

Biological Assessment for Coronado National Forest Livestock Grazing Program

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Frequently Used Acronyms

AGFD	Arizona Game and Fish Department	IDT	Inter-Disciplinary Team
BA	biological assessment	HWU	Huachuca Water Umbel
BAER	Burned Area Emergency Response	MSO	Mexican spotted owl
BMP	Best Management Practice	PAC	Protected Activity Center
BO	biological opinion	PCE	Primary Constituent Element
CH	Critical Habitat	PPC	Pima pineapple cactus
CHLT	Canelo Hills ladies' tresses	STS	Sonoran tiger salamander
CLF	Chiricahua leopard frog	TE	Threatened and Endangered
CM	Conservation Measure	THEQ	northern Mexican gartersnake
CNF	Coronado National Forest	USFWS	Fish and Wildlife Service
EA	Environmental Assessment	WUI	Wildland-Urban Interface
EMA	Ecosystem Management Area	YBCU	western yellow-billed cuckoo
EU	Ecological Units		

Introduction

Federally listed species are those that are listed under the authority of the Endangered Species Act of 1973 (ESA) (P. L. 93-205, as amended) by the U.S. Fish and Wildlife Service (USFWS) as threatened and endangered and include those proposed for listing, and land or waters that are designated by USFWS as critical habitat in the proposed area of effect (action area of effects). Section 7 of the ESA requires Federal agencies to ensure that any activities they authorize, fund, or carry out do not jeopardize the continued existence of any species federally listed or proposed for listing, or result in the adverse modification to such species' designated critical habitat. Forest Service Manual (FSM) 2670.31 directs each Forest to evaluate its programs and site-specific actions to determine their potential effect on federally listed species.

The purpose of this programmatic Biological Assessment (BA) is to evaluate the effects of the on-going livestock grazing program for the Coronado National Forest (CNF) on federally proposed and listed threatened and endangered species and their critical habitats. This BA describes conditions where effects may occur and attempts to establish governing criteria to which future actions will adhere. This BA analyzes the interaction of listed species and permitted actions related to grazing management and is structured to account for species movement into new areas, and the intent is that the effects of the grazing program on those species are covered in our analysis and in the resulting BO. The CNF requests initiation of Section 7 consultation of the CNF's Livestock Grazing Program as defined by the Standards and Guidelines in the Land and Resource Management Plan (LRMP; Forest Plan) (U.S. Forest Service [USFS] 2018) and the permitted allotment program and associated improvements, guided by monitoring and adaptive management, as described in the proposed action below. The proposed action does not include illegal or unauthorized activities not included in the description of the proposed action below; therefore, CNF's request for consultation does not include these activities.

Consultation History

In October 2002, the USFWS issued a biological opinion (BO) to the CNF for the continuation of livestock grazing on the forest. Since that time, new species have become federally listed under the ESA, baseline conditions for several listed species and some grazing allotment alignments have changed, and ecological conditions have greatly improved since the conditions that were referenced (mid-1990s) in the previous consultation. A draft biological assessment (BA) was submitted to the USFWS in August 2018, and edits have been made to this BA to reflect comments from USFWS, as appropriate.

Proposed Action

Forest Plan Standards and Guidelines for Range Program

The Forest Plan (USFS 2018) identifies the Desired Conditions and the Guidelines for the Range Program. Desired conditions set forth the desired social, economic, and ecological attributes of the CNF. They attempt to paint a picture of what the Forest Service desires the forests to look like and/or the goods and services we desire them to provide. Desired conditions are normally expressed in broad, general terms and may only be achievable over a long timeframe. In some cases, a desired condition matches the current condition, and the goal is to maintain it. Desired conditions are aspirations and are not commitments or final decisions to approve projects.

To be consistent with the desired conditions of the plan, a project or activity, when assessed at the appropriate spatial scale described in the plan (e.g., landscape scale), must be designed to meet one or more of the following conditions:

1. Maintain or make progress toward one or more of the desired conditions of a plan without adversely affecting progress toward, or maintenance of, other desired conditions; or
2. Be neutral with regard to progress toward plan desired conditions; or
3. Maintain or make progress toward one or more of the desired conditions over the long term, even if the project or activity would adversely affect progress toward or maintenance of one or more desired conditions in the short term; or
4. Maintain or make progress toward one or more of the desired conditions over the long term, even if the project or activity would adversely affect progress toward other desired conditions in a negligible way over the long term.

Desired Conditions for the Range Program are:

- Domestic livestock grazing does not move the landscape away from the desired composition and structure of plant communities. Rangeland ecosystems are diverse, resilient, and functioning within a healthy, sustainable landscape in the face of a changing climate. Areas that are grazed have stable soils, functional hydrology, and biotic integrity, while supporting healthy, diverse populations of native wildlife.
- By supporting livestock production on working landscapes with an extensive, low impact land use, the Coronado National Forest contributes to preserving large areas of unfragmented open space. These open spaces sustain biological diversity and ecological processes and help to preserve the rural cultural heritage of southeastern Arizona and southwestern New Mexico.

Standards for the Range Program are:

- Grazing permits for domestic goats and/or sheep will not be issued in the Santa Teresa, Winchester, Galiuro, and Santa Catalina Ecosystem Management Areas to prevent the transfer of disease from domestic goats and sheep to wild populations of bighorn sheep.
- New issuance, renewal, modification, and management of grazing permits shall comply with the Coronado National Forest's "Stockpond Management Plan."

Guidelines are components with which a project or activity must be consistent, in either of two ways:

1. The project or activity is designed exactly in accord with the guideline; or
2. A project or activity design varies from the exact words of the guideline, but is as effective in meeting the purpose of the guideline to contribute to the maintenance or attainment of the relevant desired conditions and objectives.

Guidelines must be followed, but they may be modified somewhat for a specific project if the intent of the guideline is followed and the deviation is addressed in a decision document with supporting rationale. When deviation from a guideline does not meet the original intent, however, a plan amendment is required.

Guidelines for the Range Program are:

- Forage utilization should be based on site-specific resource conditions and management objectives, but in general should be managed at a level corresponding to light to moderate intensity (15-45% of current year's growth). Exceptions may be allowed in order to meet objectives related to scientific studies, fuels reduction, invasive plant control, or other targeted grazing or site-specific objectives.
- Burned areas should be given sufficient deferment from grazing, especially during the growing season, to ensure plant recovery and vigor.
- Construction or reconstruction of livestock fencing and replacement of nonpermeable fencing where wildlife movement is restricted should be consistent with the appropriate state wildlife agency standards for safe passage of wildlife and/or species-specific fencing guidelines developed at the local or regional level.
- Grazing management practices should be designed to maintain or promote ground cover that will provide for infiltration, permeability, soil moisture storage, and soil stability appropriate for the ecological zone. Additionally, grazing management should retain ground cover sufficient for the forage and cover needs of native wildlife species.
- Within riparian areas, structures used to manage livestock should be located and used in a way that does not conflict with riparian functions and processes.
- Treatments for restoring rangelands should emphasize the use and perpetuation of native plant species.
- Grazing intensity, frequency, occurrence, and period should provide for growth and reproduction of desired plant species while maintaining or enhancing habitat for wildlife.

Guidelines for Riparian Areas that apply to the Range Program:

- Management activities should only be allowed in riparian areas if soil function and structure, hydrologic function and riparian plant communities (except noxious and/or invasive plants) are kept the same or improved.

Guidelines for Natural Water Sources (springs, small streams and seeps) that apply to the Range Program:

- Projects in upland habitats adjacent to streams should be designed to minimize input of sediment to streams.
- Water quality, quantity, soil function and structure, and wildlife habitat (including aquatic species habitat) should be protected or enhanced at natural springs and seeps.
- Management activities should not impair soil moisture recharge at outflows of natural water sources.
- Fences constructed around natural waters should allow bats and other desirable wildlife to pass through unharmed.

Guidelines for Constructed Waters (developed springs, wells, stock ponds) that apply to the Range Program:

- Wildlife escape ramps should extend to the bottom and near the edge of aboveground constructed waters, and at an angle to avoid entrapment of wildlife in constructed water facilities.
- Artificial waters constructed for livestock should be designed and/or retrofitted to provide a year-round drinking and habitat resource for native wildlife.
- Overflow should be diverted to allow for soil moisture recharge and creation or maintenance of wetland habitat features.

Allotments and Permits

Since the last section 7 consultation, 17 allotments have been combined with other allotments, one allotment was closed and 8 allotments remain vacant with no plans to re-authorize grazing. Currently, on the CNF, there is a total of 177 allotments with on-going domestic livestock grazing (Figures 1-12).

Grazing is authorized on allotments under terms and conditions that limit the amount of livestock, utilization guidelines, and the rotation system of grazing. Permits are issued for a number of animals and/or animal unit months (AUMs) to reflect the estimated capacity on the allotments. Using adaptive management, actual numbers of livestock may vary based on the class of livestock, duration of use and resource conditions. In general, the permitted capacity of an allotment is not exceeded. However, the Authorized Officer may temporarily authorize a higher capacity to evaluate the grazing capacity of an allotment per the Region 3 Supplement to Forest Service Handbook 2209.13, Section 16.16. The temporary increase should take place for no more than 2 consecutive years. See individual allotment tables (Appendix A) for current permitted numbers. The grazing permit also requires a permit holder to maintain improvements and manage livestock grazing in accordance with the Allotment Management Plan and Annual Operating Instructions. These activities will lead to a human presence throughout the forest to accommodate these requirements. The amount of presence is impossible to quantify on a forest level as all allotments differ in size, road density, and management complexity.

Grazing intensity across the forest is described as forage utilization on key forage species. Each allotment is managed at a specified a forage utilization guideline (Appendix A). These utilization guidelines range from 35-55% with some allotments having different utilization guidelines for riparian areas versus upland areas or dormant season use versus growing season use. Most of the allotments on the forest are managed at a forage utilization guideline that corresponds to a moderate intensity or 30-45% utilization in order to provide for grazed plant recovery, increased plant vigor and retention of herbaceous litter to protect soils and provide forage and herbaceous cover for wildlife. The Forest Service monitors utilization based on the use of key forage species in key areas. A key area is a relatively small portion of a range selected because of its location, use or grazing value as a monitoring point for grazing use. It is assumed that key areas, if properly selected, will reflect the overall acceptability of current grazing management over the range (SRM 1998). Key area utilization monitoring occurs in both the uplands and bottoms, including riparian areas. For the purposes of monitoring, an annual use guideline of 30-45% of key species in key areas will be used to monitor use in all pastures, which, combined with growing season rest or deferment, should insure pasture-wide average use of less than 45% (Holechek et al. 2004). Long term upland and riparian area monitoring across the forest indicates that the implementation of the moderate utilization guideline along with adaptive management

maintains or improves watershed conditions. Examples of such adaptive management actions may include: providing for extended growing season rest when monitoring indicates a need, adjusting pasture rotations to maximize livestock distribution, and adjusting livestock numbers and rotations in drought conditions.

The timing and duration of grazing on allotments across the forest are described as either “Seasonal” or “Year-Long” (Figure 1). A seasonal allotment would be permitted for a defined period of use that is less than 12 months in duration and usually confined to one or more climatic seasons. On the CNF, the most common time of year for these types of allotments is in the fall and winter when perennial grasses are in their dormant growth period. These allotments are often referred to as winter or dormant season allotments. Winter or dormant season allotments do not receive any use by livestock during the critical growing period of perennial grass plants, which, for southeastern Arizona, is commonly defined as July through September. Yearlong allotments are permitted to be grazed continuously throughout the year using rotational grazing that ensures that pastures receive rest during the critical growing period of perennial grasses at least every other year. The sequence and timing of pasture moves is based on monitoring of range readiness, ecological condition, and utilization.

Allotment Management Plan

Every allotment has its own Allotment Management Plan (AMP). An AMP is developed within the bounds of the existing National Environmental Policy Act (NEPA) decision for that particular allotment and becomes part of a Term Grazing Permit. An AMP would specify the goals and objectives of management, management strategies, stocking levels, livestock distribution aids, animal husbandry, range improvement construction and maintenance, monitoring plan, travel management guidelines or restrictions and associated maps.

Annual Operating Instructions

On an annual basis, the Forest and permit holders will jointly prepare annual operating plans, referred to as Annual Operating Instructions (AOI), prior to each grazing year that set forth:

- The maximum permissible grazing use authorized on the allotment for the current grazing season and the numbers, class, type of livestock, and timing and duration of use.
- The planned sequence of grazing on the allotment, or the management prescriptions and monitoring that will be used to make changes.
- Structural and non-structural improvements to be constructed, reconstructed, or maintained and who is responsible for these activities.
- Allowable use or other standards to be applied and followed by the permit holder to properly manage livestock.
- Monitoring for the current season that may include, among other things, documentation demonstrating compliance with the terms and conditions in the grazing permit, AMP and AOI.

Adaptive Management

Livestock grazing on the forest is managed under an adaptive management strategy. Adaptive management uses the documented results of management actions (i.e., monitoring) to continually modify management in order to achieve specific objectives. Adaptive management provides the flexibility to adjust livestock numbers and the timing of grazing so that use is consistent with current

productivity and is meeting management objectives. Under the adaptive management strategy proposed, the specific number of livestock authorized, specific dates for grazing, class of animal and modifications in allotment use may be administratively modified as determined to be necessary and appropriate, based on implementation and effectiveness monitoring. However, such changes would not exceed the limits for timing, intensity, duration and frequency authorized in the NEPA-based analysis and decision. Administrative changes would be documented and implemented in the AOI which is made part of the term grazing permit. Adaptive management also includes monitoring and analysis to determine whether identified structural improvements are necessary or need to be modified.

Rotation Systems

Several types of grazing rotation systems are employed across the forest, but all incorporate complete or partial growing season rest for pastures used during the growing season the year prior. The most common rotation system is the deferred rotation system. This system provides deferment, which involves the delay of grazing in pasture until the seed maturity of the key forage species (Holechek et al. 1989). In general, this seed maturity occurs on the CNF from July through September and was described above as the critical growing period. An example of this deferment might be if Pasture A is used in the growing season of Year 1, it will be deferred from use until after the growing season of Year 2. Another example of this system would be if Pasture A was used in the spring prior to the growing season, it would not be used again in the same year until after the growing season (Figure 13). Many of the seasonal allotments across the forest that are permitted for dormant season livestock use already have growing season deferment built into them by design due to their season of use.

A variation of the deferred rotation system is the “best pasture” rotation where the next best pasture is utilized while allowing for growing season deferment for any pasture used in the prior growing season or since the prior growing season. This system is much like the deferred system except logistical issues with available feed, water or infrastructure would dictate moves rather than established schedule.

All of the rotation systems across the forest have evolved for each individual allotment with adaptive management, but the basic principles of light to moderate forage utilization and growing season deferment or rest are implemented to promote plant recovery and overall ecological health. Partial growing season deferment can also be a tool implemented through adaptive management where pasture flexibility is low. This is usually done either in isolated circumstances or in time periods where future growing season deferment will provide for sufficient plant recovery. The effects of such partial deferment are documented with short- and long-term monitoring.

Pasture movements in any rotational grazing system are based on monitoring and adaptive management implementation to achieve desired conditions. Grazing intensity is one form of monitoring conducted to inform adaptive management decisions. Forest wide forage utilization is managed at a level corresponding to light to moderate intensity (30-45%). Consistent patterns of utilization in excess of 45% of key species in key areas would be used as a basis to modify management practices or take administrative actions necessary to reduce utilization in subsequent grazing seasons. Exceptions to the 45% maximum would be some pastures or allotments that are only grazed in the dormant season, or on some allotments with large concentrations of Lehmann lovegrass (*Eragrostis lehmanniana*); however, utilization would not exceed 55%.

Monitoring

The objective of monitoring is to determine whether management is being properly implemented and whether the actions are effective at achieving or moving toward desired conditions. The forest separates monitoring into the two categories: Effectiveness Monitoring and Implementation Monitoring. Collectively we refer to this as the Forest Rangeland Monitoring Program.

Effectiveness monitoring includes measurements to track condition and trend of upland and riparian vegetation, soil, and watersheds. These data sets are interpreted to determine whether management is achieving desired resource conditions, whether changes in resource condition are related to management, and to determine whether modifications in management are necessary. Effectiveness monitoring will occur at five to ten year intervals, or more frequently if deemed necessary. Examples of effectiveness monitoring include, but are not limited to plant frequencies by species, relative plant compositions by species, point ground cover, riparian evaluations and transects (repeat photography, bank stability measurements, channel gradient and cross section mapping, vegetation cover by species, age class inventory by species and/or proper functioning condition assessments), soil and watershed condition assessments (See Appendix B for the CNF's Soil Condition Rating Guide and the USFS Southwestern Region's Technical Guidance and Soil Quality Monitoring), plant community similarity index assessments, and repeat photography. Monitoring occurs at established permanent monitoring points. The forest has 800-1000 permanent upland monitoring locations and 132 riparian transects located in Regional Riparian Mapping Project (RMAP) area. These monitoring locations are used to inform management decisions and insure guidelines in the forest plan and site specific NEPA documents are being met.

Implementation monitoring will occur on an ongoing basis and will include, but not be limited to, such things as forage utilization measurements, livestock counts, and range improvement inspections. An allotment inspection will include all of the aforementioned attributes along with field observations such as cattle behavior and distribution description, grazing permit compliance checks, invasive species populations, soil and watershed conditions, recreation uses, wildlife observations, and general resource conditions.

These two types of monitoring are needed to interpret effects of management on rangelands. As effectiveness monitoring provides the long term trend and data associated with various attributes related to upland vegetation and riparian areas, the implementation monitoring helps evaluate the uses, actions, and/or stressors that took place on the same benchmark sites and the surrounding areas. Assumptions can be made by using the data from these two data sets to help determine why certain attributes in long term monitoring are or are not changing over time, and thus inform decision making in adaptive management.

Management in Drought

Drought is an ongoing management hurdle for livestock grazing in the southwestern United States. Managing around drought requires a heavy reliance on adaptive management, planning and conservative stocking. Guidelines for dealing with drought come from a Regional Supplement to the Forest Service Handbook (FSH) 2209.13-2006-1. The Standardized Precipitation Index (SPI) is a unit of measure that compares recent precipitation values for a period of interest with long term historical values to assess moisture conditions in a given area. In the Southwestern Region, anytime the SPI reaches a value of minus 1.00 or less for the preceding 12 month period, grazing allotments should be evaluated for existing drought conditions. This evaluation is site specific and done through an inter-

disciplinary approach that includes the livestock producer. Stocking during and after drought take in account for the overall recovery of the resource. Livestock management and drought planning is an ongoing process with or without the SPI values of a minus 1. These conversations take place during AOI development and throughout the year. Drought is a major issue that is considered when any management decision is being made.

Improvements

Range improvements, both existing and proposed, are essential to proper livestock management. Improvements include the following: fences to facilitate pasture rotations or for livestock exclusion; water systems (includes wells, pipelines, storage tanks, stockponds and spring developments) to help distribute cattle to achieve light to moderate livestock utilization, and; handling facilities such as corrals to facilitate pasture moves and the handling of livestock. Existing improvements are maintained in working order and replaced when their life expectancy is reached. There are proposed improvements for most allotments on the forest and they are listed by allotment in Appendix A. The implementation of the proposed improvements are usually identified by monitoring and through adaptive management, and they are installed to help achieve the standards and guidelines identified by the Forest (see above). Thus, it is possible that some improvements will never be installed if monitoring and management do not indicate a need to do so.

Wells

There are over 300 wells forest-wide; some are drilled and some are shallow hand dug wells. Water is harvested from them through submersible pumps or by a windmill. Water from the well is stored in storage tanks either at the well or on nearby highpoints to allow for gravity dispersal through pipelines to troughs.

Springs

There are more than 1,500 springs and seeps across the forest. Springs have always been an important water resource on grazing allotments. However, in the past 20-30 years, many of these sources have not been a reliable source of water. This is a symptom of a drier climate, as this is a common theme throughout the southwestern part of the United States. The occurrence of springs drying up has led to a greater dependency on wells throughout the forest. Nonetheless, some still do produce water and are an important natural resource on forest, even if it is not enough water to benefit a livestock operation.

A spring can be developed or undeveloped. An undeveloped spring would not have any means of diversion to the water produced. A developed spring would be improved with a spring box, perforated pipe, or by horizontal drilling to divert a portion of the water produced by the spring to water storage tanks and/or troughs. Developed springs are actually beneficial to spring sites because a portion of the water is diverted away from the source and piped to a more suitable location for livestock and wildlife use. A developed spring does not usually de-water the area around a spring: a spring worth developing typically has enough water to supply a diversion and continue to water the areas around the source.

Spring sources often get fenced when impacts from livestock are determined to be having a negative effect on the site, and those effects are monitored through allotment inspections. This is common practice when a spring is developed, as the source can then be fenced if necessary to protect wildlife habitat.

Stock ponds

There are more than 1,000 stock ponds and dams across the forest. These improvements utilize a structure to catch and impound surface water. These structures provide water and habitat for wildlife while still being an important water resource for livestock management. In many instances, these improvements also provide for riparian vegetation habitat around and downstream of them.

Fences

There are countless miles of range pasture fence across the forest. Fences are essential to provide rest-rotational management and for livestock exclusion. These fences were built as far back as the forest proclamation, and new fences are currently being built where monitoring indicates a need to better manage livestock. Since 1986, all new fences have been built to accommodate wildlife movements and has been conducted to the same standards. A wildlife friendly fence is 4 strands, is no taller than 42 inches, the bottom wire is made of smooth wire and is no less than 16 inches off the ground. The arrangement of the two middle wires vary slightly across the forest, but the distance between the top and second wire is no less than 12 inches. This fence allows for large ungulate and other wildlife species to move under and/or over the fence.

Ongoing Range NEPA

There are ten allotments that are currently going through the NEPA process to re-authorize changes to management. The ten allotments are the Seventy Six, Two Troughs, Cedar Springs, Crittenden, Papago, Kunde, O'Donnell, San Rafael, Mowry and Gardner allotments. The management changes are explained for each allotment in Appendix A. The proposed permitted numbers on these allotments were established using permanent long term upland and riparian trend monitoring, long term utilization and stocking records and, in the case of a permit number increase, Production and Utilization Studies were also used validate carrying capacities.

Project and Action Areas

For this BA, the project area and action area are defined as all areas to be affected directly or indirectly by the Federal action and are the same area: areas where on-going grazing of domestic livestock is occurring on 177 active grazing allotments within the boundaries of the CNF, which occurs on approximately 1,466,424 acres (90% of the CNF). The project/action area consists of 5 districts, 12 Ecosystem Management Areas (EMAs), and 25 Ecological Response Units (Wahlberg et al. 2014, Triepke et al. 2013). The action area is limited to the Forest boundary in alignment with watershed desired conditions in the LRMP (USFS 2018): Watersheds on the Coronado National Forest are functioning properly or moving toward functioning properly, and; Watersheds are dynamic and resilient, and are capable of responding to natural and human-caused disturbances while maintaining the integrity of their biological and physical processes. The project and action areas are the same for all species, unless otherwise noted: the action area for each species is defined all allotments where each species and/or habitat is present.¹

¹ Note that it is anticipated that the proposed action would have no effect to occupied habitats of or to downstream fish species because they occur beyond 3 miles past the Forest boundary; therefore, those species are not analyzed in this BA.

Conservation Measures

This section lists the general and species-specific conservation measures developed by the CNF to address potential impacts of activities related to the proposed action on federally-listed species.

General Conservation Measures

1. Follow the Desired Conditions and Standards and Guidelines for the Range Program as well as Guidelines for Riparian Areas, Natural Water Sources, and Constructed Waters that apply to the Range Program that are identified by the Forest Plan.
2. Notify permit holders and Ranch Managers of the results of this consultation and all relevant Conservation Measures during the annual review of their Annual Operating Plan.
3. If needed, conduct surveys for listed species before any new range improvement projects (e.g., fencing, stockponds, and pipelines). Mitigations will be developed to eliminate or minimize adverse effects to these species and may include site avoidance, seasonal limitations for construction and repair, or other actions necessary to avoid adverse effects.
4. Permit holders and all Forest Service personnel who implement any portion of the proposed action shall be informed that the intentional killing, disturbance, or harassment of threatened or endangered species is a violation of the Endangered Species Act.
5. Activities occurring within federally listed species habitat will apply habitat management objectives and species protection measures from approved recovery plans and signed conservation agreements.
6. Burned areas should be given sufficient deferment from grazing, especially during the growing season, to ensure plant recovery and vigor.
7. Implement adaptive management for livestock management decision making. Adaptive management requires the use of monitoring to inform decision making and then to evaluate the outcome. The monitoring used in the management is the established Forest Rangeland Monitoring Program, as well as input from inter-disciplinary specialists on the forest.

Species-specific Conservation Measures

Huachuca water umbel

8. Maintain existing riparian pastures, exclosures, and any other special management areas designed to reduce livestock pressure on Huachuca water umbel (HWU) habitat. Ensure that fences are regularly checked and repaired to ensure that no fences are non-functional for more than two weeks while permitted livestock are in any adjacent pasture next to the exclosure.
9. Limit livestock access to HWU habitat in Sycamore Spring. Access could be managed by the construction of a temporary barrier, such as electric fence, while livestock are in the pasture, or by a permanent barrier.

10. If livestock are significantly degrading HWU habitat in Scotia and Sunnyside Canyons, construct additional exclosures and/or riparian pastures to limit livestock access to HWU habitat.
11. Continue to develop upland livestock waters, where appropriate, to help distribute livestock away from HWU habitat.
12. Work with USFWS to expand populations of HWU in other areas, especially in the vacant allotments on the east side of the Huachuca Mountains. Possible areas could include, Brown Canyon, Ramsey Canyon, Carr Canyon Administrative Site, Oak Spring, and Neighbor Spring.
13. Monitor HWU populations. Work with USFWS and others to develop a monitoring protocol. Consider measuring the following variables: wet/dry, substrate, ground cover, invasive species, and frequency of HWU along drainages. Be able to address questions about the extent of available HWU habitat, extent of HWU along drainages, and potential threat from invasive species.

Pima pineapple cactus

14. Because of the difficulty in predicting where Pima pineapple cactus (PPC) might occur (slope, soil texture, soil depth) and the impracticality of surveying across the entire Forest, before construction of range improvement projects, the Forest Service will conduct surveys for PPC in all areas directly or indirectly affected by the action. Areas indirectly affected may include areas within 0.5 mile of new water sources, or areas in which cattle numbers are increased due to fences or pasturing. Surveys shall be done in accordance with USFWS protocol. Range developments shall be planned to avoid direct impacts (death or injury) to PPC as a result of construction or maintenance activities.

Gila chub

15. Implement the Stockpond Management Plan (Appendix C).

Gila topminnow

16. Implement the Stockpond Management Plan. For Gila topminnow specifically,
 - a. address populations of nonnative fish species and crayfish, and
 - b. where appropriate, introduce topminnow into stockponds within historically occupied watersheds.
17. Consider habitat improvement projects in the vicinity of the Redrock drainage including, but not limited to,
 - a. Remove populations of mosquito fish.
 - b. Renovate Down Under Tank and introduce native species.
 - c. Consider installing check dams in the upper reaches of the Redrock Canyon watershed to improve hydrologic function.

Yaqui chub

18. While there are no immediate plans to stock Yaqui chub on the CNF, the Forest commits to assisting AGFD and USFWS in identifying potential stocking locations for native fishes on the Forest.

Chiricahua leopard frog, Sonoran tiger salamander, and northern Mexican gartersnake

19. Implement the Stockpond Management Plan.
20. Notify permit holders and Range Staff of the operational procedures in the Chiricahua leopard frog (CLF) and Sonoran tiger salamander (STS) Recovery Plans to minimize take from the introduction of non-native species and disease contamination.
21. Where possible, limit livestock access to aquatic sites occupied by CLF in order to minimize direct mortality and injury due to trampling, the destruction of bankline cover, and deterioration of water quality. Emphasize sites that play a major role in metapopulation dynamics and long-term population persistence.
22. Work with AGFD, New Mexico Department of Game and Fish (NMDGF) and USFWS to translocate CLF to suitable sites in the Forest, emphasizing the enhancement of metapopulation dynamics and long-term population persistence.
23. Work with AGFD, NMDGF and USFWS to begin an aggressive program to control nonnative aquatic organisms on the Forest, particularly bullfrogs, fish in the families Centrarchidae and Ictaluridae, and crayfish.

New Mexico ridge-nosed rattlesnake

24. The Forest Service will inform all permit holders in the Clanton/Cloverdale, Deer Creek, Skeleton/Fairchild, Geronimo, Graves, Guadalupe, Juniper Basin, Peloncillo, and Outlaw Mountain, allotments of regulations and protective measures for the New Mexico ridge-nosed rattlesnake (NMR) on an annual basis. A fact sheet with photos will be given to permit holders during the AOI meetings.
25. All Forest Service personnel shall be advised that care should be exercised when operating vehicles in the project area to avoid killing or injuring snakes on roads.
26. Conduct or support comprehensive surveys for NMR on Forest Service managed lands in the Peloncillo Mountains.

Western yellow-billed cuckoo

27. If the construction or repair of range improvements may disturb breeding YBCU, then the CNF will avoid that activity within the YBCU breeding season (June 1 – September 30).

Species Evaluations

This BA addresses proposed and listed Threatened and Endangered species and their proposed and designated Critical Habitat. A thorough description of the natural histories of the following listed species, including a complete list of their threats, can be located at the USFWS website (http://www.fws.gov/southwest/es/arizona/Docs_Species.htm). The species descriptions are abbreviated and only contain details relevant to the analysis of the proposed action. The following narrative is broken down by taxonomic group and species, and will only address species and allotments for which the effects determination is *may affect*, *likely to adversely affect*. Species for which the effects

determinations are *may affect, not likely to adversely affect* are evaluated in Appendix D, following methods and guidance agreed upon by USFWS and U.S. Forest Service. The December 2015 Final Framework for Streamlining Consultation on Livestock Grazing Activities (USFS 2015) has been used to guide effects determinations for the species that are included in that document.

Plants

Huachuca water-umbel (*Lilaeopsis schaffneriana* var. *recurva*)

Huachuca water umbel (HWU) is a semiaquatic perennial herb that grows in perennial, shallow and slow-moving water between 3,700 and 7,000 feet in elevation. It does not tolerate competition with other species, but may quickly colonize open habitat created by disturbances such as scouring floods and javelina wallows (USFWS 1997). The major threat to this species are the loss or degradation of wetland habitat due to growing water demands and associated diversions and impoundments, overgrazing by livestock, introduction of invasive non-native plant species, and sand and gravel mining. Limited numbers of populations and the small size of populations make HWU vulnerable to extinction because of stochastic events that are often exacerbated by habitat disturbance. It is critically important that all occupied habitat is maintained in as healthy a condition as possible.

There are 17 naturally occurring locations of HWU in the United States and 21 in Sonora, Mexico that currently support or have historically supported populations. Most occur along the San Pedro River, along Cienega Creek, within the San Pedro River and Santa Cruz River Watersheds, and in perennial water in the Huachuca Mountains. Within the CNF, there are populations of HWU in four 6th-code watersheds: Bodie Canyon, Cave Canyon, Parker Canyon, and Turkey Creek, which all fall within the Huachuca EMA (HDMS 2015). Critical habitat for HWU was designated in 1999. Three of the seven complexes of HWU critical habitat (CH) occur on the district in Scotia, Sunnyside, Bear and Lone Mountain Canyons, totaling approximately 8.4 miles of drainages within the CNF (Figure 14). The USFWS has identified four Primary Constituent Elements (PCEs) that represent the physical or biological features and habitat requirements required to sustain HWU vital life-history functions. The PCEs are related to riparian habitat requirements:

- PCE 1: Sufficient perennial base flows to provide a permanently or nearly permanently wetted substrate for growth and reproduction of *Lilaeopsis*;
- PCE 2: A stream channel that is relatively stable, but subject to periodic flooding that provides for rejuvenation of the riparian plant community and produces open microsites for *Lilaeopsis* expansion;
- PCE 3: A riparian plant community that is relatively stable over time and in which nonnative species do not exist or are at a density that has little or no adverse effect on resources available for *Lilaeopsis* growth and reproduction; and
- PCE 4: In streams and rivers, refugia in each watershed and in each reach, including but not limited to springs or backwaters of mainstem rivers, that allow each population to survive catastrophic floods and recolonize larger areas.

Effects of the Proposed Action

Livestock grazing can affect HWU through trampling, changes in stream hydrology, and loss of stream bank stability. Livestock are attracted to water and congregate in riparian areas where they often spend

a disproportionate amount of their time, if not controlled. Grazing can alter plant composition and growth form, vigor, and seed production, reduced understory and bank vegetation and nonnative species. Reduced vegetation cover and trampling of banks results in increased soil erosion, higher peak flows, and soil compaction.

At the watershed scale, grazing can also affect riparian processes. Disturbance of soils, cryptobiotic crusts, and removal of vegetation in the uplands by livestock combine to increase surface runoff and sediment transport and decrease infiltration of precipitation. Effects can be cumulative and interactive. The loss of vegetation and trampling of the soil can promote soil structure deterioration, which then contributes to accelerated loss of vegetation. These changes in the watershed can increase peak flows and reduce low flows, making the system more prone to flash floods.

HWU is sensitive to changes in water level and may be eliminated in floods or drought. Thus, effects that contribute to stream degradation, reduce the streams' potential to recover to a functional state, and/or contribute to overall watershed degradation, can reduce habitat quality and quantity for HWU.

Because HWU is an opportunistic, early- or mid-successional species that probably benefits from periodic disturbance, such as floods and fire, periodic disturbance from occasional trampling and grazing by domestic livestock could improve habitat for the HWU. Excessive livestock use, however, can be detrimental to the species and its habitat.

Grazing Regime in HWU Habitat

All extant populations of HWU within CNF grazing allotments occur on the west slope of the Huachuca Mountains and the east side of the San Rafael Valley (Figure 14). During a consultation in 1999 for on-going and long-term grazing on the CNF, a grazing regime was proposed to reduce the effects of grazing on HWU and its habitat (BO: 21-98-F-399). In general, the management strategy was designed to reduce the grazing pressure on riparian and aquatic habitat in areas where HWU was known to occur. Methods included the construction of exclosures, limiting livestock use to the winter period (November-March), and implementing utilization standards for upland and riparian vegetation and for streambank alteration.

The effects of the proposed grazing regime appear to have been successful in mitigating the negative impacts of livestock grazing. Since 2002, most populations on the Forest appear to be stable (USFWS 2014) and range conditions are stable or improving (Appendix A). The instability of some populations appear to result from long-term drought, competition from native species, or large monsoonal events that caused significant scouring and possible breakup of large patches of HWU (USFWS 2014). Other occurrences that may be extirpated (Parker Canyon Lake, Freeman Spring, O'Donnell Canyon) either occur in inactive allotments (Parker Canyon Lake), or are excluded from grazing (Freeman Spring, O'Donnell Canyon).

The CNF proposes to maintain the general strategy of the old regime by reducing pressure on riparian and aquatic habitat by limiting livestock access, developing additional waters to promote better distribution, maintaining utilization standards on vegetation, and monitoring streambank alteration by livestock (Table 1). The biggest change in our current proposal would be to remove the winter grazing restriction from several pastures in the Lone Mountain Allotment (Peterson, Scotia, Wakefield, and Lone Mountain). Because many exclosures exist around existing populations of HWU in these pastures, and

other range improvements have been developed to help promote an even distribution of livestock across the landscape, we think that grazing during the spring and summer months (April-October) will not put undue pressure on HWU habitat. Of course, these pastures would also adhere to the CNF's rest-rotation strategy of requiring growing season rest at least every other year (Figure 13).

Effects to Critical Habitat

PCE 1: Sufficient perennial base flows to provide a permanently or nearly permanently wetted substrate for growth and reproduction of *Lilaeopsis*.

PCE 2: A stream channel that is relatively stable, but subject to periodic flooding that provides for rejuvenation of the riparian plant community and produces open microsites for *Lilaeopsis* expansion.

PCE 3: A riparian plant community that is relatively stable over time and in which nonnative species do not exist or are at a density that has little or no adverse effect on resources available for *Lilaeopsis* growth and reproduction.

PCE 4: In streams and rivers, refugial sites in each watershed and in each reach, including but not limited to springs or backwaters of mainstem rivers, that allow each population to survive catastrophic floods and recolonize larger areas.

Per our guidelines in the Forest Plan (USFS 2018), grazing practices should be designed to maintain or promote ground cover that will provide for infiltration, permeability, soil moisture storage, and soil stability appropriate for the ecological zone. Additionally, grazing management should retain ground cover sufficient for the forage and cover needs of native wildlife species. Within riparian areas, structures used to manage livestock should be located and used in a way that does not conflict with riparian functions and processes. Grazing intensity, frequency, occurrence, and period should provide for growth and reproduction of desired plant species while maintaining or enhancing habitat for wildlife.

Cumulative Effects

Federal agencies manage the majority of lands within known HWU locations within the action area. Activities that could affect HWU on federal land are not considered in this section because they require separate consultation pursuant to section 7 of the Act. Examples of these kinds of actions include management of Forest Service grazing permits, fuels reduction activities, travel management, and mineral activities.

Activities in the vicinity of the action area that are reasonably certain to occur in habitat for HWU but are not subject to section 7 analysis include illegal activities and actions on private lands. Examples of illegal activities that may affect HWU include inappropriate use of off-highway vehicles and illegal woodcutting. Illegal activities are difficult to predict and are assumed to occur indefinitely and uniformly throughout the vicinity of the action area. To date, illegal activities are not known to be a significant threat to populations of HWU within the action area.

Activities occurring on private lands may include residential development, farming/ranching, road construction and maintenance, and mineral exploration. These activities could potentially affect HWU through habitat destruction and introduction of nonnative invasive species. Many of the private lands near or within the action area have already been developed and no new major developments of private

lands are expected to occur; therefore, future activities on private lands are not expected to cause significant adverse impacts to HWU.

Determination of Effects

The proposed action **may affect, and is likely to adversely affect**, HWU and its designated critical habitat for the following reasons:

- Livestock herbivory to individual HWU in the action area may occur.
- Livestock may trample and consume HWU.
- The suitability of HWU habitat in the action area may be adversely altered by grazing.
- Listed plants may be physically damaged by livestock management activities.
- These impacts are not expected to be widespread or excessive, per the Desired Conditions and Standards and Guidelines for the Range Program as well as Guidelines for Riparian Areas, Natural Water Sources, and Constructed Waters that apply to the Range Program that are identified by the Forest Plan (CM-1).

Fish

Gila topminnow (Poeciliopsis occidentalis occidentalis)

Historically, the Gila topminnow was abundant in Arizona and was one of the most common fishes of the Gila River basin, particularly in the Santa Cruz system (Hubbs and Miller 1941). In the last 50 years, this was reduced to only 16 naturally occurring populations. Presently, only 9 of the 16 known natural Gila topminnow populations are considered extant (Weedman and Young 1997, Voeltz and Bettaso 2003, USFWS files). Only eight have no nonnative fish present and are considered secure from nonnative fish threats. The primary threat to Gila topminnow within the CNF is the introduction and spread of nonindigenous predatory and competitive fishes. Other threats include water impoundment and diversion, water pollution, groundwater pumping, stream channelization, and habitat modification.

In August of 2015, 540 Gila topminnow were reestablished in Sabino Creek on the Santa Catalina EMA; this was a cooperative effort between AGFD, USFWS, and the CNF. Subsequent monitoring of the population in 2016 and 2017 has shown that the species persists in the canyon; however, the numbers captured during surveys were less than expected. The population has moved downstream from the original release site where water is very limited during the dry season. Limited water availability along with predation from Gila chub may be affecting establishment of the species in Sabino Canyon (Catalina Rincon Firescape Biological Opinion USDI 2018).

On the CNF within the Huachuca EMA, Gila topminnow has been documented throughout Redrock Canyon within the San Rafael, Crittenden, and Kunde allotments in the Huachuca EMA (USFWS 2008). The status of the Redrock Canyon population has declined, and the species has not been documented since 2005. Although range and riparian conditions have largely improved, the area has been in drought since 1995, and the resulting reductions in habitat as stream channels have dried and perennial habitat has been reduced in extent, along with increases in nonnative species, primarily mosquitofish, have apparently extirpated the Gila topminnow from the drainage. On September 30, 2015, AGFD biologists confirmed the presence of Gila topminnow downstream of Parker Canyon Lake (AGFD 2015) on lands managed by the CNF within the Huachuca EMA.

Effects of the Proposed Action

Livestock grazing has the potential to impact Gila topminnow and its habitat, often through vegetation removal and trampling of streambanks. Vegetation removal can affect aquatic habitat by increasing water temperatures through removal of shade, whereas trampling can change important structural components such as overhanging banks, run, riffle, and pool habitats (Meehan and Platts 1978). Livestock grazing in locations where large numbers of animals congregate can impair water quality and result in nonpoint source pollution throughout an allotment. Cattle waste products can deteriorate water quality resulting in alteration of fish communities or fish kills. The effects of this type of pollution are increased under conditions of limited water supply such as in small ponds and springs. Sedimentation from erosion caused by livestock can impair spawning areas and reduce aquatic productivity, which can affect food production (Meehan 1991). However, grazing at utilization levels appropriate for specific vegetation communities can reduce these impacts and is consistent with Gila topminnow recovery.

Grazing Regime in Topminnow Habitat

Grazing does not occur in occupied Gila topminnow habitat on the Santa Catalina EMA within the Sabino Canyon watershed because it is not within any grazing allotments. Currently, the only instances on the CNF where grazing occurs within topminnow habitat occur in the Huachuca EMA (Redrock and Parker Canyon).

Within the last two decades, there have been significant changes to the management of livestock within the Redrock drainage. Livestock exclosures and seasonal restrictions on livestock grazing were established in large part to remove conflicting uses and enhance riparian and aquatic conditions for the benefit of Gila topminnow. There are five exclosures (Cott Tank, Silver Tank, Gate Spring, Falls, and Red Rock) and one Riparian Pasture (West Redrock) within Redrock Canyon drainage (Figure 15). The West Redrock Pasture was fenced in 2002 and is managed for <15% utilization of woody riparian species and <10% streambank alteration.

The effects of the past grazing regime appear to have been successful in mitigating the negative impacts of livestock grazing on topminnow habitat. Since 2002, riparian vegetation and streambank characteristics have improved within the Redrock drainage (see Appendix A). The construction of exclosures and riparian pastures appear to have halted any damage caused by livestock and allowed the habitat to restore and improve. Watershed conditions within the Redrock drainage have also improved (Appendix A), reducing the amount of landscape scale effects that can be caused by livestock. Unfortunately, drought conditions have caused a reduction in available habitat within the Redrock drainage and populations of nonnative species persist.

The CNF proposes to maintain the general strategy of the old regime by reducing pressure on riparian and aquatic habitat by limiting livestock access, developing additional waters to promote better livestock distribution, maintaining utilization standards on vegetation, and monitoring streambank alteration by livestock. The biggest difference in our current proposal would be to turn the Cott Tank Exclosure into a Riparian Pasture. The reason for this change is: 1) no perennial water occurs within this exclosure, and 2) the exclosure makes the movement of livestock between pastures very difficult. We propose to maintain the boundaries of the exclosure but allow livestock to access the pasture during the gathering and movement of livestock between North Redrock and South Redrock pastures. Within the

Riparian Pastures: livestock will not be present for more than two weeks continuously; utilization of woody riparian species will not exceed 30%; and trampling, chiseling, or other physical impact by livestock will not exceed 20% of the alterable stream banks.

In Parker Canyon, three riparian pastures have been proposed in the area where topminnow have been discovered (Figure 16). One pasture has been completed and the other two should be completed by the end of 2019. Within the Riparian Pastures: livestock will not be present for more than two weeks continuously; utilization of woody riparian species will not exceed 30%; and trampling, chiseling, or other physical impacts by livestock will not exceed 20% of the alterable stream banks.

Cumulative Effects

Federal agencies manage the majority of lands within the known Gila topminnow locations within the action area. Activities that could affect Gila topminnow on federal land are not considered in this section because they require separate consultation pursuant to section 7 of the Act. Examples of these kinds of actions include management of Forest Service grazing permits, fuels reduction activities, travel management, and mineral activities.

Activities in the vicinity of the action area that are reasonably certain to occur in habitat for topminnow but are not subject to section 7 analysis include illegal activities and actions on private lands. Examples of illegal activities that may affect topminnow include inappropriate use of off-highway vehicles, and illegal woodcutting. Illegal activities are difficult to predict and are assumed to occur indefinitely and uniformly throughout the vicinity of the action area. To date, illegal activities are not known to be a significant threat to populations of Gila topminnow within the action area.

Activities occurring on private lands may include residential development, farming/ranching, road construction and maintenance, and mineral exploration. These activities could potentially affect Gila topminnow through habitat destruction and introduction of nonnative invasive species. Many of the private lands near or within the action area have already been developed and no new major developments of private lands are expected to occur; therefore, future activities on private lands are not expected to significantly contribute to adverse impacts to topminnow from the proposed action.

Determination of Effects

The proposed action **may affect, and is likely to adversely affect**, Gila topminnow for the following reasons:

- Gila topminnow occurs within some allotments within the action area.
- Direct effect to Gila topminnow may occur because livestock are not completely excluded from occupied topminnow habitat in some allotments within the action area and, therefore, may trample and ingest topminnow, impair water quality, and deteriorate habitat.
- However, indirect effects to Gila topminnow occurring within the action area which result from upland livestock grazing are determined to be insignificant and discountable as measured through quantitative or qualitative measures such as watershed health and condition, use levels, or sedimentation.
- Implementing the Stockpond Management Plan may result in the death, injury, or displacement of topminnow.

- These impacts, however, are not expected to be widespread or excessive, per the Desired Conditions and Standards and Guidelines for the Range Program as well as Guidelines for Riparian Areas, Natural Water Sources, and Constructed Waters that apply to the Range Program that are identified by the Forest Plan (CM-1).

Sonora Chub (*Gila ditaenia*)

Sonora chub is a stream-dwelling member of the minnow family, Cyprinidae, and can achieve total lengths of 200 mm (7.8 in) (Hendrickson and Juarez-Romero 1990). The mouth is inferior and almost horizontal. The body is moderately chubby and dark-colored, with two prominent, black, lateral bands above the lateral line and a dark, oval basicaudal spot. Breeding individuals are brilliantly colored (Miller 1945).

Although Sonora chub are regularly confined to pools during arid periods, they prefer riverine habitats. In lotic waters in Mexico, Henderickson and Juarez-Romero (1990) commonly found the chub in pools less than 0.6 m (2 ft.) deep, adjacent to or near areas with a fairly swift current, over sand and gravel substrates. It was also common in reaches that were predominately pools with low velocities and organic sediments. Sonora chub are adept at exploiting small marginal habitats, and can survive under severe environmental conditions. They can also maneuver upstream past small waterfalls and other obstructions to colonize newly wetted habitats (Carpenter and Maughan 1993). Larvae likely use shallow habitats at pool margins where they feed on microscopic organisms and algae.

Potential threats to Sonora chub are related to additional watershed development. Continued and increased grazing operations in upstream watersheds could result in increased siltation and runoff, increased water demand and withdrawal, and introduced pollutants to the stream. Livestock grazing in riparian areas is usually detrimental to fish habitat. Predation by nonnative vertebrates is also a threat to populations of Sonora chub. Green sunfish is a known predator on native fish in Arizona (Minckley 1973), and has been implicated in population changes in other lotic fish communities (AGFD 1988). Hendrickson and Juarez-Romero (1990) noted smaller populations of Sonora chub in areas where nonnative fishes were present. Sonora chub was absent when nonnative predators were abundant in reservoirs and highly modified stream habitats. Bullfrogs, common in the California Gulch watershed, have also been implicated in the disappearance of native frogs and fishes in other western aquatic habitats (AGFD 1988). While grazing is excluded from much of the Sonora chub habitat on the Forest, trespass cattle, both Mexican and those of authorized ranchers, enter these restricted areas due to cutting of fence for illegal activities.

Sonora chub occurs solely on the Nogales Ranger District (RD) within the Tumacacori EMA (Figure 17). Sonora chub is locally abundant in Sycamore Creek, although the habitat is limited in areal extent (Minckley and Deacon 1968). In Mexico, it is found in the Rios Magdalena and Altar where it is considered relatively secure (Henderickson and Juarez-Romero 1990). In 1995, the AGFD found Sonora chub in California Gulch (AGFD 1995). The overall estimated current chub habitat is 16.1 km (10 mi) in Sycamore Creek and California Gulch. Sonora chub currently exist only in the lower 3.2 km (2.0 mi) of California Gulch. The species is restricted to further movement upstream to suitable and potential habitat by a concrete dam. The overall habitat currently available is 6.4 km (4 mi) including the habitat, which is occupied below the dam.

The Sonora chub is listed as threatened with critical habitat (Fish and Wildlife Service 1986). Critical habitat includes Sycamore Creek, extending downstream from and including Yanks Spring, to the International Border. Also designated was the lower 2.0 km of Penasco Creek, a tributary of Sycamore Creek, and the lower 0.4 km of an unnamed stream entering Sycamore Creek from the west, about 2.4 km downstream from Yanks (=Hank and Yanks) Spring. In addition to the aquatic environment, critical habitat includes a 12-meter-wide riparian area along each side of the stream channel.

Effects of the Proposed Action

Direct effects of livestock grazing in the aquatic habitats of Sonora chub include trampling (Roberts and White 1992) of individuals, particularly eggs and larval fish in the shallow margins of the creeks. Eggs and larval fish may also be ingested by livestock drinking from the creek. Direct effects could also occur to Sonora chub as a result of range improvement project construction or vegetation management projects in all of the occupied drainages. There are no such projects proposed near Sonora chub locations, however, any range developments shall be planned to avoid impacts to Sonora chub as a result of construction or maintenance activities. For all site specific project proposals within the range Sonora chub, the Forest Service will submit to the USFWS a project plan and request a determination of adequacy.

The effects that livestock grazing can have on riparian and aquatic habitats, both direct and through upland/watershed effects, have been well documented and discussed in recent years (Platts 1990, Bahre 1991, Fleischner 1994). Livestock grazing activities can contribute to changes in surface runoff quantity and intensity, sediment transport, and water holding capabilities of the watershed. Reduced herbaceous vegetation leads to accelerated soil loss due to increased exposure of soils to downpour events and reduced sediment filtering capabilities of the vegetation. Hoof action can cause loss of cryptobiotic soil crusts, soil compaction, erosion, and gullyng. Overuse of vegetation by livestock can cause changes to plant root structures, and alter plant species composition and overall biomass.

Livestock grazing in and on riparian vegetation may cause changes in the structure, function, and composition of the riparian community (Szaro and Pase 1983, Platts 1990, Schulz and Leininger 1990, Schulz and Leininger 1991, Stromberg 1993a). Species diversity and structural diversity may be substantially reduced and nonnative plant species may be introduced and spread in cattle feces. Reduction in riparian vegetation quantity and health, and shifts from deep rooted to shallow rooted vegetation contribute to bank destabilization and collapse and production of fine sediment (Meehan 1991).

Effects on critical habitat

The proposed action occurs outside of designated critical habitat. At the time the final rule was written, the following was discussed for the constituent elements: the area provides all of the ecological, behavioral, and physiological requirements necessary for the survival of this species.

Changes in the watershed resulting from grazing can cause increased sedimentation, higher peak flows and channel incisement, and lower base flows within the drainages with occupied Sonora chub habitat, and changes in riparian vegetation and channel morphology may cause injury and mortality of Sonora chub and adversely alter its habitat. Most precipitation falls at the higher elevations in the various watersheds; however, watershed effects on the allotments should not be disregarded because of the

proximity of the allotments to occupied Sonora chub habitat. Flows from higher elevations traverse drainages in the allotments, which if degraded by grazing, may contribute elevated levels of sediment and exhibit other characteristics of degraded watershed described above. This can effect riparian function with occupied Sonora chub habitat in the proposed action areas.

The direct effects of livestock grazing on critical habitat are: 1) increased water temperatures as a result of stream channels becoming wider and shallower, 2) loss of nutrients within in the stream channel due to reduction of pools in number, size, and depth, 3) reduction in cover as a result of livestock grazing on riparian vegetation which helps to increase water temperatures, and 4) reduction of cover by banks sloughing off due to livestock trampling.

The proposed action also includes development of range improvement projects, such as fence maintenance and construction and water developments. These projects are primarily designed to distribute cattle and allow greater management capability. They can result in improved range condition and watershed condition, if stocking rates are not increased. Localized temporary disturbance from construction of pipelines, fences, and other projects would cause negligible and localized increases in erosion and runoff. Of greater concern are development and maintenance of stockponds, which may support populations of nonnative fishes, or may provide habitat into which nonnative fishes may be introduced as sport fish or for other purposes. These fish may subsequently be introduced into occupied Sonora chub habitat or may traverse drainages between stockponds and the creek during storm events. Any new construction or reconstruction of roads to stockponds would facilitate public access and increase the chance that nonnative fish may be introduced or moved among tanks.

Authorized livestock grazing is excluded from the majority of Sonora chub designated critical habitat, with the exception of the approximately 2 kilometer stretch within Penasco Creek.

Cumulative Effects

Federal agencies manage the majority of lands that contain Sonora chub within the action area. Activities that could affect Sonora chub and its CH on federal land are not considered in this section because they require separate consultation pursuant to section 7 of the Act. Examples of these kinds of actions include management of Forest Service grazing permits, travel management, and mineral activities.

Activities in the vicinity of the action area that are reasonably certain to occur near Sonora chub but are not subject to section 7 analysis include illegal activities and actions on private lands. Examples of illegal activities that may affect Sonora chub include inappropriate use of off-highway vehicles, illegal woodcutting, and the distribution of restricted live wildlife, especially aquatic invasives. Illegal activities are difficult to predict and are assumed to occur indefinitely and uniformly throughout the vicinity of the action area.

Currently, the Forest has no information regarding any future, planned State or private activities within the action area that may affect Sonora chub.

Determination of Effects

The proposed action **may effect, and is likely to adversely affect** Sonora chub and designated Sonora chub critical habitat, for the following reasons:

- Sonora chub occurs within some allotments within the action area.
- Direct effects to Sonora chub and PCEs of critical habitat may occur because livestock are not completely excluded from occupied and designated critical habitat in some allotments within the action area and, therefore, may trample and ingest Sonora chub and their eggs, impair water quality, and deteriorate habitat.
- However, indirect effects to Sonora chub and PCEs of critical habitat occurring within the action area which result from upland livestock grazing are determined to be insignificant and discountable as measured through quantitative or qualitative measures such as watershed health and condition, use levels, or sedimentation.
- These impacts, however, are not expected to be widespread or excessive, per the Desired Conditions and Guidelines for the Range Program as well as Guidelines for Riparian Areas, Natural Water Sources, and Constructed Waters that apply to the Range Program that are identified by the Forest Plan (CM-1).

Yaqui Chub (*Gila purpurea*)

The Yaqui chub is a medium sized minnow (adults rarely exceed 15 cm [6 in] long). The species is darkly colored, but usually lighter below. Its most pronounced feature is a dark triangular caudal spot.

Historically, this species occurred in the Rio Yaqui Drainage in Cochise County, including San Bernardino Creek (Blackwater Draw), Whitewater Creek, Black Wash (Astin Wash), and the Morse Canyon portion of the Willcox Playa. It was also found in San Bernardino Creek in Sonora, Mexico. Since the 19th century, habitat of the Yaqui chub has been steadily destroyed by stream bank erosion, construction of water impoundments that dewatered downstream habitat, excessive groundwater pumping, and introduction of nonindigenous fish (USFWS 1995). The effects of climate change (i.e., decreased precipitation and water resources and increased evapotranspiration) are also a threat to this species.

