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**Agua Dulce/Squabble Mine Water Distribution
Rehabilitation**

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1 INTRODUCTION

1.1 Background

The Agua Dulce allotment (AZ06126) is located on the west side of the Ironwood Forest National Monument (IFNM) in Pima County, Arizona, and is managed by the Bureau of Land Management, Gila District, Tucson Field Office under the 2013 Ironwood Forest National Monument Record of Decision and Approved Resource Management Plan. The Agua Dulce Allotment is managed by Patrick and Maria Whillock as a cow/calf operation with 814 AUM (128 cattle yearlong) under grazing authorization 0200221.

Water is a limiting factor for wildlife and livestock on the Agua Dulce grazing allotment. An existing BLM authorized water system previously provided some water; distributed throughout the northern pasture of the allotment. However, the source (Squabble Mine) has become undependable, and the infrastructure that once provided water for the northern pasture of the allotment is no longer serviceable in its entirety.

The original Squabble Mine project was started in March 1986, after NEPA (AZ-025-85-007) was completed, and installation was completed in April of the same year. This Squabble Mine project included installation of a pump into a flooded mine shaft, several miles of pipe installation, and several trough locations. This original installation was conducted with the assumption that the water in the flooded mine shaft would replenish at a rate that could supply water for offsite use. This original installation was extended and augmented in 2002 with the completion of another EA (AZ-060-2002-0004). This project extended the length of the pipeline system and added additional trough locations. These projects occurred with funding, materials, and labor provided by both the BLM and the permitted operators at the time. Additional testing occurred on the Squabble Mine location, finding that the mine does not refill with water fast enough to continue supplying the system. The flooded mine is not connected with any reliable sub-surface water resources; it is only refilled by infiltration from precipitation in the direct area surrounding the mine. In conjunction with Arizona Game and Fish Department (AGFD), BLM Abandoned Mine Land specialists contracted work to gate the mine entrance for bat habitat enhancement and cut the water withdrawal to minimal use for wildlife purposes. Currently the only water withdrawal from the mine services one trough and is primarily used by native mammals and birds in the region, with some livestock use when they are present in the area. The current request to drill a well and enhance the existing distribution and storage system was brought forth to the BLM originally in 2017, with initial site visits and data collection occurring at that time.

1.2 Purpose and Need for Action

The purpose of the project is to improve livestock distribution and minimize livestock use in areas of the Agua Dulce allotment that have received heavy use in the past, while also providing consistent and readily available water for wildlife in the region. The need for the action is to respond to a request from the permitted livestock operator to install new, and replace/repair existing, water distribution infrastructure.

1.3 Decision to Be Made

The authorized officer will decide whether the proposed action including drilling a well, installing new water storage tanks, installing six new drinking troughs, installing new pipeline, and repairing damaged existing pipeline may proceed.

1.4 Conformance with Applicable Land Use Plan(s)

The proposed action is in conformance with the 2013 Ironwood Forest National Monument Resource Management Plan with Record of Decision. Applicable goals and objectives include:

- SW-003: Manage watersheds to maintain healthy conditions and restore degraded areas.
- VM-001: Assure adequate vegetative cover with an approximate mix of natural plant species that meet acceptable range health standards based on current ecological conditions.
- VM-004: Manage allowable and authorized uses of the Monument to minimize potential impacts on vegetation.
- WH-006: Manage for wildlife water availability to sustain optimal wildlife population sizes as determined by AGFD. Minimize adverse impacts of current and potential waters on all wildlife species.
- TE-011: Minimize livestock impacts on listed or candidate plants by providing water sources away from existing populations. Move or replace livestock waters that are found to be causing habitat deterioration near rare plants.
- LM-002: Manage grazing and range resources toward best possible ecological conditions for the local area given past uses and current potential.
- LM-011: Maintain yearlong water sources in all pastures for livestock to ensure safe availability of water to wildlife. Minimize livestock impacts on priority plant species and habitats by providing water sources away from existing populations. Move or replace livestock waters that are found to be causing habitat deterioration near rare plants.
- AA-131: Well sites will be selected based on geologic reports that predict the depth to reliable aquifers. All applicable state laws and regulations that apply to ground water will be observed.

1.5 Relationship to Statutes, Regulations or Other Plans

A review of an official species list from U.S. Fish and Wildlife Service, Ecological Services, in addition to a review of the Arizona Environmental Review Tool combined with site specific verification of habitat conditions indicated that while potential habitat exists for federally listed species to be present, no known populations of federally listed species are known to exist within the project area. Using this information, it was determined that the proposed action will have “no effect” on any federally listed species, therefore Section 7 consultation under the Endangered Species Act is not warranted.

Secretarial Order 3362 requires the BLM to consider wildlife connectivity corridors in land management actions; the proposed action would help to enhance the connectivity of the region in direct support of mule deer and desert bighorn sheep populations. Additionally, the area is historic range of the Sonoran pronghorn; should they become re-established in the area, the proposed action would enhance habitat connectivity for the species.

Other laws and policies include:

- Antiquities Act of 1906 (16 USC 431–433)
- NHPA of 1966, as amended (16 USC 470 et seq.)
- Archaeological Resources Protection Act of 1979 (16 USC 470aa–470mm)
- Native American Graves Protection and Repatriation Act of 1990 (25 USC 3001–3013)
- State Protocol Agreement
- Vegetation and Range Management Programmatic Agreement Migratory Bird Treaty Act of 1918 (16 U.S.C. 703-712)

- National Drought and Water Availability (IM2024-034)

1.6 Scoping and Public Involvement

Internal scoping occurred in an in-person meeting with a diverse group of resource specialists on May 19, 2024. During this meeting, resource specialists were given the opportunity to discuss the issues that may arise from the proposed action. From this meeting, a scoping worksheet was developed and given the Interdisciplinary Team (IDT) for further review. On this scoping worksheet, IDT members were provided the opportunity to comment on the issues brought forth, as well as provide insight to issues that may have been missed. From this scoping effort, issues to be analyzed in detail, as well as alternatives to the proposed action were developed and incorporated in the Environmental Assessment (EA).

The BLM made the draft EA available for a 15-day public comment period from September 13 – September 28, 2024. The BLM received 9 comment letters from which 64 unique, substantive comments were identified. The full response to public comments is provided in Appendix A.

1.7 Issues

1.7.1 *Issues Considered, but eliminated from Detailed Analysis*

Will the proposed action negatively impact federally listed Threatened or Endangered plants or wildlife, or their designated critical habitats?

This issue is eliminated from further analysis due to a lack of federally listed species in the project area. An official species list was generated for the area and indicated that potential habitat does exist however a closer inspection of the region shows that there are no federally listed plant or wildlife species known to occur in proximity to the project area. Additionally, the project will not alter the habitat or ecological conditions in a way that would make the area less able to support these species if they were to occupy the area in the future. Site specific surveys for Nichols Turks head cactus will be performed prior to any activity that make impact the species; should one be found; the project footprint will be adjusted to avoid the individual cacti. There is no designated critical habitat in or near the project area.

1.7.2 *Issues Identified*

How will cultural resources be impacted?

How will surface and ground water resources be impacted?

How will vegetation be impacted by the project?

How will recreation opportunities and resources be impacted by the project?

How will the proposed action impact wildlife in the area?

How will the proposed action impact grazing resources and opportunities?

2 PROPOSED ACTION AND ALTERNATIVE(S)

2.1 Alternative A: Proposed Action

Patrick Willock, the permittee of the Agua Dulce and Blanco Wash Allotments is proposing a range improvement project including drilling a well, installing new water storage tanks, installing 6 new drinking troughs, and repairing damaged existing pipeline in addition to installing new pipeline as needed. These range improvements would be installed on BLM administered lands within the IFNM, under the jurisdiction of the BLM, Tucson Field Office. BLM would retain all rights to the water and associated infrastructure. Any installed infrastructure would be operated and maintained by the authorized permittee, under a cooperative agreement. The work would be completed as funding becomes available and outside of seasonal restrictions due to weather conditions or wildlife and vegetation concerns.

The proposed well would be drilled to replace the water source at Squabble Mine, which has become an unreliable source of water. The well to be drilled would be in a canyon bottom, approximately ¼ mile from the current Squabble Mine well, near the North Agua Dulce Road (BLM 6624) and an existing water storage tank operated under cooperative agreement for range infrastructure on BLM lands by the permittee, Patrick Willock. From there, approximately 5 miles of existing pipeline would be reused, or new pipeline installed to the terminal end, with 6 wildlife and livestock accessible troughs and additional storage located along the route, just off the side of the existing road.

It is estimated that the depth to water at the site is between 500 and 1,500 feet, and the work would be completed by the permittee's contractor. This proposed well site is in an alluvial deposition area, at the mouth of a small canyon in which the old mine is located, approximately 1 mile north of Waterman Pass between the Roskrige and Waterman Mountains. The well would be powered by solar energy, with solar panels being placed on-site alongside the well head. Since no energy storage (battery) is proposed, water would be pumped from this location while the solar panels are collecting energy from the sun (daylight hours). Installation of the well and solar equipment will permanently disturb approximately 2500 square feet of surface (approximately 50 feet by 50 feet, or 0.05 acres).

At the same location as the proposed well site, an abandoned concrete ring storage tank will be repurposed to hold a new 20,000-gallon polyethylene enclosed storage tank. This new tank would be placed inside the old concrete ring tank which would partially obscure the new tank and provide an increased level of protection to the tank from vandalism, extreme weather events, and other potential damage. This storage tank would be connected to the well head with new underground pipe (buried to 24 inches); the storage tank would also be connected at this location to the existing underground pipe that feeds the remainder of the water system. Also from this same starting location, the existing water distribution pipe leading to the abandoned well in T 12s R 9E, section 31 (Silver Hill Well) would be reconnected to provide water to a trough at that existing location.

The existing water distribution pipe would be reused; it has been pressure tested and found to be serviceable except for the last 1/2 mile, which was damaged in a flood event and subsequent head cutting. This last section of pipe would be re-installed on the north side of the road using like materials (PVC pipe) and buried to a depth of 24 inches to protect against damage and preserve the visual quality of the area. Placement on the north side of the road is to avoid an existing cultural site. Burying of the pipe would be accomplished using a trenching machine, or similar equipment, and after the pipe is laid, it would be covered back using the excavated soils. During the excavation of the trench, slight modifications to the route will occur to avoid damaging cacti, shrubs, and trees.

Six new water troughs are proposed to be installed on the system in the same locations as the existing non-functional troughs; with up to 5 additional storage tanks being placed at the trough locations to ensure adequate supply throughout the system. The last trough on the system, at the end of the pipeline that will be excavated, will be placed on the north side of the road rather than at the existing trough location to avoid impacts to an existing cultural site. This existing site will be allowed to revegetate naturally. These new troughs will be connected to the existing pipe system at the site; no additional

excavation will be required to accomplish this connection. By placing these new troughs and tanks at the existing sites, vegetation clearing is expected to be minimal. These secondary storage tanks would be 10,000-gallon polyethylene tanks (approximately 12 feet in diameter). The new troughs would be constructed using recycled mining truck tires (approximately 12 feet in diameter), with concrete floors poured in after the tires have been placed onsite. These new installations will permanently disturb approximately 30 feet by 30 feet at each site. A float and shut-off valve would be installed at each trough to regulate the water level and allow them to be used individually or all together. Wildlife approach and escape ramps would be installed to allow for small animals to access the water, and escape if entrapped. The first trough on the system would be placed at the well and storage site; the last trough would be placed at the terminal end of the distribution pipe. Refer to Figure 1 for additional location information.

2.2 No Action Alternative

Under this alternative, the existing water storage and distribution system would not be enhanced, leaving the unused infrastructure and the current livestock rotation and management as it currently exists with heavy use on the south end of the Agua Dulce Allotment and minimal use on the north side of the allotment. This alternative would provide no additional reliable surface water for the wildlife that inhabit the area. The No Action alternative would preclude any of the ground disturbing activities from drilling a new well, storage tank installation, trough replacement, an excavation for the new section of pipeline, therefore causing no new impacts from installation.

2.3 Alternatives Analyzed in Detail

No additional alternatives were analyzed in detail.

2.4 Alternatives Considered but Eliminated from Detailed Analysis

2.4.1 Proposed Action with additional fencing

In addition to the proposed action, on the Silverbell and Blanco Wash Allotments, Mr. Whillock is proposing to construct a barbed wire fence to control the movement of livestock between the two allotments, and reduce the access of livestock to Avra Valley Rd. The fence would be standard 4 strand wildlife friendly fence, two miles in length along the north side of the right-of-way along Avra Valley Road. This fence would be constructed in the Silverbell Allotment and would effectively remove approximately 650 acres from the Silverbell Allotment and allow use by the Blanco Wash permittee (Mr. Willock). A cattle guard would be installed on the gas line road to control access of livestock onto Avra Valley Rd. Being adjacent to the main road, access would be directly off the asphalt, no off-road driving would be necessary to complete this project. The cattle guard would be the on-ground style, without the need for any excavation work.

This alternative meets the purpose and need for the action however the two current permittees on their respective allotments are not in agreement on the action. This action will be considered as a separate action at a later time.

