.0 PROPOSED ACTION AND ALTERNATIVES

Four alternatives are described in this chapter: the Proposed Action, the No Action Alternative, a No Grazing Alternative, and a Reduced Grazing Alternative.

2.1 Proposed Action

The Proposed Action is to renew the Complex permits for a period of 10 years with the following terms and conditions (Table 1).

Table 1. Ajo/Sentinel Complex Proposed Terms and Conditions.

Allotment Name	Number	Livestock Number	Livestock Kind	Percent Public Land	Type Use	Authorized AUMS
Childs	03016	320	Cattle	99	Perennial/ Ephemeral (Active)	3,802
Coyote Flat #2	00106	31	Cattle	97	Perennial/ Ephemeral (Active)	361
Sentinel	03076	32	Cattle	92	Perennial/ Ephemeral (Active)	353

Other Terms and Conditions

Childs Allotment

Standard terms and conditions are found on Grazing Permit/Lease Form 4130-2a. In addition to the mandatory terms and conditions, the following terms and conditions would be added to the permit under the Proposed Action:

1. When forage conditions warrant, livestock grazing may be authorized upon application to utilize an ephemeral forage crop pursuant to federal grazing regulations, special management requirements and other guidance including:
 - a. The endangered U.S. Sonoran pronghorn population must be approximately ≥ 225 .
 - b. No more than 50 percent of available ephemeral forage may be grazed.

2. The permittee/lessee must properly complete, sign and date an Actual Grazing Use Report Form (BLM Form 4230-5) annually. The completed form(s) must be submitted to the BLM, Lower Sonoran Field Office (LSFO) within 15 days from the last day of authorized annual grazing use (43 CFR 4130.3-2(d)).
3. Excavation and maintenance of earthen stock tanks may only occur between June and January.
4. Conley Tank shall remain fenced, with wildlife friendly fencing, and unavailable to livestock.
5. Livestock must be evenly distributed between at least four livestock waters or rotated between livestock waters every three months.

Coyote Flat #2 Allotment

Standard terms and conditions are found on Grazing Permit/Lease Form 4130-2a. In addition to the mandatory terms and conditions, the following terms and conditions would be added to the permit under the Proposed Action:

1. When forage conditions warrant, livestock grazing may be authorized upon application to utilize an ephemeral forage crop pursuant to federal grazing regulations, special management requirements and other guidance including:
 - a. The endangered U.S. Sonoran pronghorn population must be approximately ≥ 225 .
 - b. No more than 50 percent of available ephemeral forage may be grazed.
2. The permittee/lessee must properly complete, sign and date an Actual Grazing Use Report Form (BLM Form 4230-5) annually. The completed form(s) must be submitted to the BLM, Lower Sonoran Field Office (LSFO) within 15 days from the last day of authorized annual grazing use (43 CFR 4130.3-2(d)).
3. All cattle must be removed from the allotment for three consecutive months out of the year and rotate use between the north and south pastures every other year.
4. Excavation and maintenance of earthen stock tanks may only occur between June and January.

Sentinel Allotment

Standard terms and conditions are found on Grazing Permit/Lease Form 4130-2a. In addition to the mandatory terms and conditions, the following terms and conditions would be added to the permit under the Proposed Action:

1. 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.

2. The permittee/lessee must properly complete, sign and date an Actual Grazing Use Report Form (BLM Form 4230-5) annually. The completed form(s) must be submitted to the BLM, Lower Sonoran Field Office (LSFO) within 15 days from the last day of authorized annual grazing use (43 CFR 4130.3-2(d)).

These terms and conditions comply with the conservation measures related to livestock grazing in the 2021 Biological Opinion (BO) for the Ajo/Sentinel Complex (22410-2005-F-0120-R003)(Appendix B):

- BLM will continue to require the permittee of the Coyote Flat #2 to remove all cattle from the allotment for three consecutive months out of the year, usually in the spring/summer, and rotate use between the north and south pastures every other year, allowing range conditions to improve during those time periods.
- BLM will continue to authorize ephemeral grazing on the Coyote Flat #2 and Childs allotments in accordance with ephemeral use criteria contained in the Arizona Standards for Rangeland Health and Guidelines for Grazing Administration and when the following conditions are met.
 - a. The endangered U.S. Sonoran pronghorn population must be approximately ≥ 225 (The 2016 Recovery Plan for the Sonoran pronghorn identifies the recovery abundance target for this populations as ≥ 225 individuals. The population has remained at approximately this target from 2016 to 2020).
 - b. Prior to authorizing ephemeral grazing, BLM will coordinate with the FWS and the Arizona Game and Fish Department (AGFD) in evaluating the range conditions before ephemeral grazing is authorized. Part of the purpose of this coordination is to ensure that availability of Sonoran pronghorn forage has been evaluated and that sufficient forage occurs in other parts of the Sonoran pronghorn range to support the population.
 - c. Prior to authorizing ephemeral grazing on the Coyote Flat #2 and Childs allotments, BLM will quantify the available ephemeral forage and may authorize no more that 50 percent of the available ephemeral forage to be grazed.
- BLM will continue to authorize ephemeral grazing on the Sentinel allotment in accordance with the “BLM Ephemeral Policy”.
- Excavation and maintenance of earthen stock tanks will only occur outside of the Sonoran pronghorn fawning season (February through May).
- BLM, FWS, and AGFD will coordinate to determine the availability and effectiveness of vaccines against hemorrhagic diseases in cattle. If they are available and determined to be effective for reducing the risk of transmission of disease to Sonoran pronghorn, BLM will require the permittee to vaccinate cattle on the Ajo/Sentinel allotments.
- BLM will limit the utilization of perennial forage species by livestock to 30%.

2.2 No Action Alternative

The No Action Alternative would renew the Childs, Coyote Flat #2, and Sentinel allotments permits for a period of 10 years with the same terms and conditions as shown in Table 1. However, the updated conservation measures in the 2021 BO would not be included on the grazing permits. Actual use reporting would not be included on the Coyote Flat #2 and the Sentinel allotment permits.

2.3 No Grazing Alternative

This alternative was developed to address unresolved conflicts concerning alternative uses of available resources, in this case, alternative uses of forage (40 CFR 1501.2(c)). Under the No Grazing Alternative, the BLM would not authorize grazing in the Childs, Coyote Flat #2, and Sentinel allotments for a 10-year term and all Animal Unit Months (AUMs) for active preference would be unavailable for livestock grazing on public lands (i.e., livestock grazing would be deferred for the 10-year permit period). No new range improvement projects would be constructed and no modifications would be made to existing projects. Livestock grazing would still potentially occur on State and privately-owned lands adjacent to BLM-administered lands within this Complex.

2.4 Reduced Grazing Alternative

The Reduced Grazing Alternative is developed to include a conservative use alternative that exceeds the conservation measures of the 2021 BO to maintain both endangered species habitat and rangeland condition. Under this alternative, the Ajo/Sentinel Complex permits would be renewed for a period of 10 years with the same terms and conditions as the Proposed Action, with the exception of the level of use authorized on the Childs Allotment, which would reduce Authorized AUMs by 66 percent (Table 2).

Table 2. Childs Allotment Proposed Terms and Conditions.

Allotment Name	Allotment Number	Livestock Number	Livestock Kind	Percent Public Land	Type Use	Authorized AUMs
Childs	03016	110	Cattle	99	Perennial/ Ephemeral (Active)	1,307

2.5 Alternatives Considered but Eliminated From Detailed Analysis

Ephemeral Use Only Alternative

The BLM considered an “ephemeral use only” alternative for the allotments. The Special Ephemeral Rule defines ephemeral rangeland as lands that meet the following criteria (BLM 1968):

- The area is within the hot desert biome; annual precipitation less than eight inches;
- The land produces less than 25 lbs/acre of desirable perennial forage¹;
- The land contains less than five percent composition of desirable perennial forage plants;
- The area is below 3,500 feet in elevation;
- The total forage production is highly unpredictable and availability is usually of short duration;
- The growth is dependent upon abundant moisture and other favorable climatic conditions; and
- The area lacks the potential to improve the current ecological conditions and produce a dependable supply of forage by applying intensive rangeland management practices.