This species has been extirpated from its historical habitat; however, introduced populations exist in three locations near, but not on, the Coronado NF; two of which are National Wildlife Refuges (NWRs). These refuges include the Leslie Canyon NWR, which is located in the Swisshelm Mountains approximately 2 miles from the extreme southwestern corner of the Chiricahua EMA of the Douglas RD and San Bernardino NWR, located approximately 13 miles southwest of the Peloncillo EMA of the Douglas RD. The third location where this species exists is in ponds and the main stream of West Turkey Creek on the private land portions of El Coronado Ranch, which borders the west boundary of the Chiricahua EMA (USFWS 2010, personal communication with Charles Minckley 9/11/2018). There are no known populations of Yaqui chub within the Coronado NF boundaries, despite several attempted translocations in the past (USFS 2015).

The action area for this species is considered to be areas where habitat is present within or immediately adjacent to active grazing allotments within the Chiricahua EMA.

Effects of the Proposed Action

Neither designated critical habitat nor the fish themselves are known to occur within the boundaries of the forest; however, all three populations in the area occur within 5th code sub-watersheds that overlap National Forest System lands. Leslie Creek/Whitewater Draw and Glance Creek/Whitewater Draw include both the southwestern corner of the Chiricahua EMA as well as the Leslie Canyon NWR. The Turkey Creek sub-watershed occurs in the west-central portion of the Chiricahua EMA and includes the

population of Yaqui chub on the privately owned El Coronado Ranch. The Upper San Bernardino Valley sub-watershed includes both the west-central portion of the Peloncillo EMA as well as the San Bernardino NWR (Figure 18). Efforts to establish additional populations may take place in the future on the Coronado NF.

The effects that livestock management activities can have on riparian and aquatic habitats, both direct and through upland and watershed effects, have been well documented (Platts 1990, Bahre 1991, Meehan 1991, Fleischner 1994). Sedimentation from livestock management activities in tributaries can affect the condition of the river downstream. However, when in good condition, riparian vegetation and streambank condition in tributaries, including intermittent and ephemeral channels, form important buffers between upland impacts and the mainstem or perennial stream. A healthy riparian zone with substantial herbaceous cover is an effective buffer for filtering sediment and pollutants before they can reach the stream (Erman et al. 1977, Mahoney and Erman 1984, Lowrance et al. 1984, Bisson et al. 1992, Osborne and Kovacic 1993).

Yaqui chub may be adversely affected by activities which alter the flow regime (i.e., water quality, quantity, intensity, and duration), degrade the stream channel, and modify floodplain and riparian vegetation structure and diversity. The ways in which the effects of livestock grazing are manifested, and the magnitude of the effects in the watershed, are dependent on local site conditions.

While neither Yaqui chub nor their critical habitat occur within the Forest Service boundary, the fish do occur within 5th code sub-watersheds (Table 2) which overlap the Peloncillo and Chiricahua EMAs of the Douglas RD. Furthermore, AGFD and USFWS have expressed an interest in continuing to attempt translocation of Yaqui chub to pools within the Coronado NF boundary in order to reestablish populations within the chub's historic home range.

Currently, any indirect effects experienced by Yaqui chub due to livestock grazing are minimal because grazing on many of the Coronado NF's allotments is limited to the winter season, thus, cattle are not present and do not utilize Forest allotments year-round, allowing substantial growth of herbaceous cover and a healthy riparian zone between the Forest Boundary and the occupied habitat, which filters sediment and pollutants before they can reach the stream. However, should the Forest collaborate with AGFD and USFWS to translocate Yaqui chub onto the Forest in the future, individuals may experience both direct and indirect effects from cattle grazing. The most likely effect would be from the movement of livestock through pool habitats occupied by Yaqui chub, which can lead to direct mortality of fish and their eggs, as well as a temporary increase in the level of suspended sediment. However, because most of the grazing in the allotments on the Douglas RD occurs in the winter, Yaqui chub eggs and fry are unlikely to be affected because Yaqui chub tend to begin spawning in March with breeding continuing sporadically throughout the summer (Lee et al. 1981, Minckley 1991).

Cumulative Effects

Federal agencies manage some of the lands that contain Yaqui chub within the action area; however, the majority occur on private land. Activities that could affect Yaqui chub on federal land are not considered in this section because they require separate consultation pursuant to section 7 of the Act. Examples of these kinds of actions include: fuels reduction projects, travel management, and mineral activities.

Activities in the vicinity of the action area that are reasonably certain to occur near sites with Yaqui chub, but are not subject to section 7 analysis, include illegal activities and actions on private lands. Examples of illegal activities that may affect Yaqui chub include: inappropriate use of off-highway vehicles and illegal woodcutting. Illegal activities are difficult to predict and are assumed to occur indefinitely and uniformly throughout the vicinity of the action area.

Activities occurring on private lands also may include residential development, farming/ranching, road construction and maintenance, and mineral exploration. These activities could potentially affect Yaqui chub through habitat destruction and introduction of nonnative, invasive species. Many of the private lands near or within Yaqui chub locations have already been developed and no new major developments of private lands are expected to occur; therefore, future activities on private lands are not expected to significantly contribute to adverse impacts to Yaqui chub from the proposed action.

Determination of Effects

The proposed action **may affect, and is likely to adversely affect**, Yaqui chub for the following reasons:

- Yaqui chub occur or may occur in some allotments within the action area.
- Direct effects to Yaqui chub may occur because livestock are not completely excluded from potentially occupied habitat in some allotments within the action area and, therefore, may trample and ingest chub, impair water quality, and deteriorate habitat.
- However, indirect effects from upland livestock grazing to Yaqui chub that potentially occur within the action area are determined to be insignificant and discountable as measured through quantitative or qualitative measures such as watershed health and condition, use levels, or sedimentation.
- Maintenance/improvement activities may result in direct mortality or injury to Yaqui chub.
- These impacts, however, are not expected to be widespread or excessive, per the Desired Conditions and Standards and Guidelines for the Range Program as well as Guidelines for Riparian Areas, Natural Water Sources, and Constructed Waters that apply to the Range Program that are identified by the Forest Plan (CM-1).

Amphibians and Reptiles

*Sonoran tiger salamander (*Ambystoma tigrinum stebbinsi*)*

The Sonoran tiger salamander (STS) have been observed in 71 localities, 80% of which occur on lands managed by the CNF on the Sierra Vista RD (Hossack et al. 2016; Figure 19). All confirmed historical and extant aquatic populations are found in cattle tanks or impounded cienegas located in the Santa Cruz and San Pedro river drainages, including sites in the San Rafael Valley and adjacent portions of the Patagonia and Huachuca Mountains in Santa Cruz and Cochise counties. Sonoran tiger salamander populations occupy stock ponds and ephemeral waters adjacent to drinkers on the CNF and private lands downstream of CNF throughout the Huachuca EMA portion of the action area, and are also known to occur at drinkers near areas of water leakage from the drinker and pipelines. Sonoran tiger salamander populations are not known to occur in any other types of aquatic habitats on the CNF, such as the drainages downstream of Parker Canyon Lake and downstream of Peterson Ranch Pond in Scotia Canyon. CNF lands encompass about 73% of the range of the Sonoran tiger salamander in the United States, all of which is in the action area and within the Huachuca EMA of the Sierra Vista RD. The remaining range of the species in the United States is surrounded by and downstream of the CNF. Use of

terrestrial habitat by metamorphosed adults occurs but details are unknown. The University of Arizona is currently conducting a telemetry study looking at terrestrial habitat use of the Sonoran tiger salamander in the action area.

The primary threats to the STS include predation by non-native fish and bullfrogs, diseases, catastrophic floods and drought, illegal collecting, introduction of other subspecies of salamanders that could genetically swamp STS populations, and stochastic extirpations or extinction characteristic of small populations (USFWS 2002).

Effects of the Proposed Action

Potential effects to the tiger salamander that may be attributable to livestock grazing include habitat degradation by reducing cover at and near tanks and/or contributions to increased erosion and silt-action. Grazing in accordance with CNF standards and guidelines should provide adequate protection of watershed values in regard to potential grazing impacts and reduce landscape-level effects from erosion insignificant. Livestock may trample salamander larva, adults and/or eggs. Maintenance, or the cleaning of stockponds using heavy equipment, is necessary to maintain these features, such activities may result in mortality of salamanders and eggs and loss of shoreline cover. Virtually all of the 56 STS sites on the CNF occur on active allotments and are subject to the proposed action.

Trampling or ingestion of metamorphs, aquatic branchiata and larvae, and eggs is reasonably certain to occur, especially in stockponds with heavy livestock use and in situations where tanks are beginning to shrink and water is concentrated in smaller and shallower areas; livestock will have to enter the tank to access the water. While drinking, cattle are likely to ingest eggs or very small larval-life stage salamanders, which are not able to move rapidly. Small larvae and eggs are often deposited on aquatic vegetation, branches, or on the pond substrate, and it is reasonably certain that livestock will trample this vegetation and ingest these life stages. Branchiate and metamorphosed salamanders hide in emergent vegetation or in the shallows of stockponds; they can be trampled as livestock wade into tanks to drink and graze around the edges of the tanks at any green vegetation that occurs. Larger larvae and adult salamanders are more mobile and most would escape trampling, but may still be trampled by livestock during heavy use.

Many stockponds where the salamander currently exists have sparse bankline vegetation, and the land beside the tank is often denuded for several to many meters away from the water due to trampling and browsing by livestock. This demonstrates that salamanders can exist under these conditions, but populations could be more robust and resistant to threats if bankline cover were enhanced. This cover provides protection from predation for terrestrial salamanders and harbors insects and other invertebrates that the salamanders prey upon. Although shoreline cover may also harbor small predators that could feed on salamanders, the benefits of vegetative cover outweigh the chances of predation, which is a natural occurrence for the species under typical circumstances.

Stockpond maintenance is needed to maintain the breeding habitats of the salamander, but maintenance activities can also result in direct or indirect effects to salamanders. If salamanders are present during maintenance, equipment can crush animals or they may desiccate if isolated in drying pools. Maintenance can eliminate bank and aquatic cover and egg deposition sites. Turbidity can be increased during operations (if water is present) or afterwards (if berms and banklines have no cover). Stockpond maintenance is typically conducted when tanks are dry or nearly so. As tanks dry, many larval

salamanders over two months of age and some branchiate salamanders metamorphose, then move temporarily into upland habitats. Salamander populations can be very small to nonexistent at the time stockpond maintenance is conducted. Implementation of the Stockpond Management Plan (Appendix C) will mitigate many of the negative effects of stockpond maintenance; however, if sites are occupied and tiger salamanders are salvaged for holding and repatriation while draining, dredging, or lining activities take place, individuals may die or become injured.

Cumulative Effects

Federal agencies manage a substantial portion of lands that contain STS habitat within the action area. Activities that could affect STS on federal land are not considered in this section because they require separate consultation pursuant to section 7 of the Act. Examples of these kinds of actions include: management of Forest Service grazing permits, travel management, and mineral activities.

Activities in the vicinity of the action area that are reasonably certain to occur near STS sites but are not subject to section 7 analysis include illegal activities and actions on private lands. Examples of illegal activities that may affect STS include inappropriate use of off-highway vehicles, illegal woodcutting, and the distribution of restricted live wildlife, especially aquatic invasives. Illegal activities are difficult to predict and are assumed to occur indefinitely and uniformly throughout the vicinity of the action area.

Activities occurring on private lands may include residential development, farming/ranching, road construction and maintenance, and mineral exploration. These activities could potentially affect STS through habitat destruction and introduction of nonnative invasive species. Many of the private lands near or within STS locations have already been developed and no new major developments of private lands are expected to occur; therefore, future activities on private lands are not expected to significantly contribute to adverse impacts to STS from the proposed action.

Determination of Effects

The proposed action **may affect, and is likely to adversely affect**, the Sonoran tiger salamander for the following reasons:

- Livestock may trample salamander larva, adults, and/or eggs.
- Grazing near occupied habitat may reduce the shoreline cover and contribute to localized erosion and siltation.
- Implementing the Stockpond Management Plan may result in the death, injury, or displacement of individual salamanders.

*Chiricahua leopard frog (*Rana chiricahuensis*)*

The Chiricahua leopard frog (CLF) is found in mountain regions of central and southeastern Arizona, southwestern New Mexico, and south into Mexico from 3,200 to 8,900 feet in elevation. Historically, it occurred in springs, creeks, rivers, cienegas, perennial plunge pools and tinajas in intermittent drainages, but currently is most often found in earthen stockponds and above-ground stock drinkers. It is a highly aquatic species requiring perennial to near-perennial water sources to complete its life cycle.

The primary threats to CLF include predation and competition by nonnative organisms, the fungal disease chytridiomycosis, and degradation and loss of habitat due to development and other human activities (USFWS 2007).

The CNF occurs in four of the eight Recovery Units (RUs) identified in the Chiricahua leopard frog recovery plan. Recovery Unit 1 has three breeding populations (Tumacacori-Atascosa-Pajarito Mountains, Arizona and Mexico) on the CNF. Sycamore Canyon is the only significant site with moving water in RU 1 to support breeding frogs. Most other sites are livestock tanks or impounded springs. The Sycamore Canyon site which includes the Bear Valley Ranch Tank, Rattlesnake Tank, and Atascosa Canyon downstream of Bear Valley Ranch were all occupied by frogs at the time of listing. Within Sycamore Canyon occupied tanks include the following: Yank Tank, North Mesa Tank, South Mesa Tank, and Bear Valley Ranch Tank. Bonita Tank and Mojonera Tank are considered occupied breeding sites. In wet years, Upper Turner Tank has been known to be occupied. Pena Blanca Lake/Spring and Associated Tanks is the third population area that includes Pena Blanca Lake, Pena Blanca Spring, Summit Reservoir, Tinker Tank, Thumb Butte Tank, and Coyote Tank. These sites were all occupied in 2009. Adult frogs and tadpoles were found in Pena Blanca Lake in 2009 and 2010, after the lake had been drained and then refilled, which eliminated the non-native predators. However, early in 2010, rainbow trout (*Oncorhynchus mykiss*) were restocked back into the lake by AGFD and they intend to reestablish warm water fishes as well. Three additional waters including Sierra Tank East, Sierra Tank West, and Sierra Well may have the potential to support breeding with habitat improvement.

In 2013, Chiricahua leopard frogs were observed at 18 sites, four of which were new sites due to natural dispersal and six that had documented breeding within the area (AGFD 2014). Although few frogs were tested for Bd, four out of five samples tested positive. Bullfrog removal efforts have been extremely successful in RU1 due to the efforts of Sky Island Alliance and University of Arizona. Bullfrog removal around Ruby have also proven to be effective (AGFD 2014).

During the 2014 survey season 89 surveys were conducted at 48 sites within Alamo-Peña Blanca-Peck Canyons Management Area & Pajarito Wilderness Management Area. Chiricahua leopard frogs were detected at 12 sites, with breeding detected at six sites. American bullfrogs were detected at seven sites (AGFD 2015). In 2015, Chiricahua leopard frog were detected at 10 sites of the 33 surveyed, with breeding observed at five sites. American bullfrogs were removed from four locations, including tanks east of Pena Blanca Lake, tanks near Arivaca Lake, Mineral Lake, and Noon Tank (AGFD 2016).

Recovery Unit 2 (Santa Rita-Huachuca-Ajos Bavispe, Arizona and Mexico) also contains several populations on the CNF. The Florida Canyon site was augmented with frogs from elsewhere in the Santa Rita Mountains in 2009. The site was enhanced in 2010, with the addition of a steel tank for breeding. The eastern slope of the Santa Rita Mountains is another population site which includes two metal troughs in Louisiana Gulch, Greaterville Tank, Los Posos Gulch Tank, and Granite Mountain Tank complex. The Granite Mountain Tank complex includes two impoundments and a well. All but Los Posos Gulch Tank are currently occupied breeding sites. More than 60 frogs were observed at Los Posos Gulch Tank in 2008 which was once thought to be a robust breeding site; however, it dried, and the frogs disappeared in 2009. Scotia Canyon is another population area where breeding habitat occurs at Peterson Ranch Pond and possibly at other perennial or nearly perennial pools. Frogs were reestablished in this canyon via a translocation in 2009; the last record of a frog in the canyon before that was 1986. A population of CLF was located at Carr Barn Pond. This site was occupied in 2009, but the population has since been eliminated, probably by Bd. The CNF has renovated the habitat in 2017 and reintroduced CLF there in 2018. Brown and Ramsey Canyons have been intensively managed for the Ramsey Canyon (=Chiricahua) leopard frog since 1995. Places where frogs have bred and that still retain habitat needed for the leopard frog include Ramsey Canyon, Trout and Meadow Ponds on private lands

owned by The Nature Conservancy, and the Ramsey Canyon Box; and in Brown Canyon, the Wild Duck Pond, and House Pond.

In 2013 Chiricahua leopard frogs were detected at 14 sites with five sites showing signs of breeding, three of those sites were a result of natural dispersal. One of the natural dispersal sites was at the metal drinker at Tunnel Spring, which was the first sighting at this location in a number of years. Of five samples, none tested positive for Bd. Augmentation occurred at an unnamed tank between Hog and Fort canyons and at Bowman Tank which received toe-clipped frogs contributing to an immunogenetic study. A female Tarahumara frog was detected again in Gardner Canyon, which had originally dispersed from Big Casa Blanca Canyon (AGFD 2014).

Chiricahua leopard frogs were detected at seven sites with four showing evidence of breeding in the Huachuca Mountains / San Rafael Valley Area. Peterson Ranch Pond once supported a robust breeding population but since 2012, CLF have not been detected in large numbers. Beatty Guest Ranch (private land) supports a robust breeding population, despite losing a significant amount of habitat from sedimentation resulting from the 2011 Monument Fire. CLF in Ramsey Canyon (the Nature Conservancy) have been struggling but habitat renovations occurred in 2017.

In the Santa Rita Mountains, bullfrog eradication efforts have been successful in the Empire Cienega Area in 2013, which could allow for future releases of Chiricahua leopard frogs to some locations. Surveys were conducted at 30 sites and Chiricahua leopard frogs were detected at 15 sites, with five breeding sites detected during 2014. In addition, non-native fish were removed from Sweetwater Dam. Bd die-offs at Gardner Canyon and Greaterville Tank were also reported. In the Empire Cienega Management Area Chiricahua leopard frogs were detected at 11 sites. Bullfrogs were eradicated from Cienega Creek and die-offs were observed in November at majority of ponds (AGFD 2015). In 2015, 37 sites were surveyed, with Chiricahua leopard frogs found at 13 sites. Perfect Tank (new site) was found to have Chiricahua leopard frog, while Chiricahua leopard frog appeared to be extirpated in West Tank. In addition, egg masses were put in Sweetwater Dam (new location) (AGFD 2016).

Thirty-three surveys were conducted at 17 sites in the Huachuca Mountains Management Area during 2014. Chiricahua leopard frogs were observed at eight sites and breeding detected at four sites. Additionally, adult bullfrogs were removed from Peterson Ranch Pond in 2014 (AGFD 2015). In 2015, 39 locations were surveyed with 15 sites having Chiricahua leopard frog, of which six sites had breeding. American bullfrogs were found at 10 sites. Chiricahua leopard frogs were also released at five sites, three of which were new sites (Mud Springs, Antelope Tank and Bald Hill Tank) (AGFD 2016).

Recovery Unit 3 (Chiricahua Mountains-Malpai Borderlands-Sierra Madre, Arizona, New Mexico, and Mexico) includes the Peloncillo Mountains. Areas where frog populations occur or have occurred include Geronimo, Javelina, State Line, and Canoncito Ranch Tanks; Maverick Spring; and pools or ponds in the Cloverdale Cienega and along Cloverdale Creek below Canoncito Ranch Tank. Breeding occurs in State Line and Canoncito Ranch Tanks, and possibly other aquatic sites. In the Chiricahua Mountains, John Hands Pond (the type locality for the Chiricahua leopard frog) and a spring-fed pond at the Southwest Research Station are managed for frog recovery. However, no frogs have been observed at the site since 1977.

In 2014, 42 surveys were conducted at 15 sites in Northern Chiricahua Mountains Management Area, with Chiricahua leopard frogs detected at six sites (5 SHAs) and breeding detected at four sites. Release

of Chiricahua leopard frogs occurred at one site (Cave Creek Ranch SHA) (AGFD 2015). In 2015, 28 sites were surveyed in the North and South Chiricahua Mountains Management Areas. Only nine sites (seven breeding) were found to have Chiricahua leopard frogs in the north unit (AGFD 2016).

The Peloncillo EMA had four surveys at two sites in Arizona, with Chiricahua leopard frogs detected at one site. Three surveys were conducted at sites in New Mexico with Chiricahua leopard frogs and breeding detected at one site in 2014 (AGFD 2015). No Chiricahua leopard frogs were detected during the three surveys at three sites in the Southern Chiricahuas in 2014 (AGFD 2015). Swisshelms Management Area had seven surveys conducted at one site (Leslie Canyon NWR), with Chiricahua leopard frogs observed on all surveys. In addition, 26 tadpoles from SWRS SHA released to only occupied site in Management Area (AGFD 2015).

In 2015, four sites were surveyed in the Peloncillo Mountains, one in Arizona and three in New Mexico. Chiricahua leopard frogs were detected at the Arizona site and two of the New Mexico sites (AGFD 2016).

Recovery Unit 4 (Pinaleno-Galiuro-Dragoon Mountains, Arizona) includes populations in Oak Spring and Oak Creek (Galiuro Mountains) Shaw Tank, Tunnel Spring and until recently Halfmoon (Dragoon Mountains). The Galiuro and Dragoon mountains have been surveyed consistently over the last decade or more.

In 2013, Chiricahua leopard frogs were detected at ten sites with breeding occurring at seven locations in the Galiuro Mountains. Natural dispersal was documented at one site and two additional sites were reported as having dispersed Chiricahua leopard frogs but these have not been verified. Augmentation occurred at two sites with four egg masses and 20 frogs from Discovery Park and another 195 frogs from a wild site. Genetic samples were collected from one site to be analyzed by the Smithsonian Conservation Biology Institute (AGFD 2014). Also in 2013, Bull Tank received 303 Chiricahua leopard frogs and reported frogs dispersing from that location to Little Bull Tank. Interns seined Cave Tank and 400 salamanders were removed (AGFD 2014).

Chiricahua leopard frogs were detected at 11 sites and breeding was detected at four sites during 68 surveys at 32 sites within Galiuro Mountains during 2014. Chiricahua leopard frogs had dispersed naturally to three new sites and 6 egg masses from Discovery Park SHA released to two sites. Within the Dragoon Mountains, 31 surveys at 12 sites were conducted, with Chiricahua leopard frogs detected at 10 sites and breeding detected at four of these sites. Chiricahua leopard frogs were observed at four new sites, likely through natural dispersal. Additionally, non-native fish were removed at FS Half Moon (AGFD 2015).

In 2015, 45 sites were surveyed in the Galiuro Mountains and Chiricahua leopard frogs were detected at 25 locations, with seven of these sites having breeding. This included 12 new locations (AGFD 2016). In the Dragoon Mountains, 20 sites were surveyed, with Chiricahua leopard frog found at nine sites, five of which had evidence of breeding. There was one new site indentified at Black Diamond Spring (historical population) (AGFD 2016).

Within each occupied EMA on the CNF, there is a relatively large amount of potential habitat for CLF. Because much of the CNF receives a significant amount of precipitation during the summer monsoon season, hundreds of stockponds, or earthen tanks, were created to capture periodic runoff of surface

water. These ponds were developed as range improvements to provide water for livestock, but they have become important habitat for many native aquatic species including several Threatened and Endangered species, like the CLF. The presence of harmful nonnatives, such as the American bullfrog (*Rana catesbeiana*), and low population numbers of CLF have restricted CLF from expanding their distribution. As current CLF populations become more robust, and as the CNF engages in the removal of harmful nonnatives, it is likely that the number of CLF sites will increase within occupied EMAs.

Designated critical habitat for CLF occurs in the Chiricahua, Dragoon, Peloncillo, Santa Rita, Tumacacori, Huachuca, and Galiuro EMAs. The PCEs of its CH are:

PCE 1: Aquatic breeding habitat and immediately adjacent uplands exhibiting the following characteristics:

- a. Standing bodies of fresh water (with salinities less than 5 parts per thousand, pH greater than or equal to 5.6, and pollutants absent or minimally present), including natural and manmade (e.g., stock) ponds, slow moving streams or pools within streams, off-channel pools, and other ephemeral or permanent water bodies that typically hold water or rarely dry for more than a month. During periods of drought, or less than average rainfall, these breeding sites may not hold water long enough for individuals to complete metamorphosis, but they would still be considered essential breeding habitat in non-drought years.
- b. Emergent and/or submerged vegetation, root masses, undercut banks, fractured rock substrates, or some combination thereof, but emergent vegetation does not completely cover the surface of water bodies.
- c. Nonnative predators (e.g., crayfish, bullfrogs, nonnative fish) absent or occurring at levels that do not preclude presence of the Chiricahua leopard frog.
- d. Absence of chytridiomycosis, or if present, then environmental, physiological, and genetic conditions are such that allow persistence of Chiricahua leopard frogs.
- e. Upland habitats that provide opportunities for foraging and basking that are immediately adjacent to or surrounding breeding aquatic and riparian habitat.

PCE 2: Dispersal and nonbreeding habitat, consisting of areas with ephemeral (present for only a short time), intermittent, or perennial water that are generally not suitable for breeding, and associated upland or riparian habitat that provides corridors (overland movement or along wetted drainages) for frogs among breeding sites in a metapopulation with the following characteristics:

- a. Are not more than 1.0 mile (1.6 kilometers) overland, 3.0 miles (4.8 kilometers) along ephemeral or intermittent drainages, 5.0 miles (8.0 kilometers) along perennial drainages, or some combination thereof not to exceed 5.0 miles (8.0 kilometers).
- b. In overland and nonwetted corridors, provide some vegetation cover or structural features (e.g., boulders, rocks, organic debris such as downed trees or logs, small mammal burrows, or leaf litter) for shelter, forage, and protection from predators; in wetted corridors, provide some ephemeral, intermittent, or perennial aquatic habitat.

- c. Are free of barriers that block movement by Chiricahua leopard frogs, including, but not limited to, urban, industrial, or agricultural development; reservoirs that are 50 acres (20 hectares) or more in size and contain nonnative predatory fish, bullfrogs, or crayfish; highways that do not include frog fencing and culverts; and walls, major dams, or other structures that physically block movement.

Effects of the Proposed Action

Although Chiricahua leopard frog apparently coexists with grazing activities at most sites, livestock management activities can result in the direct mortality of CLF and degradation of their habitat. Eggs, tadpoles, and metamorphosing CLF may suffer direct mortality or injury through trampling by cattle along the perimeter of stockponds and in pools along streams, both during CLF's active season and while they are hibernating; however, most livestock effects are related to changes in habitat.

Not all occurrences of CLF occur on active allotments and some sites on active allotments are excluded from grazing (Figures 1 – 12). These populations are exempt from the direct effects of grazing like trampling and/or ingestion of CLF by livestock and the degradation of their habitat from reductions of bank vegetation and increased turbidity of water.

Populations excluded from grazing can also serve as strongholds and help mitigate the negative effects of livestock at CLF-occupied sites across the CNF. As populations of CLF expand, it will be important for the CNF to consider a spatial strategy where livestock access can be limited or excluded (Stockpond Management Plan, Appendix C) at key locations that allow for the establishment and maintenance of metapopulations and the probability of long-term population persistence.

Direct mortality or injury of frogs may occur at stockponds where maintenance activities result in significant disturbance at the tank (e.g., dredging or silt removal, major repair of berms) and frogs are present during the maintenance activity. Maintenance activities may also help expand populations of harmful nonnative species. Implementing the Stockpond Management Plan (Appendix C), would reduce the amount of direct mortality and habitat degradation caused by maintenance activities.

Effects to Critical Habitat

PCE 1: Aquatic breeding habitat and immediately adjacent uplands

The proposed action will have no effect on the permanency of occupied habitat (subsection a) but may adversely affect the amount and complexity of emergent/submerged vegetation near the bank of occupied habitat (subsection b). The proposed action may also contribute to the spread of harmful nonnatives and chytridiomycosis (subsections c and d). Implementation of the Stockpond Management Plan should help reduce the spread of harmful nonnatives when attempting to increase the hydroperiod of stockponds, and the education of Range Staff and permit holders about disease spread and decontamination protocols should reduce the likelihood of spreading chytridiomycosis through grazing operations. Upland habitats that are immediately adjacent to or surrounding breeding aquatic and riparian habitat may be adversely affected by the proposed action (subsection e).

PCE 2: Dispersal and nonbreeding habitat

The proposed action will have no effect on distances between dispersal and nonbreeding habitat (subsection a). Grazing may reduce the vegetation cover in dispersal and nonbreeding habitat, creating more exposure to predators and the elements (subsection b). The proposed action will not result in barriers that physically block movement of CLF (subsection c).

Cumulative Effects

Federal agencies manage the majority of lands that contain CLF sites within the action area. Activities that could affect CLF and its CH on federal land are not considered in this section because they require separate consultation pursuant to section 7 of the Act. Examples of these kinds of actions include: fuels reduction projects, travel management, and mineral activities.

Activities in the vicinity of the action area that are reasonably certain to occur near CLF sites but are not subject to section 7 analysis include illegal activities and actions on private lands. Examples of illegal activities that may affect CLF include: inappropriate use of off-highway vehicles, illegal woodcutting, and the distribution of restricted live wildlife, especially aquatic invasive species. Illegal activities are difficult to predict and are assumed to occur indefinitely and uniformly throughout the vicinity of the action area.

Activities occurring on private lands may include residential development, farming/ranching, road construction and maintenance, and mineral exploration. These activities could potentially affect CLF through habitat destruction and introduction of nonnative invasive species. Many of the private lands near or within CLF locations have already been developed and no new major developments of private lands are expected to occur; therefore, future activities on private lands are not expected to significantly contribute to adverse impacts to CLF from the proposed action.

Determination of Effects

The proposed action **may affect, and is likely to adversely affect**, CLF and its designated critical habitat for the following reasons:

- Livestock grazing and management activities occur in occupied or likely to be occupied habitat and designated critical habitat.
- Eggs, tadpoles, and metamorphosing CLF may suffer direct mortality or injury through trampling by cattle along the perimeter of occupied habitat.
- Implementing the Stockpond Management Plan may result in the death, injury, or displacement of individual CLF.
- Maintenance activities may increase the spread and viability of harmful nonnative species.
- The proposed action may adversely affect components of PCEs 1 and 2 of designated critical habitat.

Northern Mexican Gartersnake (*Thamnophis eques megalops*)

In Arizona, THEQ's distribution has been reduced to less than 10% of its former range along large mainstem rivers. An important component to suitable Mexican gartersnake habitat is a stable native prey base consisting of fishes and adult and larval ranid frogs. Adult Mexican gartersnakes will also prey

upon juvenile nonnative bullfrogs and/or bullfrog tadpoles where they co-occur. Current threats to THEQ include: 1) destruction and modification of its habitat; 2) predation from nonnative species; 3) significant reductions in its native prey base from predation/competition associations with nonnative species; and 4) genetic effects from fragmentation of populations caused by items 1-3. Human activities that diminish surface water or degrade streamside (riparian) vegetation are also significant threats, but particularly where they co-occur in the presence of nonnative species.

On the CNF, THEQ is only considered to occur on the Huachuca EMA and adjacent to the Santa Rita and Tumacacori EMAs (Personal communication, Jeff Servoss, USFWS, 2017). Historical records from 1970 and 2000, document the persistence of the northern Mexican gartersnake on the Buenos Aires National Wildlife Refuge (BANWR), which shares a boundary with the Tumacacori EMA. THEQ populations are expected to increase as BANWR continues to control populations of nonnatives and expand populations of CLF, likely producing more occurrences of THEQ on the Tumacacori EMA.

Adjacent to the Santa Rita EMA is the Las Cienegas National Conservation Area and Cienega Creek Natural Preserve. The Las Cienegas National Conservation Area has been the focus of intensive management to benefit native aquatic vertebrates, and they have been successful in expanding their populations of CLF and eradicating populations of bullfrogs. THEQ are thought to occur at low densities there, but as populations of native prey increase and the populations of harmful nonnatives decrease, it is expected that THEQ would increase and may occur more frequently on the Santa Rita EMA.

THEQ is considered to occur in a large portion of the Huachuca EMA, but at very low densities. One of the most robust populations of THEQ occurs in the Upper Santa Cruz River in the San Rafael Valley. Subsequently, the action area contains some of the largest chunks of the proposed THEQ CH, occupying O'Donnell Canyon, Post Canyon, Turkey Creek, Redrock Canyon, Bear Creek, and the Upper Santa Cruz River Subbasin (Figure 20). The PCEs of the proposed THEQ CH are:

PCE 1: Aquatic or riparian habitat that includes:

- a. Perennial or spatially intermittent streams of low to moderate gradient that possess appropriate amounts of inchannel pools, off-channel pools, or backwater habitat, and that possess a natural, unregulated flow regime that allows for periodic flooding or, if flows are modified or regulated, a flow regime that allows for adequate river functions, such as flows capable of processing sediment loads; or
- b. Lentic wetlands such as livestock tanks, springs, and cienegas; and
- c. Shoreline habitat with adequate organic and inorganic structural complexity to allow for thermoregulation, gestation, shelter, protection from predators, and foraging opportunities (e.g., boulders, rocks, organic debris such as downed trees or logs, debris jams, small mammal burrows, or leaf litter); and
- d. Aquatic habitat with characteristics that support a native amphibian prey base, such as salinities less than 5 parts per thousand, pH greater than or equal to 5.6, and pollutants absent or minimally present at levels that do not affect survival of any age class of the northern Mexican gartersnake or the maintenance of prey populations.

PCE 2: Adequate terrestrial space (600 ft (182.9 m) lateral extent to either side of bankfull stage) adjacent to designated stream systems with sufficient structural characteristics to support life-history functions such as gestation, immigration, emigration, and brumation (extended inactivity).

PCE 3: A prey base consisting of viable populations of native amphibian and native fish species.

PCE 4: An absence of nonnative fish species of the families Centrarchidae and Ictaluridae, bullfrogs (*Rana catesbeianus*), and/or crayfish (*Orconectes virilis*, *Procambarus clarki*, etc.), or occurrence of these nonnative species at low enough levels such that recruitment of northern Mexican gartersnakes and maintenance of viable native fish or soft-rayed, nonnative fish populations (prey) is still occurring.

Effects of the Proposed Action

Livestock grazing generally has indirect effects to THEQ. While trampling of gartersnakes can occur, it is considered exceedingly uncommon and not reasonably certain to occur. Direct mortalities can also occur from the maintenance and construction of Range Improvements, but mortalities from these actions are not considered reasonably certain to occur.

Indirect effects of grazing can include declines in the structural richness of the vegetative community and losses or reductions of the prey base through trampling/ingestion (see CLF & fish sections). The alteration of the vegetative community in occupied THEQ habitat can result in loss of thermal cover and protection from predators for THEQ and/or their prey base.

Much like the CLF and native fish populations, livestock grazing in occupied THEQ habitat is largely compatible with conservation and recovery of gartersnakes provided that potential adverse effects to primary prey species (fish and amphibians) are generally insignificant. Adopting conservation measures for native fish and amphibians (see sections), therefore, should have largely positive effects on THEQ as well. Managing riparian habitats according to FS policy and adopting the Stockpond Management Plan, should have positive effects on THEQ and their native prey base.

Effects to Proposed Critical Habitat

PCE 1: Aquatic or riparian habitat

Livestock grazing will have no effect to the amount of perennial or spatially intermittent streams, or surface water (subsections a and b).

Grazing will adversely affect the amount and complexity of bank vegetation but will not significantly affect the amount or complexity of large components like boulders, rocks, downed trees, and litter (subsection c). Adoption of the Stockpond Management Plan will help preserve the abundance and structural richness of bank vegetation near stockponds.

Grazing will adversely affect habitat characteristics that support a native prey base. Implementing the Stockpond Management Plan may help expand populations of native prey populations and improve THEQ habitat.

PCE 2: Adequate terrestrial space (600 ft (182.9 m) lateral extent to either side of bankfull stage) adjacent to designated stream systems with sufficient structural characteristics to support life-history functions such as gestation, immigration, emigration, and brumation (extended inactivity).

Grazing will adversely affect the amount and complexity of bank vegetation but will not significantly affect the amount or complexity of structural characteristics like large components such as boulders, rocks, downed trees, and litter that support life-history functions. Adoption of the Stockpond Management Plan will help preserve the abundance and structural richness of bank vegetation near stockponds.

PCE 3: A prey base consisting of viable populations of native amphibian and native fish species. Grazing will adversely affect habitat characteristics that support a native prey base. Implementing the Stockpond Management Plan may help expand populations of native prey populations and improve THEQ habitat.

PCE 4: An absence of nonnative fish species of the families Centrarchidae and Ictaluridae, bullfrogs (*Rana catesbeianus*), and/or crayfish (*Orconectes virilis*, *Procambarus clarki*, etc.), or occurrence of these nonnative species at low enough levels such that recruitment of northern Mexican gartersnakes and maintenance of viable native fish or soft-rayed, nonnative fish populations (prey) is still occurring.

Stockpond maintenance may increase populations of harmful nonnative species. Adoption of the Stockpond Management Plan will help to control nonnatives when maintenance occurs.

A program to control nonnative aquatic organisms on the Forest (CM-22) will minimize take from the introduction of non-native species and chytrid contamination. It will also help control nonnative aquatic organisms on the Forest, particularly bullfrogs, fish, and crayfish.

Cumulative Effects

Federal agencies manage a substantial portion of lands that contain THEQ habitat within the action area. Activities that could affect THEQ on federal land are not considered in this section because they require separate consultation pursuant to section 7 of the Act. Examples of these kinds of actions include: management of fuel reduction projects, travel management, and mineral activities.

Activities in the vicinity of the action area that are reasonably certain to occur near THEQ sites but are not subject to section 7 analysis include illegal activities and actions on private lands. Examples of illegal activities that may affect THEQ include: inappropriate use of off-highway vehicles, illegal woodcutting, and the distribution of restricted live wildlife, especially aquatic nonnatives. Illegal activities are difficult to predict and are assumed to occur indefinitely and uniformly throughout the vicinity of the action area.

Activities occurring on private lands may include residential development, farming/ranching, road construction and maintenance, and mineral exploration. These activities could potentially affect THEQ through habitat destruction and introduction of nonnative invasive species. Many of the private lands

near or within THEQ habitat have already been developed and no new major developments of private lands are expected to occur; therefore, future activities on private lands are not expected to significantly contribute to adverse impacts to THEQ from the proposed action.

Determination of Effects

The proposed action **may affect and is likely to adversely affect** the northern Mexican gartersnake and is **not likely to adversely modify/affect** its proposed critical habitat for the following reasons:

- Northern Mexican gartersnake and proposed critical habitat occurs within some allotments within the action area.
- Grazing will adversely affect the amount and complexity of bank vegetation that may expose gartersnakes to increased predation, especially harmful nonnatives like bullfrogs. A decrease in bank vegetation may also negatively affect populations of gartersnake's native prey base. See sections on Gila topminnow, Sonoran tiger salamander, and Chiricahua leopard frog for possible effects to populations of THEQ's native prey base.
- These impacts, however, are not expected to be widespread or excessive, per the Desired Conditions and Standards and Guidelines for the Range Program as well as Guidelines for Riparian Areas, Natural Water Sources, and Constructed Waters that apply to the Range Program that are identified by the Forest Plan (CM-1).

New Mexico ridge-nosed rattlesnake (Crotalus willardi obscurus)

The New Mexico ridge-nosed rattlesnake (NMR) was listed as threatened by the USFWS on August 4, 1978 (FR 43, 34479). Critical habitat was also designated at that time for Bear, Spring, and Indian Canyons of the Animas Mountains between 1,890 and 2,600 meters (6,048 to 8,320 feet) elevation; there is no designated critical habitat for this species on the CNF. At the time of listing, the subspecies was not known to occur in the Peloncillo Mountains. *Crotalus w. obscurus* was first discovered in the Peloncillo Mountains in the form of an apparent hybrid (*Crotalus willardi* x *Crotalus lepidus*) collected in 1987 (Campbell et al. 1989). The subspecies was first documented in the Arizona portion of the Peloncillo Mountains on October 24, 1996 (USFWS 2005).

Only one EMA on the forest, the Peloncillo EMA, is believed to have potential habitat for the subspecies. This conclusion was based on past and recent sightings in New Mexico, the historical record of NMR occurrences (USFWS 2002) and the vegetation communities found in the Forest's various mountain ranges.

Overall, the status of the NMR is presumed to have declined to some degree, primarily as the result of habitat loss or alteration (e.g., due to stand replacing fire, grazing, wood cutting, and similar impacts) (Hubbard et al. 1985). Mining and recreational developments have also been identified as potential impacts to this species' habitat (Lowe et al. 1989). In addition, this snake is highly sought by snake enthusiasts, thus, local impacts due to illegal collection and selling are significant. Given the small range of the New Mexico subspecies, the issues of habitat loss/alteration and collecting are matters of concern.

The NMR is typically found in steep, rocky canyons with intermittent streams or on talus slopes at elevations from approximately 5,400 to 8,500 feet. It is a montane generalist chiefly found in areas of Madroan evergreen woodland and Petran montane conifer forest (Pase and Brown 1982; Brown 1982).

Access to rock shelters with moderate interstitial spaces is probably a key habitat component (Barker 1991); however, the subspecies also uses perennial bunch grasses for cover (Painter 1995). The subspecies apparently moves less frequently, moves relatively shorter distances, and shows higher fidelity to specific rock shelter sites as compared to other rattlesnake species (Holycross 1995a, b; Barker 1991). Infrequently it is found in high grasslands bordering the woodlands, but may range into foothill canyons in pinyon-juniper woodlands. This species is often found on talus slopes in the Animas Mountains, but talus is largely absent from the Peloncillo Mountains. Areas where the ridge-nosed rattlesnake has been found in the Peloncillo Mountains are characteristically more arid, lower in elevation, and less vegetated than typical habitats in the Animas Mountains of New Mexico.

The NMR is primarily active in daylight, although also is crepuscular and nocturnal under favorable weather conditions. This species emerges from hibernation in mid to late spring, usually April, and individuals are surface active well into the fall and on warm days in winter. Its most active time is on warm, humid mornings during the summer monsoon season. As with other rattlesnakes, the ridge-nosed is ovoviviparous (retaining fertilized eggs in the oviduct until they hatch, at which time the female gives birth [Klauber 1972]). Mating has been observed in July, which is during the early part of the summer rain period in Madrean habitat. Captives have also been noted to court and copulate in July and August, and occasionally in April to June. Birth is in August and September, with gestation indicated to be as long as 13 months, which suggests that broods are produced only biannually (Tryon 1978). Brood size is generally 4 to 6, but ranges from 2 to 9. The prey consists primarily of small rodents, lizards, and large centipedes (Degenhart et al. 1986).

It is estimated that the extent of the habitat in the Animas Mountains is, at most, a few thousand acres, and the population of snakes is estimated at only 250-500 adults (Baltosser and Hubbard 1985). The subspecies is more common in the Animas than in the Peloncillos. In the past, several hundred hours' worth of field surveys and some incidental observations resulted in a total of 27 NMR and one hybrid snake found in the Peloncillos in 13 general areas from upper Miller Canyon in the south, to South Skeleton Canyon in the north (Holycross and Smith 2001). Recent surveys, which were conducted in the northern habitat limits for NMR within the Peloncillos, found one NMR in Pine Canyon (Andy Holycross, MCCCDC, personal communication, 2017). This individual is the farthest north and lowest elevation documentation in the Peloncillos extending the elevational range from the previously documented lower limit to 4,990 feet (Fedorko 2017; Holycross and Christman 2018).

The action area for this species is considered to be areas where habitat is present and in proposed critical habitat within active grazing allotments within the Peloncillo EMA. The Peloncillo EMA has seven allotments in which core habitat for the NMR, as mapped by Holycross and Smith (2001), occurs: Clanton/Cloverdale, Skeleton/Fairchild, Geronimo, Graves, Guadalupe, Peloncillo (formerly Robertson, Maverick and Walnut Canyon allotments), and Outlaw Mountain. Three other allotments occur within the Peloncillo EMA, but do not have the characteristics of core habitat as described by Holycross and Smith (2001). These allotments are: Skull, Deer Creek and Juniper Basin. The seven allotments with core habitat have land area equal to, or higher than, 5,000 foot elevation. No extensive habitat assessments have been made of any of the allotments, but all seven allotments with core habitat are known to contain Madrean evergreen woodlands interspersed with rock outcrops. Grazing utilization limits are not to exceed 45% for all allotments within the Peloncillo EMA.

Effects of the Proposed Action

Potential effects to NMR that may be associated with livestock grazing are variable. The primary concern is the indirect effect of "excessive" grazing relative to the modification or degradation of the subspecies' habitat, as it may reduce ground cover, making snakes more susceptible to predation and altering prey availability. Also, it is possible that the rattlesnake may be directly affected by livestock trampling, or killed by permit holders or their ranch hands that encounter the subspecies. Individuals also may be run over by vehicles or trampled by riders on horseback that are associated with grazing activities. Roads that are created or maintained as part of the grazing program could provide access to the public and facilitate illegal collecting or killing of ridge-nosed rattlesnakes.

Also possible are the direct effects of vegetation management, construction, or maintenance of range improvement projects. Snakes could be killed or injured during construction or maintenance of fence lines, pipelines, water developments and other surface disturbing activities. Water developments above 5,000 feet elevation could draw cattle into rattlesnake habitat and increase the probability of trampling or habitat modification. Well planned vegetation management may improve habitat conditions by increasing the frequency of perennial grasses which in turn provide cover for the rattlesnake.

The potential overlap of grazing and associated activities, as well as and the management goals and objectives of the grazing program will remain the same as described in previous consultations regarding grazing on the CNF. Table 2 shows the allotments pertinent to NMR within the Peloncillo EMA and their season of use.

Cumulative Effects

Federal agencies manage the majority of lands that contain NMR sites within the action area. Activities that could affect NMR on federal land are not considered in this section because they require separate consultation pursuant to section 7 of the Act. Examples of these kinds of actions include: fuels reduction projects, timber and travel management, and mineral activities.

Activities in the vicinity of the action area that are reasonably certain to occur near NMR sites, but are not subject to section 7 analysis, include illegal activities and actions on private lands. Examples of illegal activities that may affect NMR include: inappropriate use of off-highway vehicles, illegal woodcutting and illegal collection of NMR. Illegal activities are difficult to predict and are assumed to occur indefinitely and uniformly throughout the vicinity of the action area.

Activities occurring on private lands may include residential development, farming/ranching, road construction and maintenance, and mineral exploration. These activities could potentially affect NMR through habitat destruction and introduction of nonnative invasive species. Many of the private lands near or within NMR locations have already been developed or are under conservation easement preventing further development and no new major developments of private lands are expected to occur; therefore, future activities on private lands are not expected to significantly contribute to adverse impacts to NMR from the proposed action.

Determination of Effects

The proposed action **may affect, and is likely to adversely affect**, NMR for the following reasons:

- Livestock grazing and management activities occur in occupied or likely to be occupied habitat.

- Although, NMR may suffer direct mortality or injury through trampling by cattle in occupied habitat, the possibility of these effects occurring are discountable.
- Uninformed permit holders or ranch hands and maintenance/improvement activities related to grazing may result in direct mortality, injury or indirect effects to NMR; however, distribution of the fact sheet presented in CM-24 reduces these effects to a discountable level.

Birds

Western yellow-billed cuckoo (*Coccyzus americanus*)

Western yellow-billed cuckoos (YBCU) are neotropical migrants that winter in South America and spend the summer months within an area stretching from northern Mexico to southern Canada. In Arizona, YBCU arrive on the breeding grounds in late May to early June. Peak nesting activity occurs from early July through mid-August, and the onset of nesting is often correlated with spikes in local abundance of large insect prey (USFWS 2015). Most YBCU begin their fall migration south in late August through mid-September.

Yellow-billed cuckoo breeding habitat in Arizona is comprised of riparian woodlands, mesquite woodlands, or Madrean evergreen woodlands (containing oak and other trees) in perennial, intermittent, or ephemeral drainages from sea level to 7,000 feet elevation (AGFD 2017; Corman and Magill 2000; Corman and Wise-Gervais 2005; Griffin 2015; Halterman 2002, 2003, 2004, 2005, 2006, 2007, 2009; Holmes et al. 2008; MacFarland and Horst 2015, 2017; McNeil et al. 2013; USFWS unpubl. data). Habitat varies throughout Arizona, ranging from wide floodplains of dense riparian species or mesquite to narrow stands of trees, small groves of trees, or sparsely scattered trees. In addition to cottonwood, willow, and mesquite, occupied habitat may also contain a variety of riparian trees. Where riparian habitat is water-limited, a greater proportion of xero-riparian species comprise the often narrower, patchier, and sparser habitat. In the more xero-riparian habitat, oak, hackberry, sycamore, walnut, ash, acacia, tamarisk, and juniper are among the most common species. Canopy closure varies between and often within drainages. Nests are usually in the dense canopy within a grove of trees in or adjacent to a drainage.

Recent survey results on the Coronado have documented YBCU, including breeding behavior, in Madrean oak and pine-oak woodland, mesquite woodland, juniper woodland, and dense Sonoran desertscrub, mostly between 3,500 and 5,500 feet (MacFarland and Horst 2015, 2017, 2018; Moors 2017; WestLand 2013a, 2013b, 2015a, 2015b, 2016). These vegetation types are less extensive and lack the similar structure compared to the typical riparian gallery forest associated with YBCU, but apparently provide enough large insect fauna (e.g., cicadas, caterpillars, katydids, grasshoppers, large beetles, dragonflies) and frogs (USFWS 2014) for their prey base.

Within the action area, 115 YBCU surveys were conducted at 98 locations in 12 mountain ranges and eight EMAs on the CNF between 2012 and 2017 (GeoMorphis 2018; MacFarland and Horst 2015, 2017, 2018; Moors 2017; WestLand 2013a, 2013b, 2015a, 2015b, 2016; Table 3). Most survey routes were placed in what appeared to be YBCU habitat (i.e., ephemeral drainages); some survey routes were placed in ephemeral drainages in proposed project areas. Eighty-three locations were only surveyed one year, 13 were surveyed two years, and two locations were surveyed three years. Survey efforts varied by year and, therefore, so did the number of detections. YBCU were documented in all five districts and in eight of the 12 EMAs. Fifty eight (50%) of the locations had positive detections of YBCU and, of those, 30 (52%) had breeding detected and/or inferred. According to eBird (2017), additional documented

occurrence records for YBCU have been noted in the Chiricahua, Tumacacori, Santa Rita, Huachuca, Whetstone, and Santa Catalina EMAs, and YBCU have been documented on the Forest as early as the last week in May to as late as the second week in October. Based on surveys conducted on the Coronado between 2012 and 2017, YBCU have been detected as early as June 24 (in the Patagonia Mountains in 2013) and as late as August 31 (in the Huachuca Mountains in 2016).

Proposed critical habitat Unit 47, Florida Wash, consisting of 188 acres, is located partially on the CNF (Figure 21). In Florida Canyon and a tributary, Faber Canyon, there are 151 acres on the Nogales RD. The remaining proposed critical habitat extends downstream off the Forest to the broader Florida Canyon Wash on state land (Santa Rita Experimental Range) and private land. Of the 151 acres of proposed critical habitat on the CNF, 126 acres are not located within an allotment/pasture; only 25 acres are within an allotment (McBeth allotment, Ranger Station pasture).

Given the relatively recent data on YBCU occurrences on the CNF, future drafts of its proposed critical habitat may include larger areas on the CNF.

The PCEs of proposed critical habitat for the YBCU are (USFWS 2014: 48554):

PCE 1: Riparian woodlands. Riparian woodlands with mixed willow-cottonwood vegetation, mesquite-thorn-forest vegetation, or a combination of these that contain habitat for nesting and foraging in contiguous or nearly contiguous patches that are greater than 325 ft (100 m) in width and 200 ac (81 ha) or more in extent. These habitat patches contain one or more nesting groves, which are generally willow-dominated, have above average canopy closure (greater than 70%), and have a cooler, more humid environment than the surrounding riparian and upland habitats.

PCE 2: Adequate prey base. Presence of a prey base consisting of large insect fauna (for example, cicadas, caterpillars, katydids, grasshoppers, large beetles, dragonflies) and tree frogs for adults and young in breeding areas during the nesting season and in post-breeding dispersal areas.

PCE 3: Dynamic riverine processes. River systems that are dynamic and provide hydrologic processes that encourage sediment movement and deposits that allow seedling germination and promote plant growth, maintenance, health, and vigor (e.g. lower gradient streams and broad floodplains, elevated subsurface groundwater table, and perennial rivers and streams). This allows habitat to regenerate at regular intervals, leading to riparian vegetation with variously aged patches from young to old.

Since the proposed critical habitat rule for the YBCU was published (August 15, 2014), new information has emerged that indicated YBCU are using and nesting in areas outside of the traditional riparian woodland locations as noted above for PCE 1.

The action area for this species is considered to be areas where habitat is present (up to 7,000 feet elevation) and in proposed critical habitat within active grazing allotments within all EMAs.

Effects of the Proposed Action

Forty (35%) of the survey routes in 2012-2017 were grazed during the survey period (Table 3). Of the 40 locations that were actively grazed, YBCU were detected on 27 (68%) survey routes, and 18 (45%) survey

routes had evidence of breeding. Thirteen locations that were actively grazed had no detections of YBCU.

There are two effects that may occur to YBCU as a result of grazing and related activities: 1) impacts (e.g., noise and other disturbance) related to range improvements (e.g., fence repair or construction, maintenance of water sources, etc.); and 2) impacts to vegetation that that provide cover, breeding, and foraging habitat. The implementation of the proposed conservation measure (CM-26) above to avoid construction or repair of range improvements during YBCU breeding season minimizes the potential for noise and other disturbances to insignificant levels.

Forage utilization on the CNF is generally managed at a light to moderate intensity (30-45% of current year's growth). Additionally, the types of grazing rotation systems used on the Forest, incorporate complete or partial growing season rest for any pasture used during the growing season. Livestock grazing could cause adverse effects to YBCU in the form of habitat loss: trampling and herbivory/ removal of biomass (i.e., grasses, forbs and tree seedlings) by livestock could reduce and/or alter composition, structure, and density of understory and overstory vegetation.

Biomass removed by livestock may be important to YBCU because the species may prefer certain heights or organization of the vegetation. If biomass removed by livestock is important to YBCU's prey base, such as large invertebrates (e.g., grasshoppers and katydids) and frogs, indirect effects on YBCU could include changes in dispersal and hunting success and therefore reduce reproductive success. Cicadas and tent caterpillars, have both been identified as YBCU prey: cicadas mostly eat the xylem of trees, and tent caterpillars eat the leaves of trees. YBCU eat both categories of invertebrates (those that may rely on grasses and forbs and those that rely on resources provided by trees); therefore, livestock grazing may have an effect on the prey items of, and hence, YBCU.

Effects to Proposed Critical Habitat

PCE 1: Riparian woodlands

There are very few riparian woodlands with mixed willow-cottonwood vegetation on the Forest, and most of the YBCU detections on the Forest are not within that habitat type. The presence of YBCU on the Forest are often associated with Madrean woodlands with some element of mesquite. The Coronado's livestock management activities, which include rest-rotation grazing systems, and utilization standards help to minimize negative impacts to riparian vegetation on the Forest.