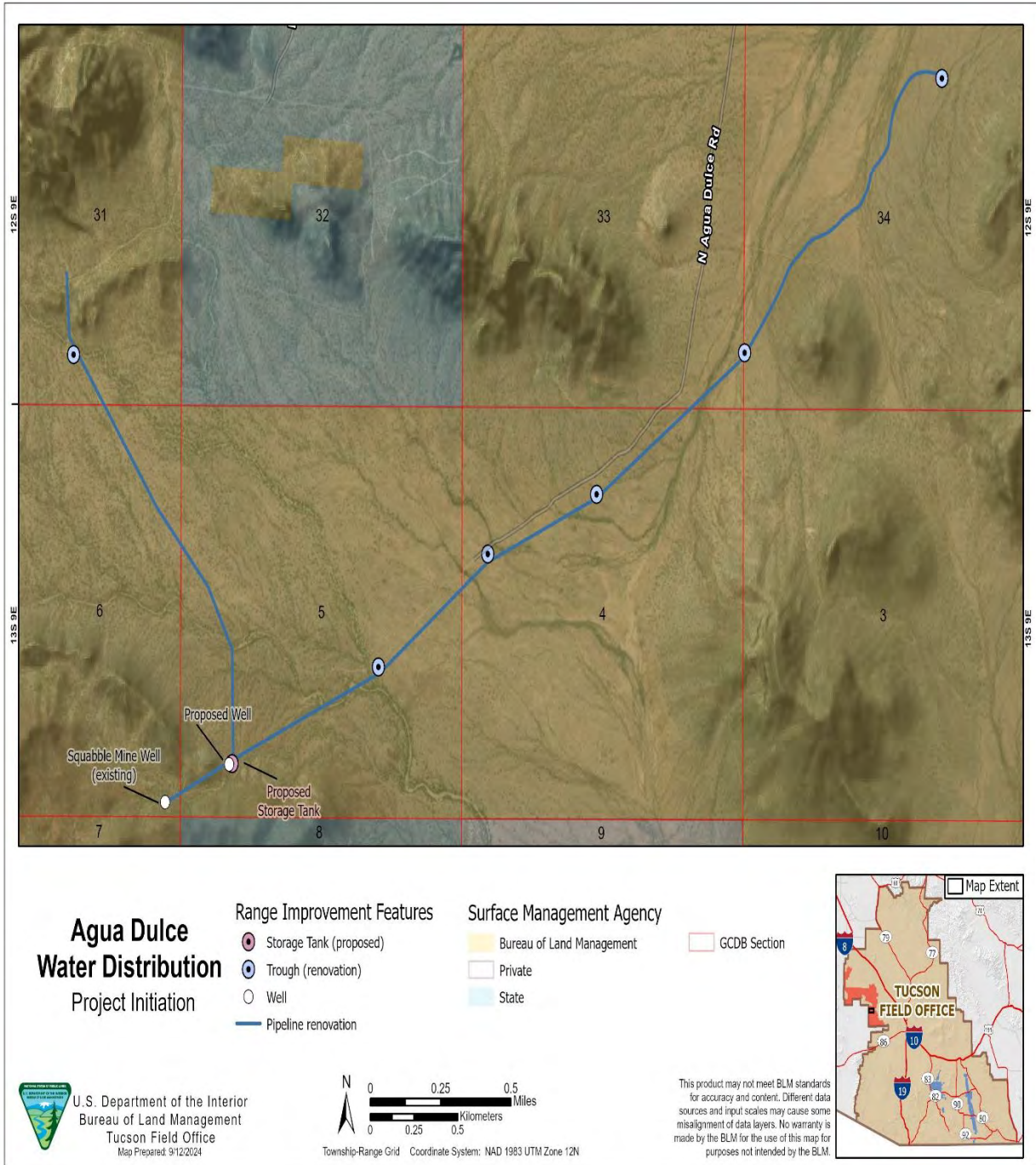
2.5 Mitigation

The following mitigations will be applied to the proposed action if selected:

- Pre-work surveys will be conducted by qualified BLM archaeologists to ensure ground disturbing activities do not disrupt any cultural resources in the area.
- If cultural resources are found, the route may be modified to avoid the resources.
- Pre-work surveys will be conducted by qualified BLM botanist for any Nichol's Turks-head cactus along the project route. If found, the route may be modified to avoid the resources.

- Pre-work and pre-maintenance surveys will be conducted by BLM wildlife biologists for any listed threatened or endangered species, or any BLM sensitive species along the survey route. Additionally, all work crews will be instructed on safe handling of Sonoran Desert tortoise for relocation should they be present in work areas while construction and maintenance activities are occurring.
- All practical attempts to avoid damaging trees, shrubs, and cacti will be employed and the route may be modified by 1-5 meters in either direction as necessary. Using areas that have been previously disturbed as locations for storage tanks and drinking troughs will be priority.
- All machinery used for excavation will be cleaned of dirt and vegetative materials prior to entering IFNM.
- For wildlife conflict mitigation, human comfort, and equipment safety, construction of the project is planned for winter months (Dec., Jan., Feb.), but may occur in late fall (Nov.) or early spring (March) due to equipment availability and scheduling needs.
- Work will not occur during migratory bird nesting season from April-October.

Figure 1. Map of project area



3 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.1 Introduction

The action area for the proposed project occurs on the Ironwood Forest National Monument (IFNM), west of the Town of Avra Valley, in Pima County Arizona. IFNM is known for its natural setting with many acres of undeveloped Sonoran Desert. Primary uses of the land are recreation, livestock grazing, wildlife watching, hunting, and minerology. The monument is visited annually by tens of thousands of visitors from across the United States and the world.

In the project area, the landscape is comprised of rocky mountainous outcroppings, separated by sandy valley bottoms with ephemeral washes stretching from the mountains along the boundary with the reservation land to the west, to the Santa Cruz River valley to the east. The project area falls within the Major Land Resource Area (MLRA) 040X Sonoran Basin and Range, ecological site R040XA111AZ, Limy Upland 10"-13" precipitation zone. Within this ecological site, elevations range from 2000 to 3200 feet and precipitation averages 10 to 13 inches per year. Native vegetation includes saguaro, palo verde, mesquite, creosotebush, triangle bursage, prickly pear, cholla, limberbush, wolfberry, bush muhly, threeawns, ocotillo, and globe mallow. The soil temperature regime is thermic, and the soil moisture regime is typic aridic (NRCS ESD).

Rangeland management on the allotment is typical of the area; the operator runs a cow/calf operation that produces calves annually to be sold at auction. Pasture rotation follows available forage and water availability. With average and above average rains, the livestock are moved to the northern pastures in the fall and winter and moved to the southern pastures where the water is reliably available in the spring and summer. Calves are sold off each year when they are approximately one year old.

3.2 Reasonably Foreseeable Environmental Trends and Planned Actions

- Changes in climate patterns has resulted in reduced the annual precipitation trends in the southwestern United States over the last twenty years. Drought conditions have persisted in the region and are likely to persist into the foreseeable future. These hotter and dryer conditions have resulted in reductions in annual production across the landscape.
- Water is currently being recharged into the Santa Cruz watershed through the allocation of Central Arizona water rights issued to Pima County and various municipalities in the area. This recharge is expected to continue and will continue to offset some of the withdrawal of water currently occurring within the Santa Cruz watershed.
- Recent visitor use in the IFNM has trended upwards, with more visitors per year travelling to see the area. This trend is not expected to change, and data collected on site by BLM recreation staff indicates that visitation is likely to increase. No anticipated changes in visitor use are expected from this project.

3.3 Issues Analyzed in Detail

3.3.1 Issue 1: How will cultural resources be impacted?

3.3.1.1 Affected Environment

The IFNM contains many historic and prehistoric period cultural resources. These resources include historic ranching, mining, and recreational use of the IFNM. For prehistoric period cultural resources, these can include long-and short-term habitation such as pithouse villages or larger artifact scatters that include pottery fragments and debris from stone tool manufacture. Resource procurement sites are also represented, including agricultural sites that can be represented by rock piles or aligned rocks creating check dams to control water. Also, wild plant and animal resource gathering can be identified by smaller lithic and/or ceramic sherd sites. Other known resources on the IFNM include rock art or petroglyph sites. In the general area of Waterman Peak, historic mining related sites exist along with smaller scale prehistoric habitation and resource processing sites. In 1985 a cultural survey for the Squabble Mine project surveyed the entire original waterline from Squabble Mine to the last trough to the east. Surveys in 2007 (road survey included parts of waterline south and east of the Waterman Mountains), 2011 (road survey included waterline location from Squabble Mine to the east), and 2016 (AML project included the Squabble Mine area) were accomplished which covered parts of the project area.

3.3.1.2 Impacts from the No Action Alternative

This alternative will not impact the current status of cultural resources on the allotment. There will be no ground disturbing activities, nor will there be any change in current use.

3.3.1.3 Impacts from the Proposed Action

BLM-funded or jurisdictionally approved projects are considered undertakings subject to compliance with Section 106 of the National Historic Preservation Act (NHPA; 54 USC 306108 et seq.) and its implementing regulations at 36 CFR 800. Newly proposed actions as described in this EA would be subject to project review and assessment in accordance with the BLM's Arizona Vegetation and Range Management Programmatic Agreement (PA; executed September 30, 2020). The BLM's primary and preferred methods to protect historic properties is avoidance of impacts through redesign or relocation of proposed activities and/or facilities. Should the BLM identify potential impacts to historic properties, the BLM may, accordingly, redesign or relocate proposed activities or constructions; or develop plans to mitigate potential adverse effects in consultation with the State Historic Preservation Office, Tribes, and other potentially affected parties.

A Class III cultural resource survey was accomplished for this project on July 30, 2024. After adjustments to the original proposed project, it will have no significant impacts on cultural resources.

3.3.2 Issue 2: How will surface and ground water resources be impacted?

3.3.2.1 Affected Environment

The affected environment was considered on both a regional and local level. For the regional boundary the Avra Valley Sub-basin was used. This area encompasses 1,372,358 acres with notable uses being the city of Marana, agriculture, and various mining operations. For a local level boundary Waterman Pass Watershed was used. This is 11,852-acre area is a smaller area within the larger Avra Valley Sub-basin.

The proposed well is within the Waterman Pass Watershed. This watershed is characterized as containing ephemeral streams which flow only during and after storm events that provide enough precipitation to cause runoff. The project area is within the 10–13-inch precipitation zone however this is highly variable from year to year. The upper areas of the watershed are composed of conglomerate and other sedimentary rocks that promote runoff. Runoff drains into alluvial sediments with cobble to gravel

sized rocks. The alluvium has the necessary porosity and permeability needed to allow rain runoff to seep into the ground and recharge the aquifer. Ground water is the source of most water used in the project area. There are 12 registered wells within Waterman Pass Watershed. Of these wells, five show that they have pumps installed. The largest well in the area is a domestic well at the Agua Dulce Ranch Headquarters, supplying water to the living quarters on the ranch, as well as water for livestock. Several water rights in the area show that water is utilized in tanks for livestock and wildlife. At the current Squabble Mine well only draws water from recharge of water seeping into an abandoned mine shaft. It is approximately 100 feet deep and appears to be separate from the primary aquifer in the area.

On a regional level the proposed well location is part of the Avra Valley Sub-basin which includes the city of Marana, AZ. The depth of the aquifer in this sub-basin varies depending on location. There are also multiple smaller aquifers which are shallower than the primary aquifer. The shallower aquifers found in this sub-basin are generally beneath alluvium valley bottoms and recharged during each rainstorm. These shallow aquifers are often disconnected from one another. Groundwater use in the sub-basin includes a large mining operation to the northwest and large agricultural operations to the east, closer to the Santa Cruz River valley.

The project area is within the Arizona Department of Water Resources (ADWR) designated Tucson Active Management Area (AMA). ADWR describes AMAs as areas subject to regulation pursuant to the Groundwater Code while considering the unique circumstances and characteristics of each individual area. Any wells drilled within an AMA must be registered with ADWR and will be reviewed by the AMA's Groundwater User's Advisory Council to ensure the new well is in line with current goals and policies of the AMA.

3.3.2.2 Impacts from the No Action

Impacts were considered on both a regional (Avra Valley Sub-basin) and local (Waterman Pass Watershed) level. Taking no action would have negligible effects on the larger region since water pumped from Squabble Mine is from shallow recharge and not directly from the aquifer. Locally the current Squabble Mine Well is becoming unreliable and producing less water. A trend that will continue as drought and climate change conditions continue. This could lead to the system being unable to produce water providing less water at the surface for livestock and wildlife.

3.3.2.3 Impacts from the Proposed Action

Within local level boundary of Waterman Pass Watershed there are potentially 12 wells pumping water from the aquifer. These wells are all less than 1,000 feet in depth and located in alluvium. This suggests they are pulling from a shallower local aquifer as opposed to the larger deeper aquifer used in the region. These wells are used to provide water to livestock, wildlife, and in one case water for the ranch house. The similar location and depth of the proposed well suggests that it will pump water from the same shallow aquifer as the preexisting wells. The water from the new well will serve the same purpose of providing water for livestock and wildlife.