The BLM determined the Complex of allotments did not fully meet these criteria for ephemeral use only due to the majority of monitoring locations within the complex containing greater than

¹ Desirable perennial forage is defined in Appendix A of the LHE.

five percent desirable perennial forage species by composition and has predictable perennial forage production and availability. Therefore, the Ephemeral Use Only alternative was eliminated from further analysis.

3.0 AFFECTED ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

This chapter identifies and describes the current condition and changes of elements or resources in the human environment which may be affected by the Proposed Action or No Action Alternative. The Affected Environment is the same for all alternatives.

3.1 General Setting

The Analysis Area is the Ajo/Sentinel Complex, consisting of three allotments and 213,841 acres of BLM and non-BLM lands (Map 1). Within the Complex is the Coffeepot Botanical Area of Critical Environmental Concern (ACEC) overlapping the Childs Allotment and the Cuerda De Lena ACEC overlapping the Coyote Flat #2 Allotment (Map 2). The predominant vegetation community in the Complex is the Sonoran paloverde-mixed cacti desert scrub and Sonoran-Mojave creosote-white bursage desert scrub. Various wildlife are associated with these vegetation communities including the Sonoran desert tortoise. Existing range improvements in the Analysis Area include wells, storage tanks, reservoirs, underground pipelines, troughs, allotment boundary and pasture fencing.

Resources Considered for Analysis

The following resources are or may be present in the Project Area, may be affected by one of the alternatives and warrant detailed analysis: ACECs, Noxious and Invasive Weeds, Migratory Birds, BLM Sensitive Species (Animals), General Wildlife; Threatened or Endangered Species, BLM Sensitive Species (Plants), Soils, and Vegetation. See Appendix C for rationale for those resources present but not analyzed in detail.

The Coffeepot Botanical ACEC is discussed in Sections 3.3.1 and 3.3.2. The Cuerda de Lena ACEC is discussed in Sections 3.5.1 and 3.5.2.

3.2 Types of Effects

In this document, the terms “effect” and “impact” are used synonymously. For this analysis, the duration of the impact is defined as follows:

- **Short-term:** impacts that would occur within one year of project implementation
- **Long-term:** impacts that would occur longer than one year from project implementation

For this analysis, intensity or severity of the impact is defined as follows:

- **Negligible:** changes would not be detectable and/or measurable. The resource would be essentially unchanged or unaltered.
- **Minor:** changes would be detectable, localized, and/or measurable. The resource would be slightly changed or altered.
- **Moderate:** changes would be clearly detectable, measurable, and/or have an appreciable effect on the resource. The resource would be notably changed or altered.

For this analysis, the type of impact is defined as follows:

- **Adverse:** impacts that would have a detrimental effect to a resource.
- **Beneficial:** impacts that would have a positive effect to a resource.

3.3.1 Affected Environment – Vegetation Communities

Vegetation Communities

This section discloses the impacts of livestock grazing within the Ajo/Sentinel Complex allotments on upland vegetation, noxious and invasive weeds, and the Coffeepot Botanical ACEC.

The BLM conducts LHEs (Land Health Evaluations) to determine whether BLM Arizona Land Health Standards are being achieved on a grazing allotment and if not, to determine if livestock grazing is a causal factor for not achieving, or failing to make significant progress toward achieving, land health standards. The LHE completed for the Ajo/Sentinel Complex determined that Standards 1 and 3 are being achieved on the majority of upland sites (Appendix A). Standard 2 applies to Riparian-Wetland Areas, and thus is not applicable since there are no riparian or wetland areas present in the Complex.

Land Health Standard 3 is specific to upland vegetation and is evaluated based on vegetation monitoring within the Complex allotments. Upland vegetation monitoring of the Complex allotments shows a vegetation community structure typical of the 7-10 inch precipitation zone of the Sonoran Desert. Vegetation communities of the Complex include creosote-bursage and paloverde-mixed cacti desert scrub.

As part of the LHE, the BLM established 13 Key Areas² across the Complex in 2014, 2015, and 2016. Some of the key areas were monitored again in 2019 and 2021 to determine the changes of ecological processes and conformance with Land Health Standards.

Desired Plant Community (DPC) objectives were established for each Key Area on the Complex. These objectives are based on the potential vegetation community on each ecological site, as limited by factors such as rainfall regime, drought effects, and the potential for the ecological site to produce forage for wildlife. DPC objectives are a measurement of attainment for Standard 3 for each Key Area. DPC objectives are designed to meet or exceed habitat requirements for wildlife species such as Sonoran pronghorn and Sonoran desert tortoise when the ecological site has the potential to do so.

The number of DPC differ among Key Areas, ranging from three to five. A key area met Standard 3 if >50% of the objectives were met. The LHE (Appendix A) determined thirteen of the seventeen key areas met Standard 3. All DPC objectives are being achieved at Childs Key Area 3 and Sentinel Key Area 4. DPC objectives are partially achieved at all other Key Areas.

² A Key Area is an indicator area that represents a larger ecological area. Range condition, change, use and production are sampled in key areas to reflect grazing management over similar areas in the unit.

Perennial grass composition objectives are not achieved at Childs Key Area 1, 2, and 4, Coyote Flat #2 Key Area 4 and 5, and Sentinel Key Area 2. Vegetative canopy cover objectives are not achieved at Childs Key Area 2, Coyote Flat #2 Key Area 1 and 3, and Sentinel Key Area 3. Bare ground cover objectives are not achieved at Childs Key Area 2. Desirable palatable species objectives are not achieved at Childs Key Area 4 and Coyote Flat #2 Key Area 3, 4, and 5. Cryptogam cover objectives are not achieved at Childs Key Area 4 and Coyote Flat #2 Key Area 1, and 3. Density of noxious species objective is not achieved at Sentinel Key Area 1.

Current utilization measurements on the Complex indicate low levels of use on the majority of the Key Areas. Livestock grazing is unlikely to be the causal factor for non-achievement of DPC objectives in areas where utilization levels are low (less than 30 percent).

Key Areas 1 and 4 on the Childs allotment show greater than 30 percent use of perennial grass which is likely a contributing factor for the non-achievement of DPC objectives on these sites. Additionally, prolonged drought in the area, combined with the low expected rainfall regime, reduces the potential for vegetation recruitment and adversely impacts vegetation cover production.

Due to their ephemeral nature, annual plant species are not measured as part of composition on long-term trend sites. Properly managed ephemeral grazing, which features stocking rates set through the BLM's best management practices and exclude the use of perennial species, has been shown to not significantly impact the diversity and reproductive ability of annual forage species (Enright and Miller 2007). Indian wheat (*Plantago ovata*) and pepper weed (*Lepidium lasiocarpum*) comprise the majority (>80 percent) of annual plant species in Sonoran Desert ecosystems (Wasser and Price 1981) and are the primary forage species for ephemeral grazing in this area.

The production and growth potential of these and other annual plants are assessed prior to ephemeral authorizations according to the guidance set forth in BLM Instruction Memorandum No. AZ-94-018 Ephemeral Grazing Authorizations, the RMP, and the Candidate Conservation Agreement for the Sonoran Desert tortoise in Arizona. This guidance takes wildlife into consideration to limit potential impacts livestock grazing may have on habitat and forage requirements of various wildlife, including Sonoran Desert tortoise and bighorn sheep. Additionally, the 2021 Biological Opinion provides further guidance to limit potential impacts to Sonoran pronghorn during ephemeral grazing.