PCE 2: Adequate prey base

As discussed in the effects to the species section above, whether the management of forage utilization on the Coronado causes negative effects to YBCUs is currently unknown. Livestock grazing could cause adverse effects to the YBCU in the form of habitat loss: trampling and herbivory/removal of biomass (i.e., grasses and forbs) by livestock could reduce and/or alter composition, structure, and density of habitat for YBCU prey, which may be important to large invertebrates (e.g., grasshoppers and katydids) and frogs. Cicadas and tent caterpillars have also been identified as YBCU prey: cicadas mostly eat the xylem of trees, and tent caterpillars eat the leaves of trees. YBCU eat both categories of invertebrates (those that may rely on grasses and forbs and those

that rely on resources provided by trees); therefore, livestock grazing may have an effect on the prey items of, and hence, YBCU.

PCE 3: Dynamic riverine processes

As with PCE 1, riparian woodlands, there are very few river systems on the Forest, and most of the YBCU detections on the Forest are not anywhere near river systems; rather they are typically found in Madrean woodlands with some element of mesquite. Livestock management activities on the Coronado do not significantly affect dynamic riverine processes because the Coronado's utilization standards help to protect riparian vegetation associated with river systems, and rest-rotation grazing activities minimize negative impacts to the riparian vegetation that grows in the few river systems on the Forest.

Cumulative Effects

Cumulative effects include the effects of future State, tribal, local, or private actions, not involving Federal activities, that are reasonably certain to occur within the action area identified for this species [50 CFR §402.02]. Future Federal actions (e.g., travel management and mineral activities) that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to Section 7 of the ESA. The Coronado manages all the land within the action area identified for this species.

Activities in the vicinity of the action area that are reasonably certain to occur near YBCU habitat and documented occurrences, but are not subject to Section 7 analysis, include illegal activities and actions on private lands. Examples of illegal activities that may affect YBCU include inappropriate use of off-highway vehicles, illegal woodcutting, and border activities related to undocumented immigrants. Illegal activities are difficult to predict and are assumed to occur indefinitely and uniformly throughout the vicinity of the action area. Activities occurring on private lands may include residential development, farming/ranching, road construction and maintenance, and mineral exploration. These activities could potentially affect YBCU through habitat destruction and introduction of nonnative invasive species. Many of the private lands near or within YBCU locations have already been developed and/or no new major developments of private lands are expected to occur; therefore, future activities on private lands are not expected to significantly contribute to adverse impacts to YBCU from the proposed action.

Determination of Effects

The proposed action **may affect, and is likely to adversely affect**, YBCU and is **not likely to adversely modify/affect** its proposed critical habitat for the following reasons:

- YBCU eat invertebrates that may rely on grasses and forbs as well as those that rely on resources provided by trees.
- The effects of construction or repair of any range improvements within YBCU breeding habitat would be insignificant and discountable if the YBCU breeding season (June 1 – September 30) is avoided (CM-27).
- The Coronado's livestock management activities, which include rest-rotation grazing systems, and utilization standards help to minimize negative impacts to riparian vegetation on the Forest.

- Livestock management activities on the Coronado do not significantly affect dynamic riverine processes because the Coronado's utilization standards help to protect riparian vegetation associated with river systems, and rest-rotation grazing activities minimize negative impacts to the riparian vegetation that grows in the few river systems on the Forest.
- These impacts, however, are not expected to be widespread or excessive, per the Desired Conditions and Standards and Guidelines for the Range Program as well as Guidelines for Riparian Areas, Natural Water Sources, and Constructed Waters that apply to the Range Program that are identified by the Forest Plan (CM-1).

Tables and Figures

Tables

Table 1. Proposed new grazing regime for the Coronado National Forest in Huachuca Water Umbel habitat. All pastures fall within the Huachuca EMA.

Pasture	Grazing Strategy	HWU Population(s)
Peterson	Maintain the current utilization levels of riparian vegetation (<30%), upland vegetation (<45%), and streambank alteration (<10%). Allow grazing in all seasons if the exclosures are maintained and all other standards are met (utilization, streambank alteration, watershed condition, etc.). Consider constructing additional exclosures and/or riparian pastures in HWU habitat in Scotia and Sunnyside Canyon.	Peterson Pond, Upper Scotia Cyn, Mud Springs, Sunnyside Cyn
Scotia	We propose to use this pasture and maintain the current utilization levels of riparian vegetation (<30%), upland vegetation (<45%), and streambank alteration (<10%). Consider constructing additional exclosures and/or riparian pastures to limit livestock access to HWU habitat. Allow grazing in all seasons if exclosures are maintained and all other standards are met (utilization, streambank alteration, watershed condition, etc.).	Lower Scotia Cyn
Wakefield	Two other exclosures, totaling approximately 100 acres were constructed in the Wakefield pasture (Figure 14). It is unknown when these exclosures were constructed, but they do encompass the majority of HWU habitat in that pasture. We propose to keep the same utilization levels of riparian vegetation (<30%) and upland vegetation (<45%); however, because the most significant proportion of HWU habitat is excluded from grazing, we propose to allow grazing in all seasons provided that the exclosures are maintained and all other standards are met (utilization, streambank alteration, watershed condition, etc.).	Wakefield Camp, Wakefield Exclosure, Bear Creek Exclosure
Bear	Since the 2002 consultation, a 17-acre exclosure was constructed around the population at the confluence of Lone Mountain Canyon and Bear Creek (Figure 14). This exclosure encompasses the largest portion of HWU habitat in Bear Pasture. We propose to keep the same utilization levels of riparian vegetation (<30%) and upland vegetation (<45%); however, because the most significant proportion of HWU habitat is excluded from grazing, we propose to allow grazing in all seasons provided that the exclosure is maintained and all other standards are met (utilization, streambank alteration, watershed condition, etc.).	Lone Mountain Canyon, Lower Bear Creek
Lone Mountain	Maintain utilization levels of riparian vegetation (<30%) and upland vegetation (<45%). Construct a permanent or temporary barrier to limit livestock access to Sycamore Springs. Allow grazing in all seasons, if the fences are maintained and all other standards are met (utilization, streambank alteration, watershed condition, etc.).	Sycamore Springs, Mud Spring Tank

Table 2. Allotments within the Peloncillo EMA of the Coronado National Forest showing their season of use and the dates of the grazing rotation.

Allotment	Season of Use	Time on	Time off
Graves ¹	Year-round	1-March	28-Feb
Skeleton/Fairchild ¹	Winter	1-Oct	15-March
Outlaw ¹	Winter	1-Nov	30-Apr
Geronimo ¹	Winter*	1-Nov	15-July
Peloncillo	Year-round	1-March	28-Feb
Clanton/Colverdale ¹	Year-round	1-March	28-Feb
Guadalupe ¹	Year-round	1-March	28-Feb
Deer Creek	Winter	1-Oct	30-Apr
Juniper Basin	Winter	1-Nov	30-Apr
Skull	Year-round	1-March	28-Feb

¹Indicates allotment with core habitat for the New Mexico ridge-nosed rattlesnake as mapped by Holycross and Smith (2001).

*The duration of use on the Geronimo allotment will not exceed 5½ months during the season within the specified dates.

Table 3. Summary of 2012-2017 YBCU survey results.

Survey routes	Year						Total
	2012	2013	2014	2015	2016	2017	
Number	3	9	5	43	18	42	115
Mountain ranges surveyed	1	2	1	9	6	7	12
With detections	3	8	2	22	8	15	58
With evidence of breeding	0	6	1	12	5	6	30
Conducted in active grazing pasture	2	4	0	8	11	14	40
With detections in active grazing pasture	2	4	0	7	5	9	27
With breeding evidence in active grazing pasture	0	0	0	6	3	4	18

*Cattle were present at some point in June, July and/or August

Figures

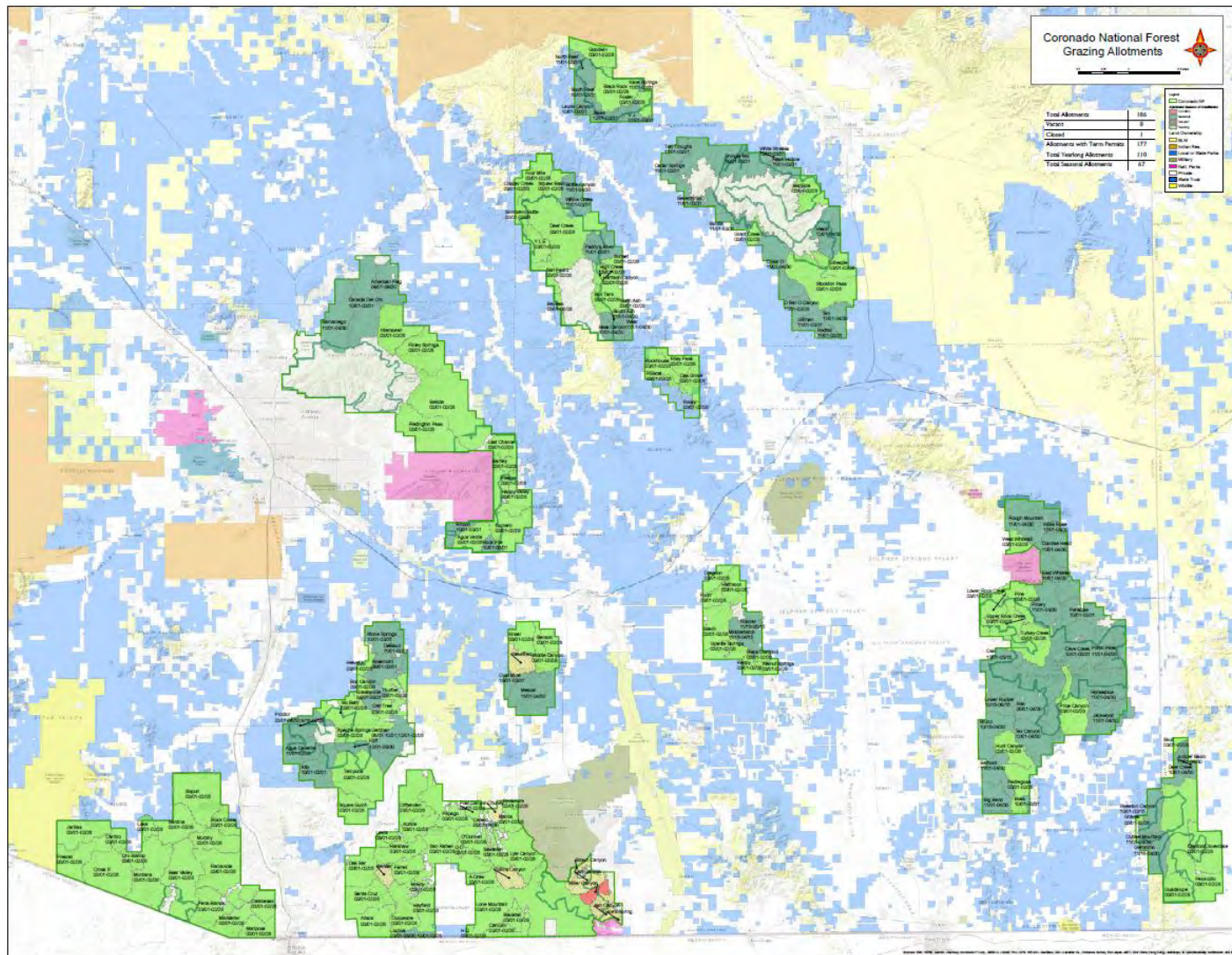


Figure 1. Coronado National Forest Grazing Allotment

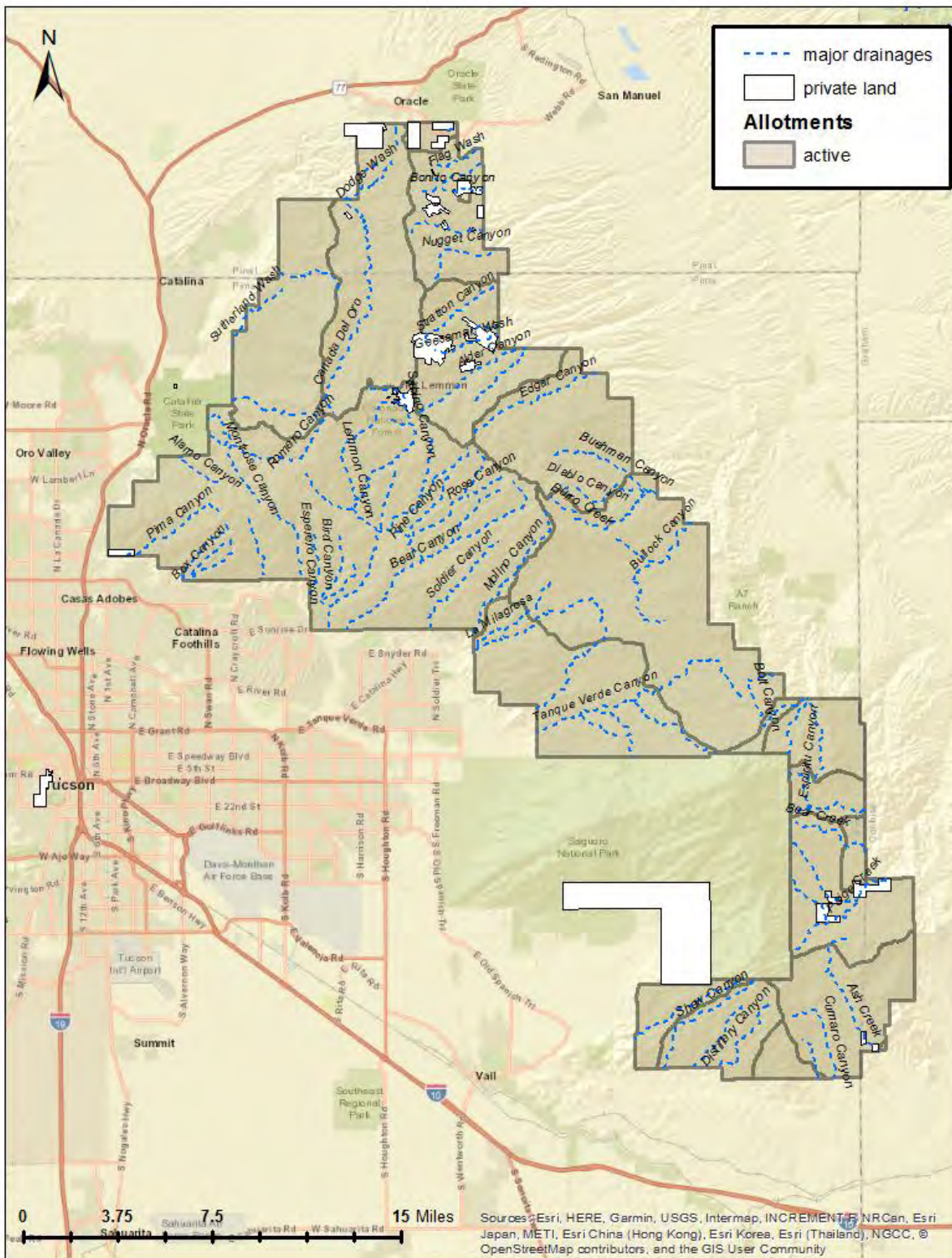


Figure 2. Santa Catalina Ecosystem Management Area and allotment boundaries.

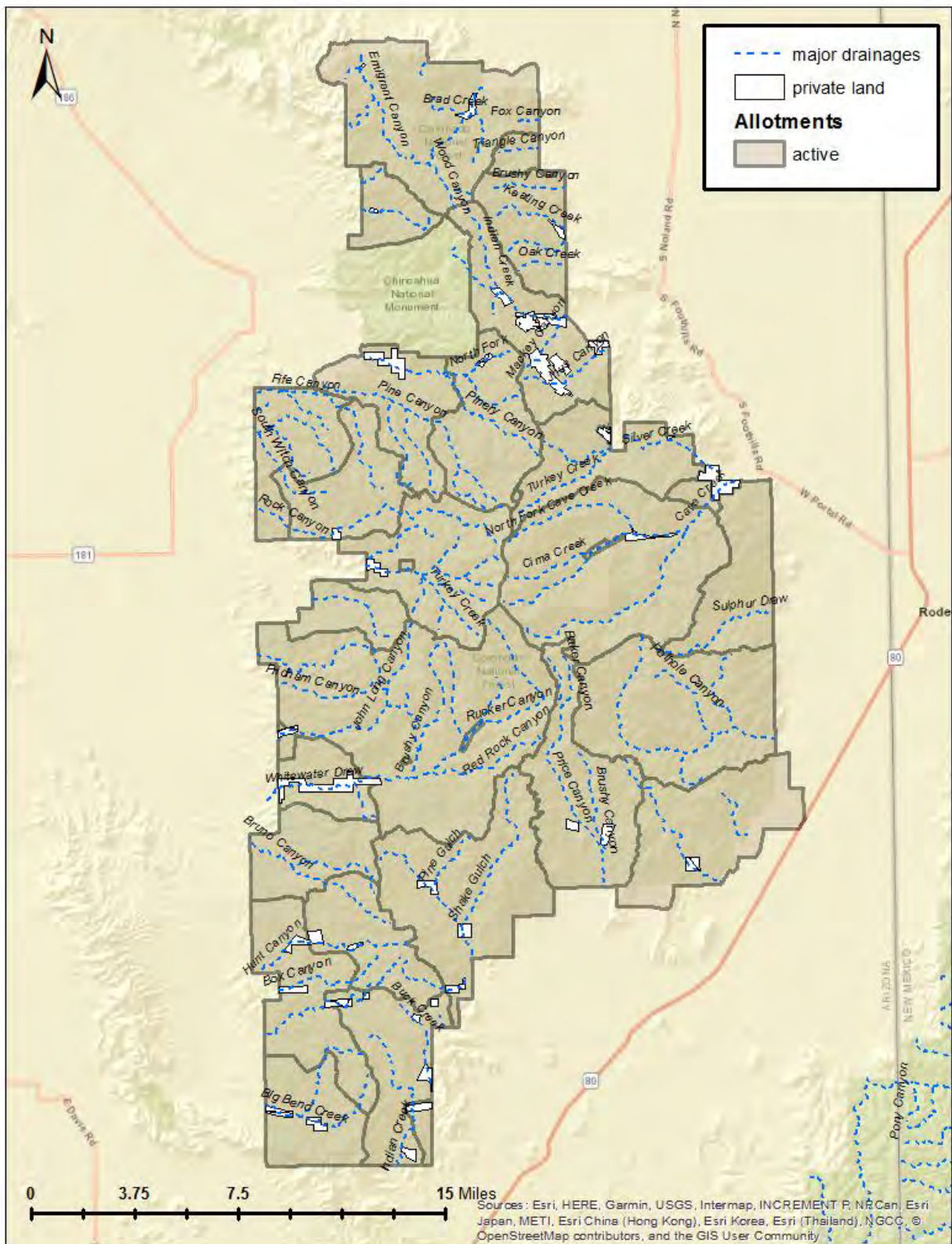


Figure 3. Chiricahua Ecosystem Management Area and allotment boundaries.

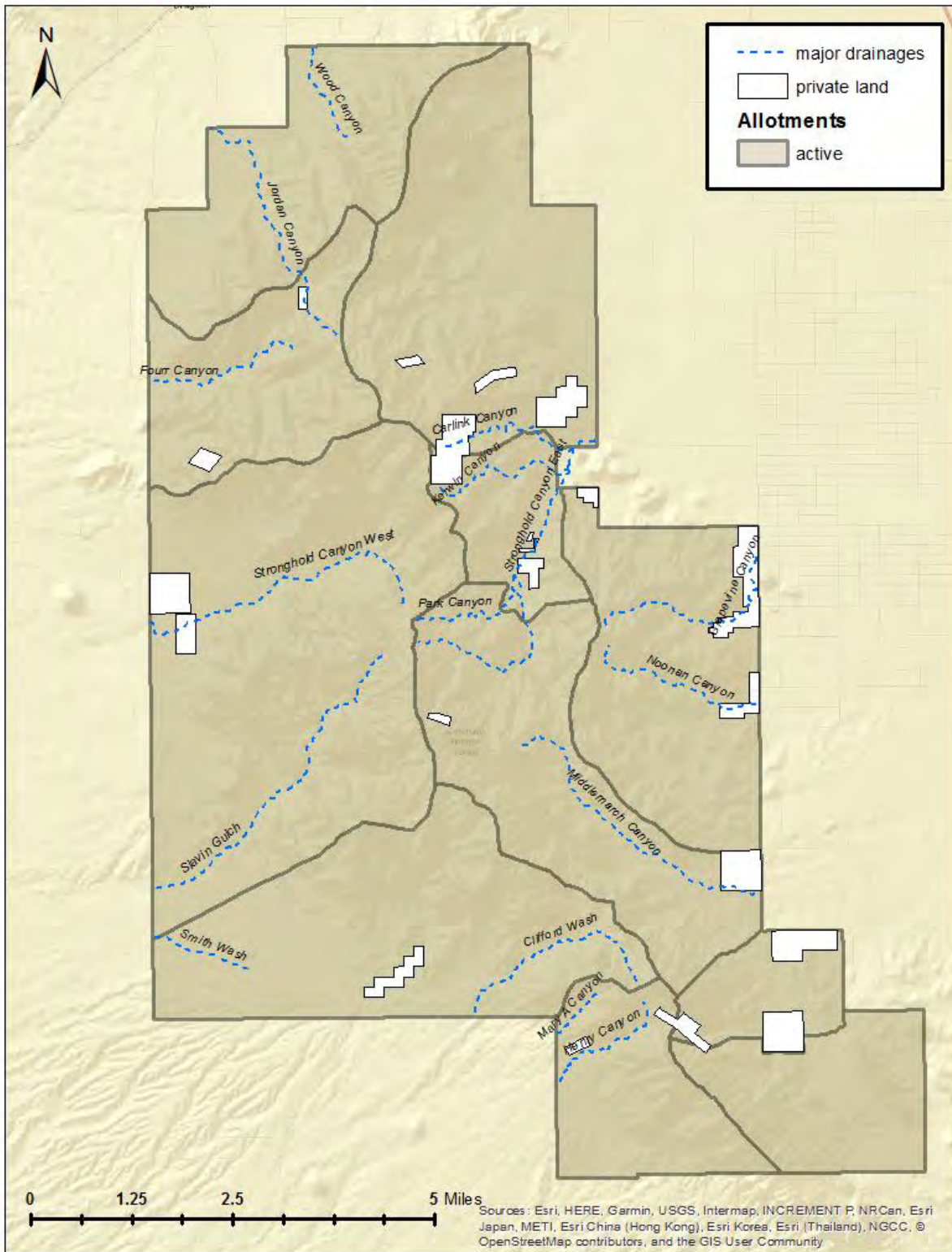


Figure 4. Dragoon Ecosystem Management Area and allotment boundaries.

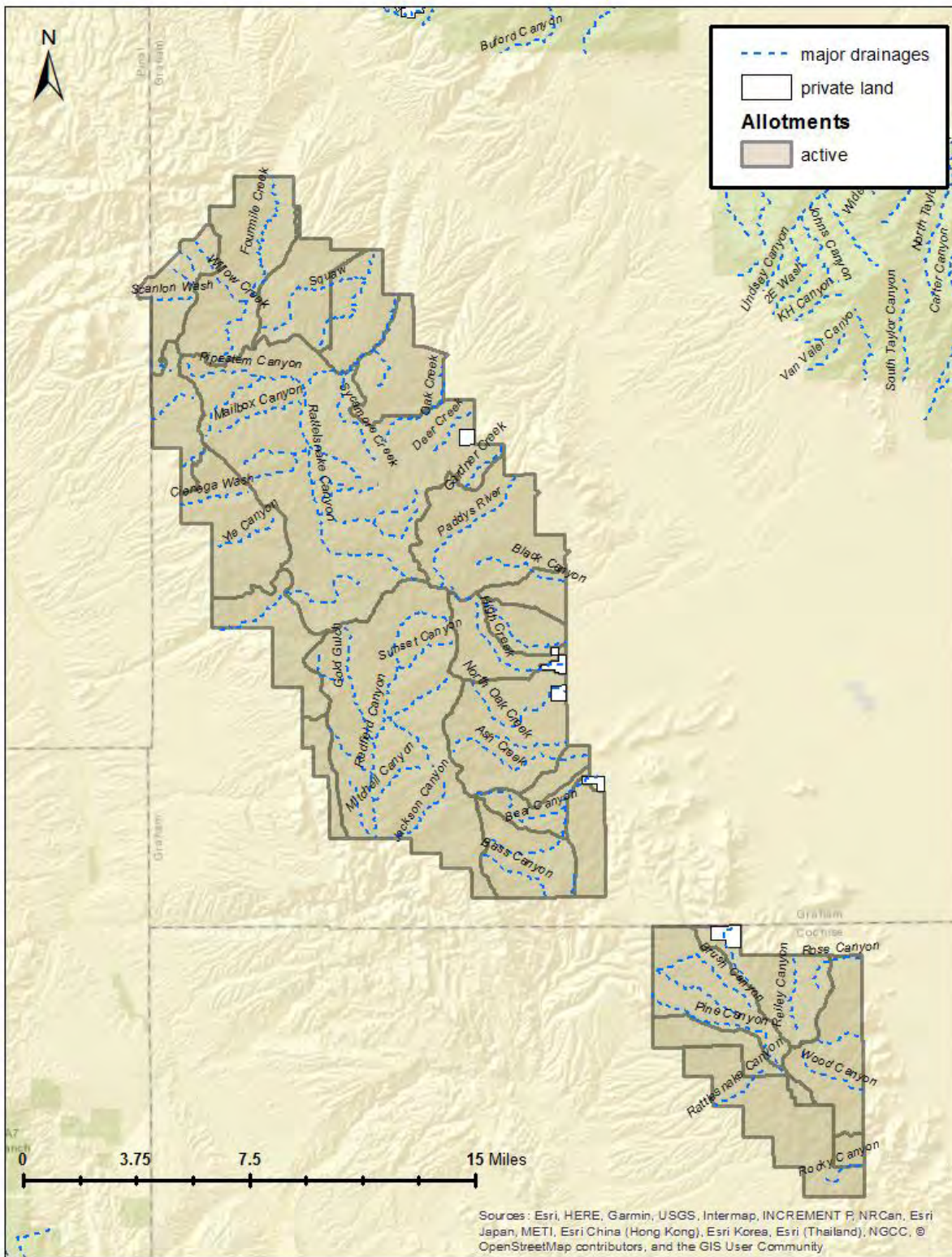


Figure 5. Galiuro and Winchester Ecosystem Management Area and allotment boundaries.

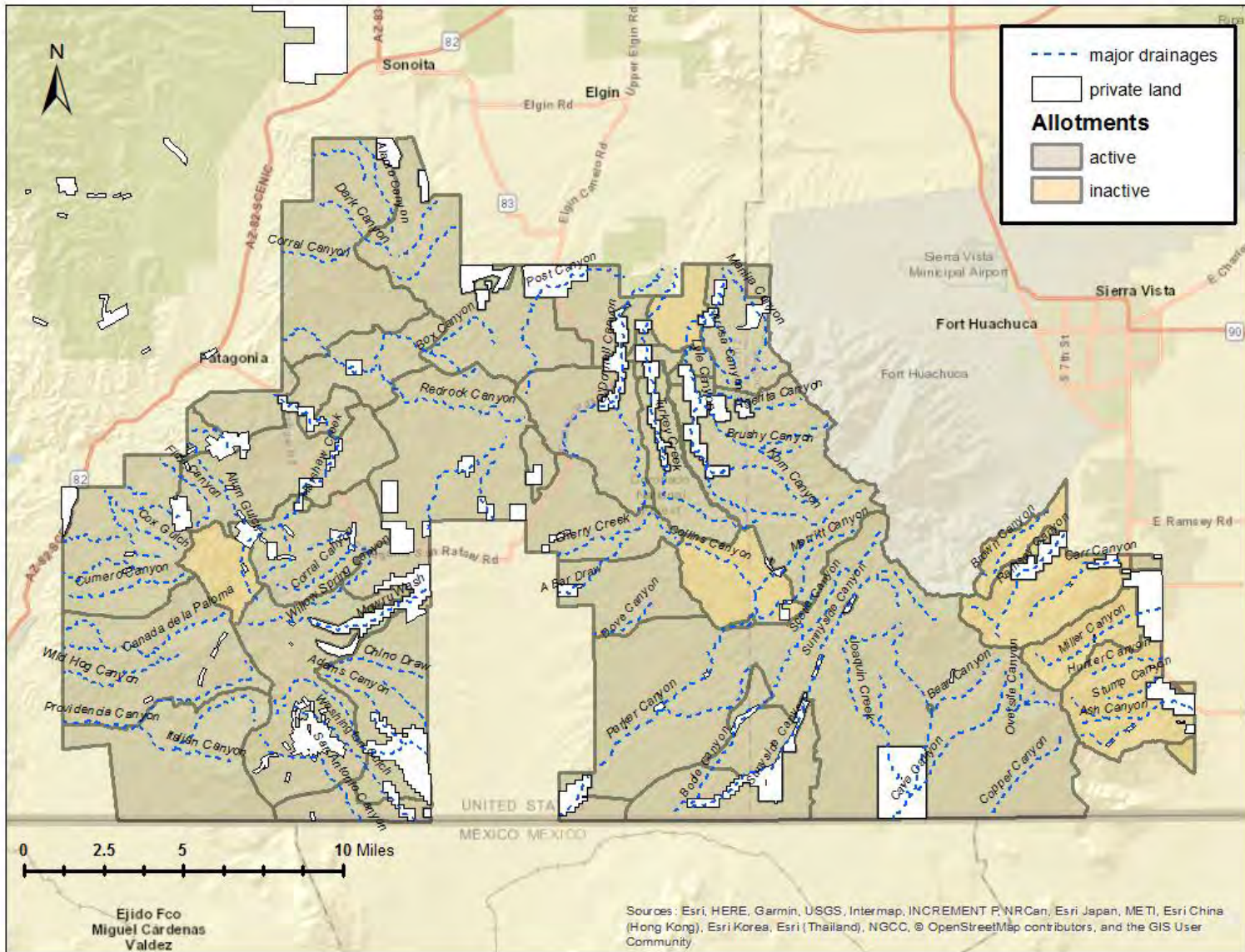


Figure 6. Huachuca Ecosystem Management Area and allotment boundaries.

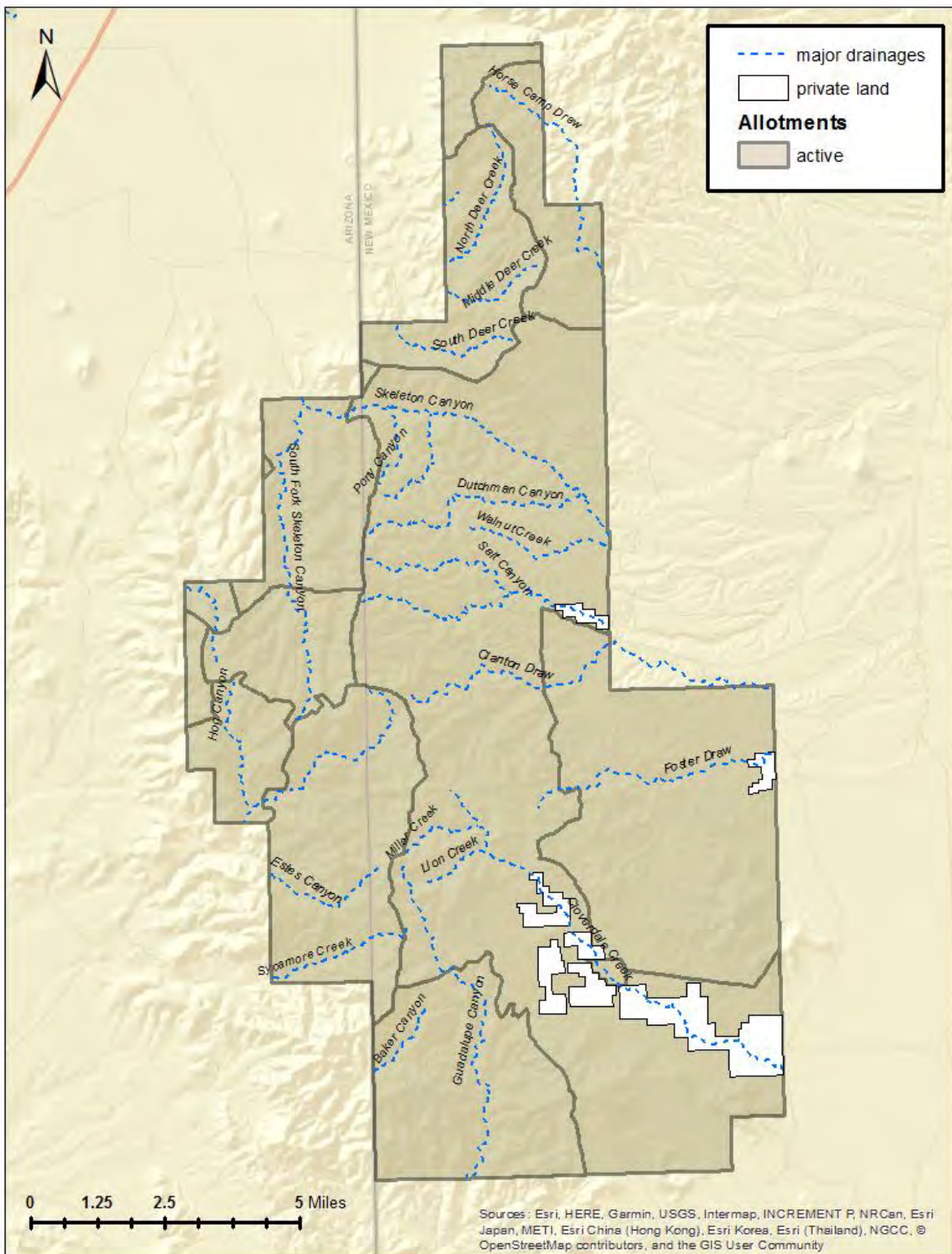


Figure 7. Peloncillo Ecosystem Management Area and allotment boundaries.

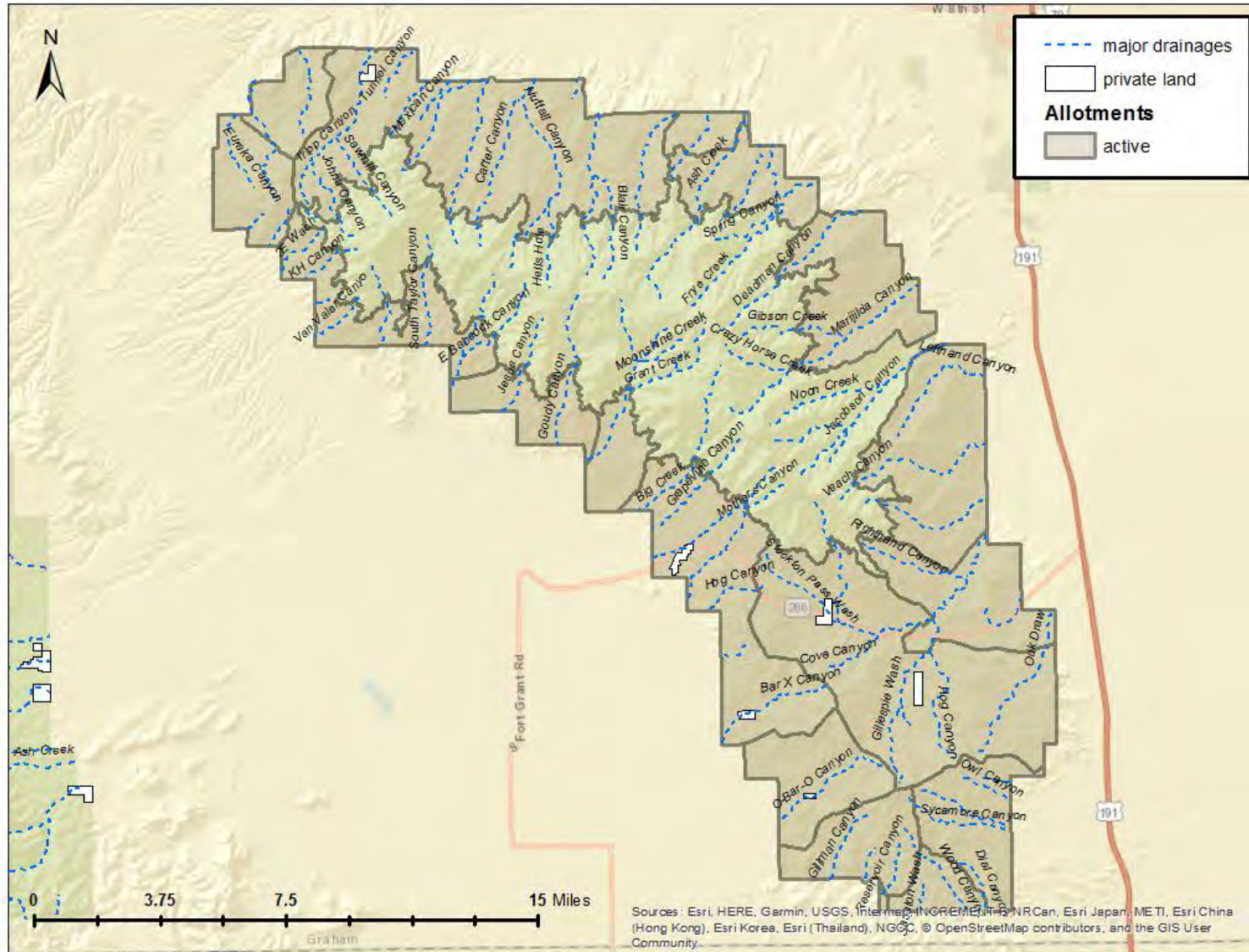


Figure 8. Pinaleno Ecosystem Management Area and allotment boundaries.

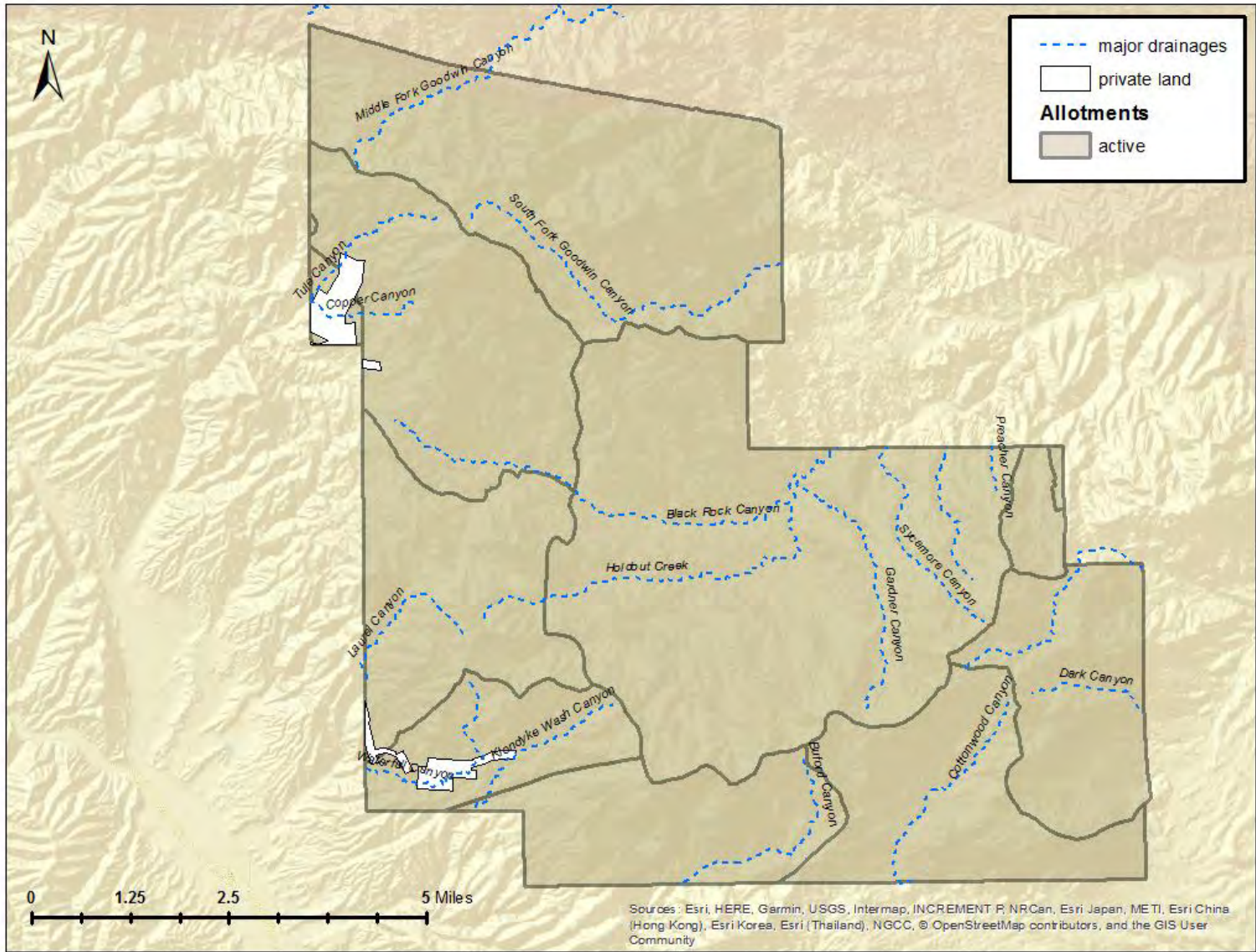


Figure 10. Santa Teresa Ecosystem Management Area and allotment boundaries.

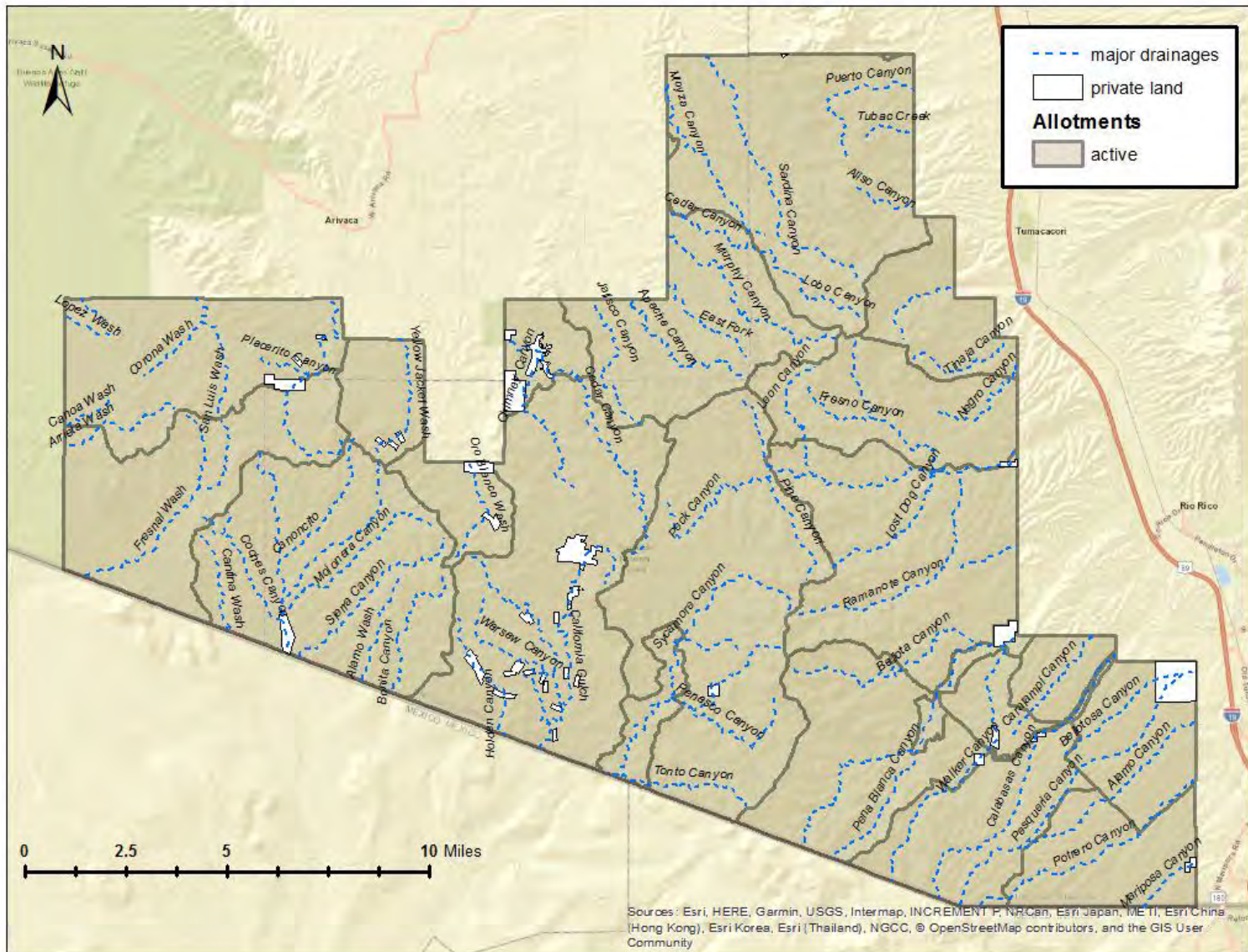


Figure 11. Tumacacori Ecosystem Management Area and allotment boundaries.

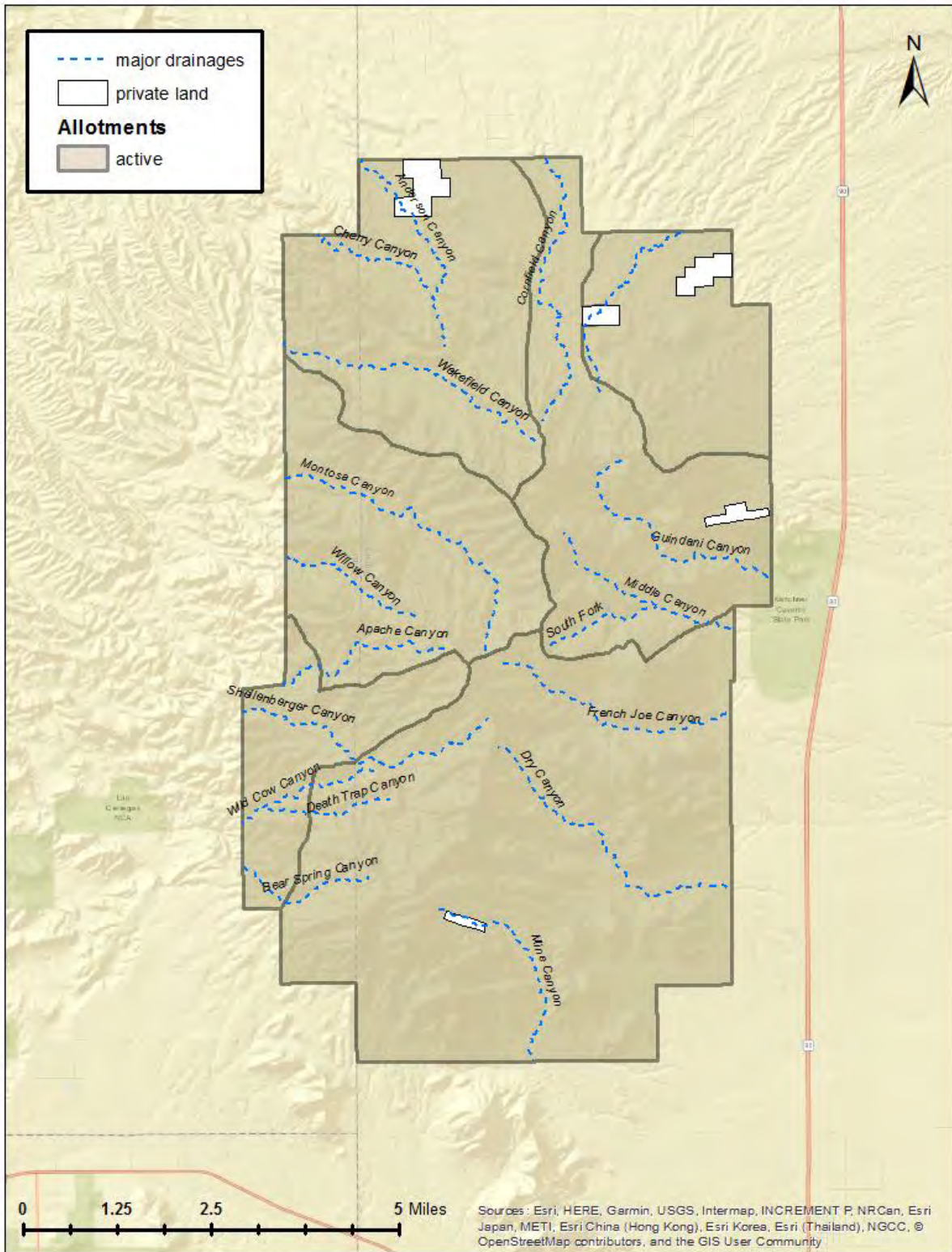


Figure 12. Whetstone Ecosystem Management Area and allotment boundaries.

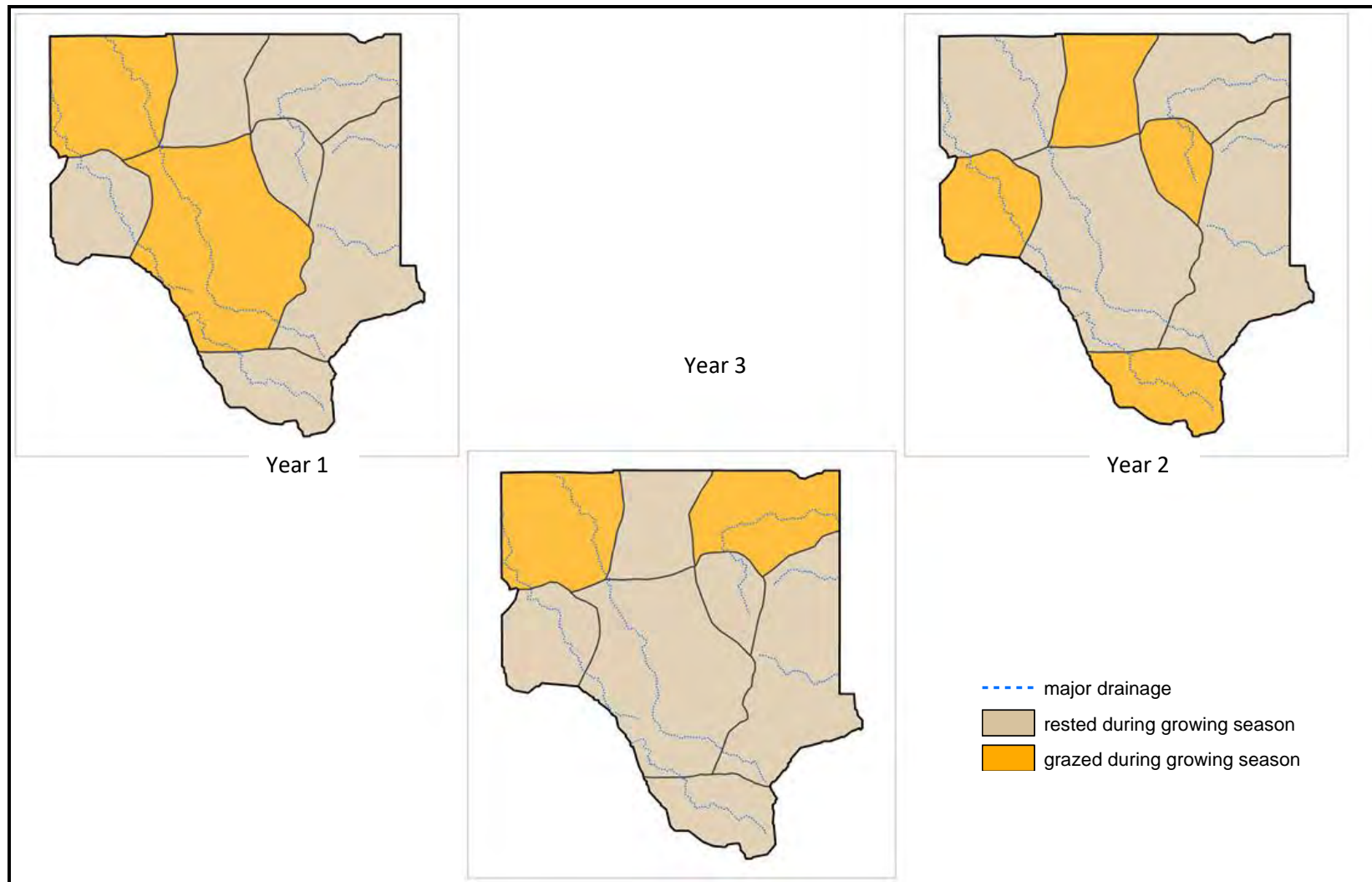


Figure 13. Pasture rotation example. In year 1, two pastures are grazed during the growing season. In year 2, those pastures will be deferred from use until after the growing while four other pastures are grazed during the growing season. In year 3, one of the pastures from year 1 is grazed during the growing season after given at least one growing season rest. The growing period of perennial grass plants is commonly defined as July through September for southeastern Arizona.

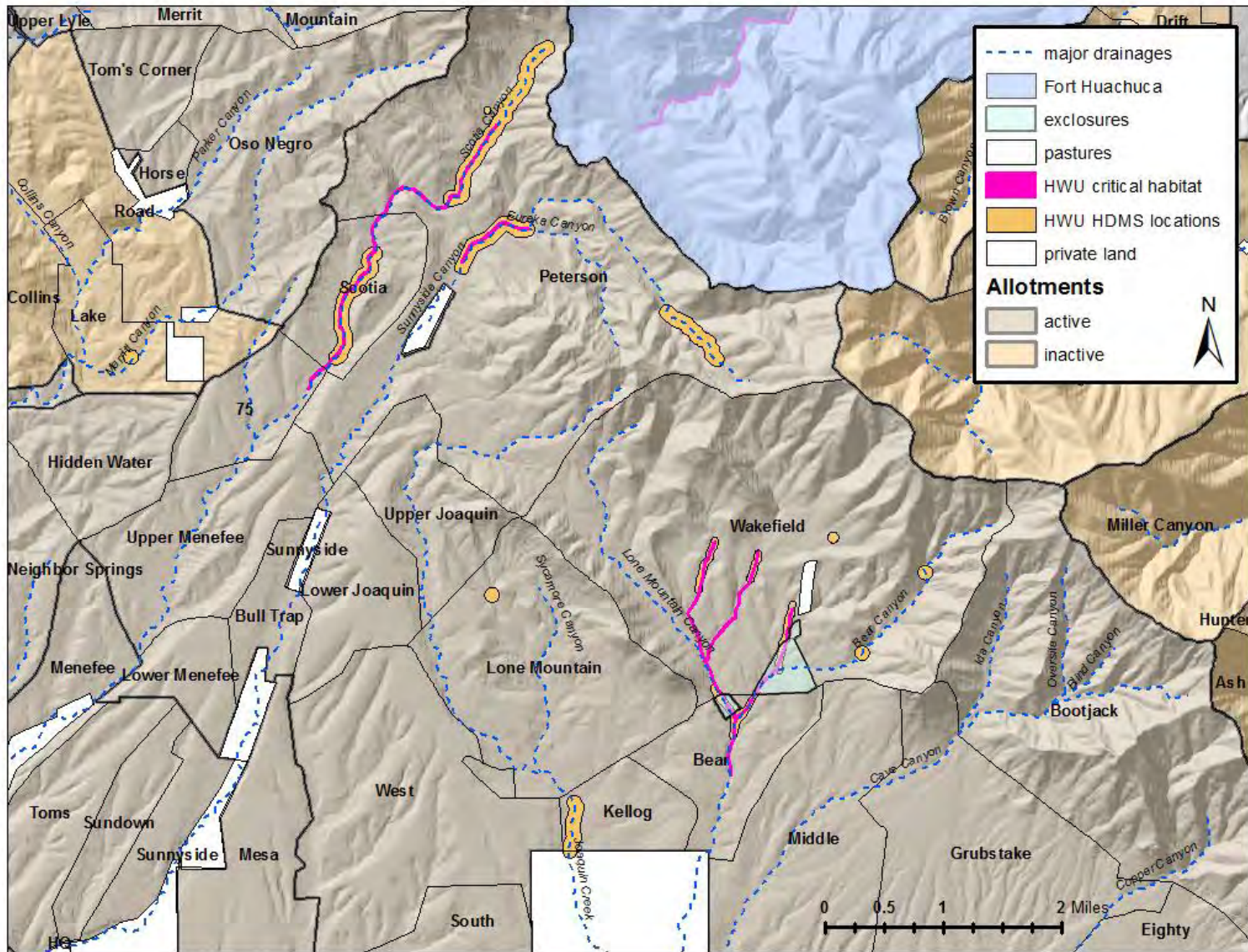


Figure 14. Map of Huachuca water umbel locations, designated critical habitat, and livestock exclosures in the Huachuca EMA.