The new infrastructure that is also part of the proposed action will provide increased protection from leaks and evaporation to the water brought to the surface requiring the well to pump less water to the surface.

At the regional level there are little to no expected impacts to the Avra Valley Sub-basin. The proposed well is relatively shallow and is drilled in alluvium which suggests it is pulling water from a smaller localized aquifer as opposed to the larger regional aquifer. Additionally, any potential demands this new well will place on the aquifer are insignificant when compared to demands common with wells associated with mining, agricultural, and municipal water use that are prevalent in the sub-basin.

3.3.3 Issue 3: How will vegetation be impacted by the project?

3.3.3.1 Affected Environment

Most of the project area is comprised of the Paloverde-Cacti – Mixed Scrub vegetation community, which is primarily comprised of foothill paloverde, ironwood, mesquite, creosotebush, triangle bursage, saguaro and other cacti. Narrow bands of xeroriparian plant community – dominated by larger mesquites, paloverdes, and ironwood – are in dry washes that intersect the project area. Perennial and annual forbs and grasses flourish with adequate winter or monsoon rain.

One Federally listed endangered plant, Nichol's Turks head cactus, occurs near the project area. While no known populations occur within the project area, potential habitat may exist.

Buffelgrass and stinknet are the primary non-native plant species of concern in the project area. Several known infestations of buffelgrass exist on the hillslopes to the east of the project area. No known stinknet infestations are in the project area. In 2023 one stinknet plant was reported and hand pulled on private land about one mile south of the planning area. Buffelgrass, and especially stinknet remain a threat to the native plant communities on the IFNM.

Recreation and cattle grazing are the primary uses within the project area. Details on types of recreation in the project area is covered in section 3.3.4. While generally light, current impacts from recreation include run off and erosion from established roads, established pull outs and campsites. These areas are mostly devoid of vegetation and remain so from repeated use. Run off and erosion can limit seed germination and seedling establishment in and around these areas. Unauthorized off-road use is rare in the project area but can crush, damage, and sometimes kill vegetation.

Current impacts from cattle grazing include consumption of the leaves and shoots of forage plants. This includes annual grasses and forbs, jojoba, ratany, palo verde, and perennial grasses. Vegetation growth and reproduction of these plants are maintained through appropriate grazing management to meet Arizona Rangeland Health Standards on the allotment. Cattle trample vegetation and soil, reducing the vegetative cover in areas where cattle concentrate. In general, cattle concentrate around water developments and salt licks, increasing the impact to vegetation in these concentration areas. The Agua Dulce allotment is split into 3 pastures: south, middle, and north. The south and middle pastures have livestock water troughs and are stocked with cattle year-round. The north pasture, area of the proposed action, has no permanent water but does get used ephemerally as water is available from precipitation, generally in the winter. Given that these water troughs in the project area have not been active for over 10 years, cattle concentration impacts to vegetation have been limited in recent years.

3.3.3.2 Impacts from the No Action

Under the no action alternative, the current grazing management system on the Agua Dulce Allotment would remain in place. The south and middle pastures will continue to be stocked with cattle yearlong and the north pasture will be used ephemerally, although perennial use is authorized. No water troughs and tanks would be installed in the north pasture as proposed, limiting the ability for cattle to spread out into the north pasture.

3.3.3.3 Impacts from the Proposed Action

The proposed action, installing up to 6 water storage tanks and drinking troughs, drilling a well, installing a solar pump, and repairing/replacing pipeline, will impact vegetation in the project area. Six tanks and watering troughs will be installed in previously disturbed areas. Each tank and watering trough will cover approximately 10 x 10 meters; as the areas were previously cleared, there will be minimal need for additional clearing of vegetation at these locations. This disturbance will be present for as long as the tanks and troughs remain in place. If removed, the tank/trough area footprint will take at least 30 years to recover naturally and would require active restoration to return to a native plant community. Cattle will congregate around these watering locations creating about two acres of increased impacts from cattle grazing around each of the six watering locations. Grazing impacts will be greater the closer to the watering troughs. Conversely, livestock can alter the vegetative community structure by selectively

grazing species with higher nutrition value. As these species are utilized, livestock may graze less palatable species and over time alter the composition of the vegetative community. In some circumstances, grazing can increase plant biodiversity, build soils, sequester carbon, increase soil nitrogen, and water content, and overall, increase productivity and sustainability (Teague et al., 2016). The IFNM RMP and EIS recognized grazing impacts to the Sonoran Desert ecosystem and has set the maximum level of utilization at 30% of annual growth to preserve the vegetative characteristics.

Installation of the well and solar equipment will permanently disturb and remove vegetation from approximately 2500 square feet of ground surface (approximately 50 feet by 50 feet, or 0.05 acres). The well area is already mostly cleared of vegetation as it is directly next to a road and used as a parking area and turn around.

Trenching needed to repair and replace the 1/2 of a mile of pipeline and last trough location will uproot and kill vegetation directly on the trenched area and damage roots of nearby cacti, trees, and shrubs. This could cause damage or kill cacti, trees, and shrubs. However, to the extent feasible, modifications to the route will occur during excavation to avoid damage to cacti, trees, and shrubs.

The proposed action has the potential to introduce non-native invasive plants (weeds) in the project area. Currently, there are no weed species of concern within the project footprint. Drilling, trenching, and other equipment used on the project has the potential to introduce weed seed into the project area. In addition, ground disturbance from the project would make the disturbed areas more prone to weed colonization. This would be mitigated by the requirement to clean all equipment used for the project prior to being brought into the IFNM. BLM staff have in the past and will continue to monitor for weed infestations in the project area and on the Monument as a whole. Should any weed infestation occur, BLM staff will follow established protocol to remove plants by hand pulling or use of selectively placed herbicides.

3.3.4 Issue 4: How will recreation opportunities and resources be impacted by the project?

3.3.4.1 Affected Environment

The project area occurs in Visual Resource Management (VRM) area class II and class III areas, with the majority of the project occurring in class II. Current recreational use in the project area is generally light and includes OHV use, dispersed camping, hunting, wildlife watching, and hiking/exploring. Dispersed camping and OHV use are popular uses for the area. Users also engage in multiple activities while visiting the area. Increases in activities tends to be seasonal. As temperatures rise through the late spring, visitation drops. As hunting season approaches and temperatures drop in the fall, visitation tends to increase. IFNM contains no developed recreation sites in the project area; the only access to the project area is either Agua Dulce Road and the various side roads that split away from it or walk-in access to areas without existing roads. The area is known to have some incidental unauthorized off-road use; these areas are mitigated as discovered and as resources are available. A frequently visited AZGFD wildlife water site near the project area is used by recreationists to view wildlife. It is the only reliable water source for wildlife and would remain in place regardless of the proposed action occurring.

3.3.4.2 Impacts from the No Action

This alternative will not impact the current status of recreation opportunities or resources on the allotment. There would be no change in current use.

3.3.4.3 Impacts from the Proposed Action

Temporary road restriction may be in place since the proposed work is adjacent to established roads. These restrictions will last between 1-5 days during construction. The negative impacts to campers and OHV users will be negligible in the long term as the disruption will occur while construction of the project is happening; maintenance activities will not require any closures. Beneficial impacts from road repair would include improved existing legal public access and improved access for law enforcement and firefighting personnel in addition, the impacts to hiking through the area will also be negligible as there are

no established trails or trailheads in the area. Hikers utilizing the road will be able to avoid the work by hiking around the work sites during construction.

This area sees low usage currently from dispersed camping with most campers preferring other areas in IFNM that have easier vehicular access. However, dispersed camping may also be impacted as work proceeds throughout the project area and once the project is completed. The trough and storage tank locations are located in areas adjacent to established roads and generally clear of vegetation. These areas are currently available for primitive camping however once water is available at these sites, camping will not be available at these specific sites as state law prohibits camping within ¼ mile of a water source. This reduction of availability will be negligible as many other sites are available throughout the IFNM and most camping occurs along Pipeline Road and Agua Blanca Ranch.

Negative impacts to hunting and wildlife watching are likely to be limited as the project will increase water availability for game species and general wildlife. Access to more water sources may lead to additional wildlife sightings and more successful hunts. This increase in hunt success may reduce populations of game species locally, however as hunting is closely managed and permits issued by AGFD the overall populations are not likely to be significantly impacted.

3.3.5 Issue 5: How will the proposed action impact wildlife in the area?

3.3.5.1 Affected Environment

Wildlife in the region is typical of species found in the Sonoran Basin and Range MLRA. Large mammals including mule deer, desert bighorn sheep, javelina, pumas, coyotes, and bobcats are common throughout the allotment where resources are available to support them. Medium and small mammals in the area include grey and kit foxes, badgers, skunks, mice, kangaroo rats, ground squirrels, blacktail jackrabbit, and desert cottontail. The area provides habitat for a wide variety of birds, both migratory and permanent residents. Reptile and amphibian species within the region include Sonoran Desert tortoise, several species of rattlesnake, numerous non-venomous snakes, many species of lizard such as Gila monster and desert iguana, and a wide variety of toads that emerge as monsoon brings seasonal rains to the region.

All the species mentioned above may be found at varying abundance with fluctuations in resource availability with particular impacts noticed based on precipitation: wet years will show higher abundance and dry years will have less. All these species are desert adapted; they can persist without man-made influence however AZGFD has implemented a series of wildlife waters in the IFNM to supplement the water needs of the wildlife off the region. The area is not known for any invasive wildlife species. IFNM has no aquatic habitats that support fish.

3.3.5.2 Impacts from the No Action

Wildlife will continue to persist throughout the region under this alternative. Population levels will continue to fluctuate with the availability of water resources particularly as changing climate conditions occur. Extended periods of drought may reduce overall abundance of species in the region, however the suite of native wildlife in the area are well adapted to the desert environment and will respond to conditions accordingly. Without the reliable water dispersed along the proposed action area, species that are more water dependent are likely to experience reduced reproductive and recruitment success, thus reducing overall health of populations.

3.3.5.3 Impacts from the Proposed Action

Temporary impacts to wildlife in the area will include potential disturbance from construction activities such as noise and human presence. Additionally, the potential for mortality, particularly of small animals such as snakes, lizards, and rodents, exists from construction activities and vehicle and equipment use. These individual losses will be localized and insignificant to populations. Sonoran Desert tortoise is known to occur in the project area; construction crews will take all reasonable steps to avoid and mitigate impacts to these animals. Should a desert tortoise be found in the project area, it will be relocated to a

safe area as close to the discovery location as possible. Birds that nest, forage, and roost on the ground or in shrubs nearby the project area may also be temporarily displaced during construction activities. Nest mortality is expected to be low with mitigation such as avoidance of trees and shrubs and work being conducted outside of the breeding season (April-October).

During construction of the project, there will be short spans of time in which open trenches will be present on the landscape. While work is planned for primarily winter months due to human comfort, equipment, and wildlife mitigation purposes, should work occur in the warmer months while reptiles are more mobile there may be times in which snakes, lizards, or desert tortoise may become entrapped for periods of time. Should this occur, they would be removed immediately upon discovery and moved to a nearby safe location. Upon completion of the project, even with the installation of wildlife escape ramps as required, mobility restricted wildlife such as reptiles, small mammals, and birds may become entrapped in troughs. Some mortality of species from drowning while entrapped may occur however it is not expected to be significant to impact species populations as a whole.

In the long term, wildlife will have the opportunity to utilize water resources that did not previously exist in the project area. This may increase survivorship of individuals and beneficially impact populations of a wide variety of species. Even though wildlife and livestock are known to coexist, an increase in livestock forage utilization may introduce small changes that over time could impact habitat conditions. These impacts could alter habitat, and forage availability and quality for some wildlife species. These small changes though are not expected to be a significant factor as this project does not include an increase in livestock stocking on the allotment. Man-made waterpoints do benefit both wildlife and livestock but may also lead to conflict at watering sites (Barroso and Gortázar, 2024). This also is not expected to be significant because the stocking rate is low, and this project does not allow for increased livestock stocking on the allotment.

3.3.6 Issue 6: How will the proposed action impact grazing resources and opportunities?

3.3.6.1 Affected Environment

The Agua Dulce allotment (AZ06126) is located on the west side of the Ironwood Forest National Monument (IFNM) in Pima County, Arizona. The allotment is managed by Patrick and Maria Whillock as a cow/calf operation with 814 AUM (128 cattle yearlong) under grazing authorization 0200221. Water is a limiting factor for wildlife and livestock on the Agua Dulce grazing allotment. An existing BLM authorized water system once provided water, distributed throughout the northern side of the allotment however the source (Squabble Mine) has become undependable, and the infrastructure is no longer serviceable in its entirety. Currently the only water withdrawal from the mine services one 100-gallon trough and is primarily used by native mammals and birds in the region.

3.3.6.2 Impacts from the No Action

Under the no action alternative, livestock would remain concentrated in the southern half of the allotment, only moving to the north side of the allotment as ephemeral water becomes available. This would lead to continued uneven grazing across the allotment.

3.3.6.3 Impacts from the Proposed Action

The proposed action would allow the cattle to distribute more evenly across the allotment. This availability of water and with the opportunity to fill or not fill troughs would provide opportunity to move livestock across the landscape in a more precisely managed system of rotation. This increased ability to manage the livestock would result in increased pasture resting and rotation and diminish overall impacts to vegetation.