Noxious and Invasive Weeds

Noxious and invasive weeds occur on the Complex and are most common on the Sentinel allotment. Weeds such as buffelgrass (*Cenchrus ciliaris*), wild arugula (*Eruca sativa*), Sahara mustard (*Brassica tournefortii*), and Mediterranean grass (*Schismus barbatus*) are the most common. Sentinel Key Area 2 saw an increase in buffelgrass composition from 0 to 0.55 percent between 2014 and 2019. Sentinel Key Area 3 saw an increase in the density of Sahara mustard from 0 plants per acre to 566 plants per acre during the same time period. Livestock are likely a contributing factor for the increase in buffelgrass on Key Area 2. Sahara mustard is primarily

dispersed by wind with many infestations on the Sentinel allotment stemming from the Interstate 8 right-of-way which harbors many noxious and invasive weed species.

Coffeepot Botanical Area of Critical Environmental Concern

The Coffeepot Botanical ACEC protects botanical resources on approximately 8,900 acres northeast of Ajo, within the Childs allotment. “The Sonoran Desert scrub community in this area is diverse and includes more than 285 plant species, many with limited distributions in the US. Among these is the Acuña cactus, a candidate for listing under the ESA. Livestock grazing in the Coffee Pot ACEC is limited due to a lack of livestock watering facilities...” (BLM 2012b).

The Lower Sonoran RMP prescribes management (in part) for the Coffeepot Botanical ACEC as:

- *The Coffeepot Botanical ACEC designation of approximately 8,900 acres will be retained to protect the outstanding botanical diversity of the native and rare plant communities, such as the acuña cactus. All management actions (including remaining open to lands and minerals actions) will be the same, except the ACEC will not be closed to OHV use.*
- *Livestock facilities will not be developed where they will increase livestock use within an area of known or newly discovered populations of acuña cactus. Livestock facilities could be developed to improve natural resource conditions by improving livestock distribution. Adaptive management and best management practices will be utilized to avoid conflicts with wildlife resources.*
- *Existing range improvements will remain in place unless the improvement is no longer needed for livestock operations or wildlife water distribution.*

3.3.2 Environmental Consequences – Vegetation Communities

Proposed Action

The Proposed Action was designed to integrate the conservation measures of the 2021 Biological Opinion into the grazing permits. The conservation measures were developed to limit livestock impacts to Sonoran pronghorn habitat and acuña cactus habitat.

Requiring the Coyote Flat #2 permittee to remove all cattle from the allotment for three consecutive months out of the year, usually in the spring/summer, and rotate use between the north and south pastures every other year, would allow vegetation of the north and south pastures a rest and recovery period every other year, resulting in increased production and vigor of perennial plants.

Limiting the utilization of ephemeral forage species to a maximum of 50 percent on the Coyote Flat #2 and Childs allotments would reduce the intensity of livestock grazing on these species. The reduction in time additional livestock spend on the allotments would also reduce the amount of trampling and incidental use of perennial species as compared to the No Action Alternative.

Excluding the use of Conley Tank, through existing fencing around the tank, on the Childs allotment would benefit vegetation, including the acuña cactus and its habitat, in proximity of the tank. Vegetation would no longer be utilized or trampled in this area allowing increased opportunity for recovery of these species as compared to the No Action Alternative. The exclusion of Conley Tank would also eliminate the presence of unauthorized livestock from the neighboring reservation which frequent the area through damaged portions of the boundary fence.

Limiting utilization of perennial forage species by livestock to 30 percent on the Complex would benefit all vegetation by allowing for increased productivity, vigor, and species diversity. An increase in composition of the most desirable forage species would be expected.

Requiring livestock to be distributed and/or rotated between livestock waters on the Childs allotment would reduce grazing intensity and/or duration resulting in increased opportunity for production and vigor of perennial plants as compared to the No Action Alternative.

Given these conservation measures and other BLM best management practices, impacts to vegetation and ACECs within the Complex under the Proposed Action would be adverse, minor, and long-term.

No Action Alternative

Under the No Action Alternative, livestock would be reauthorized on the Complex with the same other terms and conditions of the existing permits. No updates to the other terms and conditions would be included on the permits. Vegetation would continue to be grazed and trampled by livestock around Conley tank on the Childs allotment, livestock distribution and/or rotation would not be required on the Childs, and use of ephemeral forage species would not be limited to 50 percent. Vegetation of the Childs would be impacted more than under the Proposed Action. However, vegetation of the Coyote Flat #2 and Sentinel would see similar impacts when compared to the Proposed Action.

Under the No Action Alternative, impacts to vegetation and ACECs within the Complex would be adverse, moderate, and long-term.

No Grazing Alternative

Upland vegetation would have the most rest and recovery under the No Grazing Alternative. Vegetation recovery would be limited due to the extended drought coupled with the low rainfall regimes on the Complex. Because no livestock grazing would occur, the only browse pressure would be from wildlife and potentially feral and/or stray livestock. Grasses would see greater benefit compared to the other alternatives because grazing pressure would not impede their ability to fix carbon and produce and set seed.

Shrub species would most benefit from the No Grazing Alternative. Current year's growth, green leaves and young stems which are important for photosynthesis, is the most digestible part of the plant and is the portion generally removed by browsing animals. The buds are especially important because they are the source of new stems and continued growth. Under this alternative,

upland vegetation would improve the most in productivity, vigor, species composition and formation of new stems compared to the other alternatives.

Under the No Grazing Alternative, impacts to vegetation and the ACECs within the Complex would be beneficial, minor, and long-term.

Reduced Grazing Alternative

Impacts to vegetation under the Reduced Grazing Alternative would be similar to the Proposed Action with the exception of the Childs allotment. The reduced number of perennially authorized AUMs would benefit vegetation on the Childs allotment. A 65 percent reduction of AUMs, from 3,802 AUMs to 1,307 AUMs, would improve the productivity, vigor, and composition of desirable perennial forage species on the Childs allotment.

Under the Reduced Grazing Alternative, impacts to vegetation and the ACECs within the Complex would be adverse, minor, and long-term.

3.4.1 Affected Environment – Soils

This section discloses the impacts of livestock grazing on soil resources within the Complex allotments.

Land Health Standard 1 is specific to soils and hydrology and is evaluated based on monitoring within the Complex allotments.

Soils of the Complex are typical of the 7 to 10-inch precipitation zone of the Sonoran Desert. The erosional context in the higher elevations and mountainous areas of the Complex is stable, with less stability on floodplains and fans. Potential for sheet and rill erosion is greater on alluvial floodplains and fans compared to rocky mountainous soils.

Wind erosion within the Complex primarily occurs in the alluvial valleys and is more susceptible than the mountainous areas where soils are armored by rock and cobbles. Wind erosion is exacerbated in areas devoid of or with limited vegetation cover.

Water erosion within the Complex occurs during intense summer thunderstorms. Soils have well drained conditions; however, intense rainfall can overwhelm soil infiltration capacity and create overland flow. Intense monsoon rainfall can produce overland flow in part due to dry soils forming crusts that resist percolation. Overland flow transports soil particles along erosion pathways from runoff surfaces to run-on areas, typically formed by vegetation patches or topographic breaks. Compaction and trailing from cattle can exacerbate erosion when trails align with water flow pathways when soils are wet. This effect is mostly localized around livestock water sources on the Complex.

Desert soils have known contributions from biological soil crusts, also called cryptogamic crusts, for soil biological function. The ecological province of the Complex with a thermic climate is expected to favor cyanobacteria that have a flat appearance. A byproduct of crust presence is aggregation that binds soil particles. Using the LHE measures, the soil and site stability attribute departed moderately or more at five Key Areas. Cryptogamic soils crusts were noted at 11 of the 12 Key Areas. However, a reduction in cryptogamic cover was noted between 2016 and 2021 on

seven Key Areas. This was likely due to drought conditions and higher litter cover from ephemeral growth during the winter of 2019/2020.