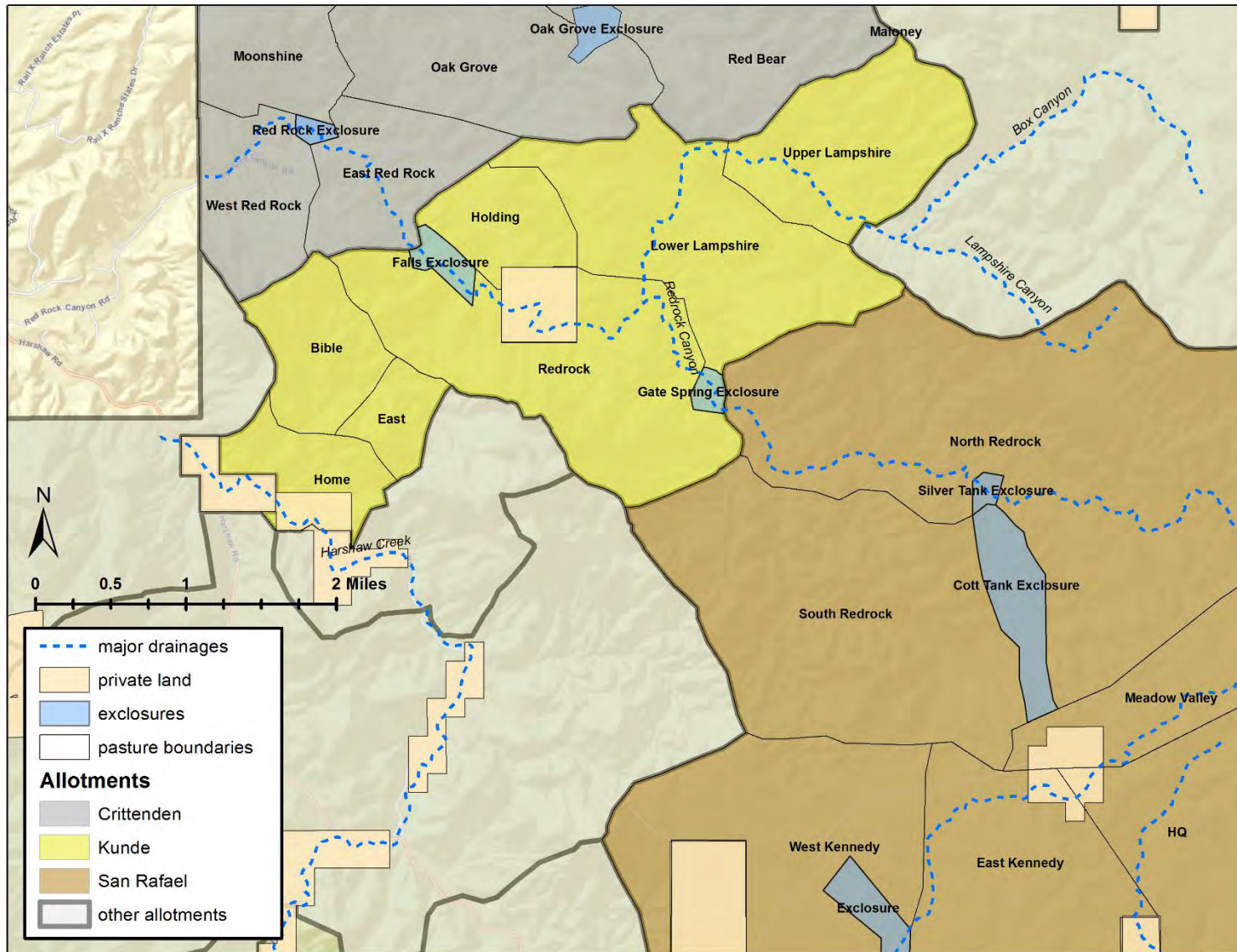


Figure 15. Allotments, pasture boundaries, and livestock exclosures within the Redrock drainage in the Huachuca EMA.

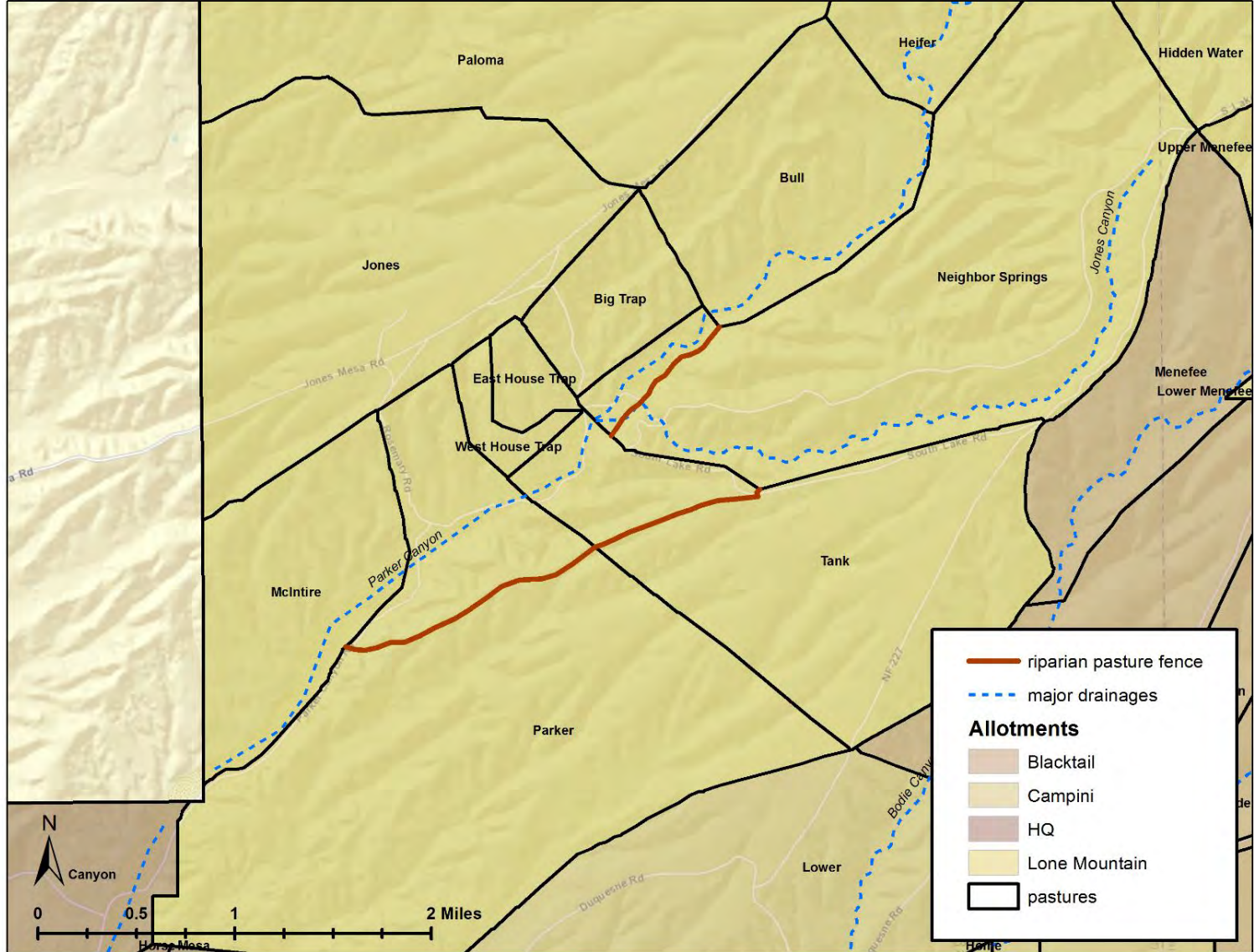


Figure 16. Allotments and pasture boundaries where Gila topminnow are known to occur within the Parker Canyon drainage in the Huachuca EMA. Three proposed riparian pastures will split the Parker, Tank, and Neighbor Springs pastures.

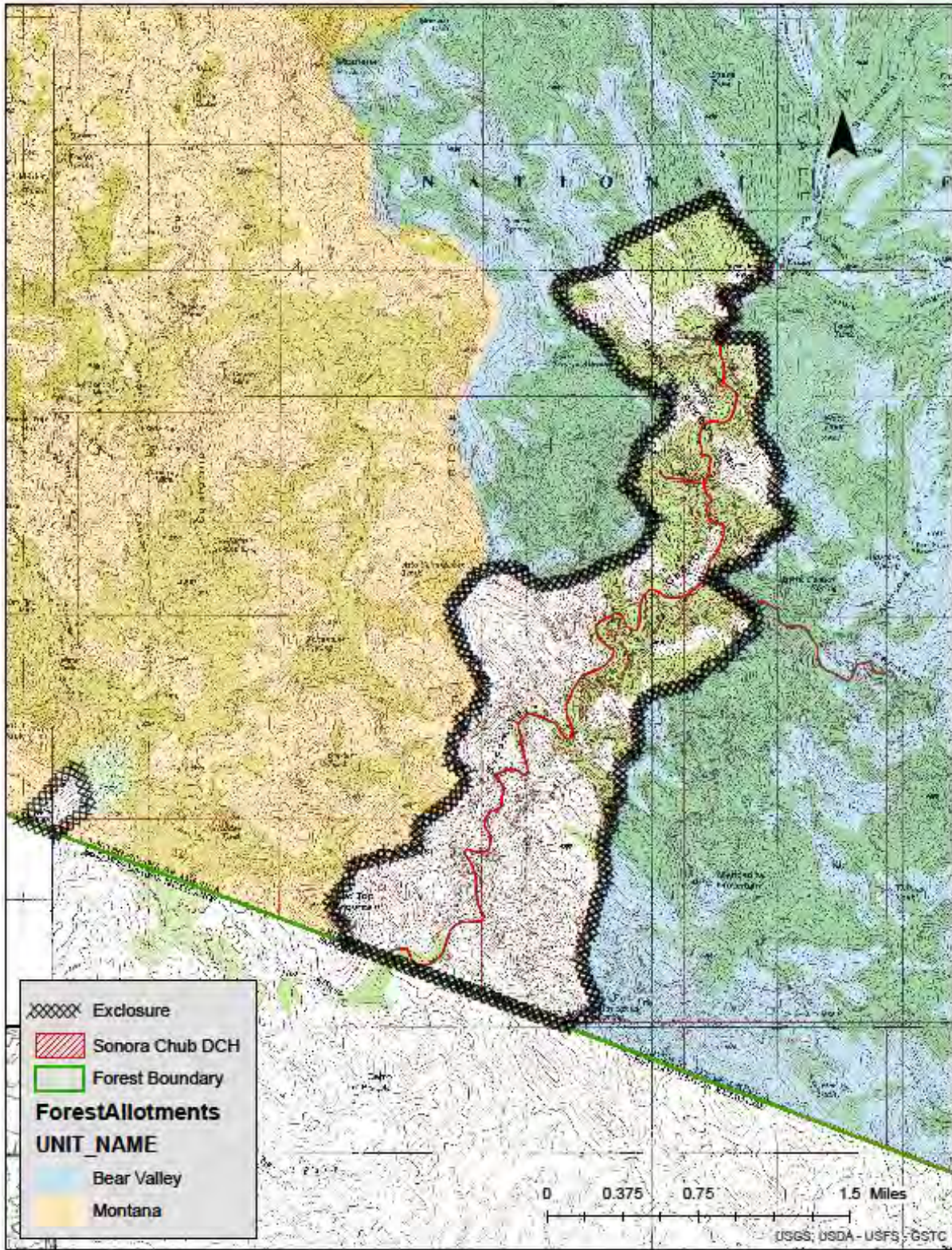


Figure 17. Sonora chub Designated Critical Habitat within the Tumacacori EMA, CNF and the boundary of the livestock enclosure fence.

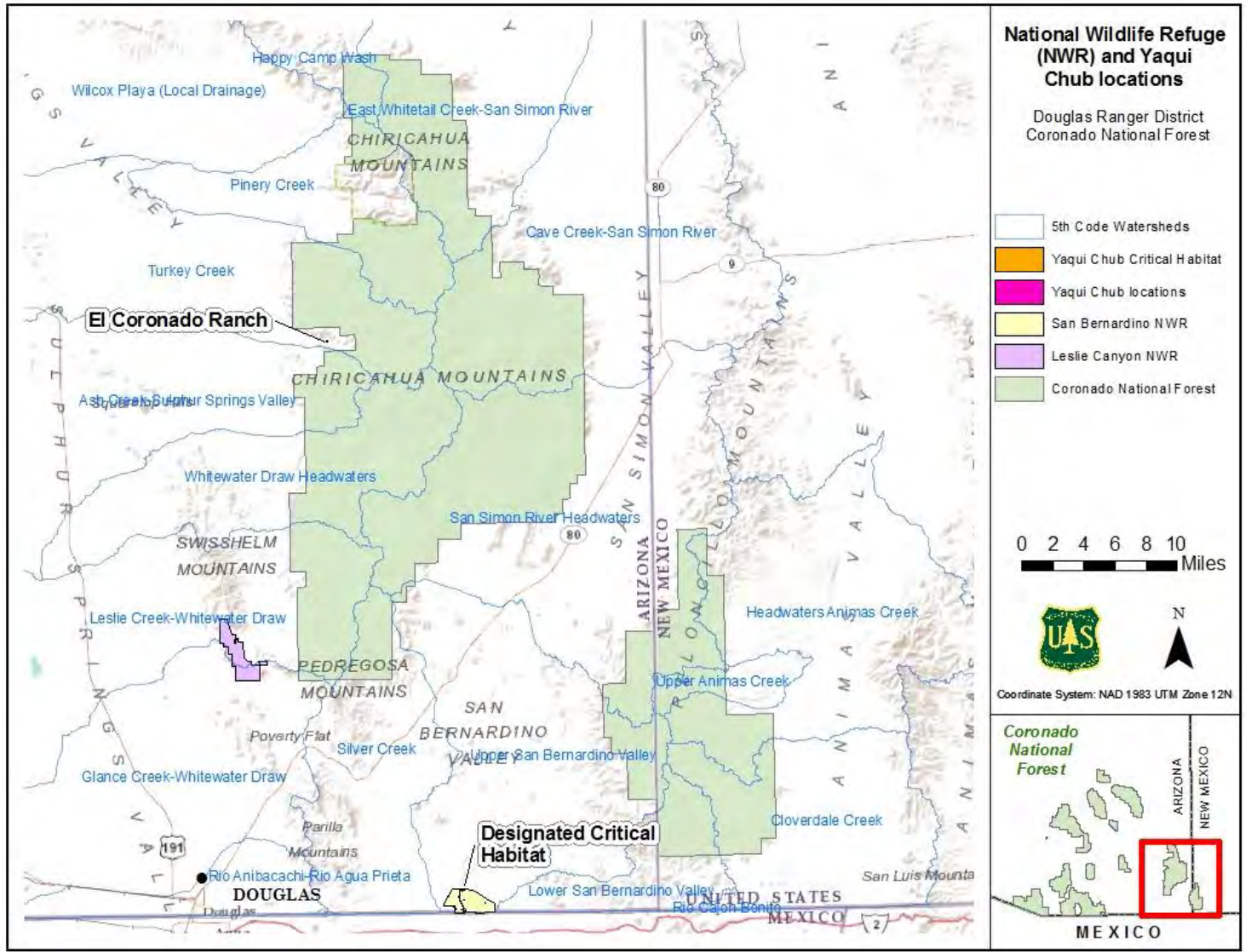


Figure 18. Locations of the National Wildlife Refuges (NWR) and private lands where Yaqui chub occur near the Coronado National Forest along with the 5th code watersheds in which these locations occur.

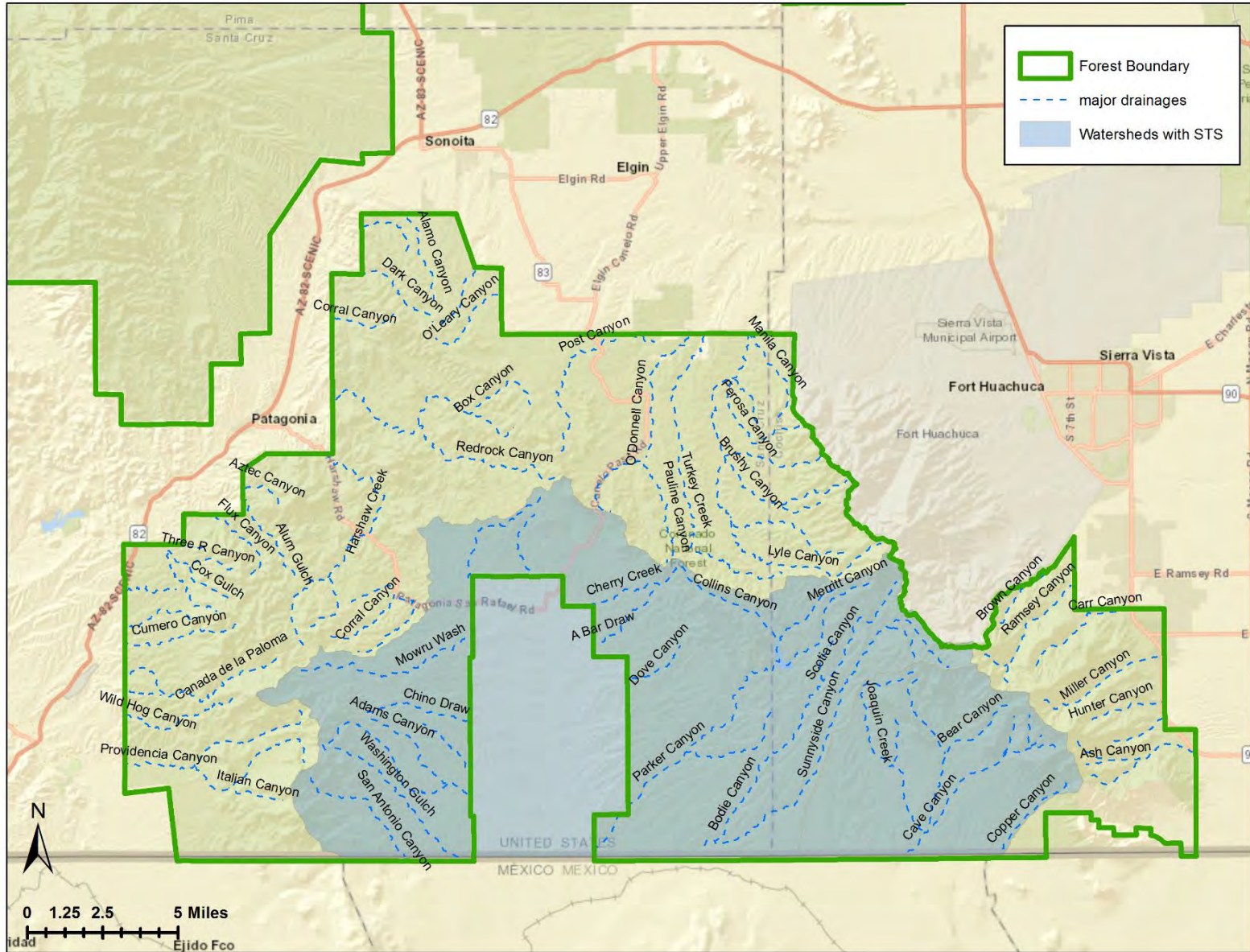


Figure 19. Watersheds within the Huachuca EMA, CNF that contain populations of Sonoran tiger salamanders (STS).

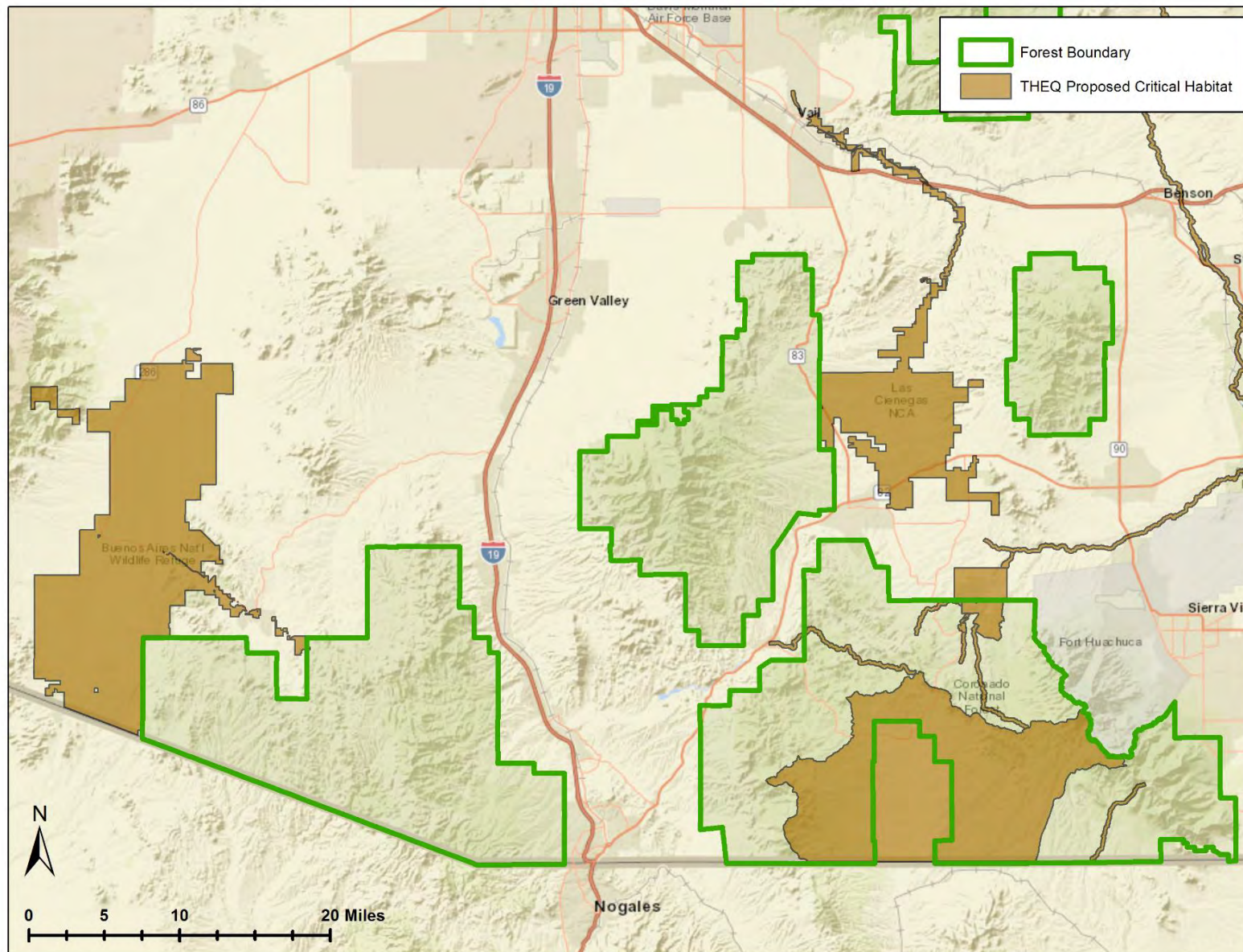


Figure 20. Proposed Critical Habitat for the northern Mexican gartersnake (THEQ) within the Coronado National Forest.

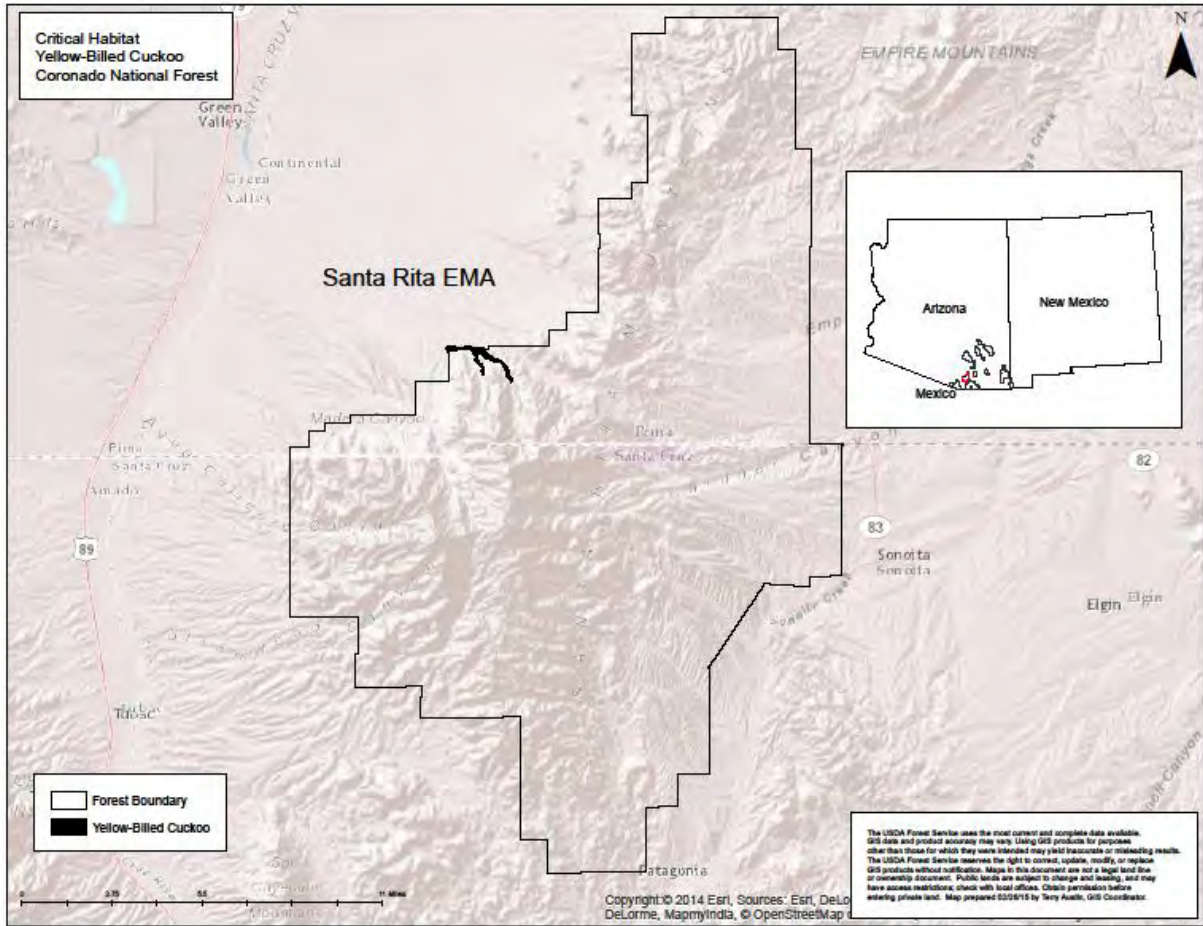


Figure 21. Map of Western yellow-billed cuckoo Proposed Critical Habitat on the CNF.

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Appendix A: Allotment Existing Condition tables – Alphabetical by EMA
(For active allotments part of the proposed action only)

APPENDIX A – grazing allotment existing condition tables

Douglas Ranger District – **Chiricahua EMA**

Allotment Name	Barboot	Allotment Number	122
5th Code Watershed	Leslie Creek- Whitewater Draw, Silver Creek	4th Code Watershed	Whitewater Draw, San Bernadino Valley
Allotment Acres	11,002	Capable Acres	6,328
Permitted Number	400	Season of Use	10/01-04/30
Utilization Level	45%	Elevation (feet)	5200-6200
Type of Grazing System	4- pasture winter grazing		
Pasture Use Constraints	N/A		
Major Drainages	Leslie Canyon		
Comprehensive Planned Improvements	<ul style="list-style-type: none"> • Develop a spring in High Lonesome drainage and pipe water downslope to a 5000 gallon storage and trough. Development would be contingent on securing water rights to the spring. (Cost shared between permittee and Forest Service) • Install a 12,000 gallon rainwater catchment in Wildcat pasture. Forest Service would fund. (\$6000) 		
Allotment Condition	Rangeland vegetation was assessed in 2005 and determined to be in the Mid to High Similarity index. Mesquites are encroaching in many portions of the allotment and this may affect range condition overtime. Soils are 100% satisfactory.		
Exclosures (Name and Acres)	N/A		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Douglas Ranger District – **Chiricahua EMA**

Allotment Name	Big Bend	Allotment Number	124
5th Code Watershed	Silver Creek, Glance Creek-Whitewater Draw, Leslie Creek-Whitewater Draw	4th Code Watershed	Whitewater Draw, San Bernadino Valley
Allotment Acres	8,254	Capable Acres	6,130
Permitted Number	400	Season of Use	11/01-04/30
Utilization Level	45%	Elevation (feet)	5000-6400
Type of Grazing System	5-pasture deferred rotation dormant season grazing		
Pasture Use Constraints	N/A		
Major Drainages	Big Bend Creek		
Comprehensive Planned Improvements	<ul style="list-style-type: none"> • Develop a Seep on the south slope of Big East pasture by installing a spring box, ½ mile of pipe, 5000 gallon storage and trough. This development would be contingent on determination of water rights on the spring. (\$4200) • Install a 12,000 gallon fiberglass umbrella rainwater catchment in the Beacon pasture. Forest Service funding (\$6500) 		
Allotment Condition	Range conditions were assessed and determined to have a Mid Similarity index with a static trend. Soils in many sites are shallow and showing signs of impairment including compaction, erosion and lack of vegetative ground cover. Nearly 40% of the allotment shows signs of soil impairment. Riparian vigor in Big Bend Canyon is rated as fair.		
Exclosures (Name and Acres)	N/A		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Douglas Ranger District – **Chiricahua EMA**

Allotment Name	Boss	Allotment Number	126
5th Code Watershed	Silver Creek	4th Code Watershed	San Bernadino Valley
Allotment Acres	873	Capable Acres	817
Permitted Number	43	Season of Use	10/01-03/31
Utilization Level	45%	Elevation (feet)	4850-5200
Type of Grazing System	2- pasture dormant season grazing		
Pasture Use Constraints	N/A		
Major Drainages	none		
Comprehensive Planned Improvements	N/A		
Allotment Condition	Until 2004, the allotment was used yearlong and vegetation and soil condition were estimated to have a low-similarity index as recently as 2002. Rangeland assessments conducted more recently indicate that resources are now recovering as a result of growing season rest. Soil condition is considered 100% satisfactory, and soils retain their inherent productivity.		
Exclosures (Name and Acres)	N/A		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Douglas Ranger District – **Chiricahua EMA**

Allotment Name	Bruno	Allotment Number	120
5th Code Watershed	San Simon River Headwaters, Whitewater Draw Headwaters, Leslie Creek-Whitewater Draw	4th Code Watershed	San Simon, Whitewater Draw
Allotment Acres	7,526	Capable Acres	5,440
Permitted Number	240	Season of Use	10/16-04/30
Utilization Level	45%	Elevation (feet)	5200-6900
Type of Grazing System	5-pasture rest rotation		
Pasture Use Constraints	N/A		
Major Drainages	Bruno Canyon		
Comprehensive Planned Improvements	<ul style="list-style-type: none"> • Extend the north Bruno pasture fence less than ½ mile north to a natural barrier. Forest Service would supply materials and permittee would construct. (\$2000) • Install 12,000 gallon fiberglass umbrella rainwater catchment in North Bruno pasture to provide reliable water. (Cost of material and helicopter transport; \$6400) • Fence Meadow tank to control access by cattle and encourage to use the upper portion of the Meadow pasture. Permittee would construct using Forest Service materials 		
Allotment Condition	Rangeland vegetation assessed and determined to have Mid-similarity index at two monitoring locations and a low- similarity index on one site. Soil stability at all sited is improving as evidence by increases in litter and decreases in bare soil. Soil condition is 93% satisfactory. Areas with compacted soils and poor vegetation condition are related to livestock concentration in areas where supplements are placed. Riparian vigor is fair and tree recruitment is low in Bruno Canyon.		
Exclosures (Name and Acres)	N/A		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Douglas Ranger District – **Chiricahua EMA**

Allotment Name	Cave Creek	Allotment Number	107
5th Code Watershed	San Simon River Headwaters, Whitewater Draw Headwaters, Cave Creek-San Simon River, Turkey Creek	4th Code Watershed	Wilcox Playa, San Simon, Whitewater Draw
Allotment Acres	26,590	Capable Acres	13,242
Permitted Number	80	Season of Use	10/01-03/31
Utilization Level	45%	Elevation (feet)	5000-9900
Type of Grazing System	3-pasture winter grazing rotation in conjunction with Paradise Allotment		
Pasture Use Constraints	N/A		
Major Drainages	Cave Creek		
Comprehensive Planned Improvements	N/A		
Allotment Condition	The range condition varies across the Cave Creek allotment from a Mid-similarity index to a very High-Similarity index, the allotment is primarily comprised of curly mesquite, hairy grama, and sideoats grama. Soil indicators show an increase in conditions due to an increase in litter and a decrease in a bare ground		
Exclosures (Name and Acres)	N/A		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Douglas Ranger District – **Chiricahua EMA**

Allotment Name	Cochise Head	Allotment Number	150
5th Code Watershed	East whitetail Creek-San Simon River	4th Code Watershed	San Simon
Allotment Acres	6,975	Capable Acres	3,198
Permitted Number	126	Season of Use	11/01-04/30
Utilization Level	45%	Elevation (feet)	5000-8109
Type of Grazing System	5-pasture community allotment; winter grazing, best pasture rotation		
Pasture Use Constraints	N/A		
Major Drainages	Brushy Canyon, Keating Canyon, Oak Canyon		
Comprehensive Planned Improvements	<ul style="list-style-type: none"> Construct a water lot around Holding Pasture tank 		
Allotment Condition	Rangeland condition data collected at two monitoring locations indicate conditions have a Mid-Similarity index, however, there has been an evident increase in mesquite and a corresponding reduction in perennial grasses at lower elevation sites.		
Exclosures (Name and Acres)	N/A		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Douglas Ranger District – **Chiricahua EMA**

Allotment Name	East Whitetail	Allotment Number	149
5th Code Watershed	East Whitetail Creek-San Simon River, Cave Creek-San Simon River, Pinery Creek	4th Code Watershed	Wilcox Playa, San Simon
Allotment Acres	12,830	Capable Acres	11,337
Permitted Number	100	Season of Use	11/01-04/30
Utilization Level	45%	Elevation (feet)	4800-8100
Type of Grazing System	7-pasture winter rest rotation		
Pasture Use Constraints	N/A		
Major Drainages	East Whitetail, Indian Creek, Jhus Canyon		
Comprehensive Planned Improvements	<ul style="list-style-type: none"> Re-establish a pipeline from Jhus Spring by constructing a new spring box, refitting storage and adding a new trough. 		
Allotment Condition	Monitoring of permanent transect indicates that the allotment vegetation has a Mid-Similarity index . Ground cover is increasing, but encroachment of woody species tends to suppress conditions. Soils are 100% satisfactory		
Exclosures (Name and Acres)	N/A		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Douglas Ranger District – **Chiricahua EMA**

Allotment Name	Horseshoe	Allotment Number	118
5th Code Watershed	San Simon River Headwaters, Cave Creek-San Simon River	4th Code Watershed	San Simon
Allotment Acres	19,744	Capable Acres	3,571
Permitted Number	Variable; not to exceed 1584 AUMs (Equivalent to 200 cow/calf pairs for six months)	Season of Use	11/01-04/30
Utilization Level	45%	Elevation (feet)	4500-8200
Type of Grazing System	6- pasture winter use		
Pasture Use Constraints	N/A		
Major Drainages	Horseshoe Canyon, Pot Hole, Blevins Draw		
Comprehensive Planned Improvements	<ul style="list-style-type: none"> • Construct a drift fence across the mouth of Pothole Canyon in the north half of Section 14, T19S, R31E to keep cattle out of the bottom of Horseshoe Canyon • Extend pipeline from an existing source in the bottom of Horseshoe Canyon ¼ mile up Pothole Canyon to a drinker in the south section of 11, T19S, R31E • Line Licklog Dam in upper Horseshoe Canyon and fence the water to control the access • Extend pipeline from Warner Well west into the upper portion of Middle pasture. 		
Allotment Condition	Vegetation condition was found to have a Mid-Similarity index. This allotment is used in conjunction with the Portal Peak allotment.		
Exclosures (Name and Acres)	N/A		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Douglas Ranger District – **Chiricahua EMA**

Allotment Name	Hunt Canyon	Allotment Number	123
5th Code Watershed	San Simon River Headwaters, Whitewater Draw Headwaters, Leslie Creek-Whitewater Draw	4th Code Watershed	San Simon, Whitewater Draw
Allotment Acres	8,311	Capable Acres	6,920
Permitted Number	154	Season of Use	03/01-02/28
Utilization Level	45%	Elevation (feet)	5500-6500
Type of Grazing System	7-pasture deferred rotation		
Pasture Use Constraints	N/A		
Major Drainages	Hunt Canyon, South Bruno Canyon, High Lonesome Canyon, Rustler Canyon		
Comprehensive Planned Improvements	<ul style="list-style-type: none"> • Install fiberglass umbrella rainwater catchment on the ridge west of the gate in Bruno pasture. • Extend the fence 1.0 mile between the Bruno and the John’s Pastures 		
Allotment Condition	Range and soil condition is improving and meeting the Forest Plan standards, although the presence of Lehmann and Boer’s lovegrass tends to reduce condition estimates on some sites. These species affect apparent rangeland condition because non-native species are not counted in plant composition scores used by the Forest Service to estimate ecological condition. Soil stability at all sites is improving as evidence by increases in litter and decreases in bare soil. Soil condition is 100% satisfactory.		
Exclosures (Name and Acres)	N/A		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Douglas Ranger District – **Chiricahua EMA**

Allotment Name	Jackwood	Allotment Number	119
5th Code Watershed	San Simon River Headwaters	4th Code Watershed	San Simon
Allotment Acres	10,832	Capable Acres	10,301
Permitted Number	Variable; Not to exceed 1705 AUM's	Season of Use	10/15-05/15
Utilization Level	45%	Elevation (feet)	4300-6300
Type of Grazing System	2 pasture on/off rotation in conjunction with private land, two additional pastures are separately used with winter and spring grazing		
Pasture Use Constraints	N/A		
Major Drainages	Jackwood Canyon		
Comprehensive Planned Improvements	<ul style="list-style-type: none"> N/A 		
Allotment Condition	<p>Rangeland vegetation condition and trend were evaluated and found that 81% of the allotment, primarily higher elevations has a Mid-Similarity index and is meeting Forest Plan standards for ecological condition. Lower elevations for the allotment appear to be trending toward a drier plant community dominated by mesquite, snakeweed, annuals and Lehmann lovegrass (<i>Eragrostis lehmanniana</i>). As a result, vegetation condition on some lower elevation sites are classified as having a Low-Similarity index. Soils were assessed in 2006 and were found to be 92% satisfactory and 8% impaired. Impaired soils typically occur on the same low flat sites dominated by woody plant and with little vegetative ground cover.</p>		
Exclosures (Name and Acres)	N/A		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Douglas Ranger District – **Chiricahua EMA**

Allotment Name	Lower Rock Creek	Allotment Number	103
5th Code Watershed	Turkey Creek, Pinery Creek	4th Code Watershed	Wilcox Playa
Allotment Acres	7,890	Capable Acres	5,541
Permitted Number	75	Season of Use	03/01-02/28
Utilization Level	45%	Elevation (feet)	6000-7000
Type of Grazing System	3-pasture rest rotation in conjunction with private land		
Pasture Use Constraints	N/A		
Major Drainages	Rock Canyon, Witch Canyon, Fife Canyon, Five Mile Creek		
Comprehensive Planned Improvements	N/A		
Allotment Condition	Rangeland vegetation was assessed and determined overall to have a mid to high-Similarity index. Trends in soil condition appear to be upward, based on observations of increasing litter and decreasing bare ground. Management issues on the allotment include a small area of impaired soils in the northwest corner of the allotment and the need to introduce additional management flexibility to reduce growing season use.		
Exclosures (Name and Acres)	N/A		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Douglas Ranger District – **Chiricahua EMA**

Allotment Name	Lower Rucker	Allotment Number	115
5th Code Watershed	Whitewater Draw Headwaters	4th Code Watershed	Whitewater Draw
Allotment Acres	4,720	Capable Acres	3,190
Permitted Number	151	Season of Use	10/15-06/15
Utilization Level	45%	Elevation (feet)	5800-6800
Type of Grazing System	3- pasture rest rotation		
Pasture Use Constraints	N/A		
Major Drainages	Rucker Canyon, O'Keefe canyon		
Comprehensive Planned Improvements	<ul style="list-style-type: none"> Extend ½ mile of pipeline into the Rock Garden and Road pastures. Costs shared between Forest Service and permittee (\$3500) 		
Allotment Condition	Rangeland vegetation was assessed and determined to have mid to high-similarity index with a static trend. Soils are 91% satisfactory, with indications of compaction and erosion in areas of the North pasture. Riparian recruitment and vigor is good, but channel stability is affected by the presence of a county road in and near the channel.		
Exclosures (Name and Acres)	N/A		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Douglas Ranger District – **Chiricahua EMA**

Allotment Name	Oak	Allotment Number	111
5th Code Watershed	Ash Creek-Sulphur Springs Valley, Whitewater Draw Headwaters, Turkey Creek	4th Code Watershed	Wilcox Playa, Whitewater Draw
Allotment Acres	4,432	Capable Acres	2,437
Permitted Number	72	Season of Use	10/01-05/15
Utilization Level	45%	Elevation (feet)	5500-8000
Type of Grazing System	5-pasture winter grazing rest rotation		
Pasture Use Constraints	N/A		
Major Drainages	Cottonwood Canyon		
Comprehensive Planned Improvements	N/A		
Allotment Condition	Vegetative Range Condition for the allotment was found to have a Mid-Similarity index; however, decreasing trends have become evident for lower elevations of the allotment due to the heavy invasion of Lehmann lovegrass. Soil stability has shown increasing trends due to the increase in litter and decrease in bare ground.		
Exclosures (Name and Acres)	N/A		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Douglas Ranger District – **Chiricahua EMA**

Allotment Name	Paradise	Allotment Number	102
5th Code Watershed	East Whitetail Creek- San Simon River, Cave Creek- San Simon River, Pinery Creek	4th Code Watershed	Wilcox Playa, San Simon
Allotment Acres	9,466	Capable Acres	7,770
Permitted Number	105	Season of Use	10/01-03/31
Utilization Level	45%	Elevation (feet)	
Type of Grazing System	5-pasture winter and spring rotation in conjunction with the Cave Creek Allotment as well as state and private land.		
Pasture Use Constraints	N/A		
Major Drainages	East Turkey Creek		
Comprehensive Planned Improvements	N/A		
Allotment Condition	Rangeland vegetation was evaluated and determined overall to have Mid to High-Similarity index. Trends in soil condition appear to be upward based on observations of increasing litter and decreasing bare ground.		
Exclosures (Name and Acres)	N/A		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Douglas Ranger District – **Chiricahua EMA**

Allotment Name	Pedregosa	Allotment Number	125
5th Code Watershed	Silver Creek, San Simon River Headwaters, Upper San Bernadino Valley, Leslie Creek- Whitewater Draw	4th Code Watershed	San Bernadino Valley, San Simon, Whitewater Draw
Allotment Acres	10035	Capable Acres	9966
Permitted Number	196	Season of Use	03/01-02/28
Utilization Level	45%	Elevation (feet)	5000-6500
Type of Grazing System	7-pasture deferred rotation		
Pasture Use Constraints	N/A		
Major Drainages	Indian Creek, Buck Creek, High Lonesome		
Comprehensive Planned Improvements	<ul style="list-style-type: none"> • Drill a well in the Halfmoon pasture to pipe water to the High Lonesome and Buck Creek pastures. The project will include 2 miles of pipeline and 3-4 troughs spaced along the line. (\$43,000) • Install a 1,500 gallon umbrella rainwater catchment in the Indian Creek pasture south of Devil's Dam. Helicopter installation required. (\$6,500) 		
Allotment Condition	Range condition was assessed and determined to have a high-similarity index with upward trends. Soils are 100% satisfactory. Indian Creek riparian condition was rated poor for vigor.		
Exclosures (Name and Acres)	N/A		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Douglas Ranger District – **Chiricahua EMA**

Allotment Name	Pine	Allotment Number	104
5th Code Watershed	Turkey Creek, Pinery Creek	4th Code Watershed	Wilcox Playa
Allotment Acres	8,507	Capable Acres	6,672
Permitted Number	16	Season of Use	03/01-02/28
Utilization Level	45%	Elevation (feet)	5300-7500
Type of Grazing System	Yearlong in conjunction with off forest pastures		
Pasture Use Constraints	N/A		
Major Drainages	Fife Canyon, Hoovey Canyon, Green Canyon		
Comprehensive Planned Improvements	N/A		
Allotment Condition	Rangeland vegetation was assessed and was determined overall to have a Mid-Similarity index. Monitoring records indicate that woody species have increased significantly since the 1960's, resulting in a loss of grazing capacity. However, the low permitted use is well within existing capacity.		
Exclosures (Name and Acres)	N/A		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Douglas Ranger District – **Chiricahua EMA**

Allotment Name	Pinery	Allotment Number	162
5th Code Watershed	East Whitetail Creek- San Simon River, Cave Creek- San Simon River, Pinery Creek	4th Code Watershed	Wilcox Playa, San Simon
Allotment Acres	12,142	Capable Acres	10,573
Permitted Number	60	Season of Use	11/01-04/30
Utilization Level	45%	Elevation (feet)	
Type of Grazing System	4-pasture rest rotation, winter and spring grazing season		
Pasture Use Constraints	N/A		
Major Drainages	North Fork, Pine Canyon, Pinery Canyon		
Comprehensive Planned Improvements	N/A		
Allotment Condition	Rangeland condition was evaluated and the allotment was determined to have a Mid to High-Similarity index. Trends in soil condition appear to be upward, based on observations of increasing litter and decreasing bare ground. Soils are 100% satisfactory. Monitoring records indicate that woody species have increased significantly since the 1960's, resulting in a loss of grazing capacity.		
Exclosures (Name and Acres)	Pinery Range Exclosure less than 1 acre		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Douglas Ranger District – **Chiricahua EMA**

Allotment Name	Portal Peak	Allotment Number	163
5th Code Watershed	San Simon River Headwaters, Cave Creek- San Simon River	4th Code Watershed	San Simon
Allotment Acres	9,367	Capable Acres	4,427
Permitted Number	Variable; Not to exceed 911 AUMs (Equivalent to 115 cow/calf pairs for six months)	Season of Use	10/01-04/30
Utilization Level	45%	Elevation (feet)	4800-8500
Type of Grazing System	3-pasture winter use		
Pasture Use Constraints	N/A		
Major Drainages	Sulphur Draw		
Comprehensive Planned Improvements	<ul style="list-style-type: none"> N/A 		
Allotment Condition	Vegetation condition for the allotment is in the Mid-Similarity index; however Lehmann lovegrass has begun to occupy much of the landscape. The last trend analysis indicated that Lehmann lovegrass occupied approximately 58% of the herbaceous species composition. Soil stability shows an increasing trend with increased values for litter and a decrease in bare ground.		
Exclosures (Name and Acres)	Sulphur Draw Range Exclosure less than 1 acre		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Douglas Ranger District – **Chiricahua EMA**

Allotment Name	Price Canyon	Allotment Number	117
5th Code Watershed	San Simon River Headwaters, Cave Creek- San Simon River	4th Code Watershed	San Simon
Allotment Acres	14,016	Capable Acres	11,596
Permitted Number	190	Season of Use	03/01-02/28
Utilization Level	45%	Elevation (feet)	500-9000
Type of Grazing System	13-pasture yearlong deferred rotation		
Pasture Use Constraints	N/A		
Major Drainages	Jackwood Canyon, Brushy Canyon, Baker Canyon		
Comprehensive Planned Improvements	<ul style="list-style-type: none"> Extend a pipeline southwest from Headquarters Well (private) approximately 1.5 mile into Southwest and behind the Hill pastures 		
Allotment Condition	Rangeland conditions largely have Mid-Similarity index with upward trends, although Lehmann lovegrass has invaded lower elevation sites. Soil assessments found 83% of the allotment to be in satisfactory condition, with the remaining 17% impaired. The Price Canyon riparian corridor was assessed and determined to be in good condition		
Exclosures (Name and Acres)	N/A		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Douglas Ranger District – **Chiricahua EMA**

Allotment Name	Rak	Allotment Number	114
5th Code Watershed	San Simon River Headwaters, Cave Creek- San Simon River, Ash Creek- Sulphur Springs Valley, Whitewater Draw Headwaters, Turkey Creek	4th Code Watershed	Wilcox Playa, San Simon, Whitewater Draw
Allotment Acres	36,355	Capable Acres	13,000
Permitted Number	332	Season of Use	08/01-04/30
Utilization Level	45%	Elevation (feet)	5600-9350
Type of Grazing System	4-units containing a total of 20-pastures; 4-unit rest rotation		
Pasture Use Constraints	N/A		
Major Drainages	John Long Canyon, Rucker Canyon		
Comprehensive Planned Improvements	<ul style="list-style-type: none"> Install a 12,000 gallon rainwater catchment in the Cottonwood pasture in Stanford Canyon. Forest Service funding. (\$6,500) 		
Allotment Condition	Rangeland vegetation was assessed and determined to be meeting Forest Plan standards for rangeland condition. Indicators of soil stability are good with upward trends. Soils are 99% satisfactory, with only a small area showing soil compaction. Riparian condition is largely good.		
Exclosures (Name and Acres)	Rucker Range Exclosure less than 1 acre		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Douglas Ranger District – **Chiricahua EMA**

Allotment Name	Rough Mountain	Allotment Number	146
5th Code Watershed	East Whitetail Creek-San Simon River, Happy Camp Wash, Pinery Creek, Wilcox Playa (Local Drainage)	4th Code Watershed	Wilcox Playa, San Simon
Allotment Acres	19,830	Capable Acres	10,744
Permitted Number	295	Season of Use	11/01-04/30
Utilization Level	45%	Elevation (feet)	4600-8000
Type of Grazing System	Community allotment ; Best Pasture Rotation		
Pasture Use Constraints	N/A		
Major Drainages	Emigrant Canyon, Little Wood Canyon, Wood Canyon, Fox Canyon		
Comprehensive Planned Improvements	<ul style="list-style-type: none"> • Install a pipeline and trough at a spring in Lower Wood pasture. • Install 500 feet of pipeline, 5,000 gallon storage and trough at a spring above Comet Spring in Upper Emigrant pasture. • Extend a drift fence ¼ mile between South Fox and Lower Wood pastures. 		
Allotment Condition	Vegetation monitoring indicates that upland vegetation is stable and improving. A small area (approximately 56 acres) of impaired soils has been identified in Fox Canyon on the eastern edge of the allotment. Issues on this allotment include inadequate fencing and steep terrain which combine to concentrate cattle in major drainages some years. Concentrations of livestock in canyon bottoms can affect riparian and soil condition.		
Exclosures (Name and Acres)	N/A		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Douglas Ranger District – **Chiricahua EMA**

Allotment Name	Tex Canyon	Allotment Number	121
5th Code Watershed	San Simon River Headwaters, Whitewater Draw Headwaters, Upper San Bernadino Valley, Leslie Creek-Whitewater Draw	4th Code Watershed	San Bernadino Valley, Whitewater Draw, San Simon
Allotment Acres	18,636	Capable Acres	11,802
Permitted Number	600	Season of Use	11/01-02/28
Utilization Level	45%	Elevation (feet)	5000-7550
Type of Grazing System	8-pasture winter grazing rest rotation		
Pasture Use Constraints	N/A		
Major Drainages	Tex Canyon, Shake Gulch, Pine Gulch		
Comprehensive Planned Improvements	N/A		
Allotment Condition	Vegetative Range condition for the allotment following the 2011 fire has a Low to Mid-Similarity index due to the heavy invasion of Lehmann lovegrass. Soil stability is increasing due to large increases in litter and herbaceous cover and decreases in bare ground.		
Exclosures (Name and Acres)	N/A		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Douglas Ranger District – **Chiricahua EMA**

Allotment Name	Turkey Creek	Allotment Number	106
5th Code Watershed	Cave Creek- San Simon River, Whitewater Draw Headwaters, Turkey Creek, Pinery Creek	4th Code Watershed	Wilcox Playa, San Simon, Whitewater Draw
Allotment Acres	13,449	Capable Acres	3,380
Permitted Number	72	Season of Use	03/01-02/28
Utilization Level	45%	Elevation (feet)	5400-9600
Type of Grazing System	4-pasture yearlong deferred rotation		
Pasture Use Constraints	N/A		
Major Drainages	Turkey Creek, Turkey Pen, Mormon Canyon, Saulsbury Canyon, Coal Pit		
Comprehensive Planned Improvements	N/A		
Allotment Condition	Rangeland vegetation was assessed and was determined to have a High-Similarity index. Trends in soil condition appear to be upward, based on observations of increasing litter and decreasing bare ground. The allotment shows upward trends in condition, and no management issues have been identified.		
Exclosures (Name and Acres)	N/A		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Douglas Ranger District – **Chiricahua EMA**

Allotment Name	Upper Rock Creek	Allotment Number	114
5th Code Watershed	Turkey Creek, Pinery Creek	4th Code Watershed	Wilcox Playa
Allotment Acres	6,807	Capable Acres	4,461
Permitted Number	40	Season of Use	03/01-02/28
Utilization Level	45%	Elevation (feet)	
Type of Grazing System	2 functional pastures are used in deferred rotation with three additional pastures that are combined with the primary two pastures depending on water availability		
Pasture Use Constraints	N/A		
Major Drainages	South Witch Canyon, Fife Canyon		
Comprehensive Planned Improvements	N/A		
Allotment Condition	Systematic rangeland condition monitoring has not been completed; however visual estimates and inspections to indicate that conditions are similar to other allotments such as Pinery, Pine, and lower Rock Creek inspection records indicate that utilization has averaged under 20%. The Rock Creek water shed and riparian area was evaluated in 2007 and was determined to be stable with high bank stability and good vegetation cover.		
Exclosures (Name and Acres)	N/A		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Douglas Ranger District – **Chiricahua EMA**