3.4 Cumulative Impacts

3.4.1 Cultural resources

Cumulative impacts to cultural resources are expected to be minimal as the change in grazing management will not impact the resource as it exists as of this proposed action. The proposed action will occur along areas already disturbed, therefore no additional disturbance beyond the impacts listed in the direct impact section are necessary for the continued life of the project.

3.4.2 Surface and ground water

Water withdrawal in the area is expected to continue into the foreseeable future. As development occurs, additional wells may be added to the aquifer that would contribute to further depletion of the available ground water. All wells are subject to ADWR administration and would be required to conform to the policies under that agency's regulation. Wells in the area would also be subject to review by the AMA's Groundwater User's Advisory Council to ensure new wells are in line with current goals and policies of the AMA. In accordance with IM 2024-034, National Drought and Water Availability, the BLM has also considered drought severity and water availability in the area. While this well is not expected to significantly impact the aquifer, it would contribute to the total amount of withdrawal and therefore may decrease water availability into the future.

3.4.3 Vegetation

Vegetation in the direct project area is likely to be impacted by increased utilization from livestock. As utilization increases, over time the vegetative composition is expected to change as perennial grasses, forbs, and palatable shrubs are grazed and browsed. This change will be balanced with the improved rest and rotation of pastures, allowing for the landscape to regenerate growth annually that will continue to support 30% or less utilization across the allotment. In areas adjacent to the troughs and storage areas, increases in livestock density is expected to decrease vegetation and increase soil compaction which is expected to result in larger than current areas of bare ground. These areas of bare ground would be expected to persist for many years after the expected life of the project without additional reclamation and restoration work. Surveillance and removal work targeting invasive weeds will continue on IFNM. This is an ongoing issue that is expected to continue into the foreseeable future.

3.4.4 Recreation

Recreation will continue to impact the area through OHV, dispersed camping, hunting, and the other activities mentioned in section 4.3.4. Dispersed camping may be impacted permanently in areas within ¼ of a mile of a water source and where troughs or storage tanks are placed near the North Agua Dulce Road (BLM 6624). This impact is expected to be negligible because most camping occurs along the pipeline road and Agua Blanca Ranch. A proposed business plan to add user fees may decrease visitation overtime however this decrease is not expected to significantly change cumulative impacts to recreation opportunities as it relates to this proposed action.

3.4.5 Wildlife

Some impacts to wildlife are expected. Wildlife and livestock coexist on the allotment, and on the Monument, as they have since livestock were introduced in the past. Some species will benefit from the introduction of additional water resources, while others will continue to exist without the benefit. The changes to the vegetative community may change the landscape in ways that favor larger species over

smaller species due to changes in vegetative structure however, these changes are in accordance with the IFNM RMP and EIS.

The U.S. Fish and Wildlife Service, in conjunction with other agencies and private organizations are currently engaged in research and release sight development for re-introducing cactus ferruginous pygmy owl (federally listed threatened) to the IFNM area. Should this occur, the need for future projects may be subject to section 7 consultation under the Endangered Species Act. The Sonoran Desert tortoise may also gain protection under ESA in the future. This project will not impact those actions however there may be additional grazing restrictions put in place to ensure the continued existence of the species.

3.4.6 Grazing

Livestock management will be improved over the life of the project as pasture rest and rotation will be more efficiently implemented with the ability to selectively use water to move livestock across the landscape. Periodic monitoring of land health will inform future management decisions regarding utilization and range management, which will result in improved ability to manage the land for grazing resources effectively.

The surrounding allotments are currently all in use by permitted grazing operators. As grazing is an authorized use per the IFNM RMP and EIS, this is expected to continue into the foreseeable future. The RMP allocates the number of AUMs permitted for use so there are no expected increases in grazing throughout the region, however operators may choose to reduce their stocking rates as resource conditions change. Within the IFNM, there are several parcels of state-owned lands, as well as privately owned lands. These lands are available for grazing per the respective owner's discretion without oversight from BLM and may be grazed regardless of any BLM decision.

4 SUPPORTING INFORMATION

4.1 Tribes, Individuals, Organizations, or Agencies Consulted

Alisha Phipps, Rangeland Management Specialist, United States Department of Agriculture, National Resource Conservation Service.

U.S. Fish and Wildlife Service, Information for Planning and Conservation (IPaC) website.

Arizona Game and Fish Department, Online Environmental Review Tool.

4.2 List of Preparers

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4.3 References

- Arizona Division of Water Resources. (2024, July 1). *AMA Overview*. Retrieved from Active Management Area: <https://www.azwater.gov/ama/active-management-area-overview>
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- Teague, W.R., S. Apfelbaum, R. Lal, U.P. Kreuter, J. Rowntree, C.A. Davies, R. Conser, M. Rasmussen, J. Hatfield, T. Wang. 2016. The role of ruminants in reducing agriculture's carbon footprint in North America. *J. Soil Water Conservation*. 71:156–164. doi:[10.2489/jswc.71.2.156](https://doi.org/10.2489/jswc.71.2.156)
- Patricia Barroso, Christian Gortázar, The coexistence of wildlife and livestock, *Animal Frontiers*, Volume 14, Issue 1, February 2024, Pages 5–12, <https://doi.org/10.1093/af/vfad064>[Appendices]

APPENDIX A. RESPONSE TO PUBLIC COMMENT

Commenter	Cmt. #	Topic	Comment	BLM Response
Not Provided	1	Weeds	The colonization and expansion of buffel grass and other invasive plants is perhaps the greatest threat to the Sonoran desert and the natural and cultural resources in your national monument. These plants allow devastating fires to occur in a non-fire-adapted ecosystem. After such fires, huge areas are converted from healthy habitats into largely sterile monocultures. Livestock grazing is the dominant cause for the ongoing presence and expansion of these invasive plants and the fine fuels they bring into the landscape.	Buffelgrass is noted as a non-native plant species of concern in the project area in section 3.3.3.1 of the EA. Section 3.3.3.3 says that all equipment used for the project would be clean prior to being brought into the IFNM to prevent weeds in the project area.
Not Provided	2	Weeds	The attachment (<i>Molvar et al. 2024, Cheatgrass Literature Review</i>) provides the conclusive science demonstrating the connection between livestock grazing and the expansion of harmful invasive plants. The EA is defective because it does not adequately address this connection and the threat that further grazing poses from devastating fires to monument resources.	Cheatgrass is not present in significant numbers in the project area. The EA addresses invasive weeds in section 3.3.3 of the EA.
Richard Spotts	3	Weeds	Expanding grazing is also likely to increase the spread of buffel grass or other invasive plants that change fuels and increase wildfire risks.	See response to comment 1.
Desert Tortoise Council	4	Vegetation	Page 15, Issue 3: How will vegetation be impacted by the project? In the “Impacts from the Proposed Action” section, BLM says, “In some circumstances, grazing can increase plant biodiversity, build soils, sequester carbon, increase soil nitrogen and water content, and overall, increase productivity and sustainability (Teague et al., 2016).” While as written this statement may be true, it is not applicable to grazing in the Sonoran Desert. Additionally, the authors in the cited publication are comparing grazing with intensive agricultural crop practices, not grazing versus no grazing. This citation and statement has no relevance to the proposed action and no relevance for the location of the proposed action. The Council requests that this misleading sentence be removed and replaced with the information from relevant scientific literature on the impacts of grazing in the Sonoran Desert where the vegetation has not evolved with large grazing animals.	The information provided has relevance in both arid environments and in the circumstance presented in the comment. The beneficial additions made by livestock presence are not diminished by a lack of agricultural intensity, merely at a smaller scale. However, additional analysis was conducted for more specific impacts to Sonoran Desert environments and added to the EA in section 3.3.3.3.
Desert Tortoise Council	5	Vegetation	Page 15, Issue 3: How will vegetation be impacted by the project? In this section, BLM describes impacts to vegetation from the proposed action but provides no citations to support the statements. For example, BLM says “If removed, the tank/trough area footprint will take at least 30 years to recover naturally and would require active restoration to return to a native plant community.” However, Abella (2010) reported that “colonization by early successional communities will facilitate the reestablishment of total perennial cover (to amounts found on undisturbed areas) generally within 100 years.” Consequently, restoration would take longer as the establishment of early succession communities is not restoration of the existing vegetation. We request that BLM provide relevant citations from the scientific literature to support the statements/conclusions made in the Final EA. This request is supported by 40 CFR 1502.24 on “Methodology and scientific accuracy” in which CEQ directs federal agencies to “insure the professional integrity, including scientific integrity, of the discussions and analyses” and “identify any methodologies used” and “make explicit reference by footnote to the scientific and other sources relied upon for conclusions.”	The areas in question are already disturbed as they have been used in the past as trough and storage locations. This was clarified in the EA in section 3.3.3.3. Given this, there is no additional disturbance from the replacement of storage and/or troughs at these locations. Given the variable nature of recovery in the arid environment, i.e., high precipitation years vs. low precipitation years, cyclic nature of boom-and-bust vegetation cycles, changing climactic trends, gains and loss of soil and nutrients, it is purely speculative to assign a specific number to how long the area would take to recover. The use of the phrase “at least 30 years” intends to inform that should the area be retired from any livestock infrastructure use; it would be a very long time before the area would appear as if untouched.
Western Watersheds	6	Vegetation	The EA indicates the North Pasture gets ephemeral use with rains, but has been inactive in past 10 years because the troughs were not used, and cattle impacts have been limited in this pasture. The information that is not available in the EA is the condition of this pasture. There does not appear to be a land health evaluation or assessment for the project area or the allotment. Therefore, the public has no information as to current condition, how that condition will change with expanded livestock use, and how that will impact Monument objects, which include ironwood, palo verde, saguaros, and forage for wildlife.	The EA (section 3.3.3.1) states “The north pasture, area of the proposed action, has no permanent water but does get used ephemerally as water is available from precipitation, generally in the winter. Given that these water troughs in the project area have not been active for over 10 years, cattle concentration impacts to vegetation have been limited in recent years”. This does not indicate non-use for 10 years. The area gets used as water is available. Descriptions of impacts on vegetation are available in section 3.3.3.3 of the EA.
Western Watersheds	7	Vegetation	The EA does provide information as to how much of the Monument will become a sacrifice zone around the 6 new troughs, which are 10 feet x 10 feet, or more than 600 square feet of land cleared (bladed or bulldozed) for the tanks, plus another 2500 square foot area cleared	The specific areas for storage/trough placement are already cleared due to prior use. This has been clarified in the EA in section 3.3.3.3. The proposed action does not include blading or bulldozing. The 2-acre area of disturbance aligns with the 1-5 acres of disturbance as indicated

			for the well and solar panels. However, the amount of land around the tanks that will become completely devoid of vegetation is identified as just 2 acres. From our experience with tanks on the Monument, the area around tanks that will be destroyed is significant and can be between at least 1-5 acres. We request the BLM provide a citation for the 2-acre disturbance assumption, or revisit the assumption. The EA indicates that, currently, there are no weed species in area but the trenching, drilling, and other equipment use will increase risk of weeds. The ground disturbance will increase risk of weed colonization and the increased use of the pasture by livestock will also increase the chance of weed infestations. The analysis of this issue is insufficient.	in the comment provided. Section 2.5 of the EA lists mitigations, including cleaning machinery before entering IFNM to lessen the risk of weed infestation.
Western Watersheds	8	Grazing	We are also concerned that the grazing that has taken place on the Agua Dulce allotment over the last several decades since the Monument was designated is described as “heavy grazing” and that there does not appear to be any Land Health Evaluation or Assessment associated with this Environmental Analysis.	AIM monitoring has occurred on the allotment several times since 2020. The information is available on the BLM AIM national database. Land Health Evaluations are planned for spring of 2025; no LHE was prepared for this proposed action.
Western Watersheds	9	Grazing	The Biological Opinion for the Monument, from 2013, points out the Management Plan provision that monitoring is an integral part of all actions and programs of the BLM. “Grazing utilization is monitored to assure Standards and Guidelines are met on allotments; vegetation trends are evaluated to ensure support of current decisions;...monitoring of special status species...and other resources and uses. A monitoring strategy will be included in the IFNM RMP implementation plan...at minimum, BLM will evaluate the approved RMP every five years to determine which decisions are implemented and where management changes may be necessary. Livestock grazing monitoring would be consistent with the AZ Standards for Rangeland Health AND protection of monument objects. If BLM determines that livestock grazing is preventing or hindering progress towards achievement of applicable management objectives, BLM can discontinue grazing. However, there is no evidence that monitoring of livestock grazing is occurring within the Monument.	Monitoring occurs every year on the Monument. All allotments are visited each year for compliance checks, but not all allotments are monitored every year. An RMP evaluation is scheduled for IFNM in 2025.
Western Watersheds	10	Grazing	To protect important wildlife, hydrology, soil, upland, and xeroriparian resources in the Monument, permittees and lessees should be allowed to voluntarily retire their grazing leases and be eligible for compensation from a third-party conservation group. With this compensation ranchers could create more secure and certain financial opportunities while protecting and enhancing the resource values the BLM is required protect within the Monument and on surrounding BLM managed lands. Voluntary retirement of any of the leases within the Tucson Field Office could reduce the cumulative impacts of livestock grazing on Monument objects. We request that the BLM include the following language in the decision for this project and in any and all grazing permits or leases within or adjacent to the project area: Permittees or lessees with allotments in the Ironwood Forest National Monument are allowed to voluntarily retire their grazing permits or leases and be eligible for compensation from a third-party conservation group.	The Ironwood Forest National Monument Record of Decision and Approved Resource Management Plan (2013) describes the process of voluntary relinquishment in LM-008 on page 62. It says, “Following cancellation or voluntary relinquishment of a grazing lease, BLM will determine if conditions within the associated allotment(s) are satisfactory based on applicable management objectives. If BLM determines that livestock grazing is preventing or hindering progress towards the achievement of applicable management objectives, BLM may decide to discontinue livestock grazing use on the allotment(s) if this action will help promote attainment of these objectives. Even if BLM initially decides to discontinue livestock use on some or all of an allotment, it may later decide to resume livestock use if it determines, based on its subsequent evaluation of ecological conditions and other pertinent factors, that it is appropriate to do so.” It is not necessary to include this language in the decision because it does not pertain to the proposed action.
Not Provided	11	Wildlife	I am very concerned that this proposed action would increase the spatial extent and intensity of livestock grazing into sensitive habitats for Sonoran desert tortoises and other native wildlife species. Grazing causes many adverse effects that are directly, indirectly, and cumulatively damaging to wildlife habitats. The EA does not properly describe or evaluate those adverse effects.	Impacts to Sonoran Desert tortoise have been added to the analysis in the EA in section 3.3.5.3.
Desert Tortoise Council	12	Wildlife	Page 9, 2.5 Mitigation: BLM lists mitigation measures that would be implemented “if the proposed action is selected.” The mitigation listed for the tortoise is “Pre-work surveys will be conducted by qualified BLM wildlife biologist for any listed threatened or endangered species, or any BLM sensitive species along the survey route. Additionally, work crew will be instructed on safe handling of Sonoran Desert tortoise for relocation should they be present in work areas while construction activities are occurring.” Our first concern is that the mitigation does not include the activities implemented in the use/operations and maintenance phases of the proposed facilities. Please correct this deficiency.	The language was corrected in section 2.5 of the EA to reflect maintenance operations.