Livestock grazing affects soil productivity by removing a portion of the vegetative standing crop. Annually produced biomass serves both a physical and biological role. Plant litter insulates soils from evaporation and contributes as a protective groundcover. Decomposition of litter provides substrate for soil microbes that increases available nutrients.

Soils on the Complex were found to meet Standard 1 on the Sentinel allotment. However, one half of the Key Areas on the Childs and Coyote Flat #2 allotments are not meeting Standard 1. The majority of sites that failed to achieve Standard 1 included impacts related to OHV use.

3.4.2 Environmental Consequences - Soils

Proposed Action

The Proposed Action was designed to address the 2021 Biological Opinion and integrate the conservation measures into the grazing permits. The conservation measures were developed to limit livestock impacts to the vegetation of Sonoran pronghorn and acuña cactus habitat.

Requiring the permittee of the Coyote Flat #2 to remove all cattle from the allotment for three consecutive months each year, usually in the spring/summer, and rotate use between the north and south pastures every other year, would reduce ground disturbance and removal of soil protecting vegetation of the north and south pastures every other year.

Limiting the utilization of ephemeral forage species to 50 percent on the Coyote Flat #2 and Childs allotments would benefit soils by reducing the time and number of livestock have in a given pasture. The reduction in time additional livestock spend on the allotments would reduce the amount of ground disturbance through trampling and use of soil protecting vegetation on these allotments.

Excluding the use of Conley Tank on the Childs allotment would benefit soils in proximity to the tank. Soils would no longer be disturbed by livestock in this area. The exclusion of Conley Tank would also eliminate the presence of unauthorized livestock from the neighboring reservation which frequent the area through damaged portions of the boundary fence.

Limiting utilization of perennial forage species by livestock to 30 percent on the complex would benefit soils by allowing for an increase in soil protecting vegetation cover.

Requiring livestock to be distributed and/or rotated between waters on the Childs would benefit soils by reducing the grazing intensity and/or duration. Soils would benefit through the reduction of trampling and an increase in soil protecting vegetation cover and litter.

Given these conservation measures and other BLM best management practices, impacts to soils under the Proposed Action would be adverse, minor, and long-term.

No Action Alternative

Under the No Action Alternative, livestock would be reauthorized on the Complex with the same other terms and conditions of the existing permits. No updates to the other terms and conditions would be included on the permits. Soil protecting vegetation would continue to be grazed and soils would be trampled by livestock around Conley tank on the Childs allotment, livestock distribution and/or rotation would not be required on the Childs and use of soil protecting ephemeral forage species would not be limited to 50 percent. Soils of the Childs would be impacted more so than under the Proposed Action. However, soils of the Coyote Flat #2 and Sentinel would see similar impacts when compared to the Proposed Action.

Under the No Action Alternative, impacts to soils would be adverse, moderate, and long-term.

No Grazing Alternative

The removal of livestock from the Complex would increase litter and reduce compaction and bare soil exposure from livestock trampling. Benefits would be the greatest at and near former livestock congregation areas.

Beneficial impacts to vegetation and soils across the range would be slow and depend on the level of forage that livestock grazing previously impacted. The response from livestock removal would be low since palatable forage makes up a small percentage of the annual crop. Changes would be highest where grasses and forbs naturally thrive.

Using Michunas' (2006) review of plant community response to livestock grazing, a very slow vegetation response to livestock removal would be expected in arid and semi-arid environments. This may be due to the small proportion of vegetation communities being comprised of desirable forage species and the unpalatability of the larger shrub component of the vegetation communities. Some quantitative studies of the effects of grazing on Sonoran desert ecosystems have shown that species composition has gone unchanged but species density did decline in grazed areas when compared to ungrazed areas (Michunas 2006).

The response from no grazing may be small since less change is associated with reductions from moderate compared to heavy grazing levels. A seven-year study near Flagstaff, Arizona, found significant reductions in vegetation cover and plant community composition only in the heavily grazed areas when compared to moderate and no grazing areas (Loesser et al. 2007).

Under the No Grazing Alternative, impacts to soils would be beneficial, minor, and long-term.

Reduced Grazing Alternative

Impacts to soils under the Reduced Grazing Alternative would be similar to the Proposed Action with the exception of the Childs allotment. The reduced number of perennially authorized AUMs would benefit soils on the Childs allotment. A 66 percent reduction of AUMs, from 3,802 AUMs to 1,307 AUMs, would improve the productivity, vigor, and composition of desirable perennial forage species resulting in additional protective vegetation cover and litter over soils on the Childs allotment.

Under the Reduced Grazing Alternative, impacts to soils would be adverse, minor, and long-term.

3.5.1 Affected Environment – Biological Resources

General Wildlife

The Analysis Area contains many species of animals that are commonly associated with a Sonoran desertscrub community. Typical wildlife species include the following: desert mule deer (*Odocoileus hemionus*), javelina (*Pecari tajacu*), mountain lion (*Puma concolor*) and bighorn sheep (*Ovis canadensis*). For more information on General Wildlife within the Analysis Area, see Section 3.2.13 of the Lower Sonoran/SDNM FEIS.

Migratory Birds

The Analysis Area contains suitable habitat for many migratory birds. Typical migratory bird species including the following: mourning dove (*Zenaida macroura*), phainopepla (*Phainopepla nitens*) and cactus wren (*Campylorhynchus brunneicapillus*). For more information on Migratory Birds within the Analysis Area, see Section 3.2.13 of the Lower Sonoran/SDNM FEIS.

BLM Sensitive Species (Animals)

There are several BLM sensitive species that potentially occur within the Analysis Area including the Sonoran desert tortoise (*Gopherus morafkai*) and the lesser long-nosed bat (*Leptonycteris curasoae yerbabuena*). The Analysis Area contains habitat that the BLM characterizes as tortoise habitat. There are approximately 3,898 acres of Category II tortoise habitat within the Coyote Flat #2 allotment. Within the Childs allotment there are approximately 23,585 acres of Category I tortoise habitat, approximately 41,733 acres of Category II tortoise habitat and approximately 1,451 acres of Category III tortoise habitat (Map 3). For more information on BLM Sensitive Species within the Analysis Area, see Section 3.2.13 of the Lower Sonoran/SDNM FEIS.

Cuerda de Lena Wildlife Area of Critical Environmental Concern

Most of the Coyote Flat #2 allotment lies within the Cuerda de Lena ACEC. The Cuerda de Lena ACEC encompasses approximately 58,500 acres of public lands. The ACEC's purpose is to protect habitat for the endangered Sonoran pronghorn and other wildlife species, including the cactus ferruginous pygmy-owl. The ACEC also protects cultural resources.

The Lower Sonoran RMP lists the following management prescription for the Cuerda de Lena ACEC:

“Within the ACEC, surface-disturbing maintenance associated with Land Use Authorizations (LUAs) would be limited to the authorized LUA grant. Mitigation, adaptive management, and BMPs would be used to avoid harassment and long-term displacement of wildlife. Impacts on wildlife would be expected to be minor” (BLM 2012b).

3.5.2 Environmental Consequences – Biological Resources

Both livestock and wildlife utilize vegetation. Various wildlife species (e.g., bighorn sheep, mule deer, some migratory birds) depend on forbs and shrubs for forage and concealment. Insectivore species such as bats or some migratory birds are indirectly dependent on herbaceous vegetation to support their insect population diet or to provide a substrate for nesting, roosting, or concealment. Larger predator species are also indirectly dependent on herbaceous vegetation to

provide forage and cover for prey species such as small mammals and birds. The presence and movement of livestock between areas can result in the direct disturbance or displacement of individual wildlife species from areas providing cover and forage. Competition between livestock and a variety of wildlife species can occur in areas with low perennial grass composition where livestock and wildlife are more likely to utilize the same browse forage species. According to the 2021 LHE, there are two areas on the Childs allotment that are not achieving Standards as a likely result of livestock grazing.