Allotment Name	West Whitetail	Allotment Number	148
5th Code Watershed	Happy Camp, Pinery Creek	4th Code Watershed	Wilcox Playa, San Simon
Allotment Acres	3,842	Capable Acres	2,478
Permitted Number	72	Season of Use	03/01-02/28
Utilization Level	45%	Elevation (feet)	5600-7800
Type of Grazing System	4-pasture yearlong community allotment deferred rotation		
Pasture Use Constraints	N/A		
Major Drainages	West Whitetail		
Comprehensive Planned Improvements	<ul style="list-style-type: none"> • Construct a ½ mile drift fence between Buckhorn and West Whitetail pastures. • Install a 300 foot wing fence in Whitetail Canyon to facilitate livestock holding. 		
Allotment Condition	Vegetation monitoring indicates that conditions on the allotment portions have a High-Similarity index, with increasing litter and decreasing bare soil. Soils are 100% satisfactory. Utilization averages 25-35% in most years.		
Exclosures (Name and Acres)	N/A		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Douglas Ranger District – **Chiricahua EMA**

Allotment Name	Willie Rose	Allotment Number	147
5th Code Watershed	East Whitetail Creek- San Simon River	4th Code Watershed	San Simon
Allotment Acres	1,572	Capable Acres	565
Permitted Number	31	Season of Use	03/01-04/30
Utilization Level	45%	Elevation (feet)	4650-7200
Type of Grazing System	1-pasture winter grazing		
Pasture Use Constraints	N/A		
Major Drainages	Triangle Canyon		
Comprehensive Planned Improvements	<ul style="list-style-type: none"> Extend a pipeline from a well on deeded land to an existing pipeline on the Forest to supply storage and troughs on the allotment. 		
Allotment Condition	Rangeland condition is considered to have a Mid-Similarity index, although there has been a noticeable increase in woody vegetation over the past several decades. Soil conditions are 100% satisfactory.		
Exclosures (Name and Acres)	N/A		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Douglas Ranger District – **Dragoon EMA**

Allotment Name	Black Diamond	Allotment Number	159
5th Code Watershed	Turkey Creek	4th Code Watershed	Wilcox Playa
Allotment Acres	1207	Capable Acres	1006
Permitted Number	25	Season of Use	03/01-02/28
Utilization Level	45%	Elevation (feet)	4800-7150
Type of Grazing System	2-pasture yearlong		
Pasture Use Constraints	N/A		
Major Drainages	None		
Comprehensive Planned Improvements	N/A		
Allotment Condition	<ul style="list-style-type: none"> Resource conditions on the Black Diamond Allotment are stable or improving. The allotment is heavily invaded by Lehmann lovegrass and as a result, condition ratings based on plant species composition show a Low-Similarity index. Soil conditions show an upward trend due to increasing ground cover 		
Exclosures (Name and Acres)	N/A		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Douglas Ranger District – **Dragoon EMA**

Allotment Name	Dragoon	Allotment Number	152
5th Code Watershed	Clifford Wash-San Pedro River, Wilcox Playa(Local Drainage)	4th Code Watershed	Wilcox Playa, Upper San Pedro
Allotment Acres	4601	Capable Acres	2889
Permitted Number	75	Season of Use	03/01-02/28
Utilization Level	45%	Elevation (feet)	4600-6600
Type of Grazing System	5-pasture yearlong rest rotation		
Pasture Use Constraints	N/A		
Major Drainages	Wood Canyon		
Comprehensive Planned Improvements	<ul style="list-style-type: none"> • Install 3 miles of buried pipeline from existing solar well to the East and Far East pastures. 		
Allotment Condition	<p>The Range Condition throughout the Dragoon Allotment was found to have a Mid- Similarity index. The Similarity Index used for the analysis may have caused the landscape to rank in a lower condition than the actual condition of the sites. The Arizona ecological sites guide does not account for Lehmann lovegrass within the biota classification, thus resulting in a decrease in condition for regions dominated by this perennial grass species. Soil condition shows an upward trend due to increasing ground cover.</p>		
Exclosures (Name and Acres)	N/A		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Douglas Ranger District – **Dragoon EMA**

Allotment Name	Fourr	Allotment Number	153
5th Code Watershed	Clifford Wash-San Pedro River, Wilcox Playa(Local Drainage)	4th Code Watershed	Wilcox Playa, Upper San Pedro
Allotment Acres	3,628	Capable Acres	1,920
Permitted Number	88	Season of Use	03/01-02/28
Utilization Level	45%	Elevation (feet)	5000-7500
Type of Grazing System	2-pasture winter grazing		
Pasture Use Constraints	N/A		
Major Drainages	Fourr Canyon, Jordan Canyon		
Comprehensive Planned Improvements	N/A		
Allotment Condition	Rangeland vegetation condition was found to have a high-Similarity index with static trends. Soils are 100% satisfactory.		
Exclosures (Name and Acres)	N/A		
Additional Information			

APPENDIX A – grazing allotment existing condition tables

Douglas Ranger District – **Dragoon EMA**

Allotment Name	Granite Springs	Allotment Number	122
5th Code Watershed	Turkey Creek, Clifford Was, San Pedro River	4th Code Watershed	Wilcox Playa, Upper San Pedro
Allotment Acres	6,887	Capable Acres	4,890
Permitted Number	117	Season of Use	03/01-02/28
Utilization Level	45%	Elevation (feet)	400-7100
Type of Grazing System	8-pasture yearlong deferred rest rotation.		
Pasture Use Constraints	N/A		
Major Drainages	None		
Comprehensive Planned Improvements	<ul style="list-style-type: none"> • Reroute short sections of the Horse Pasture pipeline to service troughs in Horse pasture and Windmill pasture to the west. • Cross fence Dirt Tank pasture and Windmill pasture. This would increase pasture rotation flexibility and provide additional opportunities for pasture deferral by increasing the number of pastures in the rotation. 		
Allotment Condition	Resource conditions are considered stable and improving, although vegetation condition on some sites are listed as having low-similarity indices due to the extensive presence of Lehmann lovegrass. Monitoring has shown significant increases in litter and decreases in bare ground, indication improving watershed conditions. Soil condition is 99% satisfactory.		
Exclosures (Name and Acres)	N/A		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Douglas Ranger District – **Dragoon EMA**

Allotment Name	Halfmoon	Allotment Number	156
5th Code Watershed	Clifford Wash- San Pedro River, Wilcox Playa(Local Drainage)	4th Code Watershed	Wilcox Playa, Upper San Pedro
Allotment Acres	6,891	Capable Acres	3,875
Permitted Number	63	Season of Use	03/01-02/28
Utilization Level	45%	Elevation (feet)	5000-7500
Type of Grazing System	4-pastures yearlong deferred rest rotation		
Pasture Use Constraints	N/A		
Major Drainages	None		
Comprehensive Planned Improvements	N/A		
Allotment Condition	Rangeland vegetation condition has a Mid-Similarity index with a static trend, although a large zone of heavy use and low-similarity index is found in the vicinity of the one reliable water source. Impaired soils are found on 24% of the allotment, primarily in low elevation sites and around the water source. There are no riparian areas on the allotment.		
Exclosures (Name and Acres)	N/A		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Douglas Ranger District – **Dragoon EMA**

Allotment Name	Middlemarch	Allotment Number	158
5th Code Watershed	Turkey Creek, Clifford Was-San Pedro River, Wilcox Playa(Local Drainage)	4th Code Watershed	Wilcox Playa, Upper San Pedro
Allotment Acres	5675	Capable Acres	3001
Permitted Number	204	Season of Use	11/16-04/15
Utilization Level	45%	Elevation (feet)	4380-7100
Type of Grazing System	7-pasture rest rotation, winter and spring grazing		
Pasture Use Constraints	N/A		
Major Drainages	Stronghold Canyon, Middlemarch Canyon, Park Canyon		
Comprehensive Planned Improvements	N/A		
Allotment Condition	Rangeland vegetation conditions on the allotment range from a low-similarity index all the way to a High-similarity index. This variation is due to the dense invasion of Lehmann lovegrass at lower elevations. In other areas of the allotment, woody species encroachment has become a concern.		
Exclosures (Name and Acres)	N/A		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Douglas Ranger District – **Dragoon EMA**

Allotment Name	Noonan	Allotment Number	157
5th Code Watershed	Turkey Creek, Wilcox Playa (Local Drainage)	4th Code Watershed	Wilcox Playa
Allotment Acres	5,382	Capable Acres	3,400
Permitted Number	215	Season of Use	10/15-04/15
Utilization Level	45%	Elevation (feet)	4500-6000
Type of Grazing System	12-pasture deferred rotation through winter and spring		
Pasture Use Constraints	N/A		
Major Drainages	Noonan, Grapevine		
Comprehensive Planned Improvements	<ul style="list-style-type: none"> • Drill a well in the north end of Middle pasture and install pipelines to the Prude and Shield pastures, and to the middle of the Middle pasture. Storage and troughs will be installed at the terminus of each pipeline. All pipelines will be buried. (T17S, R24E, Sec. 30). 		
Allotment Condition	<p>Range vegetation conditions are static or improving. Upland Vegetation conditions indicate that a majority of the capable acres have a mid-Similarity index. Lehmann lovegrass is widespread at lower elevations throughout the allotment. Riparian conditions in Noonan Canyon are meeting Forest Plan standards. 15% of the allotment, primarily low flats, shows indications of impairment. Compaction, erosion, lack of vegetative ground cover and changes in plant community have been identified as contributing to soil impairment at these sites.</p>		
Exclosures (Name and Acres)	N/A		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Douglas Ranger District – **Dragoon EMA**

Allotment Name	Reppy	Allotment Number	160
5th Code Watershed	Turkey Creek, Clifford Wash- San Pedro River	4th Code Watershed	Wilcox Playa, Upper San Pedro
Allotment Acres	2,792	Capable Acres	1,475
Permitted Number	40	Season of Use	03/01-02/28
Utilization Level	45%	Elevation (feet)	5200-7000
Type of Grazing System	1-pasture yearlong used in conjunction with adjoining state and private land		
Pasture Use Constraints	N/A		
Major Drainages	Henry Canyon		
Comprehensive Planned Improvements	<ul style="list-style-type: none"> • Install a pipeline from Bennett Dam downstream to a storage tank and drinker. • Convert the existing well and storage at Henry well to a rainwater catchment (trick tank). 		
Allotment Condition	Ecological conditions have a a Low to Mid- similarity index. Lehmann lovegrass dominates large areas of the allotment. Soils are considered to be 100% satisfactory.		
Exclosures (Name and Acres)	N/A		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Douglas Ranger District – **Dragoon EMA**

Allotment Name	Slavin	Allotment Number	154
5th Code Watershed	Turkey Creek, Clifford Was- San Pedro River, Wilcox Playa(Local Drainage)	4th Code Watershed	Wilcox Playa , Upper San Pedro
Allotment Acres	11,055	Capable Acres	4,713
Permitted Number	130	Season of Use	03/01-02/28
Utilization Level	45%	Elevation (feet)	4800-7000
Type of Grazing System	4-pasture deferred rotation during the winter and spring		
Pasture Use Constraints	N/A		
Major Drainages	West Stronghold Canyon, Slavin Canyon		
Comprehensive Planned Improvements	<ul style="list-style-type: none"> • Extend an above-ground pipeline from a private land source approximately ½ mile east into the Slavin pasture interior. • Drill a new well in the West Stronghold Canyon and install a pipeline approximately ½ mile from the well to the interior of the Stronghold pasture. 		
Allotment Condition	<p>Rangeland vegetation condition was found to have a Mid-Similarity index with a static trend. The extensive presence of Lehmann lovegrass has changed the composition of the perennial grass community and results in lower than expected vegetation condition on the allotment. Indicators of watershed health show an upward trend with an increase in litter and a decrease in bare ground. Soils are 100% satisfactory. West Stronghold Canyon and Slavin Gulch both have a good representation of riparian obligate species, generally good bank protection, and stable channels.</p>		
Exclosures (Name and Acres)	N/A		
Additional Information			

APPENDIX A – grazing allotment existing condition tables

Douglas Ranger District – **Dragoon EMA**

Allotment Name	Walnut Springs	Allotment Number	161
5th Code Watershed	Turkey Creek	4th Code Watershed	Wilcox Playa
Allotment Acres	2,882	Capable Acres	2,530
Permitted Number	76	Season of Use	03/01-02/28
Utilization Level	45%	Elevation (feet)	5000-6800
Type of Grazing System	2-pasture yearlong deferred rotation with growing season rest occurring periodically in each pasture.		
Pasture Use Constraints	N/A		
Major Drainages	None		
Comprehensive Planned Improvements	<ul style="list-style-type: none"> Drill a well in the northeastern portion of the Upper Forest pasture and install storage and a drinker. A pipeline would run from the well east into the northwest corner of Lower Forest pasture to supply a drinker. 		
Allotment Condition	<p>Rangeland vegetation condition shows a Mid similarity index with stable or upward trends. The presence of Lehmann lovegrass has changed the composition of the plant community and accounts for lower than expected range condition in some sites. Soil condition data indicates that impaired soils occur on approximately 12% of the allotment, primarily in the lower pastures. The encroachment of woody species is a concern. There are no major riparian channels on this allotment; however, a small riparian community is present at Goodrich Spring.</p>		
Exclosures (Name and Acres)	N/A		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Douglas Ranger District -- **Peloncillo EMA**

Allotment Name	Clanton/Cloverdale	Allotment Number	142
5th Code Watershed	Headwaters Animas Creek, Cloverdale Creek	4th Code Watershed	Animas Valley, Cloverdale
Allotment Acres	14,062	Capable Acres	13,309
Permitted Number	300	Season of Use	03/01-02/28
Utilization Level	45%	Elevation (feet)	5200-6200
Type of Grazing System	8-pasture yearlong rest rotation		
Pasture Use Constraints	N/A		
Major Drainages	Cloverdale Creek		
Comprehensive Planned Improvements	<ul style="list-style-type: none"> • Construct water lots around 4 stock tanks across the allotment in order to control livestock use and distribution. • Extend a pipeline from an existing water source in Lower Forest pasture into Buckhorn and Rock Tank pastures (approx. 2 miles) to improve pasture reliability and livestock distribution. • Construct a corral at Sumac just off of the southwest corner of the Clanton/Cloverdale allotment in cooperation with Robertson (now Peloncillo) permittee. • Mechanically thin manzanita and other chaparral in the uplands of the Clanton/Cloverdale allotment. 		
Allotment Condition	<p>Monitoring data indicates that resource conditions on the allotment either meets or is satisfactorily moving toward achievement of the objectives of the Forest Plan. Uplands in general have a mid- similarity index for vegetation, with the exception of a few areas where vegetative composition is low due to dense manzanita stands or compacted soils related to historic grazing practices. Riparian monitoring data indicate that riparian areas are achieving or moving towards Forest Plan goals and objectives for vegetation. Recruitment of riparian vegetation has a high-similarity index with a fair to good vigor.</p>		
Exclosures (Name and Acres)	N/A		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
Douglas Ranger District -- **Peloncillo EMA**

Allotment Name	Deer Creek	Allotment Number	129
5th Code Watershed	Headwaters Animas Creek, San Simon River Headwaters	4th Code Watershed	Animas Valley, San Simon
Allotment Acres	4,863	Capable Acres	2,609
Permitted Number	276	Season of Use	10/01-04/30
Utilization Level	45%	Elevation (feet)	4500-6300
Type of Grazing System	5-pasture winter grazing		
Pasture Use Constraints	N/A		
Major Drainages	North Deer Creek, Middle Deer Creek, South Deer Creek		
Comprehensive Planned Improvements	<ul style="list-style-type: none"> • Construct two new umbrella type trick tanks with 1,500 gallon storage each. The projects would provide reliable water in uplands of Woodchopper, Upper Deer Creek and Long Canyon pastures. Estimated cost \$6,000 each. • Construct two new dirt tanks in the Woodchopper pasture. Estimated cost is \$8,000. • Construct one new trick tank in the upper portion of the Woodchopper pasture. The trick tank would utilize exposed bedrock for the apron, and a 5,000 gallon storage and trough would be placed nearby. Estimated cost; \$8,000. • Construct one new cement dam in the Long Canyon pasture. Estimated cost:\$4,000. • Clean the Rainbow Dam in the Rainbow pasture. Estimated cost: \$6,000. 		
Allotment Condition	Uplands are generally found to have a High similarity index for vegetation. Watershed conditions are stable and increasing watershed cover. Soils are 99% satisfactory and riparian conditions are good.		
Exclosures (Name and Acres)	N/A		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Douglas Ranger District -- **Peloncillo EMA**

Allotment Name	Geronimo	Allotment Number	138
5th Code Watershed	Headwaters Animas Creek, San Simon River Headwaters, Lower San Bernadino Valley, Upper San Bernadino Valley, Cloverdale Creek	4th Code Watershed	San Bernadino Valley, Animas Valley, San Simon, Cloverdale
Allotment Acres	8372	Capable Acres	4872
Permitted Number	177	Season of Use	11/01-07/15
Utilization Level	45%	Elevation (feet)	4700-6000
Type of Grazing System	3-pasture winter and spring grazing rest rotation		
Pasture Use Constraints	N/A		
Major Drainages	Estes Canyon, Sycamore Creek, Cottonwood Creek		
Comprehensive Planned Improvements	N/A		
Allotment Condition	Monitoring data indicates that resource conditions on the allotment either meets or is satisfactorily moving toward achievement of the objectives of the Forest Plan. Uplands in general have a mid- similarity index for vegetation, with the exception of a few areas where vegetative composition is low due to dense manzanita stands or compacted soils related to historic grazing practices. Riparian monitoring data indicate that riparian areas are achieving or moving towards Forest Plan goals and objectives for vegetation. Recruitment of riparian vegetation has a high-similarity index with a fair to good vigor.		
Exclosures (Name and Acres)	N/A		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Douglas Ranger District -- **Peloncillo EMA**

Allotment Name	Graves	Allotment Number	129
5th Code Watershed	San Simon River Headwaters	4th Code Watershed	San Simon
Allotment Acres	471	Capable Acres	291
Permitted Number	14	Season of Use	10/01-04/30
Utilization Level	45%	Elevation (feet)	5200-6000
Type of Grazing System	On/Off permitted grazing		
Pasture Use Constraints	N/A		
Major Drainages	Starvation Canyon		
Comprehensive Planned Improvements	<ul style="list-style-type: none"> Run a pipeline from a new storage on the ridge between the Graves and Fairchild allotments to a trough on the ridge south of Starvation Tank, and other uplands in the allotment. The costs of these improvements are variable, but should be around \$8,000 to \$10,000. 		
Allotment Condition	Uplands are generally found to have a High similarity index for vegetation. Watershed conditions are stable and increasing watershed cover. Soils are 99% satisfactory and riparian conditions are good.		
Exclosures (Name and Acres)	N/A		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Douglas Ranger District -- **Peloncillo EMA**

Allotment Name	Guadalupe	Allotment Number	143
5th Code Watershed	Lower San Bernadino Valley, Cloverdale Creek	4th Code Watershed	San Bernadino Valley, Cloverdale
Allotment Acres	7838	Capable Acres	4672
Permitted Number	150	Season of Use	03/01-02/28
Utilization Level	45%	Elevation (feet)	4300-6250
Type of Grazing System	7-pasture yearlong rest rotation		
Pasture Use Constraints	N/A		
Major Drainages	Baker Canyon		
Comprehensive Planned Improvements	<ul style="list-style-type: none"> • Construct an earthen dam in the Tinaja pasture. • Construct concrete/ rock dams in Upper Guadalupe and Sycamore pastures. 		
Allotment Condition	<p>Monitoring data indicates that resource conditions on the allotment either meets or is satisfactorily moving toward achievement of the objectives of the Forest Plan. Uplands in general have a mid- similarity index for vegetation, with the exception of a few areas where vegetative composition is low due to dense manzanita stands or compacted soils related to historic grazing practices. Riparian monitoring data indicate that riparian areas are achieving or moving towards Forest Plan goals and objectives for vegetation. Recruitment of riparian vegetation has a high-similarity index with a fair to good vigor.</p>		
Exclosures (Name and Acres)	N/A		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Douglas Ranger District -- **Peloncillo EMA**

Allotment Name	Juniper Basin	Allotment Number	130
5th Code Watershed	Headwaters Animas Creek, San Simon River Headwaters	4th Code Watershed	Animas Valley, San Simon
Allotment Acres	3322	Capable Acres	2612
Permitted Number	125	Season of Use	11/1-04/30
Utilization Level	45%	Elevation (feet)	5500-6300
Type of Grazing System	3-pasture winter and spring grazing		
Pasture Use Constraints	N/A		
Major Drainages	none		
Comprehensive Planned Improvements	<ul style="list-style-type: none"> • Build 5 new dirt tanks throughout the allotment. A water-lot would be built around the lower elevation tanks. Each tank would cost an estimated \$6,000. • Construct a cement dam in Horse Camp Draw and pipe water to a new 10,000 gallon storage and trough down the canyon. the project would cost an estimated \$7,500 • Construct a trick tank on the ridge north of Maddox Tank in the South pasture. The Project would consist of a fiberglass apron and 12,000 gallon storage. A trough would be located nearby. The project would cost an estimated \$8,500. • Construct a trick tank on the ridge top west of Juniper Tank in the North pasture using a natural rock apron. A 3,000 gallon storage and trough would be located nearby. The project would cost between, \$5,000-\$10,000. This price would include transport of materials by helicopter. 		
Allotment Condition	Uplands are generally found to have a High similarity index for vegetation. Watershed conditions are stable and increasing watershed cover. Soils are 99% satisfactory and riparian conditions are good.		
Exclosures (Name and Acres)	N/A		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
Douglas Ranger District -- **Peloncillo EMA**

Allotment Name	Outlaw Mountain	Allotment Number	135
5th Code Watershed	San Simon River Headwaters, Upper San Bernadino Valley	4th Code Watershed	San Bernadino Valley, San Simon
Allotment Acres	2,178	Capable Acres	1,989
Permitted Number	66	Season of Use	11/01-04/30
Utilization Level	45%	Elevation (feet)	5000-6100
Type of Grazing System	1-pasture winter grazing		
Pasture Use Constraints	N/A		
Major Drainages	Hog Canyon		
Comprehensive Planned Improvements	<ul style="list-style-type: none"> • A 12,000 gallon umbrella Trick Tank in southeast ¼ of sec. 20, T22S, R32E. estimated cost of the project would be \$6,500. • A 1,500 gallon umbrella Trick Tank in NW ¼ of Sec. 22 T22S, R32E. Cost of the project would be about \$4,500 		
Allotment Condition	Uplands are generally found to have a High similarity index for vegetation. Watershed conditions are stable and increasing watershed cover. Soils are 99% satisfactory and riparian conditions are good.		
Exclosures (Name and Acres)	N/A		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Douglas Ranger District -- **Peloncillo EMA**

Allotment Name	Peloncillo	Allotment Number	164
5th Code Watershed	Headwater Animas Creek, Upper Animas Creek, San Simon River Headwaters, Lower San Bernadino Valley, Upper San Bernadino Valley, Cloverdale Creek	4th Code Watershed	San Bernadino Valley, Animas Valley Cloverdale, San Simon
Allotment Acres	36,567	Capable Acres	34,860
Permitted Number	600	Season of Use	03/01-02/28
Utilization Level	45%	Elevation (feet)	
Type of Grazing System	16-pasture yearlong rest rotation		
Pasture Use Constraints	N/A		
Major Drainages	Cloverdale Creek, Clanton Draw, Pine Canyon, Whitmire Canyon, Salt Canyon		
Comprehensive Planned Improvements	<ul style="list-style-type: none"> Construct an earthen dam and watershed structures (small rock dams) in the Stewart pasture. Construct a corral at Sumac just off of the southwest corner of the Clanton/Cloverdale allotment in cooperation with Robertson permittee. This corral will be used by the Clanton/Cloverdale permittee to gather cattle. 		
Allotment Condition	Monitoring data indicates that resource conditions on the allotment either meets or is satisfactorily moving toward achievement of the objectives of the Forest Plan. Uplands in general have a mid- similarity index for vegetation, with the exception of a few areas where vegetative composition is low due to dense manzanita stands or compacted soils related to historic grazing practices. Riparian monitoring data indicate that riparian areas are achieving or moving towards Forest Plan goals and objectives for vegetation. Recruitment of riparian vegetation has a high-similarity index with a fair to good vigor.		
Exlosures (Name and Acres)	Cloverdale Exclosure <1 acre		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Douglas Ranger District -- **Peloncillo EMA**

Allotment Name	Skeleton/Fairchild	Allotment Number	131
5th Code Watershed	San Simon River Headwaters, Upper San Bernadino Valley, Upper Animas Creek	4th Code Watershed	San Bernadino Valley, San Simon, Animas Valley
Allotment Acres	7,037	Capable Acres	3,439
Permitted Number	272	Season of Use	10/01-03/15
Utilization Level	45%	Elevation (feet)	2500-6300
Type of Grazing System	Winter grazing; Best pasture rotation		
Pasture Use Constraints	N/A		
Major Drainages	South Fork		
Comprehensive Planned Improvements	<ul style="list-style-type: none"> • Construct a concrete trick tank on an exposed bedrock face with 5,000 gallon storage and trough in the NE ¼ of section 3 (T22S, R32E) near the southern portion of the Skeleton allotment. The project would cost approximately \$3,800. • Run a pipeline from a private well to a storage (10,000+ gallons) on the top of the ridge between the Graves and Fairchild allotments. The water would then be piped from the storage to drinkers on the uplands in both the Fairchild and Skeleton portions of the allotment. The costs of these improvements are variable, but should be around \$8,000 to \$10,000 • Construct a drift fence across South Fork Canyon in the NW ¼ of sec. 34 approximately ½ mile north of Ricky's tank. The topography of the area would lend itself to require minimal fencing. 		
Allotment Condition	Uplands are generally found to have a High similarity index for vegetation. Watershed conditions are stable and increasing watershed cover. Soils are 99% satisfactory and riparian conditions are good.		
Exclosures (Name and Acres)	N/A		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Douglas Ranger District -- **Peloncillo EMA**

Allotment Name	Skull	Allotment Number	128
5th Code Watershed	San Simon River Headwaters	4th Code Watershed	San Simon
Allotment Acres	1,111	Capable Acres	75
Permitted Number	7	Season of Use	03/01-02/28
Utilization Level	45%	Elevation (feet)	
Type of Grazing System	Yearlong on/off permitted grazing		
Pasture Use Constraints	N/A		
Major Drainages	none		
Comprehensive Planned Improvements	N/A		
Allotment Condition	Uplands are generally found to have a High similarity index for vegetation. Watershed conditions are stable and increasing watershed cover. Soils are 99% satisfactory and riparian conditions are good.		
Exclosures (Name and Acres)	N/A		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Nogales Ranger District – **Santa Rita EMA**

Allotment Name	Agua Caliente	Allotment Number	245
5th Code Watershed	Lower Santa Cruz	4th Code Watershed	Upper Santa Cruz
FS Allotment Acres	9,182	FS Capable Acres	3,746
Permitted Number	110 Cow calf, 655 AUMs	Season of Use	11/1 - 4/30
Utilization Level	50	Elevation (feet)	4000-7400
Type of Grazing System	1 pasture season long		
Pasture Use Constraints	None		
Major Drainages	Agua Caliente Canyon		
Comprehensive Planned Improvements	Clean out South Boundary Tank		
Allotment Condition	20% high similarity, 60% mid similarity, 20% low similarity, Soils: 30% satisfactory, 20% impaired, 25% unsatisfactory, 25% unsuited		
Exclosures (Name and Acres)	None		
Proposed Changes to Permitted Capacity			
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Nogales Ranger District – **Santa Rita EMA**

Allotment Name	Alto	Allotment Number	246
5th Code Watershed	Lower Santa Cruz/Sonoita Creek	4th Code Watershed	Upper Santa Cruz
FS Allotment Acres	11,055	FS Capable Acres	5,014
Permitted Number	296 Cattle, 3 Horses, 1771 AUM's	Season of Use	10/01-03/31
Utilization Level	50	Elevation (feet)	4000-7600
Type of Grazing System	1 pasture season long		
Pasture Use Constraints	None		
Major Drainages	Josephine Canyon		
Comprehensive Planned Improvements			
Allotment Condition	Overall trend is upward or stable. Range Condition: majority 50% low mid similarity, 50% high mid similarity. Soil Condition: 100% satisfactory with upward or stable trend.		
Exclosures (Name and Acres)	None		
Proposed Changes to Permitted Capacity			
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Nogales Ranger District – **Santa Rita EMA**

Allotment Name	Apache Springs	Allotment Number	240
5th Code Watershed	Cienega Creek/Sonoita Creek	4th Code Watershed	Rillito/Upper Santa Cruz
FS Allotment Acres	12,913	FS Capable Acres	9,012
Permitted Number	140 Cow calf, 1680 AUM's	Season of Use	03/01-02/28
Utilization Level	35% Growing, 45% dormant	Elevation (feet)	4000-7300
Type of Grazing System	8 pasture deferred rotation		
Pasture Use Constraints	None		
Major Drainages	Gardner Canyon		
Comprehensive Planned Improvements	Install 2 wells and 8 miles of pipeline including 4 storage tanks and approximately 8 troughs.		
Allotment Condition	Range condition: 50% high similarity, 10% low similarity with upward trend, 40% mid similarity with stable trend. Soil condition: 80% satisfactory, 15% impaired, 5% unsuited.		
Exclosures (Name and Acres)	None		
Proposed Changes to Permitted Capacity			
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Nogales Ranger District – **Santa Rita EMA**

Allotment Name	Box Canyon	Allotment Number	235
5th Code Watershed	Lower Santa Cruz	4th Code Watershed	Upper Santa Cruz
FS Allotment Acres	3,139	FS Capable Acres	1,512
Permitted Number	100 Cow calf, 1584 AUM's	Season of Use	03/01-02/28
Utilization Level	45	Elevation (feet)	3200-6000
Type of Grazing System	4 Pasture deferred rotation.		
Pasture Use Constraints	None		
Major Drainages	Box Canyon		
Comprehensive Planned Improvements	Install one well on west side of allotment with approximately 5 miles of pipeline with one storage tank and 2-3 troughs.		
Allotment Condition	Range condition: 10% high similarity with stable trend, 60% mid similarity with upward trend, 30% low similarity due to Lehmann Lovegrass. Soil condition: 65% satisfactory, 25% impaired, 10% unsatisfactory, 10% unsuited		
Exclosures (Name and Acres)	None		
Proposed Changes to Permitted Capacity			
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Nogales Ranger District – **Santa Rita EMA**

Allotment Name	DeBaud	Allotment Number	232
5th Code Watershed	Cienega Creek	4th Code Watershed	Rillito
FS Allotment Acres	2,773	FS Capable Acres	2,000
Permitted Number	150 Cow Calf, 592 AUM's	Season of Use	11/01-02/28
Utilization Level	55% Dormant Season	Elevation (feet)	
Type of Grazing System	1 pasture season long		
Pasture Use Constraints	None		
Major Drainages	Papago Canyon		
Comprehensive Planned Improvements			
Allotment Condition	Range condition: 25% high similarity with upward trend, 75% mid similarity with stable trend. Soil condition: 100% satisfactory		
Exclosures (Name and Acres)	None		
Proposed Changes to Permitted Capacity			
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Nogales Ranger District – **Santa Rita EMA**

Allotment Name	Fort	Allotment Number	247
5th Code Watershed	Sonoita Creek	4th Code Watershed	Upper Santa Cruz
FS Allotment Acres	7,130	FS Capable Acres	4,029
Permitted Number	85 Cow Calf, 763 AUM's	Season of Use	12/1 - 8/30
Utilization Level	35% Growing Season, 45% Dormant Season	Elevation (feet)	4400-7000
Type of Grazing System	3 Pasture deferred rotation		
Pasture Use Constraints	None		
Major Drainages	Adobe Canyon		
Comprehensive Planned Improvements			
Allotment Condition	Range condition: 25% high similarity , 75% mid similarity. Soil condition: 55% satisfactory, 15% impaired, 15% unsatisfactory, 15% unsuited		
Exclosures (Name and Acres)	None		
Proposed Changes to Permitted Capacity			
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Nogales Ranger District – **Santa Rita EMA**

Allotment Name	Gardner	Allotment Number	241
5th Code Watershed	Cienega Creek/Sonoita Creek	4th Code Watershed	Rillito/Upper Santa Cruz
FS Allotment Acres	6,324	FS Capable Acres	5,320
Permitted Number	211Cow calf, 1686 AUM's	Season of Use	6/1 - 10/31 and 12/1 - 2/28
Utilization Level	35% Growing Season, 45% Dormant Season	Elevation (feet)	4500-6500
Type of Grazing System	5 Pasture deferred rotation		
Pasture Use Constraints	None		
Major Drainages	Gardner Canyon		
Comprehensive Planned Improvements	Install 6 miles of pipeline 3 storage tanks and 4-6 troughs. This allotment is going through NEPA and will add these improvements along with changing from seasonal to year round. Allotment will not be used year round but allowing this to happen will allow more flexibility in management and increase AUMs to 2800.		
Allotment Condition	Range condition: 10% high similarity with upward trend, 90% mid similarity with stable trend. Soil condition: 100% satisfactory		
Exclosures (Name and Acres)	None		
Proposed Changes to Permitted Capacity	Authorize 2,800 AUM's year round to allow a one herd rotation on the ranch and to provide for flexibility in the rotation.		
Additional Information	Does have a 20 head private land permit for same season of use.		

APPENDIX A – grazing allotment existing condition tables
 Nogales Ranger District – **Santa Rita EMA**

Allotment Name	Greaterville	Allotment Number	238
5th Code Watershed	Lower Santa Cruz/Cienega Creek	4th Code Watershed	Rillito/Upper Santa Cruz
FS Allotment Acres	4,488	FS Capable Acres	3,816
Permitted Number	325 Cow calf, 1635 AUM's	Season of Use	4/1 - 8/31
Utilization Level	35% Growing Season, 55% Dormant Season	Elevation (feet)	
Type of Grazing System	5 pasture deferred rotation		
Pasture Use Constraints	None		
Major Drainages	Enzenberg Canyon		
Comprehensive Planned Improvements			
Allotment Condition	Range condition: 40% high similarity, 60% mid similarity. Soil condition: 100% satisfactory		
Exclosures (Name and Acres)	None		
Proposed Changes to Permitted Capacity			
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Nogales Ranger District – **Santa Rita EMA**

Allotment Name	Helvetia	Allotment Number	233
5th Code Watershed	Lower Santa Cruz	4th Code Watershed	Upper Santa Cruz
FS Allotment Acres	1,841	FS Capable Acres	731
Permitted Number	60 Cow calf, 950 AUM's	Season of Use	3/1 - 2/28
Utilization Level	35% Growing Season, 45% Dormant Season	Elevation (feet)	4800-6000
Type of Grazing System	High intensity, short duration for 2-4 weeks/year, at variable times, then to SRER		
Pasture Use Constraints	None		
Major Drainages	None		
Comprehensive Planned Improvements			
Allotment Condition	Range condition:50% mid similarity 50% high similarity. Soil Condition: 100% satisfactory with upward or stable trend		
Exclosures (Name and Acres)	None		
Proposed Changes to Permitted Capacity			
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Nogales Ranger District – **Santa Rita EMA**

Allotment Name	McBeth	Allotment Number	239
5th Code Watershed	Lower Santa Cruz	4th Code Watershed	Upper Santa Cruz
FS Allotment Acres	8,675	FS Capable Acres	2,888
Permitted Number	95 Cow calf, 1505 AUM's	Season of Use	3/1 - 2/28
Utilization Level	35% Growing Season, 55% Dormant Season	Elevation (feet)	4600-8635
Type of Grazing System	4 pasture rest rotation		
Pasture Use Constraints	None		
Major Drainages	Florida Canyon		
Comprehensive Planned Improvements	Install a well and approximately 4 miles of pipeline, 1 storage tank and 2-3 troughs.		
Allotment Condition	Range condition: 35% high similarity, 35% mid similarity, 30% low similarity due to Lehmann Lovegrass. Soil Condition: 100% satisfactory with upward or stable trend		
Exclosures (Name and Acres)	None		
Proposed Changes to Permitted Capacity			
Additional Information			

APPENDIX A – grazing allotment existing condition tables

Nogales Ranger District – **Santa Rita EMA**

Allotment Name	Oak Tree	Allotment Number	253
5th Code Watershed	Cienega Creek	4th Code Watershed	Rillito
FS Allotment Acres	4,047	FS Capable Acres	3,995
Permitted Number	99 Cow calf, 1188 AUM's	Season of Use	03/01-02/28
Utilization Level	35% Growing Season, 45% Dormant Season	Elevation (feet)	4600-5500
Type of Grazing System	2 -4 pasture deferred rotation with two herds. One herd in Oak Tree and other in Oak Tree II.		
Pasture Use Constraints	None		
Major Drainages	None		
Comprehensive Planned Improvements	Extend approximately 3 miles of pipe in the North and South pastures.		
Allotment Condition	Range condition: 25% high similarity with upward trend, 75% mid similarity with stable trend, Soil Condition: 100% satisfactory with upward or stable trend		
Exclosures (Name and Acres)	None		
Proposed Changes to Permitted Capacity			
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Nogales Ranger District – **Santa Rita EMA**

Allotment Name	Proctor	Allotment Number	243
5th Code Watershed	Lower Santa Cruz	4th Code Watershed	Upper Santa Cruz
FS Allotment Acres	8,180	FS Capable Acres	3,859
Permitted Number	80 Cow calf, 758 AUM's	Season of Use	9/16 - 6/30
Utilization Level	35% Growing Season, 45% Dormant Season	Elevation (feet)	4200-8667
Type of Grazing System	5 pasture rotation, winter & fall use		
Pasture Use Constraints	None		
Major Drainages	Madera Canyon		
Comprehensive Planned Improvements			
Allotment Condition	Range condition: Low similarity Lehmann lovegrass dominance reduced the rating to poor in some areas. Soil Condition: 100% satisfactory with upward or stable trend		
Exclosures (Name and Acres)	None		
Proposed Changes to Permitted Capacity			
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Nogales Ranger District – **Santa Rita EMA**

Allotment Name	Rosemont	Allotment Number	234
5th Code Watershed	Lower Santa Cruz/Cienega	4th Code Watershed	Santa Cruz/Rillito
FS Allotment Acres	9,528	FS Capable Acres	7,131
Permitted Number	325 325 150 1575 AUM's	Season of Use	3/1 - 3/31 9/1 - 10/31 11/1 - 2/28
Utilization Level	35% Growing Season, 45% Dormant Season	Elevation (feet)	
Type of Grazing System	3 pasture rotation		
Pasture Use Constraints	None		
Major Drainages	Barrel Canyon		
Comprehensive Planned Improvements			
Allotment Condition	Range condition: 75% mid similarity 25% high similarity. Soil Condition: 100% satisfactory with upward or stable trend		
Exclosures (Name and Acres)	None		
Proposed Changes to Permitted Capacity			
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Nogales Ranger District – **Santa Rita EMA**

Allotment Name	Squaw Gulch	Allotment Number	248
5th Code Watershed	Sonoita Creek	4th Code Watershed	Upper Santa Cruz
FS Allotment Acres	9,025	FS Capable Acres	5,982
Permitted Number	155 Cow calf, 1860AUM's	Season of Use	03/01-02/28
Utilization Level	35% Growing Season, 45% Dormant Season	Elevation (feet)	4500-6500
Type of Grazing System	10 pasture deferred rotation.		
Pasture Use Constraints	None		
Major Drainages	Squaw Gulch		
Comprehensive Planned Improvements			
Allotment Condition	Range condition: 50% high similarity, 50% mid similarity. Soil Condition: 99.3% satisfactory with upward or stable trend		
Exclosures (Name and Acres)	None		
Proposed Changes to Permitted Capacity			
Additional Information	Does have a private land permit for 5 horses.		

APPENDIX A – grazing allotment existing condition tables
 Nogales Ranger District – **Santa Rita EMA**

Allotment Name	Stone Springs	Allotment Number	231
5th Code Watershed	Lower Santa Cruz/Cienega Creek	4th Code Watershed	Upper Santa Cruz/Rillito
FS Allotment Acres	8,709	FS Capable Acres	5,315
Permitted Number	245 Cow calf, 1474 AUM's	Season of Use	10/01-03/31
Utilization Level	45%	Elevation (feet)	4100-6200
Type of Grazing System	2 pasture season long		
Pasture Use Constraints	None		
Major Drainages	Sycamore Canyon		
Comprehensive Planned Improvements			
Allotment Condition	Range condition: 75% mid similarity, 25% high similarity. Soil Condition: 100% satisfactory with upward or stable trend		
Exclosures (Name and Acres)	None		
Proposed Changes to Permitted Capacity			
Additional Information			

APPENDIX A – grazing allotment existing condition tables

Nogales Ranger District – **Santa Rita EMA**

Allotment Name	Temporal	Allotment Number	250
5th Code Watershed	Sonoita Creek	4th Code Watershed	Upper Santa Cruz
FS Allotment Acres	21,200	FS Capable Acres	12,070
Permitted Number	150-350 Cow calf, 1800-4200 AUM's	Season of Use	03/01-02/28
Utilization Level	35% Growing Season, 45% Dormant Season	Elevation (feet)	4200-7500
Type of Grazing System	5 pasture deferred rotation		
Pasture Use Constraints	None		
Major Drainages	Temporal Canyon		
Comprehensive Planned Improvements	Install a well with approximately 3-4 miles of pipeline, 2 storage tanks with 4-6 troughs in the Smith/Stevens pasture and the Mountain pasture.		
Allotment Condition	Range condition: 10% high similarity, 80% mid similarity, 10% low similarity. Soil Condition: 100% satisfactory with upward or stable trend		
Exclosures (Name and Acres)	None		
Proposed Changes to Permitted Capacity			
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Nogales Ranger District – **Santa Rita EMA**

Allotment Name	Thurber	Allotment Number	236
5th Code Watershed	Cienega Creek	4th Code Watershed	Rillito
FS Allotment Acres	4,256	FS Capable Acres	4,197
Permitted Number	221 Cow calf, 2652 AUM's	Season of Use	03/01-02/28
Utilization Level	35% Growing Season, 45% Dormant Season	Elevation (feet)	4000-5300
Type of Grazing System	16 pasture deferred rotation		
Pasture Use Constraints	None		
Major Drainages	Empire Gulch		
Comprehensive Planned Improvements	Install a well in Oak Tree Canyon and put in approximately 4 miles of pipe with 6 troughs and 3 storage tanks.		
Allotment Condition	Range condition: 100% mid similarity. Soil Condition: 99.3% satisfactory with upward or stable trend		
Exclosures (Name and Acres)	None		
Proposed Changes to Permitted Capacity			
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Nogales Ranger District – **Tumacacori EMA**

Allotment Name	Bear Valley	Allotment Number	208
5th Code Watershed	Rio Altar	4th Code Watershed	
FS Allotment Acres	22,605	FS Capable Acres	15,013
Permitted Number	350 Cow Calf Aum's 4200	Season of Use	03/01-02/28
Utilization Level	35% Growing Season 45% Dormant Season	Elevation (feet)	4200-6100
Type of Grazing System	Deferred/Rest Rotation		
Pasture Use Constraints	None		
Major Drainages	Sycamore Creek		
Comprehensive Planned Improvements	Install a well, storage tank approximately 2 miles of pipeline and 2 troughs in the Corral Nuevo pasture.		
Allotment Condition	Range condition: 12% high similarity, 82% mid similarity, 6% low similarity. Soil condition: 64% satisfactory, 27% impaired, 9% unsatisfactory,		
Exclosures (Name and Acres)	None		
Proposed Changes to Permitted Capacity			
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Nogales Ranger District – **Tumacacori EMA**

Allotment Name	Calabasas		Allotment Number	216
5th Code Watershed	Middle Santa Cruz/Lower Santa Cruz		4th Code Watershed	Upper Santa Cruz
FS Allotment Acres	8,168		FS Capable Acres	8,109
Permitted Number	220 Cow/calf	2640 AUM's	Season of Use	03/01-02/28
Utilization Level	35% Growing Season 55% Dormant Season		Elevation (feet)	3800-4200
Type of Grazing System	Deferred/Rest Rotation			
Pasture Use Constraints	None			
Major Drainages	Calabasas Canyon			
Comprehensive Planned Improvements	In the North Martan Pasture we will add a new well, 3 drinkers, 2 storage tanks and bury approximately 3 miles of pipe.			
Allotment Condition	Range condition: 95% mid similarity with stable trend, 5% low similarity due to exotic grass species such as Lehmanns, and Natal. Soil Condition: 100% satisfactory with upward or stable trend			
Exclosures (Name and Acres)	None			
Proposed Changes to Permitted Capacity				
Additional Information				

APPENDIX A – grazing allotment existing condition tables
 Nogales Ranger District – **Tumacacori EMA**

Allotment Name	Carrizo		Allotment Number	240
5th Code Watershed	Arivaca Creek		4th Code Watershed	Rio De La Concepcion, Brawly Wash
FS Allotment Acres	3,586		FS Capable Acres	3,017
Permitted Number	70-105 Cow/calf	840-1260 AUM's	Season of Use	03/01 – 02/28
Utilization Level	35% Growing Season 45% Dormant Season		Elevation (feet)	4000-5360
Type of Grazing System	4 pasture deferred rotation			
Pasture Use Constraints	None			
Major Drainages	Yellow Jacket Wash			
Comprehensive Planned Improvements	None			
Allotment Condition	Range condition: 50% mid similarity 50% high similarity. Soil Condition: 100% satisfactory with upward or stable trend			
Exclosures (Name and Acres)	None			
Proposed Changes to Permitted Capacity				
Additional Information				

APPENDIX A – grazing allotment existing condition tables
 Nogales Ranger District – **Tumacacori EMA**

Allotment Name	Cross S		Allotment Number	204
5th Code Watershed	Arivaca Creek, Rio Altar Headwaters, Rio El Sasabe Headwaters		4th Code Watershed	Rio De La Concepcion, Brawly Wash
FS Allotment Acres	18,231		FS Capable Acres	14,669
Permitted Number	450 Cow/calf	5400 AUM's	Season of Use	03/01 – 02/28
Utilization Level	35% Growing Season 45% Dormant Season		Elevation (feet)	3200-5100
Type of Grazing System	13 pasture deferred rotation with two herds.			
Pasture Use Constraints	None			
Major Drainages	Tres Bellotas Canyon			
Comprehensive Planned Improvements	Install 5 wells,8 storage tanks, 8 miles of pipeline and 6-8 troughs. Construct 8 miles of wildlife friendly fence.			
Allotment Condition	Range condition: 75% mid similarity with stable trend 25% high similarity. Soil Condition: 100% satisfactory with upward or stable trend			
Exclosures (Name and Acres)	None			
Proposed Changes to Permitted Capacity				
Additional Information				

APPENDIX A – grazing allotment existing condition tables
 Nogales Ranger District – **Tumacacori EMA**

Allotment Name	Fresnal		Allotment Number	203
5th Code Watershed	Arivaca Creek, Rio Altar Headwaters, Rio El Sasabe Headwaters		4th Code Watershed	Rio De La Concepcion, Brawly Wash
FS Allotment Acres	12,961		FS Capable Acres	11,583
Permitted Number	280 Cow/calf	3360 AUM's	Season of Use	03/01 – 02/28
Utilization Level	35% Growing Season 45% Dormant Season		Elevation (feet)	3500-5200
Type of Grazing System	8 pasture rest rotation			
Pasture Use Constraints	None			
Major Drainages	Fresnal Wash			
Comprehensive Planned Improvements	Install no more than 3 miles of pipeline one storage tank and 2 troughs			
Allotment Condition	Range condition: 50% mid similarity 50% high similarity. Soil Condition: 100% satisfactory with upward or stable trend			
Exclosures (Name and Acres)	None			
Proposed Changes to Permitted Capacity				
Additional Information				

APPENDIX A – grazing allotment existing condition tables
 Nogales Ranger District – **Tumacacori EMA**

Allotment Name	Jarillas		Allotment Number	202
5th Code Watershed	Arivaca Creek, Puertocito Wash, Rio El Sasabe Headwaters		4th Code Watershed	Rio De La Concepcion, Brawly Wash
FS Allotment Acres	12,340		FS Capable Acres	11,337
Permitted Number	270 Cow/calf	3240 AUM's	Season of Use	03/01 – 02/28
Utilization Level	35% Growing Season 45% Dormant Season		Elevation (feet)	3200-5000
Type of Grazing System	7 pasture deferred rotation			
Pasture Use Constraints	None			
Major Drainages	Corona Wash			
Comprehensive Planned Improvements	None			
Allotment Condition	Range condition: 25% low similarity due to Lehamann Lovegrass 75% high similarity. Soil Condition: 100% satisfactory with upward or stable trend			
Exclosures (Name and Acres)	None			
Proposed Changes to Permitted Capacity				
Additional Information				

APPENDIX A – grazing allotment existing condition tables
 Nogales Ranger District – **Tumacacori EMA**

Allotment Name	Lake	Allotment Number	251
5th Code Watershed	Sopori Wash, Arivaca Creek	4th Code Watershed	Upper Santa Cruz and Brawley Wash
FS Allotment Acres	2,797	FS Capable Acres	1,987
Permitted Number	31 Cow/calf 372 AUM's	Season of Use	03/01 – 02/28
Utilization Level	35% Growing Season 45% Dormant Season	Elevation (feet)	3800-4800
Type of Grazing System	3 pasture deferred rotation		
Pasture Use Constraints	None		
Major Drainages	Chimenea Canyon		
Comprehensive Planned Improvements	None		
Allotment Condition	Range condition: 100% high similarity. Soil Condition: 100% satisfactory with upward or stable trend		
Exclosures (Name and Acres)	None		
Proposed Changes to Permitted Capacity			
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Nogales Ranger District – **Tumacacori EMA**

Allotment Name	Mariposa		Allotment Number	219
5th Code Watershed	Middle Santa Cruz		4th Code Watershed	Upper Santa Cruz
FS Allotment Acres	6,731		FS Capable Acres	6,194
Permitted Number	150 Cow/calf	1800 AUM's	Season of Use	03/01 – 02/28
Utilization Level	35% Growing Season 55% Dormant Season		Elevation (feet)	4000-4700
Type of Grazing System	5 pasture deferred rotation			
Pasture Use Constraints	None			
Major Drainages	Potrero Canyon			
Comprehensive Planned Improvements	Install 2 wells, 5 miles of pipeline, 4 storage tanks, 4-8 troughs			
Allotment Condition	Range condition: 60% low similarity due to exotic grass species like Natal and Lehamanns 40% high similarity. Soil Condition: 100% satisfactory with upward or stable trend			
Exclosures (Name and Acres)				
Proposed Changes to Permitted Capacity				
Additional Information				

APPENDIX A – grazing allotment existing condition tables
 Nogales Ranger District – **Tumacacori EMA**

Allotment Name	Marstellar		Allotment Number	218
5th Code Watershed	Lower Santa Cruz/Middle Santa Cruz		4th Code Watershed	Upper Santa Cruz
FS Allotment Acres	10,553		FS Capable Acres	8,126
Permitted Number	247 Cow/calf. 4 horses	3022 AUM's	Season of Use	03/01 – 02/28
Utilization Level	35% Growing Season 45% Dormant Season		Elevation (feet)	4000-5800
Type of Grazing System	Deferred/Rest Rotation			
Pasture Use Constraints	None			
Major Drainages	Calabasas Canyon			
Comprehensive Planned Improvements	None			
Allotment Condition	Range condition: 20% low similarity due to Lehmanns 80% mid similarity with stable or upward trend. Soil Condition: 100% satisfactory with upward or stable trend			
Exclosures (Name and Acres)	None			
Proposed Changes to Permitted Capacity				
Additional Information				

APPENDIX A – grazing allotment existing condition tables
 Nogales Ranger District – **Tumacacori EMA**

Allotment Name	Montana		Allotment Number	207
5th Code Watershed	Rio Altar Headwaters, Arivaca Creek		4th Code Watershed	Upper Santa Cruz/Rio De La Concepcion/Brawley Wash
FS Allotment Acres	20,964		FS Capable Acres	15,132
Permitted Number	400-500 Cow/calf	4800-6000 AUM's	Season of Use	03/01 – 02/28
Utilization Level	35% Growing Season 45% Dormant Season		Elevation (feet)	3400-5200
Type of Grazing System	Deferred/Rest Rotation			
Pasture Use Constraints	None			
Major Drainages	California Gulch			
Comprehensive Planned Improvements	None			
Allotment Condition	Range condition: 20% low similarity due to Lehmanns 60 % mid similarity 20% high similarity. Soil Condition: 100% satisfactory with upward or stable trend			
Exclosures (Name and Acres)	None			
Proposed Changes to Permitted Capacity				
Additional Information				

APPENDIX A – grazing allotment existing condition tables
 Nogales Ranger District – **Tumacacori EMA**

Allotment Name	Murphy		Allotment Number	212
5th Code Watershed	Josephine Canyon Santa Cruz River		4th Code Watershed	Upper Santa Cruz
FS Allotment Acres	9,373		FS Capable Acres	5,776
Permitted Number	231 Cow/calf	2556 AUM's	Season of Use	03/01 – 02/28
Utilization Level	35% Growing Season 45% Dormant Season		Elevation (feet)	
Type of Grazing System	Deferred/Rest Rotation			
Pasture Use Constraints				
Major Drainages	Fresno Canyon			
Comprehensive Planned Improvements	None			
Allotment Condition	Range condition: 40% low similarity due to Lehmanns 40% mid similarity 20% high similarity. Soil Condition: 100% satisfactory with upward or stable trend			
Exclosures (Name and Acres)	None			
Proposed Changes to Permitted Capacity				
Additional Information				

APPENDIX A – grazing allotment existing condition tables
 Nogales Ranger District – **Tumacacori EMA**

Allotment Name	Oro Blanco		Allotment Number	206
5th Code Watershed	Arivaca Creek		4th Code Watershed	Rio De La Concepcion, Brawly Wash
FS Allotment Acres	3,043		FS Capable Acres	2,150
Permitted Number	80-123 Cow/calf	960-1476 AUM's	Season of Use	03/01 – 02/28
Utilization Level	35% Growing Season 45% Dormant Season		Elevation (feet)	3800-5200
Type of Grazing System	5 Pasture Deferred/Rest Rotation			
Pasture Use Constraints	None			
Major Drainages	Oro Blanco Wash			
Comprehensive Planned Improvements	None			
Allotment Condition	Range condition: 20% low similarity due to Lehmanns, 40% mid similarity 20% high similarity. Soil Condition: 100% satisfactory with upward or stable trend			
Exclosures (Name and Acres)	None			
Proposed Changes to Permitted Capacity				
Additional Information				

APPENDIX A – grazing allotment existing condition tables
 Nogales Ranger District – **Tumacacori EMA**

Allotment Name	Pena Blanca		Allotment Number	215
5th Code Watershed	Josephine Canyon Santa Cruz River		4th Code Watershed	Rio De La Concepcion, Upper Santa Cruz
FS Allotment Acres	11,432		FS Capable Acres	7,381
Permitted Number	110 Cow/calf	1320 AUM's	Season of Use	03/01 – 02/28
Utilization Level	35% Growing Season 45% Dormant Season		Elevation (feet)	3500-5200
Type of Grazing System	8 Pasture Deferred/Rest Rotation			
Pasture Use Constraints	None			
Major Drainages	Pena Blanca Canyon, Alamo Canyon			
Comprehensive Planned Improvements	Install no more than 4 miles of pipeline and 4 troughs			
Allotment Condition	Range condition: 10% low similarity due to Lehmanns, 40% mid similarity 30% high similarity. Soil Condition: 100% satisfactory with upward or stable trend			
Exclosures (Name and Acres)	None			
Proposed Changes to Permitted Capacity				
Additional Information				

APPENDIX A – grazing allotment existing condition tables
 Nogales Ranger District – **Tumacacori EMA**