Richard Spotts	13	Wildlife	The wildlife effects analysis is deficient because it does not describe other available surface water sources in the general area nor how the expanded resource degradation from heavier grazing in new areas may reduce forage availability for wildlife.	Water resources are described in section 3.3.2.1 of the EA. There are very few other surface water resources. Impacts to wildlife are described in section 3.3.5.3.
Desert Tortoise Council	14	Wildlife	Pages 13 – 17, Issues Analyzed in Detail: As mentioned earlier in this letter under “Mitigation”, the Council is concerned that BLM did not identify and analyze issues in the Draft EA although it made commitments and has received directives including but not limited to: 1) for the tortoise, the Agreement, BLM’s recognition of the tortoise as a special status species and implementation actions in BLM’s Special Status Species Manual (BLM 2008b), and 2) for livestock grazing, compliance with the regulations for implementing NEPA to include analysis of beneficial and adverse impacts. For livestock grazing, as identified above under “Scoping and Public Involvement,” we remind BLM the NEPA analysis of impacts included beneficial and adverse impacts. BLM’s absence of identifying grazing as an issue to be analyzed in the Draft EA indicates that BLM does not consider that the proposed project will provide beneficial or adverse impacts to grazing. However, BLM states in the Draft EA that one of the purposes of the proposed action is “to improve livestock distribution and minimize livestock use in areas that have received heavy use in the past.” The absence of identifying grazing as an issue seems to contradict one of the purposes of the proposed action and indicates that BLM may have omitted an issue that should have been identified and analyzed in the Draft EA to comply with NEPA, its implementing regulations, and the BLM NEPA Handbook (2008a). The Council requests that BLM add analyses of the impacts of the proposed action to the tortoise/tortoise habitat and to livestock grazing with relevant scientific references to support the analyses and conclusions. Under the change in livestock grazing from baseline conditions, BLM should analyze the impacts to vegetation or soils that would occur from allowing perennial grazing in a pasture that has experienced ephemeral grazing for more than a decade. Please provide an analysis of these impacts in the Final EA especially with respect to increased surface disturbance in the north pasture and invasive plant species.	Livestock grazing was added to issues analyzed in detail in section 3.3.6 of the EA.
Desert Tortoise Council	15	Wildlife	Page 17, Issue 5: How will the proposed action impact wildlife in the area?: In the “Impacts from the Proposed Action” section, BLM says, “Sonoran Desert tortoise is known to occur in the project area; all attempts to avoid these animals will occur. Should a desert tortoise be found in the project area, it will be relocated to a safe area as close to the discovery location as possible.” We are surprised at the limited discussion in the Draft EA on the impacts to the tortoise or mitigation that would be implemented because it is a special status species and because of BLM’s commitment to manage for the tortoise in the Agreement. As a minimum BLM should ensure that the direction given in the following documents by the Arizona Game and Fish Department (AZGFD) is implemented during the construction and maintenance phases of the proposed action: Arizona Game and Fish Department. 2010. Desert Tortoise Survey Guidelines for Environmental Consultants. https://s3.amazonaws.com/azgfd-portal-wordpress/PortallImages/files/wildlife/2010SurveyguidelinesForConsultants.pdf . Arizona Game and Fish Department. 2014. Guidelines for Handling Sonoran Desert Tortoises Encountered on Development Projects. https://s3.amazonaws.com/azgfd-portal-wordpress/PortallImages/files/wildlife/2014%20Tortoise%20handling%20guidelines.pdf . Arizona Interagency Desert Tortoise Team. 2008. Recommended Standard Mitigation Measures for Projects in Sonoran Desert Tortoise Habitat. June 2008. . https://s3.amazonaws.com/azgfd-portal-wordpress/PortallImages/files/wildlife/MitigationMeasures.pdf	Mitigation measures are incorporated in the EA in section 2.5. The provided references have been reviewed.
Desert Tortoise Council	16	Wildlife	BLM also says, “Additionally, the potential for mortality, particularly of small animals such as snakes, lizards, and rodents, exists from construction activities and vehicle and equipment use. These individual losses will be localized and insignificant to populations.” Small animals would include the tortoise from hatchlings to adults. BLM provides no information in the Draft	See response for comment 11.

			EA on the status of the tortoise population in the NM or its trend to support the statement that these losses would be localized and insignificant to populations. Data are available from long-term study plots throughout Arizona including the West Silverbell Mountains plot in the NM that was surveyed in 1991, 1995, 2000, 2004, and 2007 (Zylstra and Steidl 2021) and the focused efforts across the NM reported by Averill-Murray and Averill-Murray (2002, 2006).	
Desert Tortoise Council	17	Wildlife	The analysis of the impacts from construction of the proposed action is minimal and for the most part lacks references from the available scientific literature to support the analyses and conclusions. Special status species in the project area are not identified and an analysis of impacts to them is not presented. For example, linear trenching would be conducted to install new pipeline and reconnect existing pipeline to wells and water troughs. Trench length in one location may be up to 0.5 mile long. These trenches may inadvertently trap small wildlife including tortoises and if they are unable to escape, result in their death from exposure or predators. We were unable to find this mentioned in the Draft EA. Rather, mortality from construction activities is mentioned with no mitigation proposed to minimize the loss of wildlife such as the standard practice of installing escape ramps in trenches. Other standard mitigation measures such as looking under vehicles and equipment before moving them to ensure that tortoises or other small animals are not present, and not moving vehicles or equipment if tortoises or small animals are present until they are out of harm's way should be required for the tortoise and wildlife.	See response for comment 11.
Desert Tortoise Council	18	Wildlife	We request that the Final EA (1) include these eight principles in its analysis of cumulative impacts to the tortoise; (2) ensure that synergistic and interactive impacts from the proposed project are included in this analysis; (3) address the sustainability of the tortoise in/near the project area and connectivity within the population in the NM and between nearby populations; and (4) include effective science-based mitigation, monitoring, and adaptive management that protect desert tortoises and their habitats during BLM's management of the public lands on which it would authorized the construction, operation/use, and maintenance of the proposed action.	Cumulative impact analysis was added to the EA in section 3.4.
Desert Tortoise Council	19	Wildlife	We found no information on the time of year that construction would begin or how long it would take to complete the construction phase of the project. If construction occurs during the active seasons for the tortoise, the proposed trenching is likely to entrap a tortoise in the area given their home range size and documentation of making periodic long-distance movements. To minimize the likelihood of encountering a tortoise during the construction phase, the project should be constructed and completed in as short time as possible and when tortoises are less likely to be above ground or walk into the project area (e.g., January). This construction time would also occur outside the nesting time for most migratory birds protected under the Migratory Bird Treaty Act.	Information has been added to the mitigation section (2.5) of the EA.
Desert Tortoise Council	20	Wildlife	The operation/use of the proposed action is likely to result in several adverse impacts to the tortoise and other wildlife species. These impacts would be ongoing long-term impacts, unlike the impacts during the construction phase. These long-term impacts should be analyzed in the Final EA and appropriate mitigation implemented to fully offset these impacts. According to the Draft EA, the water troughs will be accessible to wildlife, including small animals. Unfortunately, unless properly designed and regularly maintained, artificial waters can result drowning of small animals including tortoises. We found little information on the design of the water troughs and access ramps for wildlife or the management and monitoring actions that would be implemented to ensure that the access ramps are not entrapping and drowning wildlife including the tortoise. While many designs that are implemented to facilitate small wildlife to escape artificial water features (e.g., the ramp and step designs) may seem effective, concrete drinkers promote algae buildup (Brigham and Stevenson 2003) making	Wildlife escape ramps are a requirement of all waters that can be accessed by wildlife; they will be incorporated into this project.

			<p>the rough surface slippery and impeding an animal's ability to escape the drinker. Hoover (1995) found tortoises dead in approximately 20% of the small game guzzlers inspected in the Mojave National Preserve during the 1990s. Following this discovery, ramps were modified and barriers installed to prevent tortoises from drowning. However, in 2004, Mojave National Preserve reported finding of 28% of the 32 guzzlers inspected had tortoise mortality (see Hughson to LaRue personal communication on 29 June 2011). This information documents that the ramps and blocking techniques that were implemented between the early 1990s and 2004 did not have the desired effect of eliminating tortoise mortality (rebar was placed in the openings to prevent animals entering the guzzlers and mesh was placed inside the guzzlers to allow animals to escape. Andrew et al. (2001) found animal remains in 13 artificial water features in the Sonoran Desert in California. This long-term impact of drowning from the operation/use of the artificial water features to the tortoise and other small animals should be discussed and analyzed in the Final EA.</p>	
Desert Tortoise Council	21	Wildlife	<p>We found no analysis of the impacts to tortoise /tortoise habitat from the change in use of the north pasture that would occur from implementation of the proposed action. Because BLM reported that the water infrastructure in the north pasture has not been functioning for more than a decade, limited ephemeral grazing use has occurred in the pasture during this time. The establishment of a functioning water distribution system would allow livestock to graze the north pasture year-round. This is a change in baseline conditions. The direct and indirect impacts to the tortoise from this change in use should be analyzed in the Final EA. These impacts would include but are not limited to trampling of tortoises, collapsing of tortoise and other wildlife burrows, soil compaction and disruption/destruction of soil crusts that affects seed germination and plant growth needed for forage and cover from temperature extremes and predators, trampling of vegetation needed for forage by various size classes of tortoises making it unavailable, competition between tortoises and livestock for limited, and spreading invasive plants that compete with native vegetation and increase the potential for catastrophic fires. Please analyze these impacts in the Final EA.</p>	See response to comment 11.
Desert Tortoise Council	22	Wildlife	<p>The establishment of perennial water would result in increased water subsidies to predators of the tortoise (e.g., coyote, common raven, etc.). This subsidy may result in greater mortality to the tortoise population in the area from the increased occurrences of these predators using the troughs. This impact should be analyzed in the Final EA for the tortoise and other small animals in the project area.</p>	<p>The area is already occupied by a full suite of predators that would be expected in the region. Addition of water is not expected to change the abundance of predators nor prey; it is expected to provide for opportunity for more even distribution of the more mobile species across the landscape.</p>
Desert Tortoise Council	23	Wildlife	<p>The Final EA should include an analysis of the action alternative and how the implementation of it would result in "no net loss in quantity and quality of Sonoran desert tortoise habitat" (USFWS et al. 2015) especially because grazing would change from ephemeral to perennial grazing in the north pasture.</p>	<p>The proposed action does not include additions to AUM nor change the spatial extent of what is already authorized for grazing use.</p>
Western Watersheds	24	Wildlife	<p>The cactus ferruginous pygmy owl (<i>Glaucidium brasilianum cactorum</i>) was listed as a threatened species on August 21, 2023. The U.S. Fish and Wildlife Service current range map for the pygmy owl does appear to include the Monument: (map). The U.S Fish and Wildlife Service identifies the following counties where the owl is thought to occur: (list). However, the analysis in the EA does not appear to accurately reflect this information. Indeed, the owl is not even mentioned in the EA. We recommend the BLM review a 2021 Cactus Ferruginous Pygmy Owl Monitoring and Habitat survey report, authored by Dr. Aaron Flesch, which indicates surveys for pygmy owl should be conducted between February and April and September through October. Appendix 4, Flesch 2021. Flesch 2021 (at 14) also briefly discusses the impacts of livestock grazing: On one hand, grazing creates openings and reduces ground cover, which at small scales can enhance visibility and seems to promote local habitat selection by pygmy-owls, especially in areas with abundant vegetation cover (Flesch 2003b, Flesch and Steidl 2010, Flesch,</p>	<p>BLM has reviewed the mentioned document. There are no known occurrences of CFPO in the IFNM at this time. BLM is currently working with Dr. Flesch on a separate project to enhance habitat conditions for CFPO on IFNM. BLM will be implementing CFPO surveys to further inform future management actions in the area.</p>