Proposed Action

Under the Proposed Action Alternative, range improvements such as water developments, could continue to be maintained in allotments available for livestock grazing. The presence of maintained water developments could benefit wildlife, especially during the hot and dry periods prior to summer monsoons. The closing of Conley Tank to livestock could reduce competition for forage in this area of the Childs and this could be beneficial to wildlife.

Under the Proposed Action Alternative, impacts to general wildlife, BLM sensitive animal species, migratory birds, and the ACECs of the Complex would be adverse, moderate, and long-term.

No Action Alternative

Under the No Action Alternative, range improvements such as water developments, could continue to be maintained in allotments available for livestock grazing. The presence of maintained water developments could benefit wildlife, especially during the hot and dry periods prior to summer monsoons.

Under the No Action Alternative, impacts to general wildlife, BLM sensitive animal species, migratory birds, and the ACECs of the Complex would be adverse, moderate, and long-term.

No Grazing Alternative

In the absence of livestock grazing, competition for wildlife forage vegetation would be reduced, providing more forage for wildlife and insect populations. The absence of livestock grazing could result in cover canopy increasing over time, benefiting cover-dependent species. Livestock disturbance/displacement effects would not occur, benefiting nesting migratory birds and other wildlife. With the absence of grazing, improvements in vegetative cover conditions would be expected to occur more rapidly. This would result in a potential benefit for wildlife. Recruitment of herbaceous species cover, and composition would be expected to be greater under this alternative.

Under the No Grazing Alternative, the permittees would be reimbursed, in accordance with 43 CFR 4120, for their interest in the fair market value of the documented range improvements within the unavailable allotments. These range improvements could then be removed, maintained, or modified to achieve resource goals, such as wildlife, on a case-by-case basis. The number of maintained water sources within the complex is likely to decrease due to the removal of permittee maintenance contributions. Fewer water developments could have adverse impacts on wildlife. Fencing does hinder the movement of some wildlife species and it is possible for wildlife to get injured on fencing. Unmaintained fencing is potentially a greater hazard to

wildlife. When fence materials break, and are on the ground, there is a greater potential for wildlife to become entangled in it. Unmaintained range improvements could result in adverse impacts to wildlife.

Under the No Grazing Alternative, impacts to general wildlife, BLM sensitive animal species, migratory birds, and the ACECs of the complex would be beneficial, minor, and long-term.

Reduced Grazing Alternative

Under the Reduced Grazing Alternative, livestock grazing would be available on all allotments although the total number of AUMs on the Childs allotment would be reduced.

Under the Reduced Grazing Alternative, range improvements such as water developments, could continue to be maintained in areas available for livestock grazing. Waters that are not currently being maintained could be repaired in the future. Impacts would be similar to the No Action Alternative.

Under the Reduced Grazing Alternative, impacts to general wildlife, BLM sensitive animal species, migratory birds, and the ACECs of the Complex would be adverse, moderate, and long-term.

3.6.1 Affected Environment – Threatened or Endangered Species

Sonoran Pronghorn

Within the Ajo/Sentinel Complex there are two species listed under the Endangered Species Act, the Sonoran pronghorn (*Antilocapra americana sonoriensis*) and acuña cactus (*Echinomastus erectocentrus var. acunensis*) with designated critical habitat. There is also a nonessential experimental population (NEP) of Sonoran pronghorn. Formal consultation and conference with U.S. Fish and Wildlife Service was completed for the Proposed Action on January 11, 2021.

The Sonoran subspecies of pronghorn was listed throughout its range as endangered on March 11, 1967 (32 FR 4001) under the Endangered Species Preservation Act of October 15, 1966, without critical habitat. Abundance and population trends are described in the 2016 Recovery Plan (FWS 2016). In 2011 NEP area for Sonoran pronghorn was established in Arizona (FWS 2011). Within the analysis area there is Sonoran pronghorn traditional range and a NEP population. The three allotments consist of the Childs allotment (98,845 acres), Coyote Flat #2 allotment (20,419 acres), and Sentinel allotment (18,537 acres) (Map 4). Of these three allotments, the Sentinel allotment is completely within the range of endangered Sonoran pronghorn, whereas about 95% of the Childs allotment and 13% of the Coyote Flat #2 allotment occurs within the NEP area (Table 3).

Table 3

Allotment	Acres within range of endangered Sonoran pronghorn	Acres within range of NEP area for Sonoran pronghorn	Total Acres
Sentinel	18,537	0	18,537
Childs	4,510	94,335	98,845
Coyote Flat #2	17,795	2,624	20,419
Total	40,842	96,959	137,801

Acuña Cactus

The acuña cactus was listed as endangered in 2013 and critical habitat was designated in 2016. Approximately 2,724 acres of designated critical habitat occur within the Childs allotment (Map 4).

3.6.2 Environmental Consequences – Threatened or Endangered Species

There is potential for overlap in diet and habitat used by both Sonoran pronghorn and domestic livestock within the analysis area; however, Sonoran pronghorn telemetry information provided by Arizona Game and Fish and U.S. Fish and Wildlife Service shows that there is little conflict between these two groups. There are no records of Sonoran pronghorn on the Sentinel allotment, which is within the Sonoran pronghorn traditional range. The majority of Sonoran pronghorn that came on to the Childs allotment were on the northern most portion of the allotment where there is little use by livestock and is within the NEP area, and there have only been isolated instances of Sonoran pronghorn on the Coyote Flat #2 allotment within Sonoran pronghorn traditional range.

Many of the potential conflicts between livestock and Sonoran pronghorn are not well known or understood. Livestock may compete with Sonoran pronghorn for preferred thermal cover. In other areas, livestock have been reported to displace pronghorn does from fawning areas. There is the possibility of disease (e.g., epizootic hemorrhagic disease, bluetongue) transmission from livestock to Sonoran pronghorn.

Acuña cactus designated critical habitat does occur within the Childs allotment. Although unlikely, livestock could trample acuña cactus. If not managed properly livestock grazing could impact or degrade soils and could impact or change the vegetation communities. Within the action area, the range in and around the acuña cactus habitat and designate critical habitat is available to grazing, although the permittee of the Childs allotment has chosen not to graze this area in recent years. The habitat in this area is steep and rocky. In general, livestock do not travel more than two miles from water on flat terrain and normally no more than one mile in rough terrain (Smith et al. 1986). Currently there are no functioning waters within one mile of acuña cactus critical habitat except for Conley Tank. The permittee has agreed to make the Conley Tank unavailable to livestock and the Conley Tank has been fenced, with a wildlife friendly fence, to keep livestock out. Within the Childs allotment there is a well and range improvement at the western edge of the Coffeepot ACEC called Coffeepot well that was built in 1962. Coffeepot well is approximately one mile from the acuña cactus critical habitat. It is estimated that this area has not been grazed by a BLM permittee in more than ten years. Coffeepot well is currently in disrepair, but the permittee has expressed an interest in repairing it and utilizing it in the future.

Proposed Action

Under the Proposed Action Alternative, range improvements such as water developments, could continue to be maintained and/or repaired in allotments available for livestock grazing. The presence of maintained water developments could benefit Sonoran pronghorn, especially during the hot and dry periods prior to summer monsoons. Under the proposed action, Conley Tank would remain fenced and unavailable to livestock. This could be beneficial to acuña cactus.

Under the Proposed Action Alternative, impacts to threatened and endangered species would be adverse, minor, and long-term.

No Action Alternative

Under the No Action Alternative, range improvements such as water developments, could continue to be maintained and/or repaired in allotments available for livestock grazing. The presence of maintained water developments could benefit Sonoran pronghorn, especially during the hot and dry periods prior to summer monsoons.

Under the No Action Alternative, impacts to threatened and endangered species would be adverse, minor, and long-term.