Allotment Name	Ramanote		Allotment Number	214
5th Code Watershed	Josephine Canyon Santa Cruz River		4th Code Watershed	Rio De La Concepcion, Upper Santa Cruz
FS Allotment Acres	16,805		FS Capable Acres	9,884
Permitted Number	331 Cow/calf	3972 AUM's	Season of Use	03/01 – 02/28
Utilization Level	35% Growing Season 45% Dormant Season		Elevation (feet)	3800-6000
Type of Grazing System	16 Pasture Deferred/Rest Rotation			
Pasture Use Constraints	None			
Major Drainages	Peck Canyon			
Comprehensive Planned Improvements	None			
Allotment Condition	Range condition: 20% low similarity due to Lehmanns, 40% mid similarity 40% high similarity. Soil Condition: 100% satisfactory with upward or stable trend			
Exclosures (Name and Acres)	None			
Proposed Changes to Permitted Capacity				
Additional Information				

APPENDIX A – grazing allotment existing condition tables
 Nogales Ranger District – **Tumacacori EMA**

Allotment Name	Rock Corral		Allotment Number	211
5th Code Watershed	Josephine Canyon Santa Cruz River		4th Code Watershed	Upper Santa Cruz
FS Allotment Acres	5,555		FS Capable Acres	2,875
Permitted Number	57 Cow/calf	684 AUM's	Season of Use	03/01 – 02/28
Utilization Level	35% Growing Season 45% Dormant Season		Elevation (feet)	
Type of Grazing System	3 Pasture Deferred/Rest Rotation and going on to state land.			
Pasture Use Constraints	Can only use the Rock Corral Pasture in the winter months.			
Major Drainages	Rock Corral canyon			
Comprehensive Planned Improvements	Install approximately 5 miles of pipe, one storage tank, 2 troughs.			
Allotment Condition	Range condition: 20% low similarity due to Lehmanns Lovegrass, 40% mid similarity 40% high similarity. Soil Condition: 100% satisfactory with upward or stable trend			
Exclosures (Name and Acres)	None			
Proposed Changes to Permitted Capacity				
Additional Information				

APPENDIX A – grazing allotment existing condition tables
 Nogales Ranger District – **Tumacacori EMA**

Allotment Name	Sardina		Allotment Number	209
5th Code Watershed	Sopori Wash		4th Code Watershed	Upper Santa Cruz/Brawley Wash
FS Allotment Acres	12,053		FS Capable Acres	9,640
Permitted Number	350 Cow/calf for 9 months	3176 AUM's	Season of Use	03/01 – 02/28
Utilization Level	35% Growing Season 45% Dormant Season		Elevation (feet)	3800-5000
Type of Grazing System	4 pasture Deferred/Rest Rotation and going on to state land.			
Pasture Use Constraints	None			
Major Drainages	Jalisco Canyon			
Comprehensive Planned Improvements	Install 3 miles of pipe and two troughs and one storage tank.			
Allotment Condition	Range condition: 20% low similarity due to Lehmanns Lovegrass, 40% mid similarity 40% high similarity. Soil Condition: 100% satisfactory with upward or stable trend			
Exclosures (Name and Acres)	None			
Proposed Changes to Permitted Capacity				
Additional Information				

APPENDIX A – grazing allotment existing condition tables
 Nogales Ranger District – **Tumacacori EMA**

Allotment Name	Sopori		Allotment Number	210
5th Code Watershed	Sopori Wash/Josephine Canyon Santa Cruz River		4th Code Watershed	Upper Santa Cruz
FS Allotment Acres	20,679		FS Capable Acres	14,907
Permitted Number	300 Cow/calf	3600 AUM's	Season of Use	03/01 – 02/28
Utilization Level	35% Growing Season 45% Dormant Season		Elevation (feet)	3600-5500
Type of Grazing System	8 pasture Deferred/Rest Rotation and going on to state land.			
Pasture Use Constraints	None			
Major Drainages	Sopori Wash			
Comprehensive Planned Improvements	None			
Allotment Condition	Range condition: 20% low similarity due to Lehmanns Lovegrass, 50% mid similarity 30% high similarity. Soil Condition: 100% satisfactory with upward or stable trend			
Exclosures (Name and Acres)	None			
Proposed Changes to Permitted Capacity				
Additional Information				

APPENDIX A – grazing allotment existing condition tables
 Safford Ranger District – **Galiuro EMA**

Allotment Name	Bass Canyon	Allotment Number	438
5th Code Watershed	Upper Ash Creek	4th Code Watershed	Willcox Playa and Lower San Pedro
Allotment Acres	4534	Capable Acres	2016
Permitted Number	125 Cow/Calf, 748 AUM's	Season of Use	11/01-04/30
Utilization Level	50%	Elevation (feet)	5000-7150
Type of Grazing System	1 Pasture Season Long		
Pasture Use Constraints	N/A		
Major Drainages	Bass Canyon		
Allotment Condition	Mid Similarity over the majority of the allotment with a static trend. Some areas receive lower rates because of higher than expected percentage of shrubs in the community.		
Exclosures (Name and Acres)	N/A		

APPENDIX A – grazing allotment existing condition tables
 Safford Ranger District – **Galiuro EMA**

Allotment Name	Bayless	Allotment Number	440
5th Code Watershed	Alder Wash- San Pedro River	4th Code Watershed	Lower San Pedro
Allotment Acres	1459	Capable Acres	350
Permitted Number	5 Cow/Calf, 60 AUM's	Season of Use	03/01-02/28
Utilization Level	25%	Elevation (feet)	4300-6300
Type of Grazing System	1 Pasture On/Off		
Pasture Use Constraints	N/A		
Major Drainages	None		
Allotment Condition	Mid Similarity over the allotment with a static trend.		
Exclosures (Name and Acres)	N/A		

APPENDIX A – grazing allotment existing condition tables
 Safford Ranger District – **Galiuro EMA**

Allotment Name	Bottle Canyon	Allotment Number	427
5th Code Watershed	Lower Aravaipa Creek	4th Code Watershed	Lower San Pedro
Allotment Acres	4172	Capable Acres	2654
Permitted Number	130 Cow/Calf, 778 AUM's	Season of Use	11/01-4/30
Utilization Level	50%	Elevation (feet)	3950-5750
Type of Grazing System	2 Pasture Rotation		
Pasture Use Constraints	N/A		
Major Drainages	Bottle Canyon		
Allotment Condition	Mid-High Similarity over the majority of the allotment with a static trend.		
Exclosures (Name and Acres)	N/A		

APPENDIX A – grazing allotment existing condition tables
 Safford Ranger District – **Galiuro EMA**

Allotment Name	Bull Tank	Allotment Number	434
5th Code Watershed	Upper Ash Creek	4th Code Watershed	Willcox Playa
Allotment Acres	8355	Capable Acres	4703
Permitted Number	40 Cow/Calf, 480 AUM's	Season of Use	03/01-2/28
Utilization Level	45%	Elevation (feet)	4850-7400
Type of Grazing System	6 Pasture Rotation		
Pasture Use Constraints	N/A		
Major Drainages	North and South Oak Creek		
Allotment Condition	Mid-Similarity over the majority of the allotment with a static trend. Some areas receive lower rates because of higher than expected percentage of shrubs in the community.		
Exclosures (Name and Acres)	N/A		

APPENDIX A – grazing allotment existing condition tables
 Safford Ranger District – **Galiuro EMA**

Allotment Name	Copper Creek	Allotment Number	444
5th Code Watershed	Tucson Wash- San Pedro River	4th Code Watershed	Lower San Pedro
Allotment Acres	3550	Capable Acres	783
Permitted Number	60 Cow/Calf and 15 Cow/Calf Private Land, 375 AUM's	Season of Use	11/01-01/31
Utilization Level	45%	Elevation (feet)	4500-6650
Type of Grazing System	1 Pasture		
Pasture Use Constraints	N/A		
Major Drainages	Copper Canyon		
Allotment Condition	Mid-High Similarity over the majority of the allotment with a static trend.		
Exclosures (Name and Acres)	N/A		

APPENDIX A – grazing allotment existing condition tables
 Safford Ranger District – **Galiuro EMA**

Allotment Name	Deer Creek	Allotment Number	429
5th Code Watershed	Upper Aravaipa Creek	4th Code Watershed	Lower San Pedro
Allotment Acres	32825	Capable Acres	10398
Permitted Number	100 Cow/Calf, 1,200 AUM's	Season of Use	03/01-02/28
Utilization Level	50%	Elevation (feet)	4400-7500
Type of Grazing System	9 Pasture Rest Rotation with State Land		
Pasture Use Constraints	N/A		
Major Drainages	Deer Creek and Rattlesnake Canyon		
Allotment Condition	Mid-Similarity over the majority of the allotment with a static trend.		
Exclosures (Name and Acres)	N/A		

APPENDIX A – grazing allotment existing condition tables
 Safford Ranger District – **Galiuro EMA**

Allotment Name	Four Mile	Allotment Number	425
5th Code Watershed	Lower Aravaipa Creek	4th Code Watershed	Lower San Pedro
Allotment Acres	8990	Capable Acres	3289
Permitted Number	50 Cow/Calf, 600 AUM's	Season of Use	03/01-02/28
Utilization Level	45%	Elevation (feet)	3850-7000
Type of Grazing System	Pasture Rotation combined with Squaw Basin Allotment		
Pasture Use Constraints	N/A		
Major Drainages	Four Mile Canyon		
Vegetation Types	Interior Chaparral, Juniper Grass, Semi Desert Grassland, Madrean Encinal Woodland, Madrean Pinyon-Oak Woodland		
Allotment Condition	Mid-High Similarity over the majority of the allotment with a static trend. Trend appears to be static at this time.		
Exclosures (Name and Acres)	N/A		

APPENDIX A – grazing allotment existing condition tables
 Safford Ranger District – **Galiuro EMA**

Allotment Name	Harrison Canyon	Allotment Number	432
5th Code Watershed	Upper Aravaipa Creek	4th Code Watershed	Lower San Pedro
Allotment Acres	2248	Capable Acres	1630
Permitted Number	35 Cow/Calf, 420 AUM's	Season of Use	03/01-02/28
Utilization Level	40%	Elevation (feet)	4800-6600
Type of Grazing System	8 Pasture Rotation with State and Private Land		
Pasture Use Constraints	N/A		
Major Drainages	Harrison Canyon		
Allotment Condition	Stable to upwards trends across the allotment with the majority of it being in Mid-Similarity condition. Soil conditions were satisfactory		
Exclosures (Name and Acres)	N/A		

APPENDIX A – grazing allotment existing condition tables
 Safford Ranger District – **Galiuro EMA**

Allotment Name	High Creek	Allotment Number	433
5th Code Watershed	Upper Ash Creek	4th Code Watershed	Willcox Playa
Allotment Acres	3259	Capable Acres	1447
Permitted Number	25 Cow/Calf, 300 AUM's	Season of Use	03/01-02/28
Utilization Level	50% Uplands 40% Riparian	Elevation (feet)	4800-7200
Type of Grazing System	2 Pasture Rotation		
Pasture Use Constraints	N/A		
Major Drainages	High Creek		
Allotment Condition	Stable to upwards trends across the allotment with the majority of it being in Mid-Similarity condition. Soil conditions were satisfactory		
Exclosures (Name and Acres)	N/A		

APPENDIX A – grazing allotment existing condition tables
 Safford Ranger District – **Galiuro EMA**

Allotment Name	North Ash Creek	Allotment Number	435
5th Code Watershed	Upper Ash Creek	4th Code Watershed	Willcox Playa
Allotment Acres	1227	Capable Acres	1017
Permitted Number	15 Cow/Calf, 180 AUM's	Season of Use	03/01-02/28
Utilization Level	50%	Elevation (feet)	4800-6400
Type of Grazing System	1 Pasture Season Long		
Pasture Use Constraints	N/A		
Major Drainages	North Ash Creek		
Allotment Condition	Stable to upwards trends across the allotment with the majority of it being in mid-similarity condition. Soil conditions were satisfactory.		
Exclosures (Name and Acres)	N/A		

APPENDIX A – grazing allotment existing condition tables
 Safford Ranger District – **Galiuro EMA**

Allotment Name	Paddy's River	Allotment Number	430
5th Code Watershed	Upper Aravaipa Creek	4th Code Watershed	Lower San Pedro
Allotment Acres	9541	Capable Acres	4665
Permitted Number	100- 170 Cow/Calf 500- 850 AUM's	Season of Use	11/1-03/31
Utilization Level	45%	Elevation (feet)	4650-7400
Type of Grazing System	2 Pasture Rotation		
Pasture Use Constraints	N/A		
Major Drainages	Paddy's River		
Comprehensive Planned Improvements	Install 0.70 miles of pipeline along Forest Road 693 to a drinker and storage tank. (CE already completed)		
Allotment Condition	Mid Similarity over the majority of the allotment with a static trend.		
Exclosures (Name and Acres)	N/A		

APPENDIX A – grazing allotment existing condition tables
 Safford Ranger District – **Galiuro EMA**

Allotment Name	San Pedro	Allotment Number	441
5th Code Watershed	Alder Wash- San Pedro River	4th Code Watershed	Lower San Pedro
Allotment Acres	4608	Capable Acres	1157
Permitted Number	40 Cow/Calf, 480 AUM's	Season of Use	03/01-02/28
Utilization Level	40%	Elevation (feet)	3350-6850
Type of Grazing System	3 Pasture Rest Rotation with Private Land		
Pasture Use Constraints	N/A		
Major Drainages	Keilberg		
Allotment Condition	Mid Similarity over the allotment with a static trend.		
Exclosures (Name and Acres)	N/A		

APPENDIX A – grazing allotment existing condition tables
 Safford Ranger District – **Galiuro EMA**

Allotment Name	Sombrero Butte	Allotment Number	443
5th Code Watershed	Alder Wash- San Pedro River	4th Code Watershed	Lower San Pedro
Allotment Acres	3321	Capable Acres	905
Permitted Number	19 Cow/Calf, 228 AUM's	Season of Use	03/01-02/28
Utilization Level	40%	Elevation (feet)	4150-7050
Type of Grazing System	1 Pasture On/Off		
Pasture Use Constraints	N/A		
Major Drainages	None		
Allotment Condition	Mid-Similarity over the majority of the allotment with a static trend.		
Exclosures (Name and Acres)	N/A		

APPENDIX A – grazing allotment existing condition tables
 Safford Ranger District – **Galiuro EMA**

Allotment Name	South Ash Creek	Allotment Number	436
5th Code Watershed	Upper Ash Creek	4th Code Watershed	Willcox Playa
Allotment Acres	1982	Capable Acres	978
Permitted Number	30 Cow/Calf, 180 AUM's	Season of Use	11/01-04/30
Utilization Level	45%	Elevation (feet)	4800-7150
Type of Grazing System	3 Pasture Deferred Rotation		
Pasture Use Constraints	N/A		
Major Drainages	South Ash Creek and Bear Canyon		
Allotment Condition	Mid Similarity over the majority of the allotment with a static trend. Some areas receive lower rates because of higher than expected percentage of shrubs in the community.		
Exclosures (Name and Acres)	N/A		

APPENDIX A – grazing allotment existing condition tables
 Safford Ranger District – **Galiuro EMA**

Allotment Name	Squaw Basin	Allotment Number	426
5th Code Watershed	Lower Aravaipa Creek	4th Code Watershed	Lower San Pedro
Allotment Acres	4946	Capable Acres	3391
Permitted Number	50 Cow/Calf, 600 AUM's	Season of Use	03/01-02/28
Utilization Level	45%	Elevation (feet)	4050-6200
Type of Grazing System	7 Pasture Deferred Rotation with Four Mile Allotment		
Pasture Use Constraints	N/A		
Major Drainages	Bottle Canyon		
Allotment Condition	Mid Similarity over the majority of the allotment with a static trend.		
Exclosures (Name and Acres)	N/A		

APPENDIX A – grazing allotment existing condition tables
 Safford Ranger District – **Galiuro EMA**

Allotment Name	Sunset	Allotment Number	431
5th Code Watershed	Upper Aravaipa Creek	4th Code Watershed	Lower San Pedro
Allotment Acres	1790	Capable Acres	1405
Permitted Number	20 Cow/Calf, 240 AUM's	Season of Use	03/01/-02/28
Utilization Level	45%	Elevation (feet)	4700-6700
Type of Grazing System	3 Pasture Deferred Rotation		
Pasture Use Constraints	N/A		
Major Drainages	Black Canyon		
Allotment Condition	Mid-Similarity over the majority of the allotment with a static trend.		
Exclosures (Name and Acres)	N/A		

APPENDIX A – grazing allotment existing condition tables
 Safford Ranger District – **Galiuro EMA**

Allotment Name	Wear	Allotment Number	437
5th Code Watershed	Upper Ash Creek	4th Code Watershed	Willcox Playa
Allotment Acres	2636	Capable Acres	2117
Permitted Number	139 Forest 29 Private Cow/Calf, 840 AUM's	Season of Use	12/01-04/30
Utilization Level	45%	Elevation (feet)	4800-6050
Type of Grazing System	3 Pasture Rotation		
Pasture Use Constraints	N/A		
Major Drainages	None		
Allotment Condition	Mid Similarity over the majority of the allotment with a static trend. Some areas receive lower rates because of higher than expected percentage of shrubs in the community.		
Exclosures (Name and Acres)	N/A		

APPENDIX A – grazing allotment existing condition tables
 Safford Ranger District – **Galiuro EMA**

Allotment Name	Willow Creek	Allotment Number	428
5th Code Watershed	Upper Aravaipa Creek	4th Code Watershed	Lower San Pedro
Allotment Acres	4877	Capable Acres	3203
Permitted Number	185 Cow/Calf, 924 AUM's	Season of Use	11/01-3/31
Utilization Level	45%	Elevation (feet)	3650-6550
Type of Grazing System	1 Pasture Dormant Season		
Pasture Use Constraints	N/A		
Major Drainages	Willow Creek		
Allotment Condition	Mid-High Similarity over the majority of the allotment with a static trend.		
Exclosures (Name and Acres)	N/A		

APPENDIX A – grazing allotment existing condition tables
 Safford Ranger District – **Galiuro EMA**

Allotment Name	YLE	Allotment Number	442
5th Code Watershed	Alder Wash- San Pedro River	4th Code Watershed	Lower San Pedro
Allotment Acres	6686	Capable Acres	2315
Permitted Number	41 Cow/Calf, 492 AUM's	Season of Use	03/01-02/28
Utilization Level	45%	Elevation (feet)	3900-6800
Type of Grazing System	3 Pasture Deferred Rotation		
Pasture Use Constraints	N/A		
Major Drainages	YLE Canyon		
Allotment Condition	Mid Similarity over the allotment with a static trend.		
Exclosures (Name and Acres)	N/A		

APPENDIX A – grazing allotment existing condition tables
 Safford Ranger District – **Pinaleno EMA**

Allotment Name	Bonita	Allotment Number	424
5th Code Watershed	Grant Creek	4th Code Watershed	Willcox Playa
Allotment Acres	4247	Capable Acres	2767
Permitted Number	160 Cow/Calf, 800 AUMs	Season of Use	11/01-03/31
Utilization Level	50%	Elevation (feet)	5000-6600
Type of Grazing System	2 Pasture Rotation		
Pasture Use Constraints	N/A		
Major Drainages	Goudy Canyon		
Allotment Condition	Low Similarity across allotment because of high levels of Lehman’s Lovegrass Trend appears to be static.		
Exclosures (Name and Acres)	N/A		

APPENDIX A – grazing allotment existing condition tables
 Safford Ranger District – **Pinaleno EMA**

Allotment Name	Cedar Springs	Allotment Number	409
5th Code Watershed	Upper Aravaipa Creek	4th Code Watershed	Lower San Pedro
Allotment Acres	4904	Capable Acres	4171
Permitted Number	150 Cow/Calf, 902 AUMs	Season of Use	11/01-03/31
Utilization Level	50%	Elevation (feet)	4600-6700
Type of Grazing System	1 Pasture Season Long		
Pasture Use Constraints	n/a		
Major Drainages	Lindsey Canyon		
Vegetation Types	Chihuahuan Desert Scrub, Interior Chaparral, Madrean Encinal Woodland, Semi-Dessert Grassland, Madrean Pinyon-Oak Woodland		
Comprehensive Planned Improvements	Proposing a new pipeline heading northwest from Iron Tank well with a drinker and storage tank, 45% Use and grazing season 11/01-04/30		
Allotment Condition	15% Low Similarity and 85% Mid-Similarity. Static trend over the majority of the allotment.		
Exclosures (Name and Acres)	N/A		
Proposed Changes to Permitted Capacity	150 Cow/Calf Pairs 11/01-04/30, not to exceed 750 AUMS		

APPENDIX A – grazing allotment existing condition tables
 Safford Ranger District – **Pinaleno EMA**

Allotment Name	Gillespie	Allotment Number	417
5th Code Watershed	Stockton Wash	4th Code Watershed	Upper Gila River
Allotment Acres	8172	Capable Acres	5973
Permitted Number	47 Cow/Calf, 564 AUMs	Season of Use	03/01-02/28
Utilization Level	45%	Elevation (feet)	3800-6700
Type of Grazing System	9 Pasture Rotational Grazing		
Pasture Use Constraints	N/A		
Major Drainages	Stockton Wash		
Allotment Condition	25% Mid Similarity and 75% Low Similarity due to dominance of Lehman' Lovegrass.		
Exclosures (Name and Acres)	N/A		

APPENDIX A – grazing allotment existing condition tables
 Safford Ranger District – **Pinaleno EMA**

Allotment Name	Gillman	Allotment Number	420
5th Code Watershed	Alkali Flats	4th Code Watershed	Willcox Playa
Allotment Acres	4953	Capable Acres	4604
Permitted Number	240 Cow/Calf, 1199 AUMs	Season of Use	11/01-03/31
Utilization Level	50%	Elevation (feet)	4700-7050
Type of Grazing System	2 Pasture Rotation		
Pasture Use Constraints	N/A		
Major Drainages	Gillman Canyon		
Allotment Condition	Mid Similarity with a static trend.		
Exclosures (Name and Acres)	N/A		

APPENDIX A – grazing allotment existing condition tables
 Safford Ranger District – **Pinaleno EMA**

Allotment Name	Grant Creek	Allotment Number	413
5th Code Watershed	Grant Creek	4th Code Watershed	Willcox Playa
Allotment Acres	6073	Capable Acres	3194
Permitted Number	30 Cow/Calf , 360 AUMs	Season of Use	03/01-02/28
Utilization Level	45% Uplands and 40% Riparian	Elevation (feet)	4800-6650
Type of Grazing System	3 Pasture Rotation		
Pasture Use Constraints	N/A		
Major Drainages	Grant Creek		
Allotment Condition	1/3 of the allotment is rated as Mid-Similarity and the remaining area is rated as Low-Similarity because of high amount of Lehman's Lovegrass. Trend appears to be static.		
Exclosures (Name and Acres)	N/A		

APPENDIX A – grazing allotment existing condition tables
 Safford Ranger District – **Pinaleno EMA**

Allotment Name	Hawk Hollow	Allotment Number	414
5th Code Watershed	Cottonwood Wash-Gila River	4th Code Watershed	Upper Gila River
Allotment Acres	3967	Capable Acres	2745
Permitted Number	40 Cow/Calf, 200 AUMs	Season of Use	11/01-03/31
Utilization Level	50%	Elevation (feet)	3900-6800
Type of Grazing System	2 Pasture Season long		
Pasture Use Constraints	N/A		
Major Drainages	Frye Creek and Cave Creek		
Allotment Condition	Low Similarity across allotment because of high levels of Lehman's Lovegrass Trend appears to be static.		
Exclosures (Name and Acres)	N/A		

APPENDIX A – grazing allotment existing condition tables
 Safford Ranger District – **Pinaleno EMA**

Allotment Name	Marijilda	Allotment Number	415
5th Code Watershed	Cottonwood Wash- Gila River & Stockton Wash	4th Code Watershed	Upper Gila- San Carlos Reservoir
Allotment Acres	12466	Capable Acres	4325
Permitted Number	30 Cow/Calf , 360 AUMs	Season of Use	03/01-02/28
Utilization Level	40%	Elevation (feet)	3750-6800
Type of Grazing System	5 Pasture Rotation with State and Private Land		
Pasture Use Constraints	N/A		
Major Drainages	Marijilda Creek and Deadman		
Allotment Condition	10% of allotment is rated at Low Similarity because of Lehman Lovegrass the remainder of the allotment is at Mid Similarity. The allotment trend appears as static.		
Exclosures (Name and Acres)	N/A		

APPENDIX A – grazing allotment existing condition tables
 Safford Ranger District – **Pinaleno EMA**

Allotment Name	O Bar O	Allotment Number	419
5th Code Watershed	Alkali Flats, Grant Creek and Lower Ash Creek	4th Code Watershed	Willcox Playa
Allotment Acres	16338	Capable Acres	11158
Permitted Number	417 Cow/Calf, 2495 AUMs	Season of Use	11/01-4/30
Utilization Level	50%	Elevation (feet)	4850-6850
Type of Grazing System	6 Pasture Rotation		
Pasture Use Constraints	N/A		
Major Drainages	Big Creek and Grapevine Canyon		
Allotment Condition	80% of the allotment is rated at Low Similarity because of high levels of Lehman's Lovegrass. 20% is rated at Mid Similarity. Trend appears to be static.		
Exclosures (Name and Acres)	N/A		

APPENDIX A – grazing allotment existing condition tables
 Safford Ranger District – **Pinaleno EMA**

Allotment Name	O Bar O Canyon	Allotment Number	452
5th Code Watershed	Alkali Flats	4th Code Watershed	Willcox Playa
Allotment Acres	6263	Capable Acres	5365
Permitted Number	275 Cow/ Calf, 1085 AUMs	Season of Use	11/01-02/28
Utilization Level	50%	Elevation (feet)	4800-6900
Type of Grazing System	4 Pasture Rotation		
Pasture Use Constraints	N/A		
Major Drainages	O-O Canyon		
Allotment Condition	Mid-Similarity across allotment. Trend appears to be static although Lehman's Lovegrass appears to be increasing.		
Exclosures (Name and Acres)	N/A		

APPENDIX A – grazing allotment existing condition tables
 Safford Ranger District – **Pinaleno EMA**

Allotment Name	Redtail	Allotment Number	421
5th Code Watershed	Alkali Flats & Gold Gulch-San Simon River	4th Code Watershed	Willcox Playa & San Simonn
Allotment Acres	2552	Capable Acres	2511
Permitted Number	85 Cow/Calf, 425 AUMs	Season of Use	11/01-03/31
Utilization Level	50%	Elevation (feet)	4950-5900
Type of Grazing System	1 Pasture Season Long		
Pasture Use Constraints	N/A		
Major Drainages	Wood Canyon Wash		
Allotment Condition	Mid-High Similarity across the allotment with a static trend.		
Exclosures (Name and Acres)	N/A		

APPENDIX A – grazing allotment existing condition tables
 Safford Ranger District – **Pinaleno EMA**

Allotment Name	Seventy Six	Allotment Number	412
5th Code Watershed	Grant Creek	4th Code Watershed	Willcox Playa
Allotment Acres	13829	Capable Acres	8683
Permitted Number	285 Cow/Calf , 1,424 AUMs	Season of Use	11/01-03/31
Utilization Level	50%	Elevation (feet)	5050-6650
Type of Grazing System	1 Pasture Dormant Season		
Pasture Use Constraints	N/A		
Major Drainages	KH Canyon, South Taylor Canyon and Durkee Canyon		
Comprehensive Planned Improvements	Proposed: Installing a Pipeline and drinker inT8S R22E Section 22 , Extending the Season of Use to 04/30 and adjusting the Utilization levels to 45%		
Allotment Condition	25% Low Similarity due to Lehman’s Lovegrass, 75 % Mid-similarity with a static trend over the entire allotment.		
Exclosures (Name and Acres)	N/A		
Proposed Changes to Permitted Capacity	285 Cow/Calf Pairs 11/01-04/30, not to exceed 1,425 AUMS		

APPENDIX A – grazing allotment existing condition tables
 Safford Ranger District – **Pinaleno EMA**

Allotment Name	Shinglemill	Allotment Number	411
5th Code Watershed	Cottonwood Wash-Gila River	4th Code Watershed	Upper Gila- San Carlos Reservoir
Allotment Acres	34042	Capable Acres	23200
Permitted Number	155 Cow/Calf, 2 Horses, 947 AUMs	Season of Use	10/01-03/31
Utilization Level	40%	Elevation (feet)	3700-700
Type of Grazing System	5 Pasture Rotation Dormant Season		
Pasture Use Constraints	N/A		
Major Drainages	Tripp Canyon, North Taylor, Carter, Nutall and Shinglemill Canyon		
Allotment Condition	Mid-High Similarity with upward trend across a majority of the allotment.		
Exclosures (Name and Acres)	N/A		

APPENDIX A – grazing allotment existing condition tables
 Safford Ranger District – **Pinaleno EMA**

Allotment Name	Stockton Pass	Allotment Number	418
5th Code Watershed	Stockton Wash	4th Code Watershed	Upper Gila River & San Simon
Allotment Acres	25162	Capable Acres	18535
Permitted Number	145 Cow/Calf, 1740 AUMs	Season of Use	03/01-02/28
Utilization Level	45%	Elevation (feet)	4300-6850
Type of Grazing System	9 Pasture Rotation		
Pasture Use Constraints	N/A		
Major Drainages	Stockton Pass Wash, Gillespie and Oak Draw		
Allotment Condition	25% Low Similarity and 75% Mid-Similarity, trend is static.		
Exclosures (Name and Acres)	N/A		

APPENDIX A – grazing allotment existing condition tables
 Safford Ranger District – **Pinaleno EMA**

Allotment Name	Ten	Allotment Number	422
5th Code Watershed	Gold Gulch- San Simon River	4th Code Watershed	San Simon
Allotment Acres	6490	Capable Acres	6140
Permitted Number	112 Cow/Calf, 670 AUMs	Season of Use	11/01-04/30
Utilization Level	50%	Elevation (feet)	4800-6800
Type of Grazing System	1 Pasture Season Long		
Pasture Use Constraints	N/A		
Major Drainages	Sycamore Canyon and Willow Springs Wash		
Allotment Condition	Low Similarity at lower elevations dominated by Lehmans Lovegrass. Mid Similarity at higher elevations. Allotment as a whole appears to have a Static Trend.		
Exclosures (Name and Acres)	N/A		

APPENDIX A – grazing allotment existing condition tables
 Safford Ranger District – **Pinaleno EMA**

Allotment Name	Two Troughs	Allotment Number	410
5th Code Watershed	Black Rock Wash-Gila River	4th Code Watershed	Upper Gila- San Carlos Reservoir
Allotment Acres	3774	Capable Acres	3261
Permitted Number	100 Cow/Calf, 500 AUMs	Season of Use	11/01-03/31
Utilization Level	50%	Elevation (feet)	4150-6050
Type of Grazing System	1 Pasture Season Long		
Pasture Use Constraints	N/A		
Major Drainages	Two Troughs Canyon		
Comprehensive Planned Improvements	2 Pipelines are being proposed with multiple water troughs and storage tanks		
Allotment Condition	Mid Similarity with a Static Trend of the entire allotment.		
Exclosures (Name and Acres)	N/A		
Proposed Changes to Permitted Capacity	100 Cow/Calf Pairs 11/01-04/30, not to exceed 500 AUMS		

APPENDIX A – grazing allotment existing condition tables
 Safford Ranger District – **Pinaleno EMA**

Allotment Name	Veach	Allotment Number	416
5th Code Watershed	Stockton Wash	4th Code Watershed	Upper Gila- San Carlos Reservoir
Allotment Acres	12,860	Capable Acres	7,549
Permitted Number	192 Cow/Calf, 959 AUMs	Season of Use	12/01-04/30
Utilization Level	50%	Elevation (feet)	3450-6650
Type of Grazing System	1 Pasture Season Long		
Pasture Use Constraints	N/A		
Major Drainages	Veach, Lefthand and Dutch Henry Canyons		
Comprehensive Planned Improvements	Proposed: Installing pipeline, storage and drinkers in T8S R25E, Sec. 1,12, 13, 14, 23, 25, 26 and T9S R25E, Sec. 2. Installing drift fenceing in T8S R25E, Sec. 23, 26, and 35. Extending Season of Use from 11/01 to 04/30 and adjusting Utilization levels to 45%.		
Allotment Condition	1/3 of the allotment is rated at Low Similarity because of Lehman’s Lovegrass. The remainder of the allotment is at Mid-Similarity. Trend appears to be static.		
Exclosures (Name and Acres)	N/A		
Proposed Changes to Permitted Capacity	230 Cow/Calf, 1,369 AUMs and season of use 11/01-04/30		

APPENDIX A – grazing allotment existing condition tables
 Safford Ranger District – **Pinaleno EMA**

Allotment Name	White Streaks	Allotment Number	423
5th Code Watershed	Cottonwood Wash-Gila River	4th Code Watershed	Upper Gila- San Carlos Reservoir
Allotment Acres	5186	Capable Acres	3141
Permitted Number	28 Cow/Calf,168 AUMs	Season of Use	10/01-03/31
Utilization Level	50%	Elevation (feet)	3650-5800
Type of Grazing System	1 Pasture Season Long		
Pasture Use Constraints	n/a		
Major Drainages	Ash Creek		
Allotment Condition	Mid Similarity with a static trend.		
Exclosures (Name and Acres)	N/A		

APPENDIX A – grazing allotment existing condition tables
 Safford Ranger District – **Santa Teresa EMA**

Allotment Name	Black Rock	Allotment Number	404
5th Code Watershed	Black Rock Wash-Gila River	4th Code Watershed	Upper Gila- San Carlos Reservoir
Allotment Acres	14500	Capable Acres	6310
Permitted Number	66 Cow/Calf, 792 AUMs	Season of Use	03/01-2/28
Utilization Level	35%	Elevation (feet)	3850-7500
Type of Grazing System	3 Pasture Rotation System		
Pasture Use Constraints	N/A		
Major Drainages	Black Rock Canyon		
Allotment Condition	A 1/3 of this allotment is rated at Mid-Similarity and the remaining portion is low similarity, trend across the allotment is static.		
Exclosures (Name and Acres)	N/A		

APPENDIX A – grazing allotment existing condition tables
 Safford Ranger District – **Santa Teresa EMA**

Allotment Name	Foster	Allotment Number	406
5th Code Watershed	Black Rock Wash-Gila River	4th Code Watershed	Upper Gila- San Carlos Reservoir
Allotment Acres	3763	Capable Acres	1620
Permitted Number	30 Cow/Calf, 180 AUMs	Season of Use	11/01-04/30
Permitted Number	10 Cow/Calf, 120 AUMs	Season of Use	03/01-02/28 On/Off
Utilization Level	50%	Elevation (feet)	4500-7350
Type of Grazing System	2 Pasture Season Long		
Pasture Use Constraints	N/A		
Major Drainages	Dark Canyon		
Allotment Condition	The allotment is in Mid-High Similarity with a static trend.		
Exclosures (Name and Acres)	N/A		

APPENDIX A – grazing allotment existing condition tables
 Safford Ranger District – **Santa Teresa EMA**

Allotment Name	Jakes	Allotment Number	408
5th Code Watershed	Upper Aravaipa Creek	4th Code Watershed	Lower San Pedro
Allotment Acres	3710	Capable Acres	1585
Permitted Number	75 Cow/Calf, 451 AUMs	Season of Use	10/01-03/31 On/Off
Utilization Level	45% Uplands, 40% Riparian and 35% Wilderness	Elevation (feet)	4300-7500
Type of Grazing System	1 Pasture Season Long		
Pasture Use Constraints	N/A		
Major Drainages	Buford Canyon		
Allotment Condition	The majority of this allotment has Mid-High Similarity and a static trend		
Exclosures (Name and Acres)	N/A		

APPENDIX A – grazing allotment existing condition tables
 Safford Ranger District – **Santa Teresa EMA**

Allotment Name	Kane Springs	Allotment Number	405
5th Code Watershed	Black Rock Wash-Gila River	4th Code Watershed	Upper Gila- San Carlos Reservoir
Allotment Acres	652	Capable Acres	266
Permitted Number	17 Cow/Calf, 102 AUMs	Season of Use	11/01-03/31
Utilization Level	50%	Elevation (feet)	4150-6800
Type of Grazing System	1 Pasture Season Long		
Pasture Use Constraints	N/A		
Major Drainages	Beauchamp		
Allotment Condition	The majority of this allotment is rated at Mid-High Similarity and has a static trend.		
Exclosures (Name and Acres)	N/A		

APPENDIX A – grazing allotment existing condition tables
 Safford Ranger District – **Santa Teresa EMA**

Allotment Name	Laurel Canyon	Allotment Number	401
5th Code Watershed	Lower Aravaipa Creek	4th Code Watershed	Lower San Pedro
Allotment Acres	2295	Capable Acres	823
Permitted Number	50 Cow/Calf, 301 AUMs	Season of Use	10/01-03/31
Utilization Level	45% Uplands, 40% Riparian and 35% Wilderness	Elevation (feet)	3800-6550
Type of Grazing System	2 Pasture Season Long, combined with South Reef for usual 3 months on each		
Pasture Use Constraints	N/A		
Major Drainages	Waterfall Canyon		
Allotment Condition	The majority of this allotment has Mid Similarity and has a static trend		
Exclosures (Name and Acres)	N/A		

APPENDIX A – grazing allotment existing condition tables
 Safford Ranger District – **Santa Teresa EMA**

Allotment Name	North Reef	Allotment Number	402
5th Code Watershed	Lower Araviapa Creek and Black Rock Wash Upper Gila River	4th Code Watershed	Upper Gila River and Lower San Pedro River
Allotment Acres	5917	Capable Acres	2746
Permitted Number	50 Cow/Calf, 250 AUMs	Season of Use	11/01-03/31
Utilization Level	45% Uplands, 40% Riparian and 35% Wilderness	Elevation (feet)	4350-7100
Type of Grazing System	One Pasture Season Long		
Pasture Use Constraints	N/A		
Major Drainages	Cottonwood Canyon		
Allotment Condition	The majority of this allotment has Mid-High Similarity and has a static trend		
Exclosures (Name and Acres)	N/A		

APPENDIX A – grazing allotment existing condition tables
 Safford Ranger District – **Santa Teresa EMA**

Allotment Name	(South) Goodwin	Allotment Number	403
5th Code Watershed	Goodwin Wash- Gila River	4th Code Watershed	Upper Gila- San Carlos Reservoir
Allotment Acres	9177	Capable Acres	3817
Permitted Number	54 Cow/Calf, 648 AUMs	Season of Use	03/01-02/28
Utilization Level	35% Upland and 30% Riparian	Elevation (feet)	3650-7100
Type of Grazing System	2 Pasture Deferred Rotation		
Pasture Use Constraints	N/A		
Major Drainages	South Fork Goodwin Canyon		
Allotment Condition	15% of this allotment is rated at Mid-Similarity and 85% as Low Similarity. The entire allotment trend appears to be static.		
Exclosures (Name and Acres)	N/A		

APPENDIX A – grazing allotment existing condition tables
 Safford Ranger District – **Santa Teresa EMA**

Allotment Name	South Reef	Allotment Number	451
5th Code Watershed	Lower Aravaipa Creek & Black Rock Wash-Gila River	4th Code Watershed	Lower San Pedro & Upper Gila-San Carlos Reservoir
Allotment Acres	4675	Capable Acres	2386
Permitted Number	50 Cow/Calf, 301 AUMs	Season of Use	10/01-3/31
Utilization Level	45% Uplands, 40% Riparian and 35% Wilderness	Elevation (feet)	3800-6350
Type of Grazing System	2 Pasture Season Long, combined with Laurel Canyon for usual 3 months on each		
Pasture Use Constraints	N/A		
Major Drainages	Laurel Canyon		
Allotment Condition	The majority of this allotment has Mid-High Similarity and has a static trend		
Exclosures (Name and Acres)	N/A		

APPENDIX A – grazing allotment existing condition tables
 Safford Ranger District – **Santa Teresa EMA**

Allotment Name	VJ	Allotment Number	407
5th Code Watershed	Black Rock Wash- Gila River	4th Code Watershed	Upper Gila- San Carlos Reservoir
Allotment Acres	4363	Capable Acres	2394
Permitted Number	35 Cow/Calf, 175 AUMs	Season of Use	11/01-03/31
Utilization Level	50% utilization and 40% riparian	Elevation (feet)	4750-7450
Type of Grazing System	1 Pasture Season Long		
Pasture Use Constraints	N/A		
Major Drainages	Cottonwood Canyon		
Allotment Condition	The majority of this allotment has Mid Similarity and has a static trend		
Exclosures (Name and Acres)	N/A		

APPENDIX A – grazing allotment existing condition tables
 Safford Ranger District – **Winchester EMA**

Allotment Name	Oak Grove	Allotment Number	447
5th Code Watershed	Alkali Flats	4th Code Watershed	Willcox Playa
Allotment Acres	5203	Capable Acres	1490
Permitted Number	50 Cow/Calf or 600 AUMs	Season of Use	3/01-02/28
Utilization Level	40%	Elevation (feet)	4650-7400
Type of Grazing System	1 Pasture On/Off Yearlong		
Pasture Use Constraints	N/A		
Major Drainages	Oak Grove Canyon		
Allotment Condition	Mid-Similarity with a static trend.		
Exclosures (Name and Acres)	N/A		

APPENDIX A – grazing allotment existing condition tables
 Safford Ranger District – **Winchester EMA**

Allotment Name	Polecat	Allotment Number	448
5th Code Watershed	Hot Springs Canyon	4th Code Watershed	Lower San Pedro
Allotment Acres	2652	Capable Acres	1127
Permitted Number	17 Cow/Calf or 204 AUMs	Season of Use	03/01-02/28
Utilization Level	40%	Elevation (feet)	4950-7400
Type of Grazing System	1 Pasture On/Off Yearlong		
Pasture Use Constraints	N/A		
Major Drainages	None		
Allotment Condition	Mid-Similarity with a static trend.		
Exclosures (Name and Acres)	N/A		

APPENDIX A – grazing allotment existing condition tables
 Safford Ranger District – **Winchester EMA**

Allotment Name	Riley Peak	Allotment Number	446
5th Code Watershed	Lower Ash Creek	4th Code Watershed	Willcox Playa
Allotment Acres	4707	Capable Acres	1195
Permitted Number	20 Cow/ Calf or 120 AUMs	Season of Use	11/01-04/30
Permitted Number	10 Cow/ Calf or 120 AUMs	Season of Use	03/01-02/28 (On/Off)
Utilization Level	45%	Elevation (feet)	4900-7600
Type of Grazing System	1 Pasture Seasonal and 1 Pasture On/Off Yearlong		
Pasture Use Constraints	N/A		
Major Drainages	Mud Springs and Rose Canyon		
Allotment Condition	Mid-Similarity with a static trend.		
Exclosures (Name and Acres)	N/A		

APPENDIX A – grazing allotment existing condition tables
 Safford Ranger District – **Winchester EMA**

Allotment Name	Rockhouse	Allotment Number	445
5th Code Watershed	Hot Springs Canyon	4th Code Watershed	Lower San Pedro
Allotment Acres	5672	Capable Acres	3011
Permitted Number	150 Cow/Calf or 1800 AUMs	Season of Use	03/01-02/28
Utilization Level	50%	Elevation (feet)	5200-7600
Type of Grazing System	1 Pasture On/Off		
Pasture Use Constraints	N/A		
Major Drainages	Rockhouse Canyon		
Allotment Condition	Mid-Similarity with a static trend.		
Exclosures (Name and Acres)	N/A		

APPENDIX A – grazing allotment existing condition tables
 Safford Ranger District – **Winchester EMA**

Allotment Name	Rocky	Allotment Number	449
5th Code Watershed	Alkali Flats	4th Code Watershed	Willcox Playa
Allotment Acres	679	Capable Acres	437
Permitted Number	9 Cow/Calf or 108 AUMs	Season of Use	03/01/-02/28
Utilization Level	30%	Elevation (feet)	5050-6950
Type of Grazing System	1 Pasture On/Off		
Pasture Use Constraints	N/A		
Major Drainages	None		
Allotment Condition	Mid-Similarity with a static trend.		
Exclosures (Name and Acres)	N/A		

APPENDIX A – grazing allotment existing condition tables
 Sierra Vista Ranger District — **Huachuca EMA**

Allotment Name	A-Draw	Allotment Number	00301
5th Code Watershed	San Rafael Valley – Santa Cruz River	4th Code Watershed	Upper Santa Cruz
Allotment Acres	5,278	Capable Acres	4,773
Permitted Number	1704 AUMs 142 Cow/calf	Season of Use	Yearlong
Utilization Level	30-45%	Elevation (feet)	4,900-6,257
Type of Grazing System	Deferred rotation		
Pasture Use Constraints			
Major Drainages	A Bar Draw		
Comprehensive Planned Improvements	Install pipeline north from Jeep Well, install storage north of Jeep Well, install drinkers along pipeline, install pipeline from Gertrudis Well to a new drinker, extend KiHeKah pipeline and install 2 storage tanks, modify Dove Tank, repair Picnic Tank spillway, reconstruct 2 existing corrals		
Allotment Condition	The Allotment is in Mid Similarity Index. Ecological Conditions are static or improving across the allotment. Recent Manzanita treatments have greatly improved ecological condition and increased forage production drastically. Allotment is meeting forest plan standards for range/ecological condition. Soil conditions are 70% satisfactory and 30% impaired.		
Exclosures (Name and Acres)	N/A		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Sierra Vista Ranger District — **Huachuca EMA**

Allotment Name	Alisos	Allotment Number	00353
5th Code Watershed	Potrero Creek – Santa Cruz River, San Rafael Valley – Santa Cruz River	4th Code Watershed	Upper Santa Cruz
Allotment Acres	11,326	Capable Acres	9,076
Permitted Number	2592 AUMs 216 Cow/calf	Season of Use	Yearlong
Utilization Level	30-45%	Elevation (feet)	3,900-7,000
Type of Grazing System	Deferred rotation		
Pasture Use Constraints			
Major Drainages	Italian Canyon, Sycamore Canyon		
Comprehensive Planned Improvements	Install drinker on new Piedragosa division fence, install storage tank at Benches spring and pipeline to 3 new waters, extend pipeline from Duquesne allotment to upper Alisos pasture, install storage at Granger Corral and extend pipeline into Holding pasture, fence Piedragosa Tank and Piedragosa Tank #2		
Allotment Condition	20 % of Allotment is in Low Similarity Index due to the monoculture of Lehmann Lovegrass and heavy OHV impacts. These areas have been improving over the past 5-6 years due to management. 85% of the Allotment is Mid to High Similarity Index. Ecological Conditions are static or improving across the allotment. The Allotment is meeting forest plan standards for range/ecological condition. 96% of the allotment’s soils are satisfactory and 4% are impaired.		
Exclosures (Name and Acres)	Two exclosures in the Mezquital pasture for Pima Pineapple Cactus		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Sierra Vista Ranger District — **Huachuca EMA**

Allotment Name	Blacktail	Allotment Number	00307
5th Code Watershed	San Rafael Valley – Santa Cruz River, Las Nutrias Headwaters	4th Code Watershed	Upper San Pedro, Upper Santa Cruz
Allotment Acres	3,783	Capable Acres	2,837
Permitted Number	1200 AUMs + 360 PVT AUMs 100 Cow/calf + 30 cow/calf PVT	Season of Use	Yearlong
Utilization Level	30-45%	Elevation (feet)	4,800-5,500
Type of Grazing System	Deferred rest rotation		
Pasture Use Constraints	Historic distribution problems leading to over-use in riparian areas. Recent management has alleviated these problems.		
Major Drainages	Blacktail Canyon, Bodie Canyon, Sunnyside Canyon		
Comprehensive Planned Improvements	Fence existing spring and construct pipeline from spring.		
Allotment Condition	All of Allotment is in High Similarity Index. Ecological Conditions are static or improving across the allotment. Allotment is meeting forest plan standards for range/ecological condition. Soil conditions are 100% satisfactory.		
Exclosures (Name and Acres)	N/A		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Sierra Vista Ranger District — **Huachuca EMA**

Allotment Name	Campini	Allotment Number	00309
5th Code Watershed	San Rafael Valley – Santa Cruz River, Las Nutrias Headwaters	4th Code Watershed	Upper San Pedro, Upper Santa Cruz
Allotment Acres	5,780	Capable Acres	5,434
Permitted Number	1104-1704 AUMs + 96 AUMs PVT 92-142 Cow/calf + 8 cow/calf PVT	Season of Use	Yearlong
Utilization Level	30-45%	Elevation (feet)	4,800-5,500
Type of Grazing System	Deferred rest rotation		
Pasture Use Constraints			
Major Drainages	Bodie Canyon, Sunnyside Canyon, School Canyon		
Comprehensive Planned Improvements	Cross-fence Mesa pasture to create 2 pastures, construct water lot around George Tank.		
Allotment Condition	All of Allotment is in High Similarity Index. Ecological Conditions are static or improving across the allotment. Allotment is meeting forest plan standards for range/ecological condition. Soil conditions are 100% satisfactory.		
Exclosures (Name and Acres)	N/A		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Sierra Vista Ranger District — **Huachuca EMA**

Allotment Name	Canelo	Allotment Number	00310
5th Code Watershed	Babocomari River	4th Code Watershed	Upper San Pedro
Allotment Acres	520	Capable Acres	518
Permitted Number	204 AUMs 102 Cow/calf	Season of Use	March 1 – April 30
Utilization Level	30-45%	Elevation (feet)	5000
Type of Grazing System	Deferred rotation		
Pasture Use Constraints			
Major Drainages	Turkey Creek, Merritt Canyon		
Comprehensive Planned Improvements	Develop a well in East pasture with storage and drinkers, construct a fence in West pasture		
Allotment Condition	The Allotment is in High Similarity Index. Ecological Conditions are static or improving across the allotment. Allotment is meeting forest plan standards for range/ecological condition. Soil conditions are 100% satisfactory.		
Exclosures (Name and Acres)	N/A		
Additional Information	Canelo Allotment is run along with the Lyle Canyon Allotment.		

APPENDIX A – grazing allotment existing condition tables
 Sierra Vista Ranger District — **Huachuca EMA**

Allotment Name	Crittenden	Allotment Number	00314
5th Code Watershed	Sonoita Creek, Babocomari River, Cienega Creek	4th Code Watershed	Rillito, Upper San Pedro, Upper Santa Cruz
Allotment Acres	12,899	Capable Acres	9,684
Permitted Number	2580 AUMs 215 Cow/calf	Season of Use	Yearlong
Utilization Level	30-45%	Elevation (feet)	4,200-5,953
Type of Grazing System	Deferred rotation		
Pasture Use Constraints			
Major Drainages	Redrock Canyon, Monkey Canyon, Alamo Canyon		
Vegetation Types	Broadleaf evergreen woodland, chaparral, desert grassland		
Comprehensive Planned Improvements	Build exclosure fence around Corral Canyon spring and a holding pasture around exclosure, extend Corral Canyon spring pipeline, build holding pasture in Crittenden pasture with ride through gates, establish 2 water sources to limit cattle impacts to Oak Grove spring, extend pipeline from storage tanks to Red Bear pasture and Kunde allotment		
Allotment Condition	The allotment is in a Mid to High Similarity Index. Ecological Conditions are static across the allotment. The Allotment is meeting forest plan standards for range/ecological condition. Soil conditions are 100% satisfactory.		
Exclosures (Name and Acres)	Pig Camp and Oak Grove Spring for Gila Top Minnow		
Additional Information	Crittenden Allotment is a community allotment. It is split into N and S Crittenden, 50 and 165 CYL respectively.		

APPENDIX A – grazing allotment existing condition tables
 Sierra Vista Ranger District — **Huachuca EMA**

Allotment Name	Duquesne	Allotment Number	00342
5th Code Watershed	Potrero Creek – Santa Cruz River, San Rafael Valley – Santa Cruz River, Sonoita Creek	4th Code Watershed	Upper Santa Cruz
Allotment Acres	12,437	Capable Acres	9,510
Permitted Number	1524-2100 AUMs + 120 PVT 127-175 Cow/calf + 10 PVT	Season of Use	Yearlong
Utilization Level	30-45%	Elevation (feet)	5,000 – 7,000
Type of Grazing System	Deferred rotation		
Pasture Use Constraints	Lack of reliable water sources		
Major Drainages	Duquesne Wash, San Antonio Wash		
Comprehensive Planned Improvements	Install pipelines from existing wells to troughs in uplands.		
Allotment Condition	The allotment is in Mid to High Similarity Index, with static or improving trends across the allotment. Recent Manzanita treatments have greatly improved ecological condition and increased forage production drastically. Allotment is meeting forest plan standards for range/ecological condition. Soil conditions are 91% satisfactory and 9% impaired.		
Exclosures (Name and Acres)	N/A		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Sierra Vista Ranger District — **Huachuca EMA**

Allotment Name	Farrell	Allotment Number	00315
5th Code Watershed	Sonoita Creek, San Rafael Valley – Santa Cruz River	4th Code Watershed	Upper Santa Cruz
Allotment Acres	7,034	Capable Acres	5,281
Permitted Number	720 AUMs 60 Cow/calf	Season of Use	Yearlong
Utilization Level	30-45%	Elevation (feet)	4,200-6,300
Type of Grazing System	Deferred rotation		
Pasture Use Constraints			
Major Drainages	Corral Canyon, Goldbaum Canyon, Harshaw Creek		
Comprehensive Planned Improvements	Add pipeline, 10,000 gal storage, and 2 troughs in Best pasture, cross-fence Best pasture, develop waters in Best and Corral Canyon pastures		
Allotment Condition	Most of the Allotment is High Similarity Index, with the exception of canyon bottoms and swales. Ecological condition in those areas are in Low Similarity Index with static trends. Ecological Conditions elsewhere on the allotment are also static. The Allotment is meeting forest plan standards for range/ecological condition. Soil conditions are 100% satisfactory.		
Exclosures (Name and Acres)	N/A		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Sierra Vista Ranger District — **Huachuca EMA**

Allotment Name	Harshaw	Allotment Number	00319
5th Code Watershed	Sonoita Creek	4th Code Watershed	Upper Santa Cruz
Allotment Acres	9,482	Capable Acres	5,280
Permitted Number	996 AUMs + 2 horses 83 Cow/calf + 2 horses	Season of Use	Yearlong
Utilization Level	30-45%	Elevation (feet)	4,200-6,300
Type of Grazing System	Deferred rotation		
Pasture Use Constraints			
Major Drainages	Alum Gulch		
Comprehensive Planned Improvements	Install pipeline from Corral Canyon well to storage and trough in Bergier pasture, extend pipeline from northern end of allotment to Middle pasture		
Allotment Condition	The allotment is in Low to Mid Similarity Index. Ecological Conditions are static across the allotment. The Allotment is meeting forest plan standards for range/ecological condition. Soil conditions are 100% satisfactory.		
Exclosures (Name and Acres)	N/A		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Sierra Vista Ranger District — **Huachuca EMA**

Allotment Name	Hayfield	Allotment Number	00345
5th Code Watershed	San Rafael Valley – Santa Cruz River	4th Code Watershed	Upper Santa Cruz
Allotment Acres	8,553	Capable Acres	6,683
Permitted Number	2448 AUMs + 552 PVT AUMs 204 Cow/calf + 46 cow/calf PVT	Season of Use	Yearlong
Utilization Level	30-45%	Elevation (feet)	3,900 – 5,500
Type of Grazing System	Deferred rotation		
Pasture Use Constraints			
Major Drainages	Finley Canyon, Adams Canyon, Chino Draw		
Comprehensive Planned Improvements	None		
Allotment Condition	The allotment is in Mid Similarity Index, with static or improving trends across the allotment. Recent Manzanita treatments have greatly improved ecological condition and increased forage production drastically. Allotment is meeting forest plan standards for range/ecological condition. Soil conditions are 97% satisfactory and 3% impaired.		
Exclosures (Name and Acres)	N/A		
Additional Information	The District has authorized a greater number than what has been permitted in recent years due to the fact that the permittee primarily stocks Corriente cattle; a smaller breed. Numbers were adjusted using a smaller AUM factor.		