			<p>unpubl. data). On the other hand, livestock grazing has also been found to negatively impact natural regeneration of saguaro cacti (Niering et al. 1963, Niering and Whittaker 1965, Steenbergh and Lowe 1977, Abouhaider 1989, 1992), and high levels of grazing can negatively impact abundance and diversity of prey taxa such as lizards and small mammals that are important resources for pygmy-owls (Jones 1981, Fleischner 1994, Hayward et al. 1997, Fleisch unpublished data).</p> <p>Notably, the owl uses mesquite for nesting habitat, too, and mesquite is very likely to be impacted by expanded grazing use.</p> <p>Section 7(a)(2) of the Endangered Species Act requires federal agencies, including the Service, to ensure that any action they fund, authorize, or carry out is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of designated critical habitat of such species.</p>	
Western Watersheds	25	Wildlife	<p>Impacts of increased livestock use on prey species for CFPO, impacts to juvenile saguaros (nest cavities for CFPO) have not been adequately considered. Landscape disturbance of habitat within or close to cactus ferruginous pygmy-owl populations has led to marked declines in their occupancy. Examples of landscape disturbance are clearing for agriculture, livestock grazing, and woodcutting. Additionally, the planting of buffelgrass, an invasive species that competes with native plants, places the Sonoran Desert (and thus owl habitat), at greater risk for devastating wildfires. Because dispersing owls are reluctant to cross open vegetation gaps, the denuded areas around these new livestock waters may act as a barrier for the species. Fragmentation is a significant component of habitat quality. Fragmentation due to human activities, like clearing for agriculture or development, negatively affects populations of cactus ferruginous pygmy-owls. Because dispersing owls prefer areas of dense cover and fly short distances under rather than over canopy trees, their movements are inhibited by large vegetation gaps resulting from habitat fragmentation. Researchers have found that abundance of cactus ferruginous pygmy-owls is higher and less variable in areas with plentiful potential nest cavities (these owls prefer to nest in saguaros and legume trees, like mesquites) adjacent to intact woodlands and rich riparian vegetation. Prioritizing quality habitat also protects their preferred prey species, such as lizards. The importance of local habitat quality to the health of owl populations and their prey should not be underestimated.</p>	See response to comment 24.
Western Watersheds	26	Wildlife	<p>The summer monsoon's precipitation (or lack thereof) has a significant effect on whether or not juvenile pygmy-owls reach adulthood, as the lizards preferred by these owls are more abundant when summer precipitation does not fall below normal levels. Climate change has made the amount of summer precipitation more variable than it used to be. Average summer monsoons in the Sonoran Desert produce 2.43 inches of rain. In years like 2019 and 2020, however, when summer rainfall was significantly below average (0.66 inches and 1.0 inches respectively), there was less prey for juveniles to eat as they entered adulthood, and thus fewer owls survived.</p> <p>The best conservation strategy for protecting the cactus ferruginous pygmy-owl inside the United States must focus on protecting high quality habitat and reducing fragmentation due to landscape disturbance. Specifically, it will be important to protect saguaros and desert legume trees (the preferred nest cavities of these owls), prevent disturbance to the woodlands preferred by this subspecies, and restore desert riparian areas by enhancing establishment of mesquite and other riparian trees. These actions will protect the habitat of pygmy-owls and their preferred prey, and will thus help to mitigate the deleterious consequences of climate change.</p>	See response to comment 24.
Western Watersheds	27	Wildlife	<p>The EA fails to adequately address the impacts of the proposed increased water availability and expanded grazing to the Sonoran desert tortoise. An increase in available waters will increase the number of predators (ravens and other birds of prey, coyotes, mountain lions,</p>	See response to comment 22. This proposed action is considered necessary to ensure proper range management on the allotment and is being proposed using mostly existing infrastructure and in previously disturbed areas. There will be some disturbance to get the proposed action

			<p>bobcats) and will increase the number of perches which will result in increased predation on Sonoran desert tortoises, especially juveniles. Expanded livestock grazing will result in increased trampling, burrow collapse, and increased conflicts for forage. These impacts have not been adequately addressed in the EA.</p> <p>There are 58,000 acres designated as priority habitat (Cat I and II) for the Sonoran desert tortoise within the Monument. It does not appear that the BLM has consulted with Appendix E of Resource Management Plan for conservation measures for Sonoran desert tortoise for this project. Additionally, the management plan includes this provision: LM-009: Allow only those new range improvements for livestock in (Desert Tortoise) Category I and II Habitat Areas that will not create conflicts with tortoise populations. Mitigation for such conflicts is permissible to make the net effect of the improvements positive or neutral to desert tortoise populations. Conflicting existing improvements will be eliminated as opportunities arise. Where range improvements are necessary and/or permitted, access and activities will be located and implemented to minimize additional disturbance to resources.</p> <p>This project will disturb large areas, rather than restore them: TE-003: Restore large, disturbed areas (> 1 acre) within priority special status species habitats within 10 years, including roads and other habitat alterations. The cumulative impacts to tortoise have not been adequately considered. Drought and heavy livestock use reduce annuals and threaten tortoise reproduction success. We also note that quail are dependent on annuals for food and grass/shrub cover. Quail are usually found near water sources, but tanks and troughs are deathtraps for quail without escape ramps.</p> <p>Effects to the Lesser Long Nosed Bat (LLNB) from livestock grazing also may occur through trampling and herbivory to forage plants. Management and monitoring of livestock grazing, in areas open for this use, would be consistent with the Arizona Standards for Rangeland Health and Guidelines for Grazing Administration, and with protection of monument objects. Young agaves and columnar cacti are very susceptible during the first several years to trampling, grazing and drying. Rocks and shrubby vegetation provide protection and function as nurseries for young agave and cacti. In some areas that are more heavily grazed, but meet general Standards and Guidelines, cover and microclimates may not be present for seedling establishment and for protection against trampling or grazing. Flowering agave stalks also might be predisposed to herbivory by livestock during the flowering season. This may result in a localized reduction of agave nectar and pollen for the LLNB. There are very few agaves in the IFNM and they are restricted to the rocky slopes in the Waterman Mountains. New water sources could concentrate livestock use, altering vegetation nearby. Site selection for these waters does not appear to have considered site specific evaluation to ensure any adverse impacts to LLNB are avoided or minimized. Potential impacts would be mitigated by site specific review.</p>	<p>implemented but the overall loss of undisturbed habitat will be insignificant to the net available habitat that remains undisturbed by construction and maintenance activities (section 3.3.3.3 of the EA).</p>
Western Watersheds	28	Wildlife	<p>(Refers to WH-014: Evaluate and implement, as appropriate, proposals for wildlife waters including selecting sites and installing new waters; modifying, replacing, and/or repairing existing waters; and removing nonfunctioning waters. Coordinate with AGFD for this action. Any new or modified waters will be designed consistent with current standards for wildlife and public safety.)</p> <p>How do these troughs, made from tires, fit the design for wildlife?</p>	<p>The new troughs will be made to be accessible and safe for both wildlife and livestock per BLM and AGFD standards. Since these waters are not intended for wildlife use only, such as the guzzler that is already in the vicinity of the project area and excluded from livestock use, this proposed action does not need to be designed to only serve wildlife.</p>
Richard Spotts	29	Water	<p>The groundwater effects analysis does not provide sufficient facts to actually determine how this proposed new well water extraction may affect the long-term level and sustainability of this aquifer, nor whether any change in aquifer level may affect discharge to surface waters. Such surface waters may already be important for wildlife and people.</p>	<p>A BLM hydrologist has analyzed the impacts to both groundwater and surface water resources in section 3.3.2. Their findings indicate that the impact will be negligible to the aquifer.</p>
Western Watersheds	30	Water	<p>Additionally, there is insufficient information about the Active Management Area and the impacts to ground water that will result in from the new well and ground water pumping.</p>	<p>Active Management Areas (AMA) are managed by the Arizona Department of Water Resources (ADWR). The EA in section 3.3.2.1 acknowledges that the project is within an AMA so that all necessary applications will be filed with ADWR as part of implementation. More detailed information about AMAs can be found by contacting ADWR.</p>

Western Watersheds	31	Water	<p>The BLM provides the following information about the storage tanks and troughs that will be installed for this project: One 20,000 gallon storage tank 6 troughs x 12,000 gallons each (which can hold 72,000 gallons total) However, there is no information about the anticipated amount of water to be pumped from the new well, either daily, monthly, or annually. This information must be disclosed and analyzed. There is also no information on how much water the authorized number of livestock require. Again, this information should be disclosed and compared to the amount of water that can be pumped from the well.</p> <p>Using the 814 AUMs authorized for this allotment, we calculate (at 20 gallons per AUM) the water needs to be 16,280 gallons of water per day, 488,400 per month, and over 5.8 million gallons per year. The BLM should calculate how much of this will be needed for the use of the North Pasture and then calculate the impacts this will have on the aquifer as well as any nearby wells. By our calculation, if the storage tank and all troughs were filled, there would be enough water for 4 days. The proposed well would need to produce 488,000 gallons of water per 30-day month. The BLM must determine whether the aquifer is capable of producing that amount of water and, if so, for how long into the future.</p> <p>Additionally, BLM claims that these waters will support wildlife in the area. But, BLM notes there is a reliable Arizona Game and Fish water site near the project area, which indicates wildlife do not need these additional waters.</p>	<p>This project is intended to serve as livestock water, with additional benefit to wildlife in the region. Additionally, the AGFD wildlife water in the project area is ephemeral and only contains water as precipitation allows; this proposed action would create an opportunity for more permanent water in the region, as well as serving as a potential source for water to fill the AGFD wildlife water if rains are not sufficient.</p> <p>There is no existing infrastructure to move water from the ranch site to the existing pipeline. To do this would require much more disturbance to the area (trenching, vegetation clearing, blading, etc.) and is not being considered as a reasonable alternative.</p> <p>The water consumption equation provided assumes all AUM's to be watered from this singular well every day, all year. This assumption is not valid as the construction of this well is to allow for improved grazing rotation. Those gallons of water were already being consumed at other sites previous to this proposed action. This proposed action will disperse the water consumption across a wider area.</p>
Western Watersheds	32	Water	<p>This project is located within the Waterman Pass Watersheds, Avra Valley sub-basin, Tucson AMA. The EA indicates there are 12 registered wells in area, but does not provide any information to the public as to whether this new well must be registered or approved by any state agency. The EA states that the Agua Dulce Ranch has largest well in area, supplying water for ranch headquarters and livestock. Can the ranch well be used to provide water for livestock? If not, why not? Instead of drilling a new well, can water be transported to where livestock would use it? If not, why not?</p> <p>The EA states that the current water use from Squabble Mine is from a shallow recharge, separate from aquifer and that "[i]mpacts from this well will be insignificant compared to other uses in sub-basin," which include mining, agricultural, and municipal. However, the cumulative impacts of adding yet another well are not identified or analyzed.</p>	<p>There is no existing infrastructure to move water from the ranch site to the existing pipeline. To do this would require much more disturbance to the area (trenching, vegetation clearing, blading, etc.) and is not being considered as a reasonable alternative.</p>
Western Watersheds	33	Recreation	<p>The BLM failed to consider the impacts to wildlife from more livestock in area (displacement), which would impact wildlife viewing and hunting opportunities negatively. It appears the BLM only considered the "positive" benefits from wildlife using new waters.</p>	<p>The proposed action does not increase AUMs, so does not expand grazing. The Agua Dulce allotment is classified as a perennial allotment in the 2013 Ironwood Forest National Monument Record of Decision and Approved Resource Management Plan (LM-007, page 62). Impacts related to cattle grazing in this area have been disclosed in the Ironwood Forest National Monument Proposed Resource Management Plan and Final Environmental Impact Statement (2011).</p>
Western Watersheds	34	VRM	<p>The EA does not disclose which VRM Class the project area is in.</p>	<p>The VRM class for the project area (VRM class II and III) was added to the EA in section 3.3.4.1.</p>
Desert Tortoise Council	35	NEPA	<p>The Council learned of the availability of this Draft EA and the opportunity to provide public comments from a third party. The Council has submitted numerous comment letters on BLM projects in Arizona for the past few years that included language identifying the Council as an Affected Interest and requesting notification of proposed actions that may affect the Sonoran desert tortoise and/or its habitat (including habitat for population connectivity).</p> <p>Despite our best efforts to communicate with BLM management, BLM continues to ignore the Council's request to be considered an Affected Interest for BLM proposed actions in the range of the Sonoran desert tortoise by not notifying the Council of the availability of environmental documents for public comment for project in the range of the tortoise.</p> <p>In 40 Code of Federal Regulations (CFR) 1500.1(b), the Council on Environmental Quality (CEQ) states, "NEPA procedures must insure that environmental information is available to public officials and citizens before decisions are made and before actions are taken." In</p>	<p>The BLM uses their National NEPA register, or ePlanning, for public notification related to public involvement.</p>