No Grazing Alternative

In the absence of livestock grazing, conflicts between livestock and threatened and endangered species would be eliminated. It is possible that Sonoran pronghorn are avoiding areas with domestic livestock and the absence of grazing would make a larger portion of their traditional range and the NEP area available to them.

Under the No Grazing Alternative, impacts to threatened and endangered species would be beneficial, minor, and long-term.

Reduced Grazing Alternative

Under the Reduced Grazing Alternative, impacts to threatened and endangered species would be consistent with the impacts described under the No Action Alternative. The operator on the Childs allotment has not utilized his full preference for many years and the reduced grazing alternative would be consistent with the current actual use.

Under the Reduced Grazing Alternative, impacts to threatened and endangered species would be adverse, minor, and long-term.

3.7 Residual Effects

Residual effects are effects to the environment that remain after the implementation of the alternatives and mitigation.

Proposed Action

Under the Proposed Action, no residual effects are expected on the Complex. The majority of the Complex would remain under management similar to existing systems, and permit modifications are expected to negate any potential residual effects.

No Action Alternative

Under the No Action Alternative the updated conservation measures would not be incorporated into the permits' terms and conditions. A livestock water in proximity to acuña cactus habitat would not be excluded and updated conservation measures for Sonoran pronghorn habitat would not be considered.

No Grazing Alternative

Under the No Grazing Alternative, maintenance on water sources within the Complex would cease. Water availability for wildlife would be reduced, changing wildlife use patterns within the Complex.

Reduced Grazing Alternative

Under the Reduced Grazing Alternative, no residual effects are expected on the Complex. The majority of the Complex would remain under management similar to existing systems, and permit modifications are expected to negate any potential residual effects.

4.0 PERSONS, GROUPS, TRIBES, AND AGENCIES CONTACTED

4.1 List of Preparers

The following individuals were involved in the preparation of this EA:

Bureau of Land Management

Name	Title	Project Expertise
Brian Buttazoni	Planning and Environmental Specialist	NEPA Compliance
Michael Daehler	Wildlife Biologist	Wildlife and T&E
Doug Whitbeck	Rangeland Management Specialist	Livestock Grazing, Soils, and Vegetation
Nancy Favour	Planning and Environmental Specialist	NEPA Compliance

4.2 Public Review

This draft EA is available to the public for review and comment for 30 days. Comments must be received by the close of business on August 8, 2021. The BLM sent notification of this document’s availability to 19 individuals, organizations, or agencies by postcard or email. The BLM will respond to substantive comments, if warranted.

Substantive comments:

- 1) Question, with reasonable basis, the accuracy of the information in the EA;
- 2) Question, with reasonable basis, the adequacy of, methodology for, or assumptions used for the environmental analysis;
- 3) Present new information relevant to the analysis;
- 4) Present reasonable alternatives other than those analyzed in the EA; and/or
- 5) Cause changes or revisions in one or more of the alternatives.

4.3 Tribes, Individuals, Organizations or Agencies Contacted

The following tribes, individuals, organizations or agencies were contacted during public scoping and review in 2021:

Tribes

- Ak-Chin Indian Community
- Cocopah Indian Tribe
- Colorado river Indian Tribes

Fort McDowell Yavapai Nation
Fort Mojave Indian Tribe
Fort Yuma-Quechan Tribe
Gila River Indian Community
Hopi Tribe
Salt River Pima-Maricopa Indian Community
Tohono O'odham
Yavapai-Apache Nation
Yavapai-Prescott Indian Tribe

Individuals

Alicia Treece
James Hershey
Jeff Williamson
Jim Leon
James and Marilynn Rasmussen
Lisa McCarrick

Organizations

Arizona Antelope Foundation
Arizona Cattlemen's Association
Center for Biological Diversity
Defenders of Wildlife
Desert Tortoise Council
Western Watersheds Project

Agencies

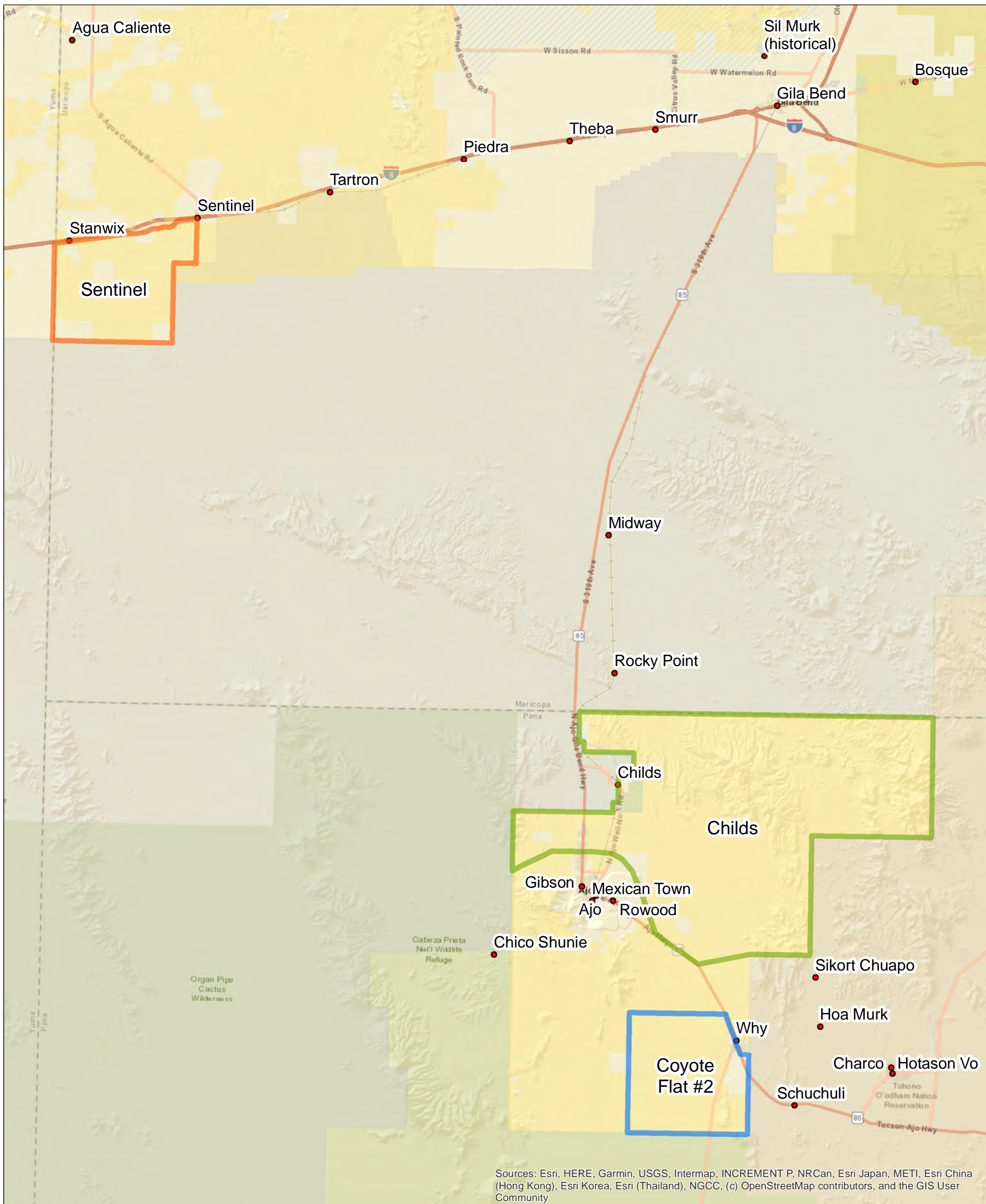
Arizona Department of Transportation
Arizona Game and Fish Department Region 4
Arizona Game and Fish Department Region 6
Arizona State Land Department
National Park Service, Organ Pipe Cactus National Monument
United States Fish and Wildlife Service, Arizona Ecological Office
United States Fish and Wildlife Service, Cabeza Prieta Wildlife Refuge

5.0 REFERENCES

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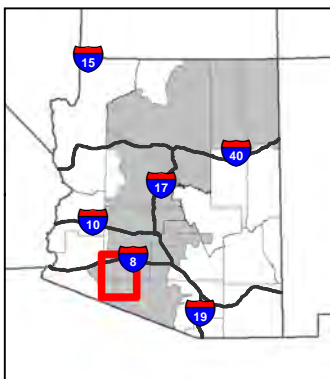
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Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

Arizona



Map Location

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data. Decisions in this document only apply to BLM lands.