APPENDIX A – grazing allotment existing condition tables
 Sierra Vista Ranger District — **Huachuca EMA**

Allotment Name	HQ	Allotment Number	00321
5th Code Watershed	San Rafael Valley – Santa Cruz River	4th Code Watershed	Upper Santa Cruz
Allotment Acres	1,498	Capable Acres	1,013
Permitted Number	108-312 AUMs + 108 PVT cows, 2 PVT horses 9-26 cow/calf + 9 cow/calf PVT, 2 PVT horses	Season of Use	Yearlong
Utilization Level	30-45%	Elevation (feet)	4,800-5,500
Type of Grazing System	Deferred rest rotation		
Pasture Use Constraints			
Major Drainages	Parker Canyon		
Comprehensive Planned Improvements	Develop upland waters by piping water from existing well.		
Allotment Condition	All of Allotment is in High Similarity Index. Ecological Conditions are static or improving across the allotment. Allotment is meeting forest plan standards for range/ecological condition. Soil conditions are 100% satisfactory.		
Exclosures (Name and Acres)	N/A		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Sierra Vista Ranger District — **Huachuca EMA**

Allotment Name	Kunde	Allotment Number	00323
5th Code Watershed	Sonoita Creek	4th Code Watershed	Upper Santa Cruz
Allotment Acres	5,159	Capable Acres	3,793
Permitted Number	792 AUMs + 84 PVT head 66 Cow/calf + 7 PVT	Season of Use	Yearlong
Utilization Level	30-45%	Elevation (feet)	4,200-5,700
Type of Grazing System	Deferred rotation		
Pasture Use Constraints	Red Rock Pasture is not in the grazing rotation		
Major Drainages	Redrock Canyon, Lower Lampshire Canyon		
Comprehensive Planned Improvements	Build drift fence to separate Redrock pasture into 2 pastures, replace Holding pasture trick tank with a trough, establish water in Redrock pasture by installing storage tanks and feeder pipeline from east side of allotment, extend pipeline into Harshaw pasture, construct fence to enclose Harshaw Creek		
Allotment Condition	The allotment is in Mid to High Similarity Index. Ecological Conditions are improving or remaining static across the allotment. The Allotment is meeting forest plan standards for range/ecological condition. Soil conditions are 63% satisfactory and 37% impaired.		
Exclosures (Name and Acres)	Falls and Gate Spring Exclosures		
Proposed Changes to Permitted Capacity	Authorize a range of 66 - 88 cow/calf pairs year-long (792 - 1,056 AUMs). This increase from the current 66 cow/calf pairs year-long is in response to the proposal for the Red Rock pasture to enter into a grazing rotation. The addition of this pasture will allow for the equivalent of 22 cow/calf pairs to be added to the permit.		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Sierra Vista Ranger District — **Huachuca EMA**

Allotment Name	Lewis	Allotment Number	00325
5th Code Watershed	Sonoita Creek	4th Code Watershed	Upper Santa Cruz
Allotment Acres	2,315	Capable Acres	1,263
Permitted Number	264 AUMs 22 Cow/calf	Season of Use	Yearlong
Utilization Level	30-45%	Elevation (feet)	4,200-6,300
Type of Grazing System	Deferred rotation		
Pasture Use Constraints			
Major Drainages	Harshaw Creek		
Comprehensive Planned Improvements	None		
Allotment Condition	The allotment is in Mid to High Similarity Index, with portions that are in Low Similarity Index due to the monoculture of Lehmann Lovegrass. Ecological Conditions are static across the allotment. The Allotment is meeting forest plan standards for range/ecological condition. Soil conditions are 100% satisfactory.		
Exclosures (Name and Acres)	N/A		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Sierra Vista Ranger District — **Huachuca EMA**

Allotment Name	Lochiel	Allotment Number	00346
5th Code Watershed	Potrero Creek – Santa Cruz River, San Rafael Valley – Santa Cruz River	4th Code Watershed	Upper Santa Cruz
Allotment Acres	2,462	Capable Acres	2,167
Permitted Number	594-725 AUMs 50-61 Cow/calf	Season of Use	03/01-06/30; 10/01-02/28
Utilization Level	30-45%	Elevation (feet)	4,200 – 6,200
Type of Grazing System	Deferred rotation		
Pasture Use Constraints	Limited flexibility due to only having 2 pastures		
Major Drainages	San Antonio Canyon		
Comprehensive Planned Improvements	Install a storage tank, pipeline, multiple troughs, and new fence line.		
Allotment Condition	The allotment is in Mid to High Similarity Index. Ecological Conditions are static across the allotment. The Allotment is meeting forest plan standards for range/ecological condition. Soil conditions are 89% satisfactory and 11% impaired.		
Exclosures (Name and Acres)	None		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Sierra Vista Ranger District — **Huachuca EMA**

Allotment Name	Lone Mountain	Allotment Number	00326
5th Code Watershed	Banning Creek – San Pedro River, Las Nutrias Headwaters, Montezuma Canyon – San Pedro River, San Rafael Valley – Santa Cruz River	4th Code Watershed	Upper Santa Cruz, Upper San Pedro
Allotment Acres	49,931	Capable Acres	41,961
Permitted Number	7800-11400 AUMs 650-950 Cow/calf	Season of Use	Yearlong
Utilization Level	30-45%	Elevation (feet)	4,800-9,466
Type of Grazing System	Deferred rest rotation		
Pasture Use Constraints			
Major Drainages	Copper, Sunnyside, Cave, Bear, Lone Mt, Bodie, Scotia, and Parker Canyons		
Comprehensive Planned Improvements			
Allotment Condition	The allotment is in Mid to High Similarity Index. Some smaller areas are in Low Similarity Index due to Lehmann Lovegrass. Ecological Conditions are static or improving across the allotment. The Allotment is meeting forest plan standards for range/ecological condition. Soil conditions are 67% satisfactory and 33% impaired.		
Exclosures (Name and Acres)	Wakefield and Scotia		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Sierra Vista Ranger District — **Huachuca EMA**

Allotment Name	Lyle Canyon	Allotment Number	00327
5th Code Watershed	Babocomari River, Banning Creek – San Pedro River, San Rafael Valley – Santa Cruz River	4th Code Watershed	Upper Santa Cruz, Upper San Pedro
Allotment Acres	14,694	Capable Acres	10,999
Permitted Number	1404-2184 AUMs 117 – 182 Cow/calf	Season of Use	Yearlong
Utilization Level	30-45%	Elevation (feet)	4,900-7,900
Type of Grazing System	Deferred rest rotation		
Pasture Use Constraints			
Major Drainages	Brushy Canyon, Korn Canyon, Lyle Canyon		
Comprehensive Planned Improvements	Absorb 3 pastures from vacant Collin’s Canyon allotment and the Becker Parcel, construct storage tank in Harkey pasture and run pipeline to drinkers to Weaner, Page, Algerita, and Center pastures, install check-dams in Korn and Mathews pastures, construct pipeline from Mountain pasture storage to Algerita, Lower Algerita, and Page pastures, develop a well in Merrit pasture with pipeline to Upper Lyle, Merrit, Mountain, Oso Negro, and Tom’s Corner pasture troughs, develop a will with pipeline and troughs in Oso Negro pasture, fence off Merrit Canyon spring and Mathews pasture stock tank		
Allotment Condition	The Allotment is in High Similarity Index. Ecological Conditions are static or improving across the allotment. Allotment is meeting forest plan standards for range/ecological condition. Soil conditions are 78% satisfactory and 22% impaired.		
Exclosures (Name and Acres)	None		
Additional Information	Allotment is run along with the Canelo Allotment.		

APPENDIX A – grazing allotment existing condition tables
 Sierra Vista Ranger District — **Huachuca EMA**

Allotment Name	Manila	Allotment Number	00328
5th Code Watershed	Babocomari River	4th Code Watershed	Upper San Pedro
Allotment Acres	4,562	Capable Acres	3,460
Permitted Number	960-1080 AUMs +84 PVT 80 – 90 Cow/calf + 7 PVT	Season of Use	Yearlong
Utilization Level	30-45%	Elevation (feet)	5,000-6,900
Type of Grazing System	Deferred rest rotation		
Pasture Use Constraints			
Major Drainages	Manila Canyon, Woodyard Canyon, Ferosa Canyon, Lyle Canyon		
Comprehensive Planned Improvements	None		
Allotment Condition	The Allotment is in Mid to High Similarity Index. Condition has improved in the past ten years, but Lehmann lovegrass continues to invade areas. Ecological Conditions are static across the allotment. Allotment is meeting forest plan standards for range/ecological condition. Soil conditions are 75% satisfactory and 25% impaired.		
Exclosures (Name and Acres)	West Gate		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Sierra Vista Ranger District — **Huachuca EMA**

Allotment Name	Mowry	Allotment Number	00350
5th Code Watershed	San Rafael Valley-Santa Cruz River	4th Code Watershed	Upper Santa Cruz
Allotment Acres	188 FS acres, 415 including private	Capable Acres	188 FS acres, 415 including private
Permitted Number	96 AUMs 8 Cow/calf*	Season of Use	Yearlong
Utilization Level	30-45%	Elevation (feet)	5,100 – 5,300
Type of Grazing System	Deferred rotation		
Pasture Use Constraints			
Major Drainages	Mowry Wash		
Comprehensive Planned Improvements			
Allotment Condition	The Allotment is in High Similarity Index. Ecological Conditions are static across the allotment. The Allotment is meeting forest plan standards for range/ecological condition. Soil conditions are 100% satisfactory with very good ground cover.		
Exclosures (Name and Acres)	None		
Proposed Changes to Permitted Capacity	Authorize a range of 8 - 25 cow/calf pairs year-long (127 - 396 AUMs). This increase from the current 8 cow/calf pairs year-long is based off of historical stocking records when the allotment was managed under a Special Use Permit.		
Additional Information	*This is an on/off allotment. 8 head (96 AUMs) total are authorized year long. The add'l 5 head are authorized b/c the allotment is mostly comprised of private land.		

APPENDIX A – grazing allotment existing condition tables
 Sierra Vista Ranger District — **Huachuca EMA**

Allotment Name	Oak Bar	Allotment Number	00324
5th Code Watershed	Potrero Creek – Santa Cruz River, Sonoita Creek	4th Code Watershed	Upper Santa Cruz
Allotment Acres	11,425	Capable Acres	7,747
Permitted Number	2640 AUMs 220 Cow/calf	Season of Use	Yearlong
Utilization Level	30-45%	Elevation (feet)	3,900-7,000
Type of Grazing System	Deferred rotation		
Pasture Use Constraints			
Major Drainages	Three R Canyon		
Comprehensive Planned Improvements	Divide 3R pasture and Paja Verde pasture and install cattle guards where fences cross. install 20,000 gal storage and solar panels at existing Old Timer Well, install pipeline from Old Timer Well into 3R pasture with 6-8 troughs at intervals along pipeline, install pipeline from Old Timer Well to drinkers in lower Paja Verde pasture, redevelop Lucky Find Well and extend pipelines to troughs located south and southwest in Paja Verde pasture		
Allotment Condition	65 % of Allotment is in Low to Mid Similarity Index due to the monoculture of Lehmann Lovegrass, 45 % of the Allotment is in High Similarity Index. Ecological Conditions are static across the allotment. The Allotment is meeting forest plan standards for range/ecological condition. Soil conditions are 100% satisfactory.		
Exclosures (Name and Acres)	None		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Sierra Vista Ranger District — **Huachuca EMA**

Allotment Name	O'Donnell	Allotment Number	00332
5th Code Watershed	Babocamari River, San Rafael Valley – Santa Cruz River, Sonoita Creek	4th Code Watershed	Upper Santa Cruz, Upper San Pedro
Allotment Acres	7,352	Capable Acres	6,836
Permitted Number	1,440 AUMs 120 Cow/calf	Season of Use	Yearlong
Utilization Level	30-45%	Elevation (feet)	4,900-6,000
Type of Grazing System	Deferred rest rotation		
Pasture Use Constraints	Lack of reliable waters		
Major Drainages	Middle Canyon, Pauline Canyon, Western Canyon		
Comprehensive Planned Improvements	Install pipeline from East Well on U-D allotment to Canelo Pass, extend Western Well pipeline, develop waters in upper and lower Pauline pastures		
Allotment Condition	The Allotment is in High Similarity Index. Ecological Conditions are static or improving across the allotment. Allotment is meeting forest plan standards for range/ecological condition. Soil conditions are 100% satisfactory.		
Exclosures (Name and Acres)	None		
Proposed Changes to Permitted Capacity	<p>Combine the Papago and O'Donnell allotments into one single allotment. Currently, the two adjacent allotments are permitted to the same grazing permittee. This action would help to increase flexibility in management. The Papago allotment is currently permitted for 250 cow/calf pairs year-long (3,000 AUMs) and the O'Donnell allotment is permitted for 120 cow/calf pairs year-long (1,440 AUMs).</p> <p>Authorize a range of 390 - 520 cow/calf pairs year-long (4,680 - 6,240 AUMs). This overall increase is based off of data gathered from an experimental increase and subsequent production-utilization study, as well as range improvements that have been implemented by the current permittee on the Papago allotment.)</p>		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Sierra Vista Ranger District — **Huachuca EMA**

Allotment Name	Papago	Allotment Number	00334
5th Code Watershed	Babocomari River, Cienega Creek , Sonoita Creek	4th Code Watershed	Rillito, Upper Santa Cruz, Upper San Pedro
Allotment Acres	12,903	Capable Acres	12,017
Permitted Number	3,000 AUMs 250 Cow/calf	Season of Use	Yearlong
Utilization Level	30-45%	Elevation (feet)	5,000-5,953
Type of Grazing System	Deferred rotation		
Pasture Use Constraints			
Major Drainages	Cienega Creek, O'Donnell Creek		
Comprehensive Planned Improvements	Reconstruct Middle/North division fence, build fence to divide Maloney and Falda pastures, reconstruct Lampshire/Pinto division fence, construct pipeline from Middle pasture well to Papago pasture and from Cave well to Rincon pasture, clean out Double Tanks, extend pipelines in West Mountain and Lampshire pastures, construct a pipeline to Pinto pasture and from 83 pasture storage tank to troughs along 83/East Cemetery division fence, extend pipeline into Roundup pasture and install trough		
Allotment Condition	Most of the Allotment is in High Similarity Index. Condition has improved in the past ten years with improved management and infrastructure. Ecological Conditions are improving across the allotment. Allotment is meeting forest plan standards for range/ecological condition. Soil conditions are 61% satisfactory, 38% impaired and 1% unsatisfactory.		
Exclosures (Name and Acres)	None		
Proposed Changes to Permitted Capacity	<p>Combine the Papago and O'Donnell allotments into one single allotment. Currently, the two adjacent allotments are permitted to the same grazing permittee. This action would help to increase flexibility in management. The Papago allotment is currently permitted for 250 cow/calf pairs year-long (3,000 AUMs) and the O'Donnell allotment is permitted for 120 cow/calf pairs year-long (1,440 AUMs).</p> <p>Authorize a range of 390 - 520 cow/calf pairs year-long (4,680 - 6,240 AUMs). This overall increase is based off of data gathered from an experimental increase and subsequent production-utilization study, as well as range improvements that have been implemented by the current permittee on the Papago allotment.</p>		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Sierra Vista Ranger District — **Huachuca EMA**

Allotment Name	Post Canyon	Allotment Number	00336
5th Code Watershed	Babocamari River	4th Code Watershed	Upper San Pedro
Allotment Acres	4,284	Capable Acres	3,194
Permitted Number	156-792 AUMs 13 – 66 cow/calf	Season of Use	Yearlong
Utilization Level	30-45%	Elevation (feet)	4,900-6,000
Type of Grazing System	Deferred rest rotation		
Pasture Use Constraints			
Major Drainages	Post Canyon		
Comprehensive Planned Improvements	Extend pipeline into Callaway pasture, fence Forest Boundary in Callaway pasture, install pipeline from Post Well to southern Mountain pasture, remove small junipers in Cemetery and Mountain pastures		
Allotment Condition	The Allotment is in Mid to High Similarity Index. Ecological Conditions are static or improving across the allotment. Allotment is meeting forest plan standards for range/ecological condition. Soil conditions are 100% satisfactory.		
Exclosures (Name and Acres)	O'Donnell and Freeman Spring		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Sierra Vista Ranger District — **Huachuca EMA**

Allotment Name	San Rafael	Allotment Number	00338
5th Code Watershed	Babocomari River, San Rafael Valley – Santa Cruz River, Sonoita Creek	4th Code Watershed	Upper Santa Cruz, Upper San Pedro
Allotment Acres	22,317	Capable Acres	18,142
Permitted Number	5,700 AUMs 475 Cow/calf	Season of Use	Yearlong
Utilization Level	30-45%	Elevation (feet)	4,600-6,170
Type of Grazing System	Deferred rotation		
Pasture Use Constraints			
Major Drainages	Redrock Canyon and Meadow Valley		
Comprehensive Planned Improvements			
Allotment Condition	The allotment is in High Similarity Index. Ecological Conditions are static across the allotment. The Allotment is meeting forest plan standards for range/ecological condition. Soil conditions are 87% satisfactory and 13% impaired.		
Exclosures (Name and Acres)	Cott Tank		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Sierra Vista Ranger District — **Huachuca EMA**

Allotment Name	Santa Cruz	Allotment Number	00351
5th Code Watershed	Potrero Creek – Santa Cruz River, Sonoita Creek, San Rafael Valley – Santa Cruz River	4th Code Watershed	Upper Santa Cruz
Allotment Acres	12,225	Capable Acres	9,470
Permitted Number	4560 AUMs 380 Cow/calf	Season of Use	Yearlong
Utilization Level	30-45%	Elevation (feet)	3,900-7,000
Type of Grazing System	Deferred rotation		
Pasture Use Constraints			
Major Drainages	Canada de la Paloma, Wild Hog Canyon		
Comprehensive Planned Improvements	Divide Shamrock pasture and Wild Hog pasture. Develop a well in Providencia Canyon with storage and drinker, extend pipeline from Gross Well to upland drinkers in lower Hog Canyon, extend pipeline from Javelina well to upper and lower Paloma pastures, extend pipeline in Soldier Basin to drinker, install 10,000 gal storage at Jackalo Mine well and install pipeline and drinkers to supply Guajolote and Shamrock pastures		
Allotment Condition	45 % of Allotment is in Low to Mid Similarity Index due to the monoculture of Lehmann Lovegrass, 65 % of the Allotment is in High Similarity Index. Ecological Conditions are static across the allotment. The Allotment is meeting forest plan standards for range/ecological condition. Soil conditions are 95% satisfactory and 5% impaired.		
Exclosures (Name and Acres)	None		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Sierra Vista Ranger District — **Huachuca EMA**

Allotment Name	Sawtelle	Allotment Number	00339
5th Code Watershed	Babocamari River, San Rafael Valley – Santa Cruz River	4th Code Watershed	Upper Santa Cruz, Upper San Pedro
Allotment Acres	4,821	Capable Acres	4,205
Permitted Number	1346 AUMs 85 Cow/calf	Season of Use	Yearlong
Utilization Level	30-45%	Elevation (feet)	4,900-6,000
Type of Grazing System	Deferred rotation		
Pasture Use Constraints			
Major Drainages	Turkey Creek		
Comprehensive Planned Improvements	Realign southern fence in Bull pasture to exclude Algerita and Lyle Canyons' riparian areas, cross-fence Mountain pasture, extend pipeline from Korn well to new storage and troughs in Becker pasture, extend pipeline from Rogers well to new storage and trough in Howell pasture, extend pipeline from Canelo allotment to Highway pasture		
Allotment Condition	The Allotment is in High Similarity Index. Ecological Conditions are static or improving across the allotment. Allotment is meeting forest plan standards for range/ecological condition. Soil conditions are 100% satisfactory.		
Exclosures (Name and Acres)	None		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Sierra Vista Ranger District — **Huachuca EMA**

Allotment Name	Sycamore	Allotment Number	00344
5th Code Watershed	Babocamari River, San Rafael Valley – Santa Cruz River	4th Code Watershed	Upper San Pedro
Allotment Acres	488	Capable Acres	483
Permitted Number	144 AUMs 12 Cow/calf	Season of Use	Yearlong
Utilization Level	30-45%	Elevation (feet)	4,900-6,000
Type of Grazing System	Deferred rest rotation		
Pasture Use Constraints			
Major Drainages	None		
Comprehensive Planned Improvements	None		
Allotment Condition	The Allotment is in Mid to High Similarity Index. Condition has improved in the past ten years, but Lehmann lovegrass continues to invade areas. Ecological Conditions are static across the allotment. Allotment is meeting forest plan standards for range/ecological condition. Soil conditions are 100% satisfactory.		
Exclosures (Name and Acres)	None		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Sierra Vista Ranger District — **Huachuca EMA**

Allotment Name	U-D	Allotment Number	00347
5th Code Watershed	Babocamari River, San Rafael Valley – Santa Cruz River	4th Code Watershed	Upper Santa Cruz, Upper San Pedro
Allotment Acres	1,025	Capable Acres	730
Permitted Number	240 AUMs 20 Cow/calf	Season of Use	Yearlong
Utilization Level	30-45%	Elevation (feet)	4,900-6,000
Type of Grazing System	Grass bank, not used in consecutive growing seasons		
Pasture Use Constraints			
Major Drainages	None		
Comprehensive Planned Improvements	None		
Allotment Condition	The Allotment is in High Similarity Index. Ecological Conditions are static or improving across the allotment. Allotment is meeting forest plan standards for range/ecological condition. Soil conditions are 100% satisfactory.		
Exclosures (Name and Acres)	None		
Additional Information	Allotment has been reserved as a grassbank for many years and is typically used if a nearby allotment experienced a wildfire.		

APPENDIX A – grazing allotment existing condition tables
 Sierra Vista Ranger District – **Whetstone EMA**

Allotment Name	Benson	Allotment Number	00303
5th Code Watershed	Ash Creek – San Pedro River, Clifford Wash – San Pedro River	4th Code Watershed	Upper San Pedro
Allotment Acres	3,941	Capable Acres	3,404
Permitted Number	100 Cow/calf + 6 on/off; 1200 AUMs; 72 on and off	Season of Use	Yearlong
Utilization Level	30 – 45%	Elevation (feet)	4,800 – 7,711 feet
Type of Grazing System	5 pasture rest-rotation		
Pasture Use Constraints	Limited water availability and varied topography		
Major Drainages	Cottonwood Canyon		
Comprehensive Planned Improvements	fence North Tank, install storage at Cottonwood, construct pipeline from Sabin well to Dolphin pasture and Dolphin well pipeline, construct fence to split Canary pasture		
Allotment Condition	25% of Allotment is in Low Similarity Index due to the monoculture of Lehmann Lovegrass, 75% of the Allotment is in Mid to High Similarity Index. Ecological Conditions are static across the allotment. The Allotment is meeting forest plan standards for range/ecological condition. Soil conditions are 100% satisfactory.		
Exclosures (Name and Acres)	None		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Sierra Vista Ranger District – **Whetstone EMA**

Allotment Name	Coal Mine	Allotment Number	00316
5th Code Watershed	Cienega Creek, Bobocamari River, Clifford Wash – San Pedro River	4th Code Watershed	Rillito, Upper San Pedro
Allotment Acres	2,926	Capable Acres	2,079
Permitted Number	50 Cow/calf, 300 AUMs	Season of Use	10/1 – 3/31
Utilization Level	30 – 45%	Elevation (feet)	4,800 – 7,711 feet
Type of Grazing System	Single pasture, winter seasonal		
Pasture Use Constraints			
Major Drainages	Shellenberger canyon		
Comprehensive Planned Improvements	Extend pipeline from Willow spring to Boice pasture and install trough, fence Bear spring and install spring box pipeline and trough, install pipeline from Copper Sands well to provide upland waters		
Allotment Condition	5 % of Allotment is in Low Similarity Index due to the monoculture of Lehmann Lovegrass, 95 % of the Allotment is in High Similarity Index. Condition trends are static. The Allotment is meeting forest plan standards for range/ecological condition. Soil conditions are 100% satisfactory.		
Exclosures (Name and Acres)	Simpson Spring is planned to be exclosed		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Sierra Vista Ranger District – **Whetstone EMA**

Allotment Name	Knear	Allotment Number	00302
5th Code Watershed	Cienega Creek, Ash Creek – San Pedro River, Clifford Wash – San Pedro River	4th Code Watershed	Rillito, Upper San Pedro
Allotment Acres	7,255	Capable Acres	5,184
Permitted Number	100 Cow/calf; 1200 AUMs	Season of Use	Yearlong
Utilization Level	30 – 45%	Elevation (feet)	4,800 – 7,711 feet
Type of Grazing System	6 pasture rest-rotation		
Pasture Use Constraints	Lack of reliable waters		
Major Drainages	None		
Comprehensive Planned Improvements	construct forest boundary fence along North pasture, locate and develop Middle Wakefield spring		
Allotment Condition	25 % of Allotment is in Low to Mid Similarity Index due to the monoculture of Lehmann Lovegrass, 75 % of the Allotment is in High Similarity Index. Ecological Conditions are static across the allotment. The Allotment is meeting forest plan standards for range/ecological condition. Soil conditions are 100% satisfactory.		
Exclosures (Name and Acres)	none		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Sierra Vista Ranger District – **Whetstone EMA**

Allotment Name	Mescal	Allotment Number	00318
5th Code Watershed	Bobocamari River, Cienega Creek, Clufford Wash – San Pedro River	4th Code Watershed	Rillito, Upper San Pedro
Allotment Acres	17,570	Capable Acres	10,401
Permitted Number	800 Cow/calf; 4800 AUMs	Season of Use	11/1 – 4/30
Utilization Level	30 – 45%	Elevation (feet)	4,800 – 7,711 feet
Type of Grazing System	2 pasture winter seasonal		
Pasture Use Constraints			
Major Drainages	French Joe and Dry Canyon		
Comprehensive Planned Improvements	Pump water from mine in upper Mine Canyon to ridges between Mine Canyon and Christmas Tank Canyon, pump water from Cottonwood spring storage to supplement existing Cottonwood trick tank and Christmas dirt tank, re-drill Dry Canyon well and pump water to Upper Dry Canyon trick tank		
Allotment Condition	15 % of Allotment is in Low Similarity Index due to the monoculture of Lehmann Lovegrass, 85 % of the Allotment is in Mid to High Similarity Index. Ecological Conditions are static across the allotment. The Allotment is meeting forest plan standards for range/ecological condition. Soil conditions are 99% satisfactory and 1% impaired.		
Exclosures (Name and Acres)			
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Sierra Vista Ranger District – **Whetstone EMA**

Allotment Name	Middle Canyon	Allotment Number	00306
5th Code Watershed	Clifford Wash – San Pedro River, Ash Creek – San Pedro River, Cienega Creek	4th Code Watershed	Rillito, Upper San Pedro
Allotment Acres	6,990	Capable Acres	3,825
Permitted Number	100 Cow/calf; 1200 AUMs	Season of Use	Yearlong
Utilization Level	30 – 45%	Elevation (feet)	4,800 – 7,711 feet
Type of Grazing System	8 pasture deferred rotation		
Pasture Use Constraints	Lack of reliable waters in Guindani, Glenn, Starr, and Ricketts		
Major Drainages	Middle Canyon, Guindani Canyon,		
Comprehensive Planned Improvements	Drill new well in Lower Trask pasture, drill new well in Star pasture, install storage and troughs in Middle, Star, Guindani, and Glenn pastures, install storage in SE Lower Trask pasture and pipeline to Forest well, install pipeline to Artesian Well trough, install storage at Cottonwood spring and pipeline, install pipeline and trough from Ricketts Well, construct drift fence at mouth of Guindani Canyon		
Allotment Condition	15 % of Allotment is in Low Similarity Index due to the monoculture of Lehmann Lovegrass, 85 % of the Allotment is in High Similarity Index. Ecological Conditions are static across the allotment. The Allotment is meeting forest plan standards for range/ecological condition. Soil conditions are 100% satisfactory.		
Exclosures (Name and Acres)	none		
Additional Information	Allotment has not been stocked to full capacity in many years		

APPENDIX A – grazing allotment existing condition tables
 Santa Catalina Ranger District – **Santa Catalina EMA**

Allotment Name	Agua Verde	Allotment Number	525
5th Code Watershed	Agua Verde Creek-Pantano Wash, Ash Creek-San Pedro River	4th Code Watershed	Rillito, Upper San Pedro
Allotment Acres	7,812	Capable Acres	5,135
Permitted Number	100 cow/calf or equivalent (up to 1,584 AUMs)	Season of Use	3/1-2/28
Utilization Level	35% max. Utilization	Elevation (feet)	3,500 – 7,800 ft
Type of Grazing System	3 pasture deferred rest rotation		
Pasture Use Constraints			
Major Drainages	Shaw, Chimney & Distillery Canyons		
Comprehensive Planned Improvements	None		
Allotment Condition	50% of the allotment has a low to mid similarity index, and 50% of the allotment has a mid to high similarity index. The low similarity index is due to large amounts of Lehman's lovegrass. 100% of the soils on the allotment are in satisfactory condition.		
Exclosures (Name and Acres)	None		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Santa Catalina Ranger District – **Santa Catalina EMA**

Allotment Name	American Flag	Allotment Number	508
5th Code Watershed	Alder Wash-San Pedro River, Tucson Wash-San Pedro River	4th Code Watershed	Lower San Pedro
Allotment Acres	9,810	Capable Acres	6,207
Permitted Number	150 Yearlings or equivalent (up to 630 AUMs)	Season of Use	4/1-9/31
Utilization Level	45% max. utilization	Elevation (feet)	4,500 to 8,200 ft
Type of Grazing System	2 pasture rest rotation		
Pasture Use Constraints	None		
Major Drainages	Nugget Canyon, Peppersauce Canyon, & Bonito Wash		
Comprehensive Planned Improvements	Redrill or deepen three wells Install storage tanks Install pipelines and troughs Drill new horizontal wells at five spring locations. American Spring Development		
Allotment Condition	30% of the allotment has a low similarity index, and 70% of the allotment has a mid to high similarity index. The low similarity index is due to large amounts of Lehman's lovegrass. 97.7% of the soils on the allotment are in satisfactory condition and 2.3% are impaired.		
Exclosures (Name and Acres)	None		
Additional Information	Used in conjunction with the Interocean Allotment		

APPENDIX A – grazing allotment existing condition tables
 Santa Catalina Ranger District – **Santa Catalina EMA**

Allotment Name	Barney	Allotment Number	517
5th Code Watershed	Page Creek-San Pedro River	4th Code Watershed	Lower San Pedro
Allotment Acres	3,383	Capable Acres	1,759
Permitted Number	65 cow/calf pairs or equivalent (up to 1030)	Season of Use	3/1-2/28
Utilization Level	35% max. utilization	Elevation (feet)	4,000 – 6,000 ft
Type of Grazing System	2 pasture season long		
Pasture Use Constraints	None		
Major Drainages	Sycamore & Deer Creek		
Comprehensive Planned Improvements	None		
Allotment Condition	100 % of the allotment has a mid to high similarity index. 100% of the soils on the allotment are in satisfactory condition.		
Exclosures (Name and Acres)	None		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Santa Catalina Ranger District – **Santa Catalina EMA**

Allotment Name	Bellota	Allotment Number	502
5th Code Watershed	Red Field Canyon-San Pedro River, Tanque-Verde Creek-Rillito River	4th Code Watershed	Lower San Pedro/Rillito
Allotment Acres	36,716	Capable Acres	26,484
Permitted Number	400 cow/calf pairs or equivalent year-long and 6 horses year-long	Season of Use	3/1-2-28
Utilization Level	45% max. utilization	Elevation (feet)	3,400 – 7,300 ft
Type of Grazing System	7 pasture deferred rest rotation system with 6 holding traps.		
Pasture Use Constraints	None		
Major Drainages	Agua Caliente, Tanque Verde, Bullock Canyons		
Comprehensive Planned Improvements	Install water storage in East and West Park pastures.		
Allotment Condition	40% of the allotment has a low similarity index, and 60% of the allotment has a mid to high similarity index. The low similarity index is due to large amounts of Lehman's lovegrass and other exotic perennial grasses. 100% of the soils on the allotment are in satisfactory condition.		
Exclosures (Name and Acres)			
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Santa Catalina Ranger District – **Santa Catalina EMA**

Allotment Name	Cañada del Oro	Allotment Number	503
5th Code Watershed	Cañada del Oro, Putnam Wash, Tucson Wash-San Pedro River,	4th Code Watershed	Lower San Pedro, Upper Santa Cruz
Allotment Acres	20,251	Capable Acres	8,912
Permitted Number	350 cow/calf pairs (up to 2,772 AUMs)	Season of Use	10/1-3/31
Utilization Level	45% max. utilization in Pig Springs and Wild Cow pastures. 55% use in Dodge and Irene pastures	Elevation (feet)	4,500 to 9,150 ft
Type of Grazing System	3 pasture rotation-dormant season use		
Pasture Use Constraints	None		
Major Drainages	Cañada del Oro		
Comprehensive Planned Improvements	Develop 4 new water systems in Dodge/Irene pastures.		
Allotment Condition	100 % of the allotment has a mid to high similarity index. 100% of the soils on the allotment are in satisfactory condition.		
Exclosures (Name and Acres)	None		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Santa Catalina Ranger District – **Santa Catalina EMA**

Allotment Name	Cumero	Allotment Number	520
5th Code Watershed	Aqua Verde Creek-Pantano Wash, Ash Creek-San Pedro River, Page Creek-San Pedro River, Cienega Creek	4th Code Watershed	Upper and Lower San Pedro, Rillito
Allotment Acres	12,872	Capable Acres	8,088
Permitted Number	125 cow/calf pairs and 4 horses or equivalent (up to 2,038)	Season of Use	3/1-2/28
Utilization Level	35% utilization within the wilderness and 45% utilization outside of wilderness.	Elevation (feet)	4,000 – 8,500 ft
Type of Grazing System	6 pasture “next best pasture” rest rotation		
Pasture Use Constraints	Ash Creek Riparian Pasture will not exceed a maximum of 28 days per calendar of livestock use. Reserved for pasture moves.		
Major Drainages	Cumero & Ash Creek		
Comprehensive Planned Improvements	Cumero Water Developments -Pipeline -Storage tanks -Troughs		
Allotment Condition	100 % of the allotment has a mid-similarity index. 100% of the soils on the allotment are in satisfactory condition.		
Exclosures (Name and Acres)			
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Santa Catalina Ranger District – **Santa Catalina EMA**

Allotment Name	Finley Springs	Allotment Number	505
5th Code Watershed	Alder Wash-San Pedro River, Red Field Canyon-San Pedro River	4th Code Watershed	Lower San Pedro, Rillito
Allotment Acres	16,107	Capable Acres	6,127
Permitted Number	175 cow/calf pairs or equivalent (up to 2,772 AUMs)	Season of Use	3/1-2/28
Utilization Level	45% max. utilization	Elevation (feet)	3,840 – 8,550 ft
Type of Grazing System	3 pasture deferred rotation		
Pasture Use Constraints	None		
Major Drainages	Edgar Canyon, Bushman Canyon		
Comprehensive Planned Improvements	Install 4 new water developments		
Allotment Condition	100 % of the allotment has a mid to high similarity index. 100% of the soils on the allotment are in satisfactory condition.		
Exclosures (Name and Acres)	none		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Santa Catalina Ranger District – **Santa Catalina EMA**

Allotment Name	Fresno	Allotment Number	519
5th Code Watershed	Page Creek-San Pedro River	4th Code Watershed	Lower San Pedro
Allotment Acres	1,632	Capable Acres	1,482
Permitted Number	20 cow/calf pairs or equivalent (up to 317 AUMs)	Season of Use	3/1-2/28
Utilization Level	45% max. utilization	Elevation (feet)	4,100-4,600 ft
Type of Grazing System	2 pasture deferred rest rotation		
Pasture Use Constraints			
Major Drainages	Paige Creek		
Comprehensive Planned Improvements	None		
Allotment Condition	100 % of the allotment has a mid to high similarity index. 100% of the soils on the allotment are in satisfactory condition.		
Exclosures (Name and Acres)	None		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Santa Catalina Ranger District – **Santa Catalina EMA**

Allotment Name	Happy Valley	Allotment Number	518
5th Code Watershed	Ash Creek-San Pedro River, Page Creek-San Pedro River	4th Code Watershed	Upper and Lower San Pedro
Allotment Acres	11,250	Capable Acres	8,662
Permitted Number	140 cow/calf pairs and 6 horses or equivalent (up to 2,218 AUMs)	Season of Use	3/1-2/28
Utilization Level	45% max. utilization	Elevation (feet)	4,000 – 8,500 ft
Type of Grazing System	4 pasture rest rotation		
Pasture Use Constraints			
Major Drainages	Paige, Turkey and Miller Creeks		
Comprehensive Planned Improvements	Happy Valley Water Developments		
Allotment Condition	100 % of the allotment has a mid to high similarity index. 100% of the soils on the allotment are in satisfactory condition.		
Exclosures (Name and Acres)	Turkey Creek		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Santa Catalina Ranger District – **Santa Catalina EMA**

Allotment Name	Interocean	Allotment Number	507
5th Code Watershed	Alder Wash-San Pedro	4th Code Watershed	Lower San Pedro, Rillito
Allotment Acres	12,427	Capable Acres	3,332
Permitted Number	546 yearlings and 65 cow/calf pairs or equivalent (up to 2,278 AUMs)	Season of Use	3/1-2/28
Utilization Level	45% max. utilization	Elevation (feet)	4,500 to 8,200 ft
Type of Grazing System	3 pasture rotation		
Pasture Use Constraints			
Major Drainages	Alder/Atchely Canyons and Stratton/Geesamen Canyons		
Comprehensive Planned Improvements	Orchard Spring Solar Pump and Pipeline		
Allotment Condition	15% of the allotment has a low similarity index, and 85% of the allotment has a mid-similarity index. The low similarity index is due to large amounts of Lehman's lovegrass. 99.7% of the soils on the allotment are in satisfactory condition and .3% are impaired.		
Exclosures (Name and Acres)	None		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Santa Catalina Ranger District – **Santa Catalina EMA**

Allotment Name	Last Chance	Allotment Number	516
5th Code Watershed	Red Field Canyon-San Pedro River, Page Creek-San Pedro River	4th Code Watershed	Lower San Pedro
Allotment Acres	6,205	Capable Acres	3,872
Permitted Number	80 cow/calf pairs or equivalent (up to 1,267 AUMs)	Season of Use	3/1-2/28
Utilization Level	35% max. utilization	Elevation (feet)	4,250 - 7,150 ft
Type of Grazing System	3 pasture deferred rest rotation		
Pasture Use Constraints			
Major Drainages	Espiritu Canyon		
Comprehensive Planned Improvements	None		
Allotment Condition	100 % of the allotment has a mid-similarity index. 100% of the soils on the allotment are in satisfactory condition.		
Exclosures (Name and Acres)	None		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Santa Catalina Ranger District – **Santa Catalina EMA**

Allotment Name	Redington Pass	Allotment Number	504
5th Code Watershed	Tanque Verde Creek-Rillito	4th Code Watershed	Rillito
Allotment Acres	20, 895	Capable Acres	14,970
Permitted Number	290 cow/calf pairs and 4 horses or equivalent (up to 4,594 AUMs)	Season of Use	3/1-2/28
Utilization Level	45% max. utilization	Elevation (feet)	2,840 – 6,200 ft
Type of Grazing System	15 pasture deferred rest rotation with 1 holding trap		
Pasture Use Constraints			
Major Drainages	Tanque Verde & Agua Caliente		
Comprehensive Planned Improvements	Lower Palo Verde Water Development		
Allotment Condition	25% of the allotment has a low similarity index, and 75% of the allotment has a mid to high similarity index. The low similarity index is due to large amounts of Lehman's lovegrass and other exotic perennial grasses. 100% of the soils on the allotment are in satisfactory condition.		
Exclosures (Name and Acres)	None		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Santa Catalina Ranger District – **Santa Catalina EMA**

Allotment Name	Rincon	Allotment Number	524
5th Code Watershed	Agua Verde Creek-Pantano Wash	4th Code Watershed	Rillito
Allotment Acres	4,186	Capable Acres	2,641
Permitted Number	52 cow/calf pairs or equivalent (up to 412 AUMs)	Season of Use	10/1-3/31
Utilization Level	45% max. utilization	Elevation (feet)	3,500 – 7,800 ft
Type of Grazing System	2 pasture dormant season use		
Pasture Use Constraints			
Major Drainages	Posta Quemada		
Comprehensive Planned Improvements	None		
Allotment Condition	100% of the allotment has a mid to high similarity index. 100% of the soils on the allotment are in satisfactory condition.		
Exclosures (Name and Acres)	None		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Santa Catalina Ranger District – **Santa Catalina EMA**

Allotment Name	Rock Pile	Allotment Number	523
5th Code Watershed	Cienega	4th Code Watershed	Rillito
Allotment Acres	2,168	Capable Acres	1,499
Permitted Number	25 cow/calf pairs or equivalent (up to 198 AUMs)	Season of Use	10/1-3/31
Utilization Level	45% max. utilization	Elevation (feet)	4,250 – 7,044 ft
Type of Grazing System	2 pasture dormant season rotation		
Pasture Use Constraints			
Major Drainages	Agua Verde creek		
Comprehensive Planned Improvements	None		
Allotment Condition	100% of the allotment has a mid to high similarity index. 100% of the soils on the allotment are in satisfactory condition.		
Exclosures (Name and Acres)	None		
Additional Information			

APPENDIX A – grazing allotment existing condition tables
 Santa Catalina Ranger District – **Santa Catalina EMA**

Allotment Name	Samaniego	Allotment Number	513
5th Code Watershed	Cañada del Oro	4th Code Watershed	Upper Santa Cruz
Allotment Acres	17,658	Capable Acres	10,912
Permitted Number	356 yearlings or equivalent (up to 1,495 AUMs)	Season of Use	11/1-4/30
Utilization Level	45% max. utilization	Elevation (feet)	3,100 – 7,500 ft
Type of Grazing System	4 Pasture Seasonal Grazing		
Pasture Use Constraints			
Major Drainages	Dodge Wash & Carrista Canyon		
Comprehensive Planned Improvements	None		
Allotment Condition	100 % of the allotment has a mid-similarity index. 100% of the soils on the allotment are in satisfactory condition.		
Exclosures (Name and Acres)	None		
Additional Information			

Appendix B: Region 3 Soil Condition Assessment Framework

Technical Guidance for Soil Quality Monitoring in the Southwestern Region, USDA Forest Service

DEFINITIONS.

Bulk Density. The mass of dry soil per unit bulk volume. Soil Science Society of America. 1997. Glossary of soil science terms. p. 14.

Coarse Woody Material. Organic materials on the soil surface such as plant stems, branches and logs with a diameter greater than 7.6 cm (3 inches).

Litter. Organic materials on the soil surface that are at least 1.25 cm (0.5 inches) thickness. This includes needles, leaves and all woody material.

Nutrient Cycling. The ability of the soil to accept, hold and release nutrients.

Soil Condition. An evaluation of soil quality based on an interpretation of factors which affect vital soil functions.

Soil Hydrology. The ability of the soil to absorb, store, and transmit water, both vertically and horizontally. Changes in soil bulk density, soil chemistry, soil structure, soil pores and ground cover can alter soil hydrology.

Soil-loss Tolerance. The maximum rate of soil erosion at which plant productivity can be sustained indefinitely. It is dependent on the rate of soil formation and organic matter balance.

Soil Quality. The capacity of the soil to function within ecosystem boundaries to sustain biological productivity, maintain environmental quality and promote plant and animal health. Doran, John W.; Parkin, Timothy B.. 1994. Defining and assessing soil quality. Defining soil quality for a sustainable environment. Soil Science Society of America, Madison, Wisconsin. Special Publication No. 35. p. 3-21.

Soil Stability. The ability of the soil to resist erosion. This is a function of both slope and inherent soil erodibility.

SOIL QUALITY STANDARDS. Soil quality standards are thresholds that indicate soil impairment. The phrase "soil condition objectives", as used throughout this supplement, is equivalent to "soil quality standards".

1. Soil Condition Evaluation. Management activities create various degrees of soil disturbance but ecologically sustainable land stewardship can minimize adverse impacts on soils. Soil condition objectives provide threshold values that indicate when changes in soil properties would result in significant change or impairment of soil condition.

Soil condition is primarily determined by evaluating surface soil properties. This is the critical area where plant and animal organic matter accumulate, begin to decompose and eventually become incorporated into soil. It is also the zone of maximum biological activity and nutrient release. The physical condition of this zone plays a significant role

in soil stability, nutrient cycling, water infiltration and energy flows. The presence and distribution of the surface soil is critically important to productivity.

Soil condition objectives apply to lands where long-term soil productivity and satisfactory watershed condition are principle objectives. Management activities which may affect soil condition include timber or fuelwood harvesting, grazing, dispersed recreation and management prescribed fires.

While soil condition is an important element in determining general watershed condition, it is not intended to be a stand-alone process for evaluation of site specific conditions such as soil mass movement, stream channel health or sediment yield.

Soil condition is an evaluation of soil quality based on an interpretation of factors which affect three primary soil functions. The primary soil functions evaluated are: soil hydrology, soil stability and nutrient cycling. It is important to realize that these functions are interrelated.

a. Soil Hydrology. This function is assessed by evaluating or observing changes in surface structure, surface pore space, consistence, bulk density, infiltration or penetration resistance using appropriate methods. Increases in bulk density or decreases in porosity results in reduced water infiltration, permeability and plant available moisture.

b. Soil Stability. Erosion is the detachment, transport, and deposition of soil particles by water, wind or gravity. Vascular plants, soil biotic crusts, and litter cover are the greatest deterrent to surface soil erosion. Visual evidence of surface erosion may include rills, gullies, pedestalling, soil deposition, erosion pavement or loss of the surface "A " horizon. Erosion models are also used to predict on-site soil loss.

c. Nutrient Cycling. This function is assessed by evaluating the vegetative community composition, litter, coarse woody material, root distribution and soil biotic crusts. These indicators are directly related to soil organic matter, which is essential in sustaining long-term soil productivity. Soil organic matter provides a carbon and energy source for soil microbes and provides nutrients needed for plant growth. Soil organic matter also provides nutrient storage and capacity for cation and anion exchange.

2. Soil Condition Categories. Ecological land units are assigned a soil condition category which is an indication of the status of soil functions. Soil condition categories reflect soil disturbances resulting from both planned and unplanned events. Current management activities provide opportunities to maintain or improve soil functions that are critical in sustaining soil productivity.

Following is a brief description of each soil condition category:

a. Satisfactory - Indicators signify that soil function is being sustained and soil is functioning properly and normally. The ability of soil to maintain resource values and sustain outputs is high.

b. Impaired - Indicators signify a reduction of soil function. The ability of soil to function properly has been reduced and/or there exists an increased vulnerability to degradation. An impaired category should signal land

managers that there is a need to further investigate the ecosystem to determine causes and degrees of decline in soil functions. Changes in management practices or other preventative actions may be appropriate.

c. Unsatisfactory - Indicators signify that loss of soil function has occurred. Degradation of vital soil functions result in the inability of soil to maintain resource values, sustain outputs, and recover from impacts. Soils rated in the unsatisfactory category are candidates for improved management practices or restoration designed to recover soil functions.

MONITORING METHODS.

Qualitative methods are generally used to make initial evaluations of the effects of management activities on soils. The major objective of soil condition monitoring is to ensure that ecologically sustainable soil management practices are being applied. In most cases, qualitative estimates will be considered sufficient.

Measurements and detailed sampling are used to calibrate visual methods and to conduct investigations where qualitative methods are inadequate or where benchmark sampling is required for comparison purposes. Monitoring may be one-time or periodic, depending on the type or duration of the activity.

Soil Condition Evaluation Techniques.

Soil condition is evaluated by using the Soil Condition Field Evaluation Form and Rating Guide. Indicators of each soil function are assessed in order to place the soil into a soil condition category. Weighting of indicators is site specific and is based on professional experience and judgement of the watershed specialist.

Soil Condition Management Implications.

Soil condition evaluations describe existing conditions. Degradation of soil function may reflect past or current events. Management activities responsible for changes in soil condition should be identified. If necessary, corrective action should be taken to reverse unfavorable changes in soil condition.

A soil condition category of satisfactory indicates that past and current management activities have allowed the soil to function properly and retain its inherent productivity. If changes in management are planned, their effects on soil function should be evaluated.

A soil condition category of impaired indicates that past and/or current management activities have reduced the soil's ability to function properly and normally. Existing management practices need to be evaluated to determine if the current management activity is responsible for the decline in soil function. The effects of management activities on declining soil functions should be evaluated and monitored.

A soil condition category of unsatisfactory indicates that past and/or current management activities have resulted in a loss of soil function. These soils have degraded to the point that, for most ecosystems, rest alone is not likely to allow them to recover their function in a reasonable period of time. Unless intensive restoration projects are implemented, decades or centuries may be required before soil functions are fully restored.

Existing management activities need to be evaluated to determine if the current management activity is contributing to the loss of soil function. In some cases, current management activities may not have caused the loss of soil function, but may be preventing recovery of functions. Management activities that slow or prevent recovery of soil function should be avoided.

Table 1.

SOIL CONDITION FIELD EVALUATION FORM AND SOIL CONDITION RATING GUIDE

Map Symbol	State	County	Forest	District	By	Date
Watershed		Area		7 1/2 Min. Quad	7 1/2 Quad No.	
T.	R.	S.	1/4	1/4	Aerial Photo	Stop Number
GPS File Name		Latitude		Longitude		UTM
Soil Taxon					Phase	
Vegetation Taxon			Climax Class		Climate Class	
Landform		Parent Material		Bedrock		Elevation
Slope Gradient	%	Length	m	Aspect	°	Complexity
Shape		Contour				

SURFACE SOIL DESCRIPTION

Horizon		Texture	Rock	Color	Structure	Consistence	Pores	Roots	Other
Symbol	Depth (cm)	Boundary	U.S.D.A. Texture and % clay	gr st co bd (% Vol)	p/d p/c p/m p/r	gr si sh dr st mo pl	qu si lo	qu si lo	Accessory Properties

CANOPY COVER BY SPECIES

Trees	%	#1/	Shrubs	%	Forbs	%	Forbs	%	Graminoids	%	Graminoids	%
Total			Total				Total				Total	

SURFACE COMPONENTS 2/

OTHER OBSERVATIONS

Components	%	Modeled Soil Loss	T/h/yr	Coarse woody material:	diameter
Graminoids (ba)		Potential:			number
Forbs (ba)		Current:		Bulk density:	g/cc
Shrubs/trees (ba)		Natural:		Infiltration rate:	cm/hr
Litter (>1.25 cm)		Tolerance:		Penetration resistance (depth):	cm
Gravel (.2-2 cm)				Forage production:	lbs/ac/yr
Gravel (2-7.5 cm)		Notes:			
Cobble					
Stone					
Boulder					
Rock outcrop					
Bare soil					
Biotic crust					

1/ Number of regenerating trees (<5" dbh) in plot

2/ Sample area of 375 square meter circular plot

SOIL CONDITION RATING GUIDE

Function	Indicator	CONDITION CATEGORY		
		Satisfactory	Impaired	Unsatisfactory
H Y D R O L O G I C	Surface Structure ¹	Moderate/strong granular or single grained. ..	Sub-angular blocky or weak granular. ..	Massive or platy. ..
	Surface Pore Space ¹	Many/common tubular pores, high vertical continuity. ..	Common/few tubular pores. ..	Few tubular pores, low vertical continuity. ..
	Rupture Resistance ¹	Loose to slightly hard (dry) Loose to friable (moist). ..	----	Very hard to very rigid (dry), Extr. firm to very rigid (moist). ..
	Near Surface Subzones ¹	No surface crusting or subsurface compaction. ..	Water compacted or non-biotic surface crust present. ..	Mechanically compacted. ..
	Bulk Density	Bulk density not increased. ..	Moderate bulk density increases (5-15%). ..	Significant increase in bulk density (>15%). ..
	Infiltration	No decrease in infiltration. ..	Moderate decrease in infiltration. (10-50%). ..	Significant decrease in infiltration (>50%). ..
	Penetration Resistance	No increase in resistance. ..	Moderate increase in resistance (10-50%). ..	Significant increase in resistance (>50%). ..
S T A B I L I T Y	Modeled Soil Loss	Current soil loss \leq tolerance. ..		Current soil loss > tolerance. ..
	Visible Sheet Rill & Gully Erosion	Sheets/rills/gullies not evident. ..	Rills/gullies are small, discontinuous, poorly defined & not connected into any pattern. ..	Rills/gullies actively expanding, well-defined, continuous & connected into a definite pattern. ..
	Pedestaling	No/slight pedestaling of plant, litter and rocks. No evidence of exposed roots. ..	Grasses, forbs and rock fragments are pedestaled. Small, fibrous root strands of forbs & grasses are exposed on the soil surface. ..	Trees and shrubs are pedestaled and may be hummocked. Shallow, lateral roots of trees and shrubs are exposed. ..
	Erosion Pavement ²	None to slight. If erosion pavement exists it is discontinuous or localized. ..	----	Erosion pavement is continuous or exists in interspaces between canopy cover of trees & shrubs. ..
	Soil Deposition	Not unusual or excessive. ..	Soil and/or litter deposition is present. Fine litter may be patterned as small debris accumulations. ..	Soil and/or litter is deposited on the uphill side of logs, brushpiles, etc. Soil may be moving offsite. ..
	Surface ("A") Horizon	"A" horizon is present, well distributed, not fragmented. ..	"A" horizon is present, but not evenly distributed. Changes in physical properties exist. ..	"A" horizon is absent or present in association with prominent plants. Properties are similar to those of the underlying subsoil. ..
N C U T C R L I E N G T	Vegetative Community Composition	Distribution of desirable, perennial plants reflects species by vegetative layer (i.e. trees, shrubs, forbs and graminoids) as identified in the potential plant community. ..	Changes in vegetation composition indicate a shift towards a drier, less productive plant community. There may also be an increase in annual plants, shallow-rooted grasses, taprooted woody perennials or invasive plants. ..	The perennial forb and/or graminoid vegetative layers are absent or sparse. ..
	Litter	Litter is distributed evenly across the soil surface and is associated with all vegetative layers. ..	----	Litter is either absent or is associated only with prominent plants and not evenly distributed across the soil surface. ..
	Coarse Woody Material	Pipos/Quga-----5-10 t/ac. Pipos/Fear2-----7-14 t/ac. Abco/Fear2-----8-16 t/ac. ..	----	Pipos/Quga-----<5 t/ac. Pipos/Fear2-----<7 t/ac. A bco/Fear2-----<8 t/ac. ..
	Root Distribution ¹	Many/common roots in surface horizons. ..	Moderately few roots in surface horizons. ..	Few/very few roots in surface horizons. ..

1/ Categories and/or descriptions defined in USDA Handbook No. 18, Soil Survey Manual, October, 1993.

2/ Certain soils within desert ecosystems inherently contain erosion pavement (desert pavement) surfaces. Desert pavements are not used to indicate soil condition.

SOIL CONDITION RATING GUIDE (Adapted for the Coronado National Forest)

Function	Indicator	CONDITION CATEGORY		
		Satisfactory	Impaired (At Risk)	Unsatisfactory
HYDRO-LOGIC	Surface Structure ¹	Moderate/strong granular or single grained. <input type="checkbox"/>	Sub-angular blocky or weak granular. <input type="checkbox"/>	Massive or platy. <input type="checkbox"/>
	Rupture Resistance ¹	Loose to slightly hard (dry) Loose to friable (moist). <input type="checkbox"/>	----	Very hard to very rigid (dry), Extr. firm to very rigid (moist). <input type="checkbox"/>
	Near Surface Subzones ¹	No surface crusting or subsurface compaction. <input type="checkbox"/>	Water compacted or non-biotic surface crust present. <input type="checkbox"/>	Mechanically compacted. <input type="checkbox"/>
STABILITY	Visible Sheet Rill & Gully Erosion	Sheets/rills/gullies not evident. <input type="checkbox"/>	Rills/gullies are small, discontinuous, poorly defined & not connected into any pattern. <input type="checkbox"/>	Rills/gullies actively expanding, well-defined, continuous & connected into a definite pattern. <input type="checkbox"/>
	Pedestaling	No/slight pedestaling of plant, litter and rocks. No evidence of exposed roots. <input type="checkbox"/>	Grasses, forbs and rock fragments are pedestaled. Small, fibrous root strands of forbs & grasses are exposed on the soil surface. <input type="checkbox"/>	Trees and shrubs are pedestaled and may be hummocked. Shallow, lateral roots of trees and shrubs are exposed. <input type="checkbox"/>
	Erosion Pavement ²	None to slight. If erosion pavement exists it is discontinuous or localized. <input type="checkbox"/>	-----	Erosion pavement is continuous or exists in interspaces between canopy cover of trees & shrubs. <input type="checkbox"/>
	Soil Deposition	Not unusual or excessive. <input type="checkbox"/>	Soil and/or litter deposition is present. Fine litter may be patterned as small debris accumulations. <input type="checkbox"/>	Soil and/or litter is deposited on the uphill side of logs, brushpiles, etc. Soil may be moving offsite. <input type="checkbox"/>
	Surface ("A") Horizon	"A" horizon is present, well distributed, not fragmented. <input type="checkbox"/>	"A" horizon is present, but not evenly distributed. Changes in physical properties exist. <input type="checkbox"/>	"A" horizon is absent or present in association with prominent plants. Properties are similar to those of the underlying subsoil. <input type="checkbox"/>
NUTRIENT CYCLING	Vegetative Community Composition	Distribution of desirable, perennial plants reflects species by vegetative layer (i.e. trees, shrubs, forbs and graminoids) as identified in the potential plant community. <input type="checkbox"/>	Changes in vegetation composition indicate a shift towards a drier, less productive plant community. There may also be an increase in annual plants, shallow-rooted grasses, taprooted woody perennials or invasive plants. <input type="checkbox"/>	The perennial forb and/or graminoid vegetative layers are absent or sparse. <input type="checkbox"/>
	Litter	Litter is distributed evenly across the soil surface and is associated with all vegetative layers. <input type="checkbox"/>	----	Litter is either absent or is associated only with prominent plants and not evenly distributed across the soil surface. <input type="checkbox"/>
	Root Distribution ¹	Many/common roots in surface horizons. <input type="checkbox"/>	Moderately few roots in surface horizons <input type="checkbox"/>	Few/very few roots in surface horizons <input type="checkbox"/>

1/ Categories and/or descriptions defined in USDA Handbook No. 18, Soil Survey Manual, October, 1993.

2/ Certain soils within desert ecosystems inherently contain erosion pavement (desert pavement) surfaces. Desert pavements are not used to indicate soil condition.

District:		EMA:		County:	
By:		Date:		Watershed:	
Allotment:		Pasture:			
General location description:					
T:	R:	Sec:	¼ (160 acres)	¼ (40 acres)	¼ (10 acres)
UTM or Lat/Long:				Elevation:	Corrected: Y N
Slope Gradient:		0-15%	15-40%	>40%	Length: ft or m
Vegetation monitoring data:		Aspect:			
Photographs:					
Notes:					

Appendix C: Stockpond Management Plan

Stockponds, or earthen tanks, stocktanks, or pit tanks, are depressions and embankments designed to capture stream or periodic runoff of surface water. They can vary in size from a few thousand square feet to over an acre. Most on the CNF contain less than a 0.5 acre of surface water. Depth can also vary considerably, ranging from as little as two feet deep to well over 10 feet. Because they primarily capture surface flow, the hydroperiod of stockponds can be variable and is dependent on annual precipitation levels and timing.

As the name suggests, stockponds were developed as range improvements to provide water for livestock and allow for better distribution of grazing pressure across the landscape. Current estimates suggest there are approximately 1,000 stockponds on the CNF. Because the majority of historical aquatic habitat on the CNF altered and degraded post settlement (Hendrickson and Minckley 1985), stockponds have become important habitat for many native aquatic species including several Threatened and Endangered species (e.g., Sonora tiger salamander, Chiricahua leopard frog, northern Mexican gartersnake) and Regional Forester's Sensitive Species (e.g., lowland leopard frog; Arizona treefrog). However, stockponds can also provide habitat for harmful nonnative species. American bullfrogs, crayfish, and spiny-rayed fishes now occur in many of the stockponds on the CNF and their populations pose a major threat to native wildlife and if unmanaged, may prevent or hinder the recovery of threatened or endangered species. Therefore, serious consideration should be given to the management of stockponds and their role in the persistence, expansion, and control of harmful nonnative species.

This management plan describes actions needed for the continued existence of stockponds as range improvements, important habitat for native aquatic species, and water sources to aid in fire suppression activities. This plan does not outline an overall strategy for how stockponds will be used in species recovery. Recovery actions including habitat improvement activities and species introductions will be addressed during planning meetings between the relevant land management agencies and partners. Prior to any action involving a stockpond, the Forest Service shall ensure that the activities comply with the management of livestock operations and the management of listed species in that area.

The six major actions that involve stockponds on the CNF are:

1. Increasing the hydroperiod
2. Draining
3. Reducing the hydroperiod
4. Limiting livestock access
5. Native species introduction
6. Drafting water for fire suppression activities

Increasing the Hydroperiod

This is the primary management action for stockponds on the CNF for both rangeland management and wildlife habitat improvement; with rangeland management being the main purpose. The majority of stockponds are designed to capture surface runoff, thus, they periodically fill with sediment and become ephemeral and/or cause livestock to get trapped in sediment. Managers can utilize heavy equipment (bulldozer, backhoe, trackhoe, etc.) to remove accumulated sediment and thereby increase the amount

of water collected and lengthen the hydroperiod. Dredging stockponds almost exclusively occurs when little or no surface water remains, otherwise managers risk trapping heavy equipment in wet sediment.

Increasing the hydroperiod of a stockpond can also be achieved by installing a water impermeable layer within the basin of the stockpond. The impermeable layer can be locally-harvested clay, imported clay (e.g., bentonite), or artificial pond liners. These methods also typically use heavy equipment to form a basin within the stockpond before installing the water impermeable layer.

Guidelines:

1. Ensure that activities are consistent with livestock operations and the management of listed species in that area.
2. Prior to increasing the hydroperiod of a stockpond, the site should be evaluated for its potential to expand the population of nonnative species. If expansion of nonnative species is likely to occur, actions should be taken to address those threats.
3. Prior to the use of heavy equipment, a qualified and permitted surveyor shall determine presence/absence of Threatened and Endangered species according to established protocol.
4. Sites occupied by Threatened or Endangered species shall be avoided, if possible. If avoidance is not possible, the Forest will coordinate with the US Fish and Wildlife Service and the Arizona Game and Fish Department to temporarily house listed species for repatriation after dredging/lining activities.
5. Oil, fuel, and other hazardous fluids shall be stored away from stockponds in secure containers with secondary containment. Any leaks shall be cleaned up and containers properly disposed of per Environmental Health and Safety guidelines.
6. All personnel working at the site shall follow the Field Work Disease Prevention Protocol outlined in the Chiricahua leopard frog Recovery Plan.

Draining

Draining usually occurs prior to the operation of heavy equipment in the stockpond to increase the hydroperiod (see above); however, draining a stockpond may occur as a separate action related to the control and removal of nonnative invasive species. If draining is required prior to the use of heavy equipment, see the guidelines for Increasing the Hydroperiod. If partial or complete draining is required for the control of nonnative invasive species, the following guidelines should be followed:

Guidelines:

1. Ensure that the activities are consistent with livestock operations and the management of listed species in that area.
2. Immediately prior to draining, a qualified and permitted surveyor shall determine the likelihood of occupancy for Threatened and Endangered species according to established protocol (if applicable). If the site is occupied by one, or several listed species, the Forest will coordinate with the US Fish and Wildlife Service and the Arizona Game and Fish Department to temporarily house listed species for repatriation after draining activities.
3. Oil, fuel, and other hazardous fluids shall be stored away from stockponds in secure containers with secondary containment. Any leaks shall be cleaned up and containers properly disposed of per Environmental Health and Safety guidelines.

4. All personnel working at the site shall follow the Field Work Disease Prevention Protocol outlined in the Chiricahua leopard frog Recovery Plan.

Reducing the Hydroperiod

Reducing the hydroperiod is a very uncommon action in the management of stockponds, but it may become more common as stockponds are replaced by livestock drinkers supported by wells and as the Forest continues its management against harmful nonnative species. Reducing the hydroperiod of certain stockponds could be an effective management tool to control nonnative species that require permanent water to breed, while maintaining habitat for native aquatic species that use ephemeral waters, such as spadefoots (Pelobatidae) and the Arizona treefrog (*Hyla wrightorum*).

Guidelines:

1. Prior to permanently reducing the hydroperiod of a stockpond, ensure that the activities are consistent with livestock operations and the management of listed species in that area.
2. If heavy equipment is used to reduce the height of the berm, make sure that oil, fuel, and other hazardous fluids shall be stored away from stockponds in secure containers with secondary containment. Any leaks shall be cleaned up and containers properly disposed of per Environmental Health and Safety guidelines.
3. All personnel working at the site shall follow the Field Work Disease Prevention Protocol outlined in the Chiricahua leopard frog Recovery Plan.

Limit Livestock Access

Limiting livestock access to stockponds is often used to improve the amounts of aquatic and bankline vegetation and/or reduce the amount of trampling and/or ingestion of listed species by livestock. Limiting access does not necessarily require the total spatial or temporal exclusion of livestock from a stockpond. Depending on the habitat goals, limited access can be achieved by complete or partial fencing or other livestock barriers such as the construction of twin-tank systems where one tank is completely fenced, the development of an alternate water source, an alteration of the grazing rotation system, or a combination of all of the above methods.

When deciding which method to use to limit livestock access, it is important to determine the habitat goals. Although aquatic plants generally support healthy pond ecosystems, extremely dense submergent plant growth may facilitate predatory aquatic insect populations and reduce the abundance of small native fishes, notably the Gila Topminnow (*Poeciliopsis occidentalis*). Similarly, cattails (*Typha sp.*) and bulrushes (e.g., *Scirpes americanus*) can rapidly proliferate and eliminate sunlight penetration in the water column, reducing food supplies for tadpoles and fishes. Livestock can be a management tool to help regulate vegetation and help produce a varied structure and composition within the stockpond.

Native Species Introduction

According to the FS Manual, Chapter 2670, and section 7(a)(1) of the Endangered Species Act, the Forest Service is to manage National Forest System habitats and activities for threatened and endangered species to achieve recovery objectives so that special protection measures provided under the Endangered Species Act are no longer necessary. In addition, top priority is given to conserve and

recover endangered, threatened, and proposed species through relevant National Forest System activities and programs.

The effective management of stockponds is crucial to the recovery effort of many listed species on the CNF. Until populations are robust enough to be self-sustaining and expand on their own, species introductions and augmentations are an important recovery action for many of the listed species that utilize stockpond habitat. Because many of the habitat requirements of listed species are compatible with the other uses of stockponds (livestock grazing, fire suppression), the expansion of listed species through introductions could occur with a relatively small amount of change to management activities.

Draft water for fire suppression activities

Occasionally, water is drafted from stockponds to aid in fire suppression. The most common method is helicopters equipped with buckets or snorkels to collect water from a waterbody and then discharge it on an active fire line. Engines can also draft water out of a pond and store it in their internal tanks to use for fire suppression. Overall, water should not be drafted from stockponds if they are occupied by listed species; however, sometimes in emergency situations, like wildfires, occupied habitat may be the best option available.

Guidelines:

1. If aircraft or engines collect water, it is important to track where it was collected, the number of times water was collected, the amount of water collected, and where it is being deposited on the fire.
2. Avoid water drops on other aquatic habitats whether occupied or not to prevent movement of wildlife and disease between sites.
3. Avoid using the same equipment to collect water from multiple sources without decontaminating the equipment per the Field Work Disease Prevention Protocol outlined in the Chiricahua leopard frog Recovery Plan.
4. Avoid over collection of water that will lead to the waterbody drying out.
5. Do not refill a stockpond with water from another source (stockpond, lake, etc.) without approval from a qualified biologist.
6. Make sure that oil, fuel, and other hazardous fluids shall be stored away from stockponds in secure containers in secondary containment. Any leaks shall be cleaned up and containers properly disposed of per Environmental Health and Safety guidelines.
7. All personnel working at the site shall follow the Field Work Disease Prevention Protocol outlined in the Chiricahua leopard frog Recovery Plan.

Appendix D: Informal Consultation Requests

The purpose of the Framework for Streamlining Consultation on Livestock Grazing Activities (USFS 2015) is to provide a framework for streamlining informal consultation under Section 7(a)(2) of the Endangered Species Act of 1973 [87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.; ESA] for livestock grazing activities. That document contains guidance in the form of criteria for use in making ESA Section 7(a)(2) effects determinations for selected threatened, endangered, and proposed (TEP) species and/or proposed or designated critical habitat for livestock grazing activities for each grazing allotment in the U.S. Forest Service's Southwestern Region (USFS). The guidance found in that document does not constitute an amendment to Land and Resource Management Plans (USFS 2018) nor does it require a modification of grazing permits. The criteria described was used by the CNF to assist in preparing grazing consultation forms for consistency for species where the determination of "may affect, but is not likely to adversely affect" was fairly straightforward and fit the guidance contained in the streamlining document.

Plants

Canelo Hills Ladies'-Tresses (*Spiranthes delitescens*)

Canelo Hills ladies' tresses (CHLT) is known from five sites in cienega and streamside habitats within the San Pedro River watershed in Santa Cruz and Cochise counties, Arizona. There are only four known sites within the vicinity of the action area and they all occur on private land (HDMS 2015).

This species is presumed to be perennial, but mature plants rarely flower in consecutive years and in some years, have no visible above ground structures. The cryptic nature of this plant make surveys and prediction of plant numbers difficult. The orchid occurs in habitats where scouring floods are unlikely. Soils supporting the populations are finely grained, highly organic, and seasonally or perennially saturated. Springs are the primary water source, but a creek near one locality contributes near-surface groundwater.

Primary potential threats to this species include a number of activities that result in wetland habitat degradation such as groundwater overdrafts, surface water diversions, impoundments, channelization, improper livestock grazing, agriculture, mining, invasive exotic species, and recreation. This orchid is also potentially threatened by collection. The limited distribution and low numbers of individuals of this species leave it vulnerable to extinction from stochastic events.

In the early 1990s, The Nature Conservancy (TNC) suspected that an accumulation of dried vegetation in orchid habitat at the Canelo Hills Cienega was inhibiting emergence and sexual reproduction. TNC staff set up plots and experimentally burned them in 1991, 1993, and 1996 based on the McClaran and Sundt (1992) study and anecdotal observations indicating a population decline. Monitoring between 1994 and 1999 showed orchid declines on unburned plots while numbers on the burned plots increased independently of precipitation. Their limited results suggest that cool season burns increase the number of Canelo Hills ladies'-tresses while warm season burns decrease the population size. Nonetheless, further studies are necessary to confirm the suitability of cool season prescribed fires.

Effects Analysis

The proposed action **may affect but is not likely to adversely affect**, the Canelo Hills ladies' tresses.

The rationale for these determinations includes:

- Currently, grazing does not occur in any occupied or potentially occupied habitat for CHLT on the CNF.
- The CNF has committed to general conservation measures to address potential effects of activities related to the proposed action.
- Therefore, effects to Canelo Hills ladies' tresses are expected to be insignificant and discountable.

Pima Pineapple Cactus (*Coryphantha scheeri* var. *robustispina*)

The species is restricted to Pima and Santa Cruz counties and probably northern Sonora, Mexico. Several small populations occur on the CNF. The range of the species extends east from the Baboquivari Mountains, 45 miles to the western foothills of the Santa Rita Mountains; and extends south from Tucson, Arizona, 50 miles to Sonora, Mexico, inhabiting lower Sonoran desert scrubland, desert-grassland, or the ecotone between the two.

It is difficult to address abundance and population trends for this species due its very general habitat requirements (USFWS 2007). The Pima pineapple cactus (PPC) occurs at low densities widely scattered, sometimes in clumps, across the valley bottoms primarily on Quaternary and Cenozoic geologic formations. The species can be difficult to detect, especially in dense grass cover. For this reason, systematic surveys are expensive and have not been conducted for much of its range. Therefore, location information has been gathered opportunistically, either through small systematic surveys usually associated with specific development projects, or larger surveys that are typically only conducted in areas that seem highly suited for the species.

There are approximately 100 known PPC on lands managed by the CNF. The majority of the cacti occur on the Sierra Vista RD (Alisos allotment, Huachuca EMA), but a few individuals are on the Nogales RD (Sopori and Proctor allotments, Tumacacori EMA). Most of these plants have been monitored sporadically for the last 5 to 10 years. The predominant land use within the PPC habitat on the Forest is grazing. Lehmann's lovegrass dominates the herbaceous community. Two small exclosures on the Alisos grazing allotment (Sierra Vista RD) were constructed to protect the PPC and evaluate the effects of livestock grazing.

Effects Analysis

The rationale for this determination for the species is in italics below each criteria:

May Affect, Not Likely to Adversely Affect (must meet all of the criteria)

1. Livestock grazing in the action area is managed in such a way that livestock herbivory to individual listed plants is not expected.

Herbivory to individual PPC has not been observed on the CNF (J. Heitholt personal comm. 2017).

2. Livestock grazing in the action area is managed in such a way that trampling of individual listed plants is not expected.

The majority of known PPC on the CNF are excluded from livestock grazing, and other known locations are not near water sources or heavily trafficked areas; therefore, effects to PPC due to grazing are expected to be discountable.

3. The suitability and sustainability of listed plant habitat will not be adversely altered by livestock grazing, in the action area.

While overgrazing has many negative effects to PPC habitat, low to moderate grazing may aid PPC through the creation of open areas free of competition from non-native grasses and reduced fuels (USFWS 2017); therefore, effects to PPC due to grazing are expected to be insignificant.

4. Listed plants will not be physically damaged by livestock management activities.

Range developments such as water developments are assessed and evaluated for potential impacts to species prior to construction approval/implementation. Site specific surveys will be conducted (see mitigation above) and any perceived effects to individual PPC will cause a proposal to be redesigned, relocated, and/or rejected (see CM-14). Therefore, effects to PPC are expected to be insignificant and discountable.

Fish

Gila Trout (*Oncorhynchus gilae*)

Gila trout are endemic to mountain streams in the Gila, San Francisco, Agua Fria, and Verde River drainages in New Mexico and Arizona (USFWS 2003). The species was listed as Endangered in 1996 and relisted as Threatened in 2006 (USFWS 2006). Gila trout are found in moderate- to high-gradient perennial mountain streams above 5,400 feet elevation (USFWS 2003). Streams typically flow through narrow, steep-sided canyons and valleys. The species requires water temperatures below 25°C (77°F), clean gravel substrates for spawning, continuous stream flow of sufficient quantity to maintain adequate water depth and temperature, and pool habitat that provides refuge during low flow conditions and periods of thermal extremes. Abundant invertebrate prey, cover, and water free from contaminants are also required. Cover typically consists of undercut banks, large woody debris, deep pools, exposed root masses of trees at water's edge, and overhanging vegetation. These streams are often associated with coniferous and mixed woodland, montane coniferous forest, and subalpine coniferous forest.

The Pinaleño EMA is currently the only EMA on the CNF known to support Gila trout. Supplemental stocking of this species has occurred in the Ash Creek and Frye Creek 6th code watersheds as part of recovery efforts by USFWS. These streams are tributaries of the Gila River and are considered historical habitat for Gila trout. Both streams were identified as potential recovery streams in the recovery plan (USFWS 2003).

In 2017, the Frye Fire affected all known habitat for Gila trout in the Pinaleño EMA. Immediately after the Frye Fire was contained, actions were taken by USFS, USFWS and AGFD to salvage Gila trout; fish that were salvaged are currently under the care of NMDGF at state hatcheries. The subsequent monsoonal flooding considerably altered Gila trout habitat through sediment and ash flows affecting

pool structure, temperature regimes and water chemistry. A survey conducted by AGFD in Frye, Marijilda, and Ash Creeks following post-Frye Fire flooding resulted in no Gila trout detections (AGFD 2018). Gila trout may be repatriated to previously occupied areas at some time in the future when habitat is available.

Effects of the Proposed Action

Within the areas above 6,500 feet in the Pinaleño EMA, areas previously occupied by Gila trout, are closed to grazing through the Forest Plan (USFS 2011a). There is some overlap between allotments (i.e., Marijilda, White Streaks, and Hawk Hollow) and the lower portions of the Gila trout potential elevational distribution from 5,400 ft to 6,500 ft. However, these areas of the allotments are steep, rugged, with little opportunity for access or forage utilization by cattle (S. Lundt, USFS, pers. Comm., 2018). Drainages are steeply channeled and access to the stream corridor is naturally restricted by large cliff areas, natural waterfalls and boulders. Cattle have not been observed in this area of the allotment. There is little likelihood that cattle would be able to access or effect streams that could contain Gila trout in the future. Direct effects to Gila trout, if they are present in the future, will be avoided by the exclusion of livestock to the natural barriers that limit any grazing to lower elevations or to the broader mountain slope uplands. The forage potential and cattle utilization of the high elevations of the allotment is very limited, and any indirect effects occurring within the action area which result from upland livestock grazing are likely to be insignificant and discountable.

Cumulative Effects

Federal agencies manage the lands that contain potential Gila trout sites within the action area. Activities that could affect Gila trout on federal land are not considered in this section because they require separate consultation pursuant to section 7 of the Act. Examples of these kinds of actions include management of Forest Service grazing permits, travel management, and fire management and forestry activities. Management activities (such as construction or upland watershed changes) that affect water quality, water quantity, and riparian conditions also may contribute to the species effects. Current distribution of Gila trout in headwater streams makes them highly vulnerable to catastrophic events such as wildfire or floods that can eliminate entire populations.

Determination of Effects

The rationale for this determination for the species is in italics below each criteria:

May Affect, Not Likely to Adversely Affect (must meet all of the criteria)

1. Evidence suggests that there is reason to believe listed aquatic species are reasonably certain to occur in the action area.

The Frye Fire affected all known habitat for Gila trout in the Pinaleño EMA, and a survey conducted by AGFD in Frye, Marijilda, and Ash Creeks following post-Frye Fire flooding resulted in no Gila trout detections. Prior to post-fire flooding, however, Gila trout were salvaged and are currently under the care of NMDGF at state hatcheries and may be repatriated to previously occupied areas at some time in the future when habitat is available.

2. Direct effects to listed fish will be avoided by yearlong exclusion of livestock from occupied TEP species habitats in the action area.

Direct effects to Gila trout will be avoided by yearlong exclusion of livestock in the portions of creeks above 5,400 feet due to natural barriers in the terrain at the lower elevational range and the prohibition of cattle grazing above 6,500 feet. Therefore, effects to Gila trout are expected to be insignificant and discountable.

3. Indirect effects to listed fish occurring within the action area which result from upland livestock grazing are determined to be insignificant or discountable.

Although there is some overlap between three allotments and the lower portions of the Gila trout potential elevational distribution, these areas of the allotments are steep, rugged, with little opportunity for access or forage utilization by cattle. Drainages are steeply channeled and access to the stream corridor is naturally restricted by large cliff areas, natural waterfalls and boulders, and as result cattle have not been observed in these areas. Further, the forage potential and cattle utilization of the high elevations of the allotment is very limited. In addition, the CNF has committed to general conservation measures to address potential effects of activities related to the proposed action. Therefore, any indirect effects occurring within the action area which result from upland livestock grazing are likely to be insignificant and discountable.

Gila Chub (*Gila intermedia*)

Gila chub is a member of the roundtail chub (*Gila robusta*) complex that also includes headwater chub (*G. nigra*). The species was listed as endangered with critical habitat on November 11, 2005 (USFWS 2005, 67 FR 51948). The final rule cites collection records, historical habitat data, the 1996 AGFD Gila chub status review (Weedman et al. 1996), and USFWS information documenting currently occupied habitat to conclude that Gila chub has been eliminated from 85-90% of formerly occupied habitat. It was also estimated that 90% of the currently occupied habitat is degraded due to the presence of non-native species and land management actions. Due to fragmented and often small population sizes, extant populations are susceptible to environmental conditions such as drought, flood events, and wildfire. Primary threats to Gila chub include predation by and competition with non-native organisms; secondary threats are habitat alteration, destruction, and fragmentation.

Historically, Gila chub were recorded from nearly 50 rivers, streams and spring-fed tributaries throughout the Gila River basin in southwestern New Mexico, central and southeastern Arizona, and northern Sonora, Mexico Gila chub now occupies an estimated 10-15% of its historical range (Weedman et al. 1996, USFWS 2005). The Gila chub currently occurs in the Agua Fria River, the Verde River, Santa Cruz, San Pedro, and Upper Gila subbasins.

On the CNF, six populations of Gila chub are present in two EMAs: within the Santa Catalina EMA they occur in Bear Creek, Romero Creek, and Sabino Creek, and within the Huachuca EMA populations in O'Donnell Creek, Post Canyon, and Turkey Creek are located on private land in-holdings within Forest Service System lands. The Gila chub that occur on private inholdings within the boundary of the CNF are upstream of CNF managed lands in Turkey and O'Donnell Creeks. The downstream portion of O'Donnell Creek that occurs on the Post Canyon Allotment is within an enclosure that keeps livestock from

accessing the creek and is inundated occasionally with sufficient rainfall. Much of the year the stretch is dry. The Post Canyon Allotment is in mid- to high similarity index. Ecological Conditions are static or improving across the allotment. Allotment is meeting forest plan standards for range/ecological condition. Soil conditions are 100% satisfactory.

In 2005, all Gila chub populations on the Forest were considered unstable and threatened (i.e., the species is rare, has limited distribution, predatory or competitive nonnatives are present, or the habitat is modified or threatened in these three streams) (USFWS 2005). During 2005, Gila chub were repatriated in Sabino Creek and introduced to Romero and Bear Creeks within the Santa Catalina EMA. Additionally, CNF personnel assisted with introductions on private property in the Canelo Hills within the Huachuca EMA. During 2008, emergency flood repairs to Sabino Canyon resulted in short-term effects to habitat, but appear to have resulted in additional stability for habitats over the long term. Aquatic surveys conducted in 2014 by the University of Arizona and AGFD confirmed the stability of the Gila chub population in Sabino Creek, as well as the absence of nonnative species (AGFD 2014). Critical habitat for Gila chub is designated for approximately 160.3 miles of stream reaches in Arizona and New Mexico that includes cienegas, headwaters, spring-fed streams, perennial streams, and spring-fed ponds. Critical habitat includes the area of bankfull width plus 300 feet on either side of the banks. The bankfull width is the width of the stream or river at bankfull discharge (i.e., the flow at which water begins to leave the channel and move into the floodplain) (Rosgen 1996, USFWS 2005). Critical habitat is organized into seven areas or river units (USFWS 2005).

Of those areas of CH, three (approximately 13.9 stream miles) are on lands managed by the CNF: Sabino Creek (6.9 miles of creek extending from the southern boundary of the CNF upstream to its confluence with the West Fork of Sabino Canyon is within the Santa Catalina EMA.) CH along O'Donnell Creek is in the Huachuca EMA (6.2 miles of creek extending from its confluence with Turkey Creek upstream to the confluences of Western, Middle, and Pauline Canyons.) CH along Turkey Creek includes 3.9 miles extending from its confluence with O'Donnell Canyon upstream to where Turkey Creek crosses Arizona Highway 83.

There are seven PCEs of critical habitat, which include those habitat features required for the physiological, behavioral, and ecological needs of the species:

PCE 1: Perennial pools, areas of higher velocity between pools, and areas of shallow water among plants or eddies all found in headwaters, springs, and cienegas, generally of smaller tributaries;

PCE 2: Water temperatures for spawning ranging from 63°F to 75 °F, and seasonally appropriate temperatures for all life stages (varying from about 50°F to 86 °F);

PCE 3: Water quality with reduced levels of contaminants, including excessive levels of sediments adverse to Gila chub health, and adequate levels of pH (e.g. ranging from 6.5 to 9.5), dissolved oxygen (i.e., ranging from 3.0 ppm to 10.0 ppm) and conductivity (i.e., 100 mmhos to 1,000 mmhos);

PCE 4: Prey base consisting of invertebrates (i.e., aquatic and terrestrial insects) and aquatic plants (i.e., diatoms and filamentous green algae);

PCE 5: Sufficient cover consisting of downed logs in the water channel, submerged aquatic vegetation, large rocks and boulders with overhangs, a high degree of stream bank stability, and a healthy, intact riparian vegetation community;

PCE 6: Habitat devoid of non-native aquatic species detrimental to Gila chub or habitat in which detrimental non-native species are kept at a level that allows Gila chub to continue to survive and reproduce; and

PCE 7: Streams that maintain a natural flow pattern including periodic flooding.

Effects of the Proposed Action

Livestock grazing has the potential to impact the Gila chub or their habitat, often through destruction or removal of riparian vegetation as well as trampling of streambanks. Vegetation removal can affect aquatic habitat by increasing water temperatures through removal of shade whereas trampling can change important structural components such as overhanging banks, run, riffle, and pool habitats.

No grazing occurs in occupied Gila chub CH on the CNF within the Santa Catalina EMA. Sabino, Bear, and Romero canyons and their watersheds are not within grazing allotments. Within the Huachuca EMA all of the Gila Chub designated Critical Habitat are located within exclosures or inactive allotments (Research Ranch portion). The proposed action does not occur within Gila chub CH on the Sierra Vista Ranger District. The Adjacent O'Donnell Canyon allotment is in mid- to high similarity index with static or improving Ecological Conditions according to the summary tables in the appendix. The downstream segment of this creek is within a fenced enclosure in the Post Canyon Allotment designed to keep livestock out of the creek. Post Canyon allotment where the excluded CH occurs is in mid- to high similarity index with static or improving Ecological Conditions.

Cumulative Effects

Federal agencies manage the majority of lands within the known Gila chub locations within the action area. Activities that could affect both species on federal land are not considered in this section because they require separate consultation pursuant to section 7 of the Act. Examples of these kinds of actions include management of Forest Service grazing permits, fuels reduction activities, travel management, and mineral activities.

Activities in the vicinity of the action area that are reasonably certain to occur in habitat for Gila chub but are not subject to section 7 analysis include illegal activities and actions on private lands. Examples of illegal activities that may affect topminnow include inappropriate use of off-highway vehicles, and illegal woodcutting. Illegal activities are difficult to predict and are assumed to occur indefinitely and uniformly throughout the vicinity of the action area. To date, illegal activities are not known to be a significant threat to populations of Gila chub within the action area.

Activities occurring on private lands may include residential development, farming/ranching, road construction and maintenance, and mineral exploration. These activities could potentially affect Gila chub through habitat destruction and introduction of nonnative invasive species.

Determination of Effects

The rationale for this determination for the species is in italics below each criteria:

May Affect, Not Likely to Adversely Affect (must meet all of the criteria) Gila chub and its designated critical habitat:

1. Evidence suggests that there is reason to believe listed aquatic species are reasonably certain to occur in the action area.

Gila chub occur within the Santa Catalina and Huachuca EMAs.

2. Direct effects to listed fish will be avoided by yearlong exclusion of livestock from occupied TEP species habitats in the action area.

No grazing occurs in occupied Gila chub habitat in the Santa Catalina EMA. Sabino, Bear, and Romero Canyons and their watersheds are not within grazing allotments. Livestock are excluded from occupied Gila Chub habitat within the Huachuca EMA. Therefore, effects to Gila chub are expected to be insignificant and discountable.

3. Indirect effects to listed fish occurring within the action area which result from upland livestock grazing are determined to be insignificant or discountable as measured through quantitative or qualitative measures such as watershed health and condition, use levels, or sedimentation in critical habitat.

The Post Canyon Allotment is in mid- to high similarity index. Ecological Conditions are static or improving across the allotment. This allotment is meeting forest plan standards for range/ecological condition, and soil conditions are 100% satisfactory. Therefore, any indirect effects occurring within the action area which result from upland livestock grazing are likely to be insignificant and discountable.

The rationale for this determination for the Gila chub DCH includes:

1. Direct effects to primary constituent elements of critical habitat will be avoided by yearlong exclusion of livestock from critical habitat.

No grazing occurs in occupied Gila chub critical habitat in the Santa Catalina EMA. All Gila chub critical habitat is located within exclosures or inactive allotments within the Huachuca EMA.

2. Indirect effects to primary constituent elements of critical habitat which result from upland grazing are determined to be insignificant or discountable as measured through quantitative or qualitative measures such as watershed health and condition, use levels, or sedimentation in critical habitat.

The Post Canyon Allotment is in mid- to high similarity index. Ecological Conditions are static or improving across the allotment. This allotment is meeting forest plan standards for range/ecological condition, and soil conditions are 100% satisfactory. Therefore, effects to Gila chub critical habitat are expected to be insignificant and discountable.

Birds

Mexican spotted owl (*Strix occidentalis lucida*)

The CNF manages 186 allotments with 177 active grazing permits across five districts and 12 EMAs. There are 109 Mexican spotted owl (MSO) Protected Activity Centers (PACs) (or portions of MSO PACs) delineated on the CNF of which 78 are completely or partially within 53 active grazing allotments totaling approximately 40,132 acres. Surveys within the last four years have identified additional areas that may be appropriate for PAC delineation, and the CNF is working with the FWS MSO lead to delineate new PACs. There are approximately 623,005 acres of MSO designated critical habitat (DCH) within active grazing allotments on the CNF.

Threats to MSO include stand-replacing fires, improper livestock grazing (use levels and seasons), land development of facilities or structures and roads (including road maintenance) and recreation activities (often associated with motor vehicles such as ATVs).

Determination of Effects

The rationale for this determination for the species is in italics below each criteria:

May Affect, Not Likely to Adversely Affect (must meet all criteria) MSO and MSO DCH.

1. In the action area, livestock grazing or livestock management activities will occur within PACs, but no human disturbance or construction actions associated with the livestock grazing will occur in PACs during the breeding season (exceptions may occur where recent surveys indicate non-breeding or infer absence).

No construction activities associated within active grazing allotments occur during MSO breeding season in PACs. All of these activities are authorized in the Annual Operating Instructions (AOIs) for each allotment. The AOIs provide specifications and site specific detail for these activities including timing of work to be completed. Therefore, effects to MSO are expected to be insignificant and discountable.

2. Livestock grazing and livestock management activities within PACs in the action area will be managed for levels that maintain or enhance prey availability, maintain potential for beneficial surface fires while inhibiting the potential for destructive stand-replacing fire, and to promote natural and healthy riparian, meadow, and upland plant communities including their functional processes (see guidelines for assessing and monitoring in 2012 recovery plan, first revision).

Light to moderate grazing intensity will maintain/enhance prey availability, maintain potential for beneficial surface fires while inhibiting the potential for destructive stand-replacing fire, and promote natural and healthy riparian, meadow, and upland plant communities including their functional processes. The proposed action will not significantly alter key habitat components for MSOs or their prey base. In addition, the CNF has committed to general conservation measures to address potential effects of activities related to the proposed action. Therefore, effects to MSO are expected to be insignificant and discountable.

3. Within protected and restricted habitat as described in the species' 1995 recovery plan, or within protected and recovery habitat as described within the species' 2012 recovery plan, first

revision, forage utilization is maintained at conservative levels, i.e., light to moderate grazing intensity within owl habitats described above (see definitions and grazing guidelines on pages 289-291 in the 2012 recovery plan, first revision).

Forage utilization is based on site-specific resource conditions and management objectives, but in general is managed at a level corresponding to light to moderate intensity (15-45% of current year's growth). In addition, the CNF has committed to general conservation measures to address potential effects of activities related to the proposed action. Therefore, effects to MSO are expected to be insignificant and discountable.

The rationale for this determination for the MSO DCH includes:

1. Livestock grazing and livestock management activities within designated critical habitat is managed for levels that provide a wide range of tree and plant species, including hardwoods, adequate levels of residual plant cover to maintain fruits, seeds, and allow plant regeneration, the woody and herbaceous vegetation necessary for cover for rodent prey species, the residual biomass that will support prescribed natural and ignited fires that would reduce the risk of high-severity, stand-replacing wildfire in the forest, and regeneration of riparian trees.

Light to moderate grazing intensity will maintain/enhance prey availability, maintain potential for beneficial surface fires while inhibiting the potential for destructive stand-replacing fire, and promote natural and healthy riparian, meadow, and upland plant communities including their functional processes. The proposed action will not significantly alter key habitat components for MSOs or their prey base. In addition, the CNF has committed to general conservation measures to address potential effects of activities related to the proposed action. Therefore, effects to MSO DCH are expected to be insignificant and discountable.

2. Within protected and recovery habitat (2012 recovery plan, first revision), forage utilization will be maintained at conservative levels (i.e., light to moderate grazing intensity within owl habitat).

Forage utilization is based on site-specific resource conditions and management objectives, but in general is managed at a level corresponding to light to moderate intensity (15-45% of current year's growth). In addition, the CNF has committed to general conservation measures to address potential effects of activities related to the proposed action. Therefore, effects to MSO DCH are expected to be insignificant and discountable.

Mammals

Mexican long-nosed bat (*Leptonycteris nivalis*)

The range of the Mexican long-nosed bat occurs mainly from the southern Trans-Pecos region of Texas to Guatemala (USFWS 1994). The species has been collected in 15 Mexican states. In the U.S., they are found in southwestern Texas (Mollhagen 1973) and southwestern New Mexico (Arita and Humphrey 1988). The presence of this species in the Animas Mountains was reconfirmed in 1992 (Hoyt et al. 1994). A single animal was captured and released in September 2000, about 20 mi north of Lordsburg, Grant County, New Mexico, along the Gila River (L. Lewis, USFWS, pers. comm. 2001). Mexican long-nosed

bats from southwestern New Mexico may represent summer migrants from western Mexico (Hoyt et al. 1994, NMDGF 1996).

Effects of the Proposed Action

The rationale for this determination for the species is in italics below each criteria:

May Effect, Not Likely to Adversely Affect (must meet all of the criteria)

1. Livestock grazing occurs in the action area, and roost sites will be protected from disturbance or modification.

Site specific resource conditions and management objectives will be used to result in light to moderate forage utilization, which will not result in disturbance or modification of habitat, including roost sites. In addition, the CNF has committed to general conservation measures to address potential effects of activities related to the proposed action. Therefore, effects to the Mexican long-nosed bat are expected to be insignificant and discountable.

2. Livestock management activities located within the range of the bat will not damage or destroy more than 1% of bat food plants within 0.5 mi of the project site.

Livestock management activities are assessed and evaluated for potential species' impacts prior to construction approval/implementation. While the majority of such proposals are of minor consequence, any perceived impact to Mexican long-nosed bat or their food sources will cause a proposal to be redesigned, relocated, and/or rejected. In addition, the CNF has committed to general conservation measures to address potential effects of activities related to the proposed action. Therefore, effects to the Mexican long-nosed bat are expected to be insignificant and discountable.

3. Within the range of the bat, livestock management will not destroy more than 1% of the agave flowering bolts during the flowering period to allow bolts to reach a height where livestock grazing on agaves is unlikely to occur. The flowering period may vary but April 1 through June 15 can be used as a guide.

It has not been established that grazing by livestock significantly increases herbivory on agaves. Studies have found that levels of herbivory on agaves are similar in both grazed and ungrazed pastures because deer and other wildlife feed on the plants (Widmer 2001, Bowers and McLaughlin 2001). Furthermore, grazing on many of the CNF's allotments is limited to the winter season, thus, cattle are not present and do not utilize Forest allotments during the agave bolting season. In the cases where allotments are permitted for year-long grazing, grazing occurs during a portion of the agave bolting season only in selected pastures in each allotment. Deferment and rest periods ensure that not all pastures are grazed in a given year. Grazing is often deferred from April-June because water is limited during this part of the year. Moreover, the duration of exposure is short and grazing intensity is light to moderate (30-45%). In addition, the CNF has committed to general conservation measures to address potential effects of activities related to the proposed action. Therefore, effects to the Mexican long-nosed bat are expected to be insignificant and discountable.

4. Development or maintenance of water sources for livestock will consider designs friendly to bats and will not result in adverse effects to individuals using these sites.

Structural range developments such as water developments are assessed and evaluated for potential species' impacts prior to construction approval/implementation. While the majority of such proposals are of minor consequence, any perceived impact to lesser long-nosed bat movement will cause a proposal to be redesigned, relocated, and/or rejected. In addition, the CNF has committed to general conservation measures to address potential effects of activities related to the proposed action. Therefore, effects to the Mexican long-nosed bat are expected to be insignificant and discountable.

Jaguar (*Panthera onca*)

Historically, as the listing rule 62 FR 39147 (USFWS 1997) discusses, jaguars in the United States occurred in California, Arizona, New Mexico, Texas, and possibly Louisiana. The last jaguar sightings in California, Texas, and Louisiana were documented in the late 1800s or early 1900s. Sightings in the United States in the late 20th century to the present have occurred mainly along the U.S./Mexico international border. Jaguars in the United States are thought to be part of a population, or populations, that occur largely in Mexico. The two primary threats to jaguar are habitat destruction, modification, and fragmentation, and illegal killing of jaguars (USFWS 2016). Other factors that may threaten jaguar include disease, predation, inadequacy of existing regulatory mechanisms, border related issues, and climate change.

There are approximately 488,812 acres of jaguar designated critical habitat (DCH) on the CNF, with approximately 457,731 (94%) within active grazing allotments (USFWS 2014). The primary constituent elements (PCEs) of jaguar designated critical habitat are listed briefly below:

PCE 1: Provide connectivity to Mexico.

PCE 2: Contain adequate levels of prey species, including deer and javelina, as well as other medium-sized prey.

PCE 3: Surface water resources available within 20 km (12.4 mi) of each other.

PCE 4: Contain from greater than 1-50% canopy cover within Madrean evergreen woodland, generally recognized by a mixture of oak, juniper, and pine trees on the landscape, or semi-desert grassland vegetation communities.

PCE 5: Intermediately, moderately, or highly rugged terrain.

PCE 6: Below 2,000 m (6,562 feet) in elevation.

PCE 7: Characterized by minimal to no human population density, no major roads, or no stable nighttime lighting over any 1 km² (0.4 mi²) area.

Effects of the Proposed Action

The Final Rule listing jaguar as endangered (USFWS 1997) states:

“On the best available information, the following actions will not result in a violation of Section 9, provided these activities are carried out in accordance with any existing regulations and permit requirements:

1. Normal ranching activities, except predator control targeting large cats which results in inadvertent trapping or mortality of a jaguar.
2. Habitat clearing, except in areas where jaguars are known to exist or have been known to exist.
3. Fencing or other property delineation.
4. If, when using dogs to tree mountain lions, a jaguar is inadvertently chased and/or treed by the dogs, so long as the dogs are called off upon realization that a jaguar is being chased.

The following activities would likely violate Section 9 of the Act:

1. Any activity specifically prohibited by the Act (e.g., shooting, hunting, trapping, etc.).
2. Intentional clearing or destruction of habitat known to be occupied by jaguars.
3. Any activities that fall within the definition of harass and harm. The Service has defined the terms harass and harm as follows: Harass means an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering. Harm has been defined as an act which actually kills or injures wildlife. Such acts may include significant habitat modification or degradation when it actually kills or injures wildlife by significantly impairing essential behavioral patterns including breeding, feeding or sheltering.
4. Predator control activities targeting large cats that trap, kill, or otherwise injure jaguars.”

The Final Rule designating jaguar critical habitat (USFWS 2014) cites grazing as a primary land use of every subunit of designated critical habitat. This rule also states:

“Actions with no effect on the PCEs and physical or biological feature of jaguar critical habitat do not require section 7 consultation, although such action may still have adverse or beneficial effects on the species itself that require consultation. Examples of these actions may include **grazing, ranching operations**, routine border security activities, or limited recreational activity, which we anticipate would **not result in adverse effects or adverse modification** to jaguar critical habitat, but may still require section 7 review for effects to the species itself.”

The proposed action would continue to authorize grazing permits on the CNF. While the proposed action does not include predator control, the U.S. Department of Agriculture (USDA) Animal and Plant Health Inspection Service – Wildlife Services conducts predator control activities on public lands. This interrelated action falls under Section 7 compliance of Wildlife Services, and is conducted under those regulations which require identification of target animal species before control activities are carried out.

Indirect effects to habitat from livestock grazing under current management systems and forage utilization are minimized and/or eliminated when light to moderate grazing intensities are implemented. Pasture rotation and adaptive management further minimize these effects at a landscape scale. Range improvements provide a more uniform distribution of available wildlife water across rangeland on the CNF. Livestock management as proposed will not result in clearing of habitat, destruction of riparian areas, or fragmentation. Any changes to prey habitat are likely to be localized and transitory and, therefore, not expected to significantly alter prey availability throughout areas where jaguars may occur.

The rationale for this determination for the species is in italics below each criteria:

May Affect, Not Likely to Adversely Affect (must meet all of the criteria)

1. Grazing and livestock management activities will not significantly disturb jaguars or reduce cover, water, or prey and will not increase noise or lighting within jaguar habitat, therefore, the effects are determined to be discountable and/or insignificant.

Site specific resource conditions and management objectives will be used to result in light to moderate forage utilization, which will not result in clearing of habitat, destruction of riparian areas, or fragmentation. Impacts to habitat via grazing are localized and transitory, and when considered at a landscape scale, do not significantly impact prey availability on the CNF. Grazing activities will not increase noise or lighting within jaguar habitat. In addition, the CNF has committed to general conservation measures to address potential effects of activities related to the proposed action. Therefore, effects to the jaguar are expected to be insignificant and discountable.

2. Livestock management activities will not permanently disrupt connectivity corridors within the U.S. and between the U.S. and Mexico.

Structural range developments such as water developments are assessed and evaluated for potential impacts to species prior to construction approval/implementation. While the majority of such proposals is of minor consequence, any perceived impedance to jaguar movement will cause a proposal to be redesigned, relocated, and/or rejected. In addition, the CNF has committed to general conservation measures to address potential effects of activities related to the proposed action. Therefore, effects to the jaguar are expected to be insignificant and discountable.

The rationale for this determination for jaguar critical habitat includes:

1. Livestock grazing and management activities will be insignificant or discountable with no measurable effect on the primary constituent elements of the physical and biological features necessary for all jaguar life history processes.

Light to moderate forage utilization will not result in habitat fragmentation, clearing, or destruction, therefore maintaining connectivity to Mexico (PCE 1), adequate levels of prey species (PCE 2), and canopy cover (PCE 4). Range improvements, such as water developments, will maintain water resources (PCE 3). Grazing activities will have no effect on landscape ruggedness (PCE 5), elevation (PCE 6), or population density (PCE 7). In addition, the CNF has committed to general conservation measures to address potential effects of activities related to

the proposed action. Therefore, effects to jaguar critical habitat are expected to be insignificant and discountable.

Ocelot (Leopardus pardalis)

Little is known about ocelot habitat use in Arizona and Sonora; however, Lopez Gonzalez et al. (2003) found that 27 of the 36 records (75%) of ocelots in Sonora were associated with tropical or subtropical habitat, namely subtropical thornscrub, tropical deciduous forest, and tropical thornscrub. Only males (11.1% of the total records) were recorded in temperate oak and pineoak woodland. Ocelots were photographed by the Sky Island Alliance in Sonora and Arizona in oak woodland and grassland (Avila-Villegas and Lamberton-Moreno 2013). Recent detections of three other ocelots in Arizona were located in the semi-desert grassland (46%), Madrean evergreen woodland (46%), and Great Basin grassland (8%) biotic communities (Culver et al. 2015). Individual ocelots have been documented on the CNF via trail cameras. The proximity of the CNF to Mexico provides some potential for future re-colonization by animals crossing the borderlands. It is likely that the source population of ocelots in Arizona occurs in Sonora.

In the past, the primary threat to ocelots was illegal hunting and habitat loss (Sunquist and Sunquist 2002). Currently, habitat loss appears to be the primary threat to the ocelot through agricultural and urban conversion of habitat and fragmentation (USFWS 2010). Other impacts in the U.S. today include clearing of preferred habitat, alteration and destruction of riparian areas, fragmentation or blocking of corridors that ocelots may use to move between Mexico and the U.S., and any trapping or animal control activities that target other predators (USFWS 2010).

Effects of the Proposed Action

Similar to jaguar, effects to ocelot and their habitat associated with livestock grazing and range improvements are very limited. While the proposed action does not include predator control, USDA Animal and Plant Health Inspection Service – Wildlife Services conducts predator control activities on public lands. This interrelated action falls under Section 7 compliance of Wildlife Services, and is conducted under those regulations which require identification of target animal species before control activities are carried out.

Indirect effects to habitat from livestock grazing under current management systems and forage utilization are minimized and/or eliminated when light to moderate grazing intensities are implemented. Pasture rotation and adaptive management further minimize these effects at a landscape scale. Range improvements provide a more uniform distribution of available wildlife water across rangeland on the CNF. Livestock management as proposed will not result in clearing of habitat, destruction of riparian areas, or fragmentation. Any changes to prey habitat are likely to be localized and transitory and, therefore, not expected to significantly alter prey availability throughout areas where ocelots may occur.

The rationale for this determination for the species is in italics below each criteria:

May Affect, Not Likely to Adversely Affect (must meet all of the criteria)

1. *Grazing and livestock management activities will not significantly disrupt ocelots or reduce cover, water, or prey and will not increase noise or lighting within ocelot habitat, therefore, the effects of the action are discountable or insignificant.*

Site specific resource conditions and management objectives will be used to result in light to moderate forage utilization, which will not result in clearing of habitat, destruction of riparian areas, or fragmentation. Impacts to habitat via grazing are localized and transitory, and when considered at a landscape scale, do not significantly impact prey availability on the CNF. Grazing activities will not increase noise or lighting within ocelot habitat. In addition, the CNF has committed to general conservation measures to address potential effects of activities related to the proposed action. Therefore, effects to the ocelot are expected to be insignificant and discountable.

2. Livestock management activities will not significantly disrupt connectivity corridors within the U.S. and between the U.S. and Mexico.

Site specific resource conditions and management objectives will be used to result in light to moderate forage utilization, which will not result in clearing of habitat, destruction of riparian areas, or fragmentation. Structural range developments such as water developments are assessed and evaluated for potential impacts to species prior to construction approval/implementation. While the majority of such proposals is of minor consequence, any perceived impedance to ocelot movement will cause a proposal to be redesigned, relocated, and/or rejected. In addition, the CNF has committed to general conservation measures to address potential effects of activities related to the proposed action. Therefore, effects to the ocelot are expected to be insignificant and discountable.

Mexican Wolf (*Canis lupus baileyi*)

Mexican gray wolves are the southernmost occurring, rarest, and most genetically distinct gray wolf in North America. They historically occurred in the mountainous regions of the Southwest from throughout portions of southern Arizona, New Mexico, and Texas into central Mexico. Mexican gray wolves were extirpated in the United States by aggressive predator control programs (Brown 1983).

The Mexican wolf was listed as an endangered subspecies on April 28, 1976. On August 4, 2010, a 90-day finding on two petitions to list the Mexican wolf as an endangered subspecies with critical habitat. In the 90-day finding, the USFWS determined that the species was warranted reclassification as a subspecies or Distinctive Population Segment (DPS). On October 9, 2012, a 12-month finding stated that the listing of the Mexican wolf as a subspecies or DPS was not warranted at that time because Mexican wolves already receive the protections of the Act under the species-level gray wolf listing of 1978. On June 13, 2013 the Mexican wolf nonessential experimental population in Arizona and New Mexico was published in the FR (USDI 2014).

On January 12, 1998, the USFWS published an ESA section 10(j) rule on the Mexican gray wolf that provided for the designation of specific populations of listed species in the United States as “as experimental populations” (USFWS 1998). Under 10(j), a population of a listed species re-established outside its current range but within its probable historic range may be designated as an experimental population. Nonessential experimental populations located outside of National Wildlife Refuges or National Park lands are treated as if they are proposed for listing. This means that under section 7 of the ESA, Federal agencies are under obligation to confer with the USFWS, as opposed to consult, on their proposed actions that are likely to jeopardize the continued existence of the species. The reintroduced

Mexican gray wolf population has been designated a non-essential experimental population, providing for greater management flexibility.

Per the 10(j) rule, “disturbance-causing land use activity” means any land use activity that the USFWS determines could adversely affect reproductive success, natural behavior, or survival of Mexican gray wolves. These activities may be temporarily restricted within a 1-mile radius of release pens, active dens, and wolf rendezvous sites. Such activities may include, but are not limited to, timber or wood harvesting, management-ignited fire, mining or associated actions, camping occurring outside designated campgrounds, livestock trailing and drives, off-road vehicle use, hiking, hunting, and any other use or activity with the potential to disturb wolves. The following activities are specifically excluded from this definition: 1) legally permitted livestock grazing and use of water sources by livestock; 2) livestock trailing or drives (only if no reasonable alternative route or timing exists); 3) vehicle access over established roads to private property and to areas on public land where legally permitted activities are ongoing (only if no reasonable alternative route exists); 4) use of lands within the national park or national wildlife refuge systems as safety buffer zones for military activities; 5) prescribed fire and associated management actions (except in the vicinity of wolf release pens); and 6) any authorized, specific, land use that was active and ongoing at the time wolves chose to locate a den or rendezvous site nearby.

Livestock grazing and associated activities that directly or indirectly effect the survival and productivity of the species should be carefully considered for all possible effects to the species. Livestock carcasses that occur in proximity to den sites may habituate wolves to more often choosing livestock as a preferred food source. Livestock, especially young calves on early spring range in proximity to pack activities may also create a food source wolves may begin to choose.

The reintroduced Mexican gray wolf population has been designated as a non-essential experimental population, pursuant to section 10(j) of the ESA. By definition, a nonessential experimental population is not essential to the continued existence of the species. Therefore, no proposed action impacting a 10(j) population so designated could lead to a jeopardy determination for the entire species.

Effects of the Proposed Action

Conflicts can occur between the timing and location of livestock calving and calf depredations (depredation that is other than incidental) by Mexican gray wolves already residing in a specific reintroduction area. If this situation occurs or is anticipated, U.S. Forest Service personnel and affected livestock permit holders shall work with the Mexican wolf Field Team to arrive at a solution.

Site-specific resource conditions and management objectives will be used to result in light to moderate forage utilization, which will not result in clearing of habitat or fragmentation. Grazing and livestock management activities will not significantly disturb the Mexican wolf or reduce cover, water, or prey availability or movement patterns. Therefore, the effects are determined to be discountable and/or insignificant.

The proposed program of ongoing grazing with its incorporated proposed conservation measures is **not likely to jeopardize** the non-essential experimental population of the Mexican gray wolf.