			<p>addition, CEQ states in 40 CFR 1506.6 Public involvement, "Agencies shall:</p> <p>(a) Make diligent efforts to involve the public in preparing and implementing their NEPA procedures.</p> <p>(b) Provide public notice of NEPA-related hearings, public meetings, and the availability of environmental documents so as to inform those persons and agencies who may be interested or affected.</p> <p>(1) In all cases the agency shall mail notice to those who have requested it on an individual Action."</p>	
Desert Tortoise Council	36	NEPA	<p>BLM's National Environmental Policy Act (NEPA) Handbook (2008a) says "For preparation of an EA, public involvement may include any of the following: external scoping, public notification before or during preparation of an EA, public meetings, or public review and comment of the completed EA and unsigned FONSI."</p> <p>"In addition to public involvement in the preparation of EAs, you must notify the public of the availability of a completed EA and FONSI." From the information we have gathered on this proposed action, BLM did not conduct external scoping, did not notify the Council before or during preparation of the EA, did not notify the Council if there were public meetings, did not notify the Council of the availability of the EA, and did not provide an unsigned FONSI with the Draft EA.</p> <p>In reviewing the information BLM provided on their National NEPA Register webpage for this Draft EA (https://eplanning.blm.gov/eplanning-ui/project/2034511/510), we were unable to find a closing date for the public to comment on the Draft EA. In addition, we were unable to find information on the address to use to submit written comments or email address to submit comments electronically. Usually, for proposed actions posted on the National NEPA Register, BLM includes a paragraph with information on the date the public comment period closes and how the public can submit comments.</p>	<p>The BLM scoped the project internally, as described in section 1.6 of the EA. The BLM then made the draft EA available for public comment on the BLM's National NEPA register.</p> <p>According to 40 CFR 1506.6, the BLM shall mail notice to those who have requested it on an individual action and there were no requests related to this action.</p> <p>The BLM followed all requirements for public notification related to the release of the Draft EA.</p>
Desert Tortoise Council	37	NEPA	<p>Page 6, Scoping and Public Involvement: In this section, BLM describes a process that it implemented to determine "the issues that may arise from the proposed action." The process that BLM describes appears to be one that included only BLM employees and no public involvement.</p>	<p>The BLM describes its internal scoping process in section 1.6 of the draft EA. Public scoping is not required in the development of an EA (43 CFR 46.235(a)).</p>
Desert Tortoise Council	38	NEPA Grazing	<p>While public scoping may not be a requirement for environmental assessments, this internal process of identifying issues for analysis in the Draft EA did not identify grazing as an issue. We remind BLM that the analysis of impacts under NEPA includes beneficial and adverse impacts. BLM's absence of identifying any impacts to grazing as an issue to be analyzed in the Draft EA indicates that BLM does not believe that the proposed project will provide beneficial or adverse impacts to grazing. However, BLM states that one of the purposes of the proposed action is "to improve livestock distribution and minimize livestock use in areas that have received heavy use in the past." The absence of identifying grazing as an issue seems to contradict one of the purposes of the proposed action and indicates that BLM may have omitted an issue that should have been identified and analyzed in the Draft EA to comply with NEPA, its implementing regulations, and the BLM NEPA Handbook (2008a). The Council requests that BLM include impacts to grazing as an issue in the Final EA and analyze these impacts, both beneficial and adverse. The Council strongly recommends that BLM include the public in future scoping efforts for its NEPA documents to ensure that that draft version of these documents identifies issues that should be included in the analysis and complies with NEPA and its implementing regulations.</p>	<p>See response to comment 14.</p>
Desert Tortoise Council	39	NEPA	<p>Page 7, Issues Considered, but Eliminated from Detailed Analysis: "Will the proposed action negatively impact grazing resources and opportunities?" BLM's response in the Draft EA is, "The project is specifically designed to improve grazing conditions on the allotment by</p>	<p>See response to comment 14.</p>

			allowing for better management of livestock throughout the allotment. This improved management will have the effect of lessening the impacts on those areas that are being more heavily used by dispersing livestock through the landscape. For this reason, this issue will not be analyzed in detail." Please see our comments above on Page 6, "Scoping and Public Involvement."	
Desert Tortoise Council	40	NEPA	Cumulative Impacts Analysis: We found no cumulative impacts analysis in the Draft EA. Please see Grand Canyon Trust v. F.A.A., 290 F.3d 339, 345-46 (D.C. Cir. 2002) in which the court decided that agencies must analyze the cumulative impacts of actions in environmental assessments. In the cumulative effects analysis of the Final EA, please ensure that the CEQ's "Considering Cumulative Effects under the National Environmental Policy Act" (1997) is followed, including the eight principles, when analyzing cumulative effects of the proposed action to the affected resource issues.	See response to comment 18.
Desert Tortoise Council	41	NEPA	Please add an analysis of cumulative impacts of each alternative to the Final EA for the resource issues carried forward in the Final EA following this guidance. Note that CEQ recognizes that synergistic and interactive impacts as well as cumulative impacts should be analyzed in the NEPA document for the resource issues.	See response to comment 40.
Western Watersheds	42	NEPA	Given that this allotment is within a National Monument, is home to endangered or special status species, is located within an Active Management Area, and is also experiencing the impacts of climate change and drought, moving forward via an Environmental Assessment seems unwise. We do not believe the Bureau of Land Management can reach a Finding of No Significant Impact and we believe additional analysis is needed.	The BLM has prepared a FONSI according to 40 CFR 1501.6 and found no significant impacts that would require the preparation of an EIS.
Western Watersheds	43	NEPA	In Idaho Sporting Congress v. Thomas, 137 F.3d 1146, at 1149 (9th Cir. 1998), the court recognized that under 42 U.S.C. § 4332(2) an EIS "must be prepared if substantial questions are raised as to whether a project may cause significant degradation of some human environmental factor." "The plaintiff need not show that significant effects will in fact occur, but if the plaintiff raises substantial questions whether a project may have a significant effect, an EIS must be prepared." Id. at 1150. This is a low standard. Given the plethora of data in the record for the 2012 RMP decision clearly indicating livestock grazing was not compatible with protecting Monument objects, there are clearly "substantial questions" regarding the impacts livestock grazing will have in the project area. Klamath Siskiyou Wildlands Center v. Boody, 468 F.3d 549, 562 (9th Cir. 2006)	The project area is in the Agua Dulce allotment, which is classified as a perennial allotment in the 2013 Ironwood Forest National Monument Record of Decision and Approved Resource Management Plan (LM-007, page 62). Impacts related to cattle grazing in this area have been disclosed in the Ironwood Forest National Monument Proposed Resource Management Plan and Final Environmental Impact Statement (2011).
Western Watersheds	44	NEPA	The comment period is insufficient. The BLM did not provide any written notice to Interested Parties about this comment period. The only information available was a posting to the BLM's ePlanning website. The notice appears to have been posted on September 12, 2024 and the comment deadline is posted as September 28, 2024. That gives the public just 11 business days to find the project on ePlanning, review the EA, and provide comment. This timeframe is insufficient, especially for an area that has been designated as a National Monument, is home to sensitive, threatened and endangered species, has an active restoration project, and is of keen interest to a large number of people.	The BLM provided a 15-day comment period that was advertised on the BLM's National NEPA register. According to 43 CFR 46.305(a) the "methods for providing public notification and opportunities for public involvement are at the discretion of the Responsible Official".
Western Watersheds	45	NEPA	There are no alternatives for this project other than the proposed action and the no action. The BLM should consider and analyze: an alternative that reduces the number of AUMs authorized; an alternative that eliminates the North Pasture from use for the allotment (due to the inadequate water); an alternative that eliminates livestock grazing on the entire allotment. According to the Resource Management Plan for the Monument, the BLM could convert the Agua Dulce allotment to an ephemeral allotment. LM-007: Classify Agua Blanca, Agua Dulce, Blanco Wash, Clafin, Cocoraque, King, Old Sasco, Sawtooth Mountains, and Silver Bell allotments as perennial (refer to Appendix D for classification criteria). Morning Star and Tejon Pass allotments continue to be classified	The draft EA also include one alternative that was considered but eliminated from detailed analysis that included the proposed action with additional fencing (EA section 2.4.1). Suggested alternatives that reduce or eliminate cattle grazing in a pasture, in the allotment, or in the Monument, are outside of the scope of this EA which is a response to an external application for range improvements, not an authorization of grazing.

			ephemeral. If the resource conditions within an allotment change due to implementation of management decisions or other factors, an allotment may be recategorized based on those conditions. It appears that resource conditions on this allotment have changed and a recategorization is needed. This should have been included as an alternative, in addition to the alternatives we recommend above.	
Desert Tortoise Council	46	Conformance	<p>Pages 5 - 6, Conformance with Land Use Plans: BLM states, "The Proposed Action is in conformance with the 2013 Ironwood Forest National Monument Resource Management Plan with Record of Decision..."</p> <p>While the 2013 Ironwood Forest National Monument Resource Management Plan (RMP) may be the document that BLM refers to in its management of the NM, BLM should also refer to "Presidential Proclamation 7320—Establishment of the Ironwood Forest National Monument,"</p> <p>BLM should ensure that the goals and objectives in the RMP and the proposed action comply with the Proclamation.</p> <p>BLM's approach to management in the NM appears to be to manage for allowable and approved uses while minimizing impacts to the named objects, rather than manage for the named objects to assure their protection. An allowable or authorized use could result in substantial decline or extirpation of a named object in the NM because BLM is not focusing on managing for/protecting that named object. In the Draft EA, the question that BLM should be asking for the flora, fauna, and habitat components named in the Proclamation is are the ecological needs of these biological resources being protected under the proposed action in the Draft EA along with existing, ongoing impacts? If the answer is no, then the allowable or authorized use should be prohibited and the prohibition enforced rather than minimize the impact(s) from the allowable use to the named object.</p> <p>Although BLM is not revisiting the RMP in the Draft EA, the Council contends that BLM's first directive is to comply with the purpose and intent of the Proclamation, which is to protect the named objects and to demonstrate, using the best available information, that if the proposed action is approved, the results would be that the objects identified in the Proclamation will be protected.</p>	During land use planning for the Ironwood Forest National Monument, the BLM was required to ensure that land use plan decisions were consistent with Proclamation 7320. See section 1.4 of the EA for conformance with the 2013 Ironwood Forest National Monument Resource Management Plan with Record of Decision. The Proposed Action is consistent with the applicable RMP.
Desert Tortoise Council	47	Conformance	Page 6, Relationship to Statutes, Regulations or Other Plans: This section should include a discussion of the Candidate Conservation Agreement for the Sonoran Desert Tortoise (USFWS et al. 2015) (Agreement) and how the commitments BLM made in this Agreement apply to and are being implemented with respect to the proposed project. Please add this information to the Final EA.	The proposed action conforms with the CCA commitments listed on pages 34 and 35 of the CCA through mitigations directly aimed at Sonoran Desert tortoise protection. Specifically, the time of year and pre-work survey mitigations in section 2.5 of the EA, and the proposed action is in conformance with the approved RMP which is accepted in the CCA agreement.
Desert Tortoise Council	48	Conformance	This section mentions Secretarial Order 3362 that requires the BLM to consider wildlife connectivity corridors and three wildlife species, mule deer, desert bighorn sheep, and Sonoran pronghorn. Please add to this section, the CEQ's (2023) directive "Guidance for Federal Departments and Agencies on Ecological Connectivity and Wildlife Corridors" and apply it to the special status species in the project area including the tortoise. In this document CEQ directs Federal agencies to consider "how their actions can support the management, long-term conservation, enhancement, protection, and restoration of year-round habitat, seasonal habitat, stopover habitat, wildlife corridors, watersheds, and other landscape/waterscape/seascape features and processes that promote connectivity."	Supplemental waters are in conformance with SO 3362 as well as supporting mule deer and desert big horn sheep.
Desert Tortoise Council	49	Conformance	In addition, please add to this section, BLM's Instructional Memorandum – Habitat Connectivity on Public Lands IM 2023-005 (2022a). This document applies to all species. In	The proposed action will not imperil connectivity of habitat. Section 1.5 of the EA lists SO 3362 and discusses the ways that the proposed action would enhance connectivity in the region.

			addition, please describe and analyze how the proposed action complies with this directive, including for the tortoise.	
Desert Tortoise Council	50	Conformance	We found no mention of the Migratory Bird Treaty Act or compliance with BLM's Information Bulletin No. 2022-036, Addendum to BLM and U.S. Fish and Wildlife Memorandum of Understanding To Promote the Conservation of Migratory Birds (BLM 2022b). Please add this information to this section of the NEPA document and clearly explain in the section on "Issue 5: How will the proposed action impact wildlife in the area?" how BLM is complying with these directives.	The proposed action does not violate the MBTA; mitigation (listed in section 2.5 of the EA) is in place to lessen the impacts to migratory bird species.
Desert Tortoise Council	51	Conformance	Our second concern is that BLM should as a minimum comply with the Arizona Game and Fish Department's guidance for the Sonoran desert tortoise. This includes: Arizona Game and Fish Department. 2010. Desert Tortoise Survey Guidelines for Environmental Consultants. <ul style="list-style-type: none"> • Arizona Game and Fish Department. 2014. Guidelines for Handling Sonoran Desert Tortoises Encountered on Development Projects. • Arizona Interagency Desert Tortoise Team. 2008. Recommended Standard Mitigation Measures for Projects in Sonoran Desert Tortoise Habitat. June 2008. 	These references have been reviewed and incorporated when appropriate.
Desert Tortoise Council	52	Conformance	Our third concern is the mitigation does not comply with BLM's commitment in the Agreement (USFWS et al. 2015). In this document BLM, committed to manage for the tortoise. BLM committed to implementing: (1) BLM Manual 6840 (BLM 2008b) that establishes procedures for managing the Sonoran desert tortoise, a BLM sensitive species, with the goal of conserving the Sonoran desert tortoise and its habitat on BLM-managed lands in cooperation with other agencies; (2) landscape level conservation measures (e.g., identifying areas of potential conflict between agency mission and Sonoran desert tortoise habitat and identifying and reducing or otherwise mitigating dispersal barriers between Sonoran desert tortoise populations, etc.); and (3) local level conservation measures (e.g., considering the effects of actions on the Sonoran desert tortoise during the planning process, and avoiding or minimizing impacts, or implementing mitigation measures to offset impacts to tortoise populations and habitat where practical and feasible, avoid, where practicable, or otherwise minimize or mitigate adverse effects of actions that could result in isolation of known Sonoran desert tortoise populations and/or landscape-level fragmentation of Sonoran desert tortoise habitat, etc.). These three measures may only be effectively implemented when BLM knows the status and trend of the tortoise populations on the lands it manages and where the direct and indirect impacts to the tortoise are occurring, especially at a landscape level, and thus affecting tortoise populations. The Council is concerned about projects and management decisions that contribute to degradation and loss of tortoise habitat (including habitat needed for connectivity among populations) (CEQ 2023) from habitat fragmentation, activities that introduce and spread non-native plant species and reduce the availability of native herbaceous vegetation needed by all size classes of tortoises for adequate nutrition, non-native fuels that carry wildfire's and destroy tortoises/tortoise habitat, etc., which result in a reduction in tortoises. To conduct an accurate regional or cumulative effects analysis and comply with the Agreement, BLM would need to track these and other impacts to the tortoise at a local and landscape level using a geospatial tracking system for all management actions and projects that it authorizes, funds, or implements. Projects that alter grazing patterns and create piospheres, provide subsidized water for tortoise predators, contribute to the introduction and spread of non-native plants, and unless properly designed and maintained entrap and drown tortoises should be added to BLM's geospatial tracking system. In the Agreement, BLM says, that through [its] Resource Management Plans (RMPs), BLM managers are directed to "[a]void, minimize or mitigate impacts associated with all BLM authorized activities including mineral material sales, rights-of-way [emphasis added], recreational use, travel management, and livestock grazing through project design and modifications to allowable uses in order to achieve Sonoran desert tortoise management	See response to comment 51.

			objectives” (USFWS et al. 2015). BLM should explain and analyze in the Final EA how it will mitigate (avoid, minimize, and/or compensate) direct, indirect, and cumulative impacts associated with the proposed action at a local and landscape level to contribute to/achieve Sonoran desert tortoise management objectives, not minimize impacts. This analysis should include the direct, indirect, and cumulative impacts of the construction, operation/use, and maintenance of the proposed action.	
Desert Tortoise Council	53	Conformance	Our fourth concern is that BLM should explain in the Final EA how it will comply with its Rangeland Plan (BLM 1988), Compensation for the Desert Tortoise (MOG 1991), Manual 6840 – Special Status Species Management (BLM 2008b) and BLM’s Instructional Memorandum on Mitigation (BLM 2021a), Mitigation Manual (BLM 2021b), and Mitigation Handbook (BLM 2021c). Please address these four concerns in the Final EA and demonstrate how BLM’s proposed action complies with these numerous documents.	See response to comment 51.
Desert Tortoise Council	54	Conformance	Under the Proclamation, BLM is directed to protect the named objects in the Proclamation. These include ironwood, palo verde, and saguaro, ancient legume and cactus forests, associated understory plants, and Nichols turk’s head cactus; fauna – lesser long-nosed bat, habitat for the cactus ferruginous pygmy-owl, desert bighorn sheep; and habitat components – “roosting sites for hawks and owls, forage for desert bighorn sheep, protection for saguaro against freezing, burrows for tortoises, flowers for native bees, dense canopy for nesting of white-winged doves and other birds, and protection against sunburn for night blooming cereus.” In the Final EA, BLM should include these named objects and analyze how the construction, operation/use, and maintenance of the proposed action would or would not protect these objects.	See response to comment 49.
Western Watersheds	55	Conformance	There is no information in the EA regarding the Pima County Multispecies Habitat Conservation Plan (MHCP) and how this expansion of grazing within the Monument will impact species covered by the MHCP.	The proposed action does not change the applicable grazing permit, and so does not increase the AUMs currently authorized. The EA discusses conformance with applicable land use plans in section 1.4 and conformance with applicable statutes, regulations, or other plans in section 1.5.
Western Watersheds	56	Conformance	By proposing to expand the impacts of livestock grazing within the Monument, the BLM is risking a violation of the Federal Land Policy and Management Act. Specifically, this project is likely to cause unnecessary and undue degradation. (FLPMA, sections 202 and 302) Unnecessary and undue degradation: Federal Land Policy and Management Act of 1976 (FLPMA), Pub. L. No. 94-579, 90 Stat. 2743 (1976). FLPMA requires the Secretary of the Interior to develop land use plans for public lands, see 43 U.S.C. § 1712(a), and to “manage the public lands under principles of multiple use and sustained yield,” id. § 1732(a). FLPMA directs that, “[i]n managing the public lands the Secretary shall, by regulation or otherwise, take any action necessary to prevent unnecessary or undue degradation of the lands.” id. § 1732(b). <i>Bohmker v. Oregon</i> , 903 F.3d 1029 (9th Cir. 2018)	The proposed action does not change the applicable grazing permit, and so does not increase the AUMs currently authorized. The Agua Dulce allotment is classified as a perennial allotment in the 2013 Ironwood Forest National Monument Record of Decision and Approved Resource Management Plan (LM-007, page 62). Impacts related to cattle grazing in this area have been disclosed in the Ironwood Forest National Monument Proposed Resource Management Plan and Final Environmental Impact Statement (2011).
Western Watersheds	57	Consultation	As the BLM is aware, the Ironwood Forest National Monument is on O’odham land and is adjacent to the Tohono O’odham Nation. However, there is nothing in the EA to indicate the BLM conducted any outreach to the Nation or Tribal members to ensure adequate consultation. The project cannot move forward until consultation is completed.	Impacts to cultural resources were analyzed in section 3.3.1 of the EA. The proposed action described in this EA would be subject to project review and assessment in accordance with the BLM’s Arizona Vegetation and Range Management Programmatic Agreement (PA; executed September 30, 2020). If the BLM identified potential impacts to historic properties, the BLM could redesign or relocate the proposed activities or develop plans to mitigate the potential adverse effects in consultation with the State Historic Preservation Office, Tribes, and other potentially affected parties. A Class III cultural resource survey was accomplished for this project. The survey found the project will have no significant impacts on cultural resources.
Western Watersheds	58	Consultation Wildlife	Because of the lack of information and surveys for pygmy owls within the Monument, along with the lack of information available in the record thus far for this project related to the owls, we strongly recommend the BLM consult with the U.S. Fish and Wildlife Service to determine the impacts of livestock grazing infrastructure and expanded use on the pygmy owl. Reinitiation of consultation may be required: As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may	In section 1.5 of the EA, the BLM states that “A review of an official species list from US Fish and Wildlife Services, Ecological Services, in addition to a review of the Arizona Environmental Review Tool combined with site specific verification of habitat conditions indicated that while potential habitat exists for federally listed species to be present, no known populations of federally listed species are known to exist within the project area”.

			affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.	
Western Watersheds	59	Data	Information that should be made available to the public for this allotment, prior to authorizing any new grazing infrastructure, includes the following: Amount of forage necessary for the authorized number of livestock Amount of forage the allotment (by pasture) is capable of producing Amount of water necessary for the authorized number of livestock Amount of water that must be pumped from the new well for the authorized livestock Most recent Land Health Evaluation or Assessment Any and all range monitoring information the BLM has collected for this allotment, by pasture Any compatibility determination for livestock grazing within the National Monument Information about suitable habitat for the Cactus Ferruginous Pygmy Owl within the allotment Information about any monitoring for Cactus Ferruginous Pygmy Owl within the Monument over the last 10 years Information on how far livestock will travel from water sources (which will identify the area of impact that will result from these new livestock waters)	The information requested is available to the public and not substantive to the proposed action.
Western Watersheds	60	Data Grazing	There is no information regarding how far livestock will travel from water There is no information as to how far livestock are likely to travel from these new waters. A literature review of studies from around the world and indicates that livestock travel more than 2 miles from water sources, especially in areas that have experienced drought or that experience above average rainfall. Studies show livestock will travel up to 4.97 miles from water in both drought and above average rainfall years. Identifying how far livestock will travel from these new waters will provide a more accurate understanding of the impacts this project will have on Monument objects. Table	The purpose of the proposed action is to allow for greater disbursement of livestock.
Western Watersheds	61	Citations	BLM cites to Teague et al., 2016, for idea that cattle can increase biodiversity of plants – “In some circumstances, grazing can increase plant biodiversity, build soils, sequester carbon, increase soil nitrogen and water content, and overall, increase productivity and sustainability (Teague et al., 2016).” However, Teague et al. indicates that this is possible only with “appropriate regenerative crop and grazing management” on agroecosystems (croplands), and they don’t address grazing on publicly managed lands. It does not appear that the BLM is suggesting the high level of livestock grazing management necessary to produce “positive” benefits from livestock grazing, which would be especially inappropriate in the Monument because of the number of fences necessary for the intensive pasture rotation (high intensity, short duration) to achieve the purported goals of Teague et al. As a reminder to BLM, the Ironwood Forest National Monument is not “crop land.” There is no way to combine crop rotation with grazing on the Monument, at least not without significant changes to the grazing management. If BLM is suggesting a significant change to grazing management on the Agua Dulce allotment, it will need to revise the management plan for this allotment, which is not what BLM appears to be proposing in this EA and which is outside the scope of this project. Additionally, Teague et al. suggests the “regenerative AMP grazing management” is suitable on degraded lands. If BLM wants to implement regenerative grazing management, it must first acknowledge that the allotment is degraded, which under BLM grazing regulations would require a reduction in the number of livestock, especially within these protected Monument lands. Indeed, the science applicable to the Sonoran Desert indicates that livestock grazing has significant negative benefits. We have attached an annotated bibliography with resources we strongly encourage the BLM to review.	See response to comment 4.

APPENDIX B. REVIEW OF LITERATURE SUBMITTED DURING THE PUBLIC COMMENT PERIOD

Author/Date	Relevant to EA	Notes/Summary	Change made to the EA
Shawcroft 2024	No	The attached document is an exit letter to the Director of the BLM related to their personal experience working as a Range Specialist in the San Luis Valley in Colorado. The information does not pertain to the proposed project or the project area.	No
Molvar and Rosenthal 2023	No	The article is an opinion piece in the Salt Lake Tribune. The information does not pertain to the proposed project or the project area.	No
Molvar et al. 2024	No	The paper is related to cheatgrass invasions, which is not an issue in the project area.	No
Kauffman et al. 2022	No	The paper is related to grazing impacts on climate change. The information is not specific to the proposed project or the project area.	No
Public Employees for Environmental Responsibility 2024	No	The paper assesses trends in Rangeland Health on BLM lands. The information is not specific to the proposed project or the project area.	No
Gustin 2022	No	The article discusses grazing on federal lands and climate impacts. The information is not specific to the proposed project or the project area.	No
Wuerthner 2020	No	The article discusses livestock impacts on ecosystems. The information is not specific to the proposed project or the project area.	No
Annotated Bibliography – submitted by Western Watersheds	Yes	BLM has reviewed the literature listed in Wester Watershed’s comment letter. Literature was either incorporated into the EA and cited, already cited in the EA, already addressed by literature covering the same topic and cited in the EA or lacked relevance.	Yes
Literature cited submitted by the Desert Tortoise Council	Yes	BLM has reviewed the literature listed in the Desert Tortoise Council’s comment letter. Literature was either incorporated into the EA and cited, already cited in the EA, already addressed by literature covering the same topic and cited in the EA or lacked relevance.	Yes