**Ajo/Sentinel Complex
Proposed Grazing Permit Renewals**

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT



MAP PREPARED BY
B. Buttazoni

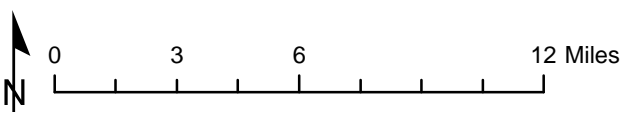


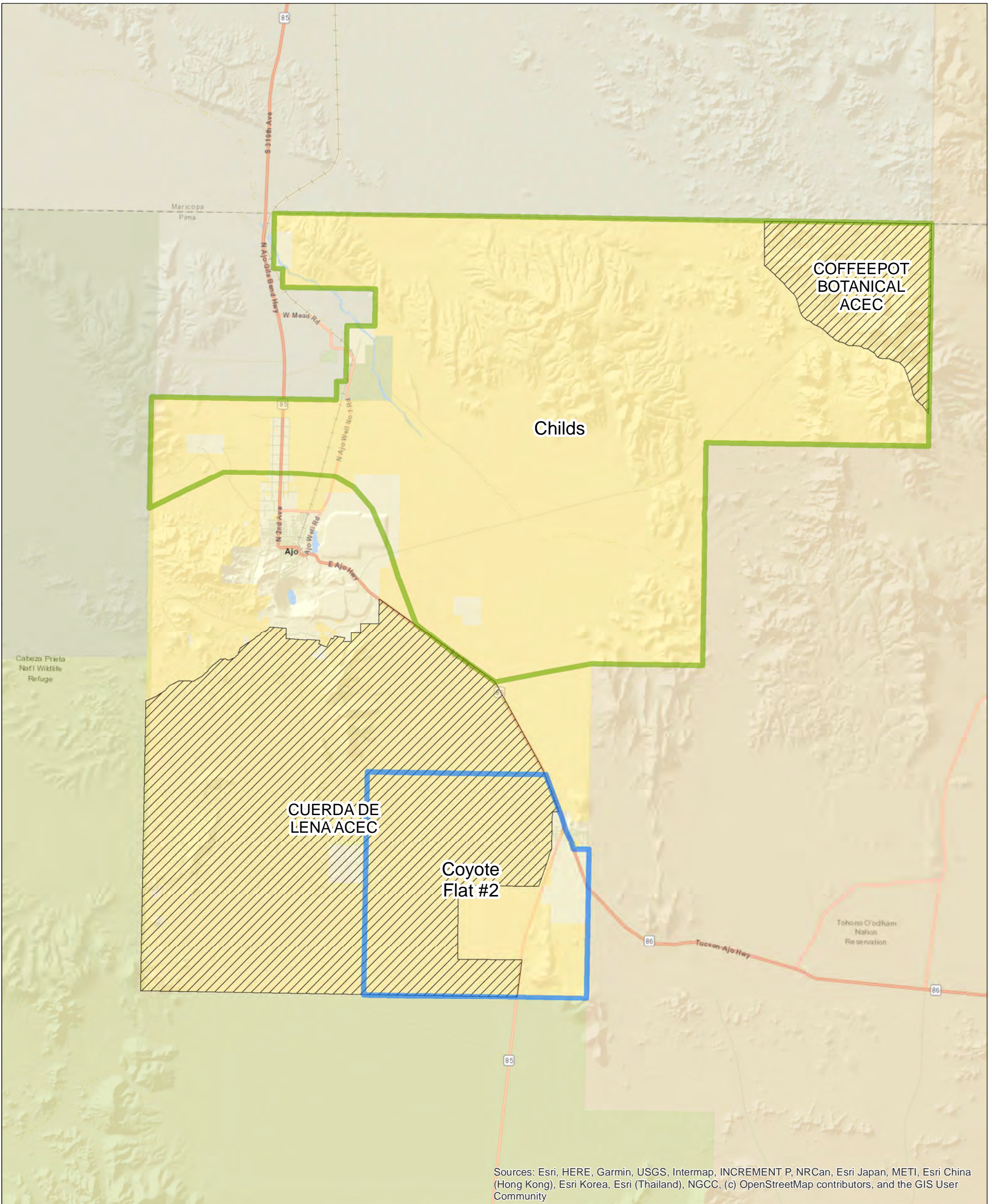
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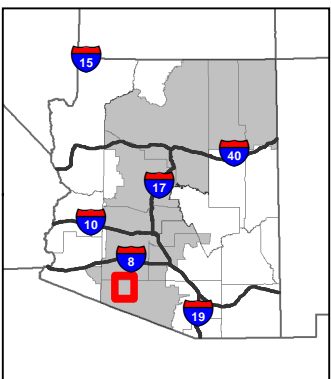
- Childs
- Coyote Flat #2
- Sentinel
- Bureau of Land Management





Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

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**Ajo/Sentinel Complex
Proposed Grazing Permit Renewals**

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT




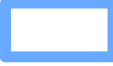

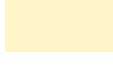

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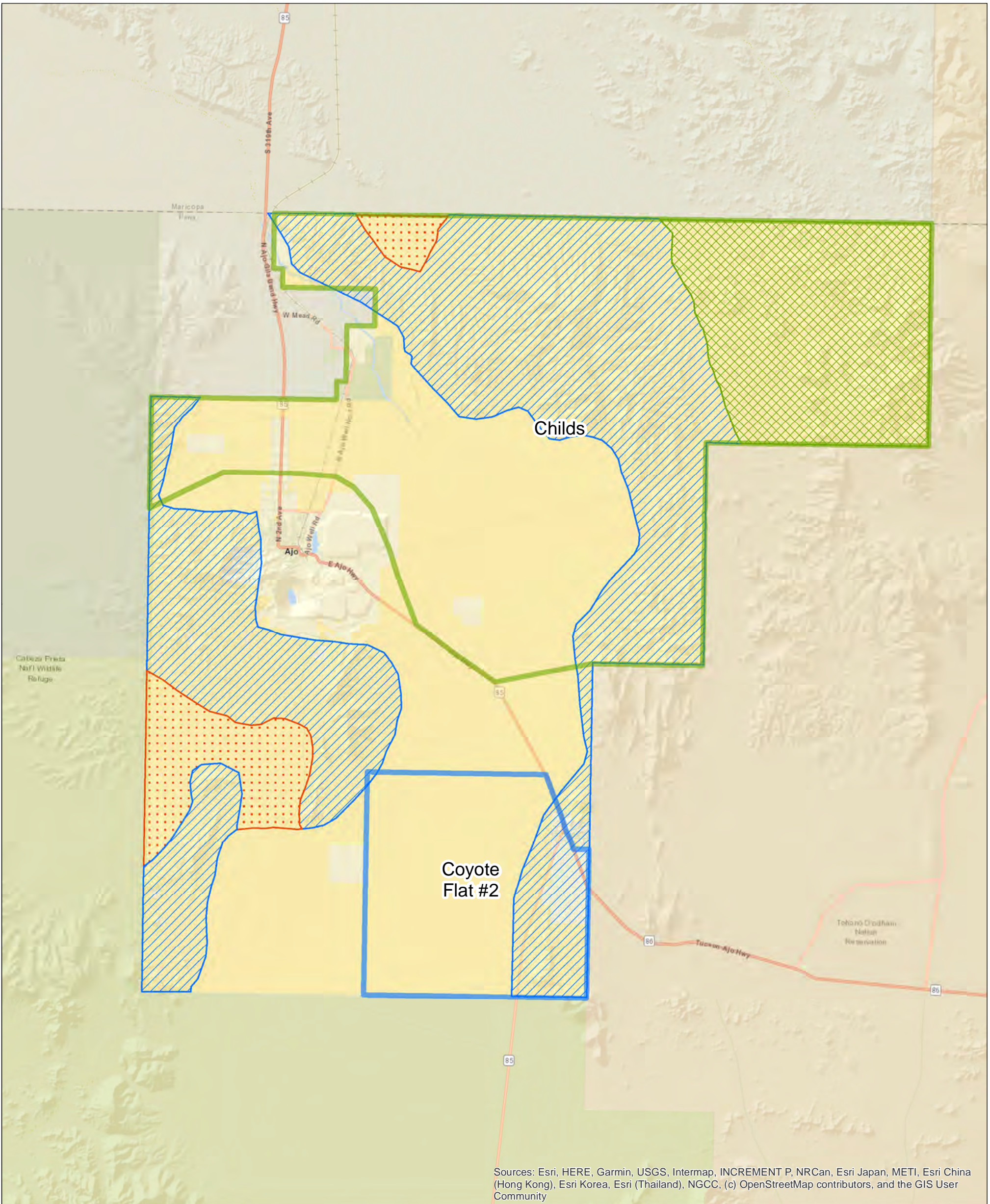
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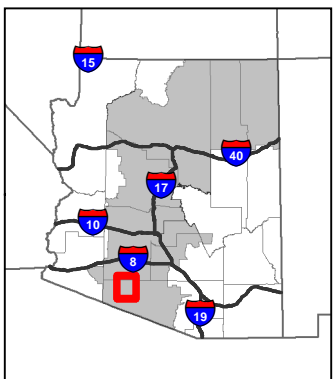
-  Childs
-  Coyote Flat #2
-  Sentinel
-  Bureau of Land Management
-  Areas of Critical Environmental Concern

MAP PREPARED BY
B. Buttazoni
ON February 2, 2021



Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

Arizona



Map Location

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data. Decisions in this document only apply to BLM lands.

**Ajo/Sentinel Complex
Proposed Grazing Permit Renewals**

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

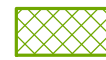


MAP PREPARED BY
B. Buttazoni
Date: 2/22/2021




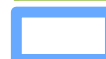


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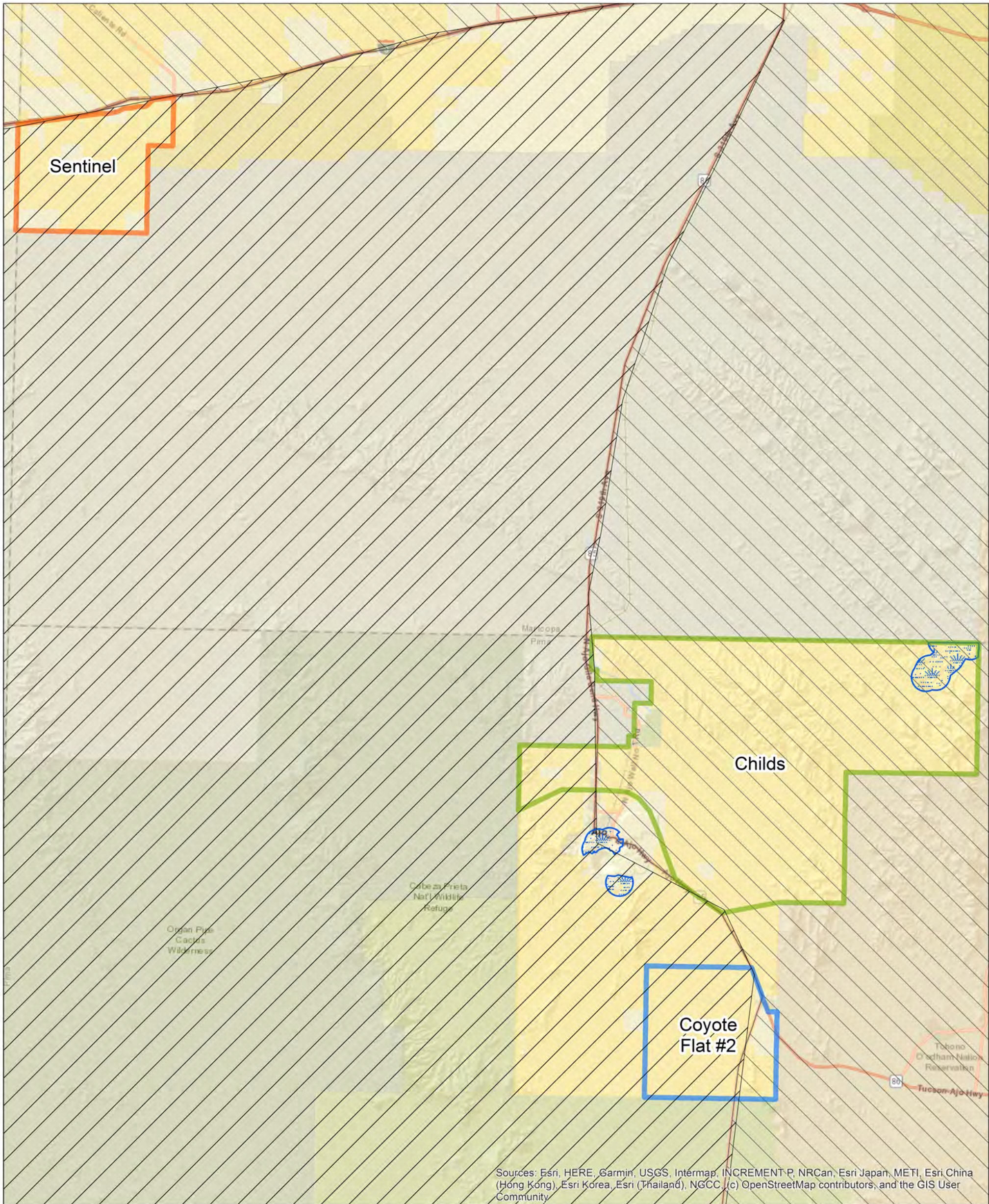


**Sonoran Desert Tortoise Habitats
CATEGORY**

-  Category I
-  Category II
-  Category III

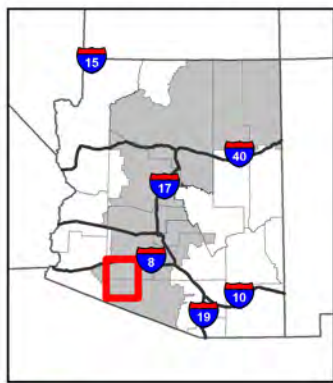
Allotment Name

-  Childs
-  Coyote Flat #2
-  Sentinel
-  Bureau of Land Management



Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT-P, NRCAn, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

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Ajo/Sentinel Complex Proposed Grazing Permit Renewals

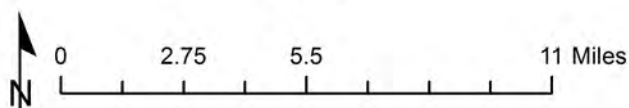
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MAP PREPARED BY
B. Buttazoni / M. Daehler
Date: 3/5/2021



1:272,672



-  Sonoran Pronghorn Range
-  Sonoran Pronghorn NEP
-  Acuna Cactus Critical Habitat
- Allotment Name**
-  Childs
-  Coyote Flat #2
-  Sentinel
-  Bureau of Land